

DEPARTMENT OF ENERGY

PART ASSESSMENTS¹

¹This document contains details of the most recent program assessments as of the date the 2005 Budget was published (February 2004). Programs originally assessed for the 2004 Budget were reassessed only where evidence showed an agency's rating was likely to change. Programs not reassessed are presented in this document in the form of reprints of the original worksheets and are footnoted "FY 2004 Budget".

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Program Assessment Rating Tool (PART)

Program: Advanced Fuel Cycle Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	100%	53%	Effective

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The purpose of the Advanced Fuel Cycle Initiative (AFCI) is to develop technologies that can reduce significantly the volume and toxicity of spent nuclear fuel generated by commercial nuclear power plants and thereby reduce the costs of waste disposal.

Evidence: National Energy Policy; Appropriation Language; Secretary Abraham Statements; AFCI Report to Congress (January 2003), Report of the U.S./Russian Joint Working Group on Advanced Nuclear Technologies (July 2002); Reports of the Nuclear Energy Research Advisory Committee (NERAC) Advanced Nuclear Transformation Technology (ANTT) Subcommittee (April 2002 and January 2003); FY 2004 Budget Request; and the AFCI Ten-Year Program and Program Management Plans.

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: DOE's plan addresses size and cost of repository, proliferation risk and toxicity of spent fuel. It also will develop fuel cycle technologies for Generation IV reactor systems. National Energy Policy Report recommends addressing program issues.

Evidence: National Energy Policy; Secretary Abraham Statements; Annual AFCI Report to Congress (January 2003); Report of the U.S./Russian Joint Working Group on Advanced Nuclear Technologies (July 2002); Reports of the NERAC ANTT Subcommittee (April 2002 and January 2003); AFCI Ten-Year Program Plan.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: This is a unique initiative that does not duplicate any other Federal or non-Federal program.

Evidence: AFCI Report to Congress (January 2003); Report of the U.S./Russian Joint Working Group on Advanced Nuclear Technologies (July 2002); Reports of the NERAC ANTT Subcommittee (April 2002 and January 2003); FY 2004 Budget Request

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: The program has been designed with extensive government, industry, academia and international collaboration to achieve the program objectives. Considerable analysis has been and continues to be devoted to identifying the most efficient and effective technology options for accomplishing program objectives.

Evidence: Secretary Abraham Statements; AFCI Report to Congress (January 2003), Report of the U.S./Russian Joint Working Group on Advanced Nuclear Technologies (July 2002); Reports of the NERAC Advanced Nuclear Transformation Technology (ANTT) Subcommittee (April 2002 and January 2003); FY 2004 Budget Request; AFCI Ten-Year Program and Program Management Plans; FY 2003 AFCI Comparison Report.

Program Assessment Rating Tool (PART)

Program: Advanced Fuel Cycle Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	100%	53%	Effective

1.5 **Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: YES Question Weight: 20%

Explanation: The program targets resources to accomplish the program purpose to reduce significantly the volume and toxicity of spent nuclear fuel generated by commercial nuclear power plants and thereby reduce the cost of waste disposal. The program will support development of advanced fuel cycles for Generation IV reactor systems, contributing significantly to the continued future viability of nuclear energy.

Evidence: AFCI Ten-Year Program and Program Management Plans; AFCI Report to Congress (January 2003); FY 2003 AFCI Comparison Report; FY2004 Budget Request; Reports of the NERAC ANTT Subcommittee (April 2002 and January 2003)

2.1 **Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program?** Answer: YES Question Weight: 10%

Explanation: The program has developed and included in the AFCI Program Plan specific long-term performance measures that will guide program planning, budget and performance management.

Evidence: AFCI Report to Congress (January 2003); AFCI Ten-Year Program and Program Management Plans; Reports of the NERAC ANTT Subcommittee (April 2002 and January 2003); FY 2004 Budget Request; Goal 4.2 of the Draft DOE Strategic Plan; FY 2004 Annual Performance Plan; FY 2003 Joule. (See the "Measures" section of this PART.)

2.2 **Does the program have ambitious targets and timeframes for its long-term measures?** Answer: YES Question Weight: 10%

Explanation: Ambitious baselines and quantified targets have been developed to support accomplishment of the long-term measures. These ambitious targets are based on the AFCI's need to provide a comprehensive basis for a Secretarial decision on the technical need for a second repository as early as CY 2007.

Evidence: AFCI Report to Congress (January 2003); AFCI Ten-Year Program and Program Management Plans; FY 2004 Annual Performance Plan; FY 2003 Joule. (See the "Measures" section of this PART.)

2.3 **Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals?** Answer: YES Question Weight: 10%

Explanation: Specific, quantifiable and measurable annual program performance measures have been developed that will clearly indicate whether progress toward long-term goals is being achieved.

Evidence: AFCI Report to Congress (January 2003), AFCI Ten-Year Program and Program Management Plans. (See the "Measures" section of this PART.)

2.4 **Does the program have baselines and ambitious targets for its annual measures?** Answer: YES Question Weight: 10%

Explanation: Annual performance baselines and targets have been established to measure performance. These ambitious targets are based on the AFCI's need to provide a comprehensive basis for a Secretarial decision on the technical need for a second repository as early as CY 2007.

Evidence: AFCI Report to Congress (January 2003), AFCI Ten-Year Program and Program Management Plans.

Program Assessment Rating Tool (PART)

Program: Advanced Fuel Cycle Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	100%	53%	Effective

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 10%

Explanation: Participant performance goals and measures are established in contractors guidance letters and work packages that support program performance goals. They are monitored monthly through performance reports and follow-up reviews of these reports. Quarterly Program Reviews are conducted.

Evidence: AFCI Report to Congress (January 2003), AFCI Ten-Year Program and Program Management Plans; 5-year agreements with French & Swiss; program guidance memoes and associated Statements of Work for DOE contractors. Monthly performance reports.

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: The NERAC Advanced Nuclear Transformation Technology Subcommittee (ANTT) Subcommittee conducts reviews and analyses of the program at least annually and reports its recommendations to DOE. The last review was conducted on December 2, 2002, and the next is scheduled for September 18, 2003.

Evidence: NERAC ANTT meeting reports

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: Departmental budget requests for FY 2004 and prior years have not done so; however, the AFCI program maintains a detailed program plan, initially developed early in 2003, that is updated on an as-needed basis to accommodate budget changes. This document makes fully transparent the adjustments in program priorities, costs, schedules, and achievement of long- and short-term performance measures to meet budget requirements. It is also the document used to set priorities on which future budget requests are based.

Evidence: FY 2004 Budget Request; AFCI Ten-Year Program and Program Management Plans; Draft 17 of DOE Strategic Plan General Goals.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: NERAC's ANTT Subcommittee provides close review and oversight of program activities. The AFCI Ten-Year Program and Program Management plans address specific strategic planning goals.

Evidence: Charter for the NERAC ANTT Subcommittee and associated meeting reports; AFCI Ten-Year Program and Program Management Plans

Program Assessment Rating Tool (PART)

Program: Advanced Fuel Cycle Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	100%	53%	Effective

- 2.RD1** **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: YES Question Weight: 10%
- Explanation: The program has continually re-examined, analyzed and assessed its potential benefits, most recently in the AFCI Report to Congress and the FY 2003 AFCI Comparison Report. The independent NERAC ANTT (as well as independent reviewers at such universities as MIT) have reviewed the AFCI Report to Congress, and the ANTT will review the FY 2003 AFCI Comparison Report, which specifically compares benefits in addition to costs.
- Evidence: Charter for the NERAC ANTT Subcommittee and associated meeting reports; AFCI Report to Congress (January 2003); FY 2004 Budget Request; FY 2003 AFCI Comparison Report, which specifically compares benefits in addition to costs.
-
- 2.RD2** **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%
- Explanation: The program priorities are defined in AFCI Program and Program Management Plans and the AFCI Report to Congress. The ANTT Subcommittee of NERAC provides close oversight of program activities and assists in prioritizing program activities and recommending funding levels.
- Evidence: Charter for the NERAC ANTT Subcommittee and associated meeting reports; AFCI Report to Congress (January 2003); AFCI Ten-Year Program and Program Management Plans; NERAC ANTT Subcommittee Report (January 2003)
-
- 3.1** **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: YES Question Weight: 12%
- Explanation: Program performers prepare monthly progress and earned value reports covering cost, schedule, and technical performance. Reports are reviewed monthly with the performers and corrective actions, as needed, are determined and implemented.
- Evidence: FY 2004 Budget Request; Annual DOE Performance Plan and Performance Appraisal Form; Quarterly updates to the Annual Performance Plan; monthly program participant performance controls review; formal change control process
-
- 3.2** **Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: YES Question Weight: 12%
- Explanation: Program performance goals are incorporated into the annual performance plans for the federal senior manager and federal program manager. Program performance goals are also incorporated into the contractor's annual performance plan and program guidance.
- Evidence: Annual DOE Performance Plan and Performance Appraisal Form; NE program guidance memos and associated Statements of Work; Performance Based Incentives in M&O contracts.

Program Assessment Rating Tool (PART)

Program: Advanced Fuel Cycle Initiative
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100%	90%	100%	53%	Effective

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: Funds are obligated in a timely manner and program is executed in conformance with Congressional language and established program plan.

Evidence: NE program guidance memos and associated Statements of Work; NE's Monthly Obligation and Cost and Performance Tracking Report; AFCI Ten-Year Program and Program Management Plans

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 12%

Explanation: Contractor performance is judged against project costs, schedule and technical baselines. Decisions to continue funding are based on these evaluations. Incentives are included in participants contracts but not on a program-specific basis. Costs relative to baseline are measured on a monthly basis using Earned Value Reporting.

Evidence: NE program guidance memos and associated Statements of Work; NE's Monthly Obligation and Cost and Performance Tracking Report (including earned value reporting); AFCI Ten-Year Program and Program Management Plans. Contracts and Award Fee Determinations for program participants.

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: The program is coordinated with other DOE nuclear energy and waste management programs, including the Generation IV Nuclear Energy Systems Initiative, the Nuclear Power 2010 Initiative, and the Civilian Radioactive Waste Management Program (RW). The Ten-Year AFCI Program and Program Management Plans clearly articulate interfaces with these programs, including RW. The Nuclear Energy (NE) program and RW worked closely on the AFCI Report to Congress and are involved in ongoing program planning and monitoring pursuant to a memorandum of understanding.

Evidence: National Energy Policy; AFCI Report to Congress (January 2003), NERAC ANTT Subcommittee meeting reports, FY 2004 Budget Request; AFCI Ten-Year Program and Program Management Plans; Draft NE/RW MOU (still under negotiation)

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 12%

Explanation: Internal controls are used in the execution of the program. Program performers prepare monthly progress and earned value reports covering cost, schedule, and technical performance. Reports are reviewed monthly with the performers and corrective actions, as needed, are determined and implemented.

Evidence: Annual Reporting for Federal Managers Financial Integrity Act. FY 2004 Budget Request; Annual DOE Performance Plan and Performance Appraisal Form; Quarterly updates to the Annual Performance Plan; monthly program participant performance controls review; formal change control process.

Program Assessment Rating Tool (PART)

Program: Advanced Fuel Cycle Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	100%	53%	Effective

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 12%

Explanation: No management deficiencies have been identified. Program performance goals are incorporated into staff and contractor annual performance plans and progress against these goals are monitored. The Department uses this information to evaluate contractor performance and resulting award fees. Specific deliverables and their related costs and schedules are tracked via monthly participant reports and corrective or remedial action determined in monthly review conferences; in addition, program direction, costs and schedules are tracked and calibrated in Quarterly Program Reviews.

Evidence: FY 2004 Budget Request; AFCI Ten-Year Program and Program Management Plan; AFCI Report to Congress (January 2003). Monthly participant reports and management review conferences; Quarterly Program Reviews.

3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality? Answer: YES Question Weight: 12%

Explanation: The program incorporates both merit-based competitive awards and national laboratory-directed awards based on technical capabilities and facilities.

Evidence: FY 2004 Budget; AFCI Ten-Year Program and Program Management Plans; AFCI Report to Congress (January 2003); Procedure for Selection of Laboratory Contractors for AFCI R&D Activities.

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: LARGE EXTENT Question Weight: 20%

Explanation: The program is relatively new but is currently on track in achieving its long-term performance goals. Annual performance measures and targets established to support the long-term performance and targets are being achieved.

Evidence: AFCI Report to Congress (January 2003). AFCI Ten-Year Program and Program Management Plans; FY 2003 Performance and Accountability Report; NERAC ANTT Subcommittee Reports. FY 2004 Budget Request.

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: YES Question Weight: 20%

Explanation: All annual performance goals have been achieved. Annual measures and targets are tracked on a monthly basis.

Evidence: FY 2004 Budget Request; Performance documented in monthly performance reviews and annual contractor evaluations; FY 2004 Annual Performance Plan; FY 2003 Joule; FY 2002 DOE Performance and Accountability Report.

Program Assessment Rating Tool (PART)

Program: Advanced Fuel Cycle Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
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4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: NO Question Weight: 20%

Explanation: The program has been in operation for four years. During each year there has been a steady improvement in both management systems and technical achievements. Through foreign collaborations (including obtaining vital irradiation data from France) the program has avoided R&D costs of approximately \$10 million annually over a 10+ year period beginning in 2000. DOE contracts do not reward program-specific efficiencies, but the AFCI program monitors and collects information on contractor efficiency on a quarterly basis through program reviews and also annually through 360° performance reviews. The program inputs the results of these reviews into the various contractors award fee determinations at the Departmental level. The program has not presented detailed evidence of improvements in efficiency or cost-effectiveness.

Evidence: Improvements are documented in the annual contractor performance reviews and in the monthly cost and schedule performance reviews. AFCI-specific, task-related Performance Based Incentives.

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: NO Question Weight: 20%

Explanation: Foreign programs with very similar objectives and goals have been in operation for several decades; however, no comparative evaluations have been conducted. In four years, the U.S. program has achieved a technical maturity of sufficient stature that international interest in establishing cooperative programs with the United States has grown annually. There is no similar domestic program.

Evidence: French/U.S. cooperative programs in transmutation technology were established in 2001, followed by a multinational program based in Switzerland. Opportunities for cooperation with Russia, Japan and South Korea are currently under consideration. Cooperative agreements have been signed by the French, Swiss and European Union.

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: YES Question Weight: 20%

Explanation: The NERAC ANTT Subcommittee chaired by Nobel Laureate Burton Richter conducts ongoing external reviews and semi-annual oversight of the program. These evaluations have confirmed that the program is effective in achieving program goals.

Evidence: NERAC ANTT Subcommittee meeting reports. The latest evaluation conducted in December 2002; the next one is scheduled for September 2003.

PART Performance Measurements

Program: Advanced Fuel Cycle Initiative

Agency: Department of Energy

Bureau:

Measure: Complete focused spent fuel treatment and transmutation technology research and development that will provide the Secretary sufficient input to decide (with a 70% confidence level) on the technical need for a second geologic repository.

Additional Information: The intermediate term goal of AFCI is to enable a decision on delaying or eliminating the need for a second repository by the statutory limit of January 1, 2010. The program wants to achieve this goal by Dec. 31, 2007.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2008	Report to secretary		

Measure: Demonstrate separation of uranium from spent nuclear fuel at a level of 99.9 percent using the Uranium Extraction (UREX) process to support the development of advanced fuel cycles for enhanced repository performance.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	1	1	

Measure: Complete laboratory-scale "hot" testing of the UREX+ advanced aqueous spent fuel separations process.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	1	1	

Measure: Establish with at least one country a new international agreement on advanced accelerator applications programs that significantly leverages financial and technical resources, to the mutual benefit of both countries particularly in areas such as safety, fuels and materials development, and facility operations.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	1	1	

PART Performance Measurements

Program: Advanced Fuel Cycle Initiative

Agency: Department of Energy

Bureau:

Measure: Demonstrate the integrity of at least one oxide fuel form containing 5 percent plutonium.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2000	1	1	

Measure: Complete laboratory-scale "hot" testing of the UREX+ advanced aqueous spent fuel separations process. (Target refers to separation purity.)

Additional Information: Reaching this target will provide the baseline data required to bring final resolution to the flowsheet for the UREX+ process and aid in the verification of a key computer modeling program.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2005	Purity >=99.9%		

Measure: Cost-weighted mean percent variance from established cost and schedule baselines for Advanced Fuel Cycle Initiative activities.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2005	<10%		
2004	<10%		
2003	<10%		
2002	<10%		
2001	<10%		

Measure: Complete 100 percent of the first irradiation experiment that will demonstrate the integrity of at least one oxide fuel form containing 5 percent plutonium.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2005	No fuel failure		

PART Performance Measurements

Program: Advanced Fuel Cycle Initiative

Agency: Department of Energy

Bureau:

Measure: Complete fabrication of advanced light water reactor proliferation-resistant fuel samples and initiate irradiation

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	1		

Measure: Demonstrate a laboratory scale separation of americium and curium as well as cesium and strontium from spent nuclear fuel to support the development of advanced fuel cycles for enhanced repository performance.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	1		

Measure: Complete fabrication of proliferation resistant transmutation fuel samples and commence irradiation in the ATR beginning in FY 2004.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	1		

Measure: Demonstrate a laboratory scale separation of plutonium and neptunium as well as cesium and strontium from other actinides and fission products to support the development of advanced fuel cycles for enhanced repository performance.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	1		

Measure: Successfully manufacture advanced transmutation non-fertile fuels and testing containers for irradiation testing in the Advanced Test Reactor.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	1	1	

Program Assessment Rating Tool (PART)

Program: Advanced Scientific Computing Research

Agency: Department of Energy

Bureau: Office of Science

Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The mission of the Advanced Scientific Computing Research (ASCR) program is to discover, develop, and deploy the computational and networking tools that enable researchers in the scientific disciplines to analyze, model, simulate, and predict complex phenomena important to the Department of Energy (DOE). To accomplish this mission the program fosters and supports fundamental research in advanced scientific computing applied mathematics, computer science, and networking and operates supercomputer, networking, and related facilities.

Evidence: FY 2004 Budget Request (www.mbe.doe.gov/budget/04budget/index.htm). Public Law 95-91 that established the Department of Energy (DOE). The ASCR Mission has been validated by the Advanced Scientific Computing Advisory Committee (ASCAC).

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The ASCR program addresses the specific need for the Department of Energy's Office of Science (SC) to develop large-scale, complex, high-performance simulation capabilities to accelerate civilian scientific advancement focused on the mission needs of the DOE, and secondarily on the needs of the broader scientific community.

Evidence: This program was specifically authorized in the "High Performance Computing Act of 1991" (PL 102-194). The "Scientific Discovery through Advanced Computing (SciDAC)" plan describes the issues and the program's strategic vision circa 2000 (www.osti.gov/scidac/SciDAC.pdf).

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: The ASCR program is unique in addressing the specific computational needs and challenges of civilian R&D in the DOE. ASCR is coordinated with other Federal programs through the Interagency Working Group on IT R&D (IWG/IT R&D) to ensure that efforts are not needlessly redundant. The most recent strategic vision for the program (SciDAC) briefly describes relationships with the computing programs at DOE's National Nuclear Security Administration and other Federal agencies.

Evidence: IWG/IT R&D (www.itrd.gov/iwg/program.html). SciDAC plan (see above).

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: The ASCR program is based on competitive merit-review, independent expert advice, and joint program planning. This proves efficient and effective. However, a Committee of Visitors (COV) has yet to independently validate ASCR's merit review process.

Evidence: ASCAC reports (www.sc.doe.gov/ascr/adviscommittee.html). Joint planning efforts include SciDAC, Genomes to Life (doegenomestolife.org), and computational nanoscience (www.sc.doe.gov/production/bes/besac/Theory%20and%20Modeling%20in%20Nanoscience.pdf). Program reviews and files.

Program Assessment Rating Tool (PART)

Program: Advanced Scientific Computing Research

Agency: Department of Energy

Bureau: Office of Science

Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

1.5 **Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: YES Question Weight: 20%

Explanation: ASCAC ensure that research community input is regularly gathered to assess the priorities and progress of the program. SciDAC efforts are tightly linked to the application programs (and associated advisory committees). Peer review is used to assess the relevance and quality of each project.

Evidence: ASCAC reviews and reports. SciDAC reports (www.osti.gov/scidac). Program files.

2.1 **Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program?** Answer: YES Question Weight: 10%

Explanation: While not comprehensive, the two long-term measures reflect key goals for the underlying mathematics and computer science research sponsored by ASCR, and provide a test case for the computation component of the Genomes to Life SciDAC effort. The program has defined "successful" and "minimally effective" performance milestones for each measure, and an external panel will assess interim program performance on a triennial basis, and update the measures as necessary. It is inappropriate for a basic research program such as this one to have a quantitative long-term efficiency measure.

Evidence: SciDAC goals are outlined in program plan (www.osti.gov/scidac), and GTL-specific goals are online at doegenomestolife.org. A description of the "successful" and "minimally effective" milestones, and an explanation of the relevance of these measures to the field can be found on the SC Web site (www.sc.doe.gov/measures).

2.2 **Does the program have ambitious targets and timeframes for its long-term measures?** Answer: YES Question Weight: 10%

Explanation: ASCAC has reviewed the new long-term measures for this program and found them to be ambitious and meaningful indicators of progress toward computer science, applied mathematics, and SciDAC goals.

Evidence: Letter from ASCAC chair regarding review of long-term measures.

2.3 **Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals?** Answer: YES Question Weight: 10%

Explanation: ASCR has developed quantitative annual output measures that are indicators of progress toward the long term measures, primarily because they focus on efficiently providing the computational capabilities (hardware and the underlying applied math and computer science) necessary for enabling improved scientific progress.

Evidence: FY04 Budget Request. Description on measures and relationship to long-term goals (www.sc.doe.gov/measures). Brief description of "best value" procurement process alluded to in the procurement measure (www.nersc.gov/research/annrep01/03systems.html#NERSC4).

2.4 **Does the program have baselines and ambitious targets for its annual measures?** Answer: YES Question Weight: 10%

Explanation: All of the annual measures include quantifiable annual targets. The new efficiency measure quantifies ambitious performance improvements over current rates. Baseline data (FY02 and FY03) for the procurement and NERSC usage measures demonstrate the targets to be ambitious, yet realistic.

Evidence: FY04 Budget Request. Description on measures and relationship to long-term goals (www.sc.doe.gov/measures). NERSC FY02 Annual Report (www.nersc.gov/research/annrep02/html/).

Program Assessment Rating Tool (PART)

Program: Advanced Scientific Computing Research
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development Competitive Grant Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: NO Question Weight: 10%

Explanation: ASCR program solicitations for research grants do not yet explicitly include specific program goals, though Federal program managers attempt to fund a grant portfolio that is aimed at the long-term goals of the program. For contractors, a limited FY03 audit by the DOE Inspector General (IG) found that "performance expectations generally flowed down into the scope of work at the national laboratories." Management and Operations (M&O) contracts for the labs contain generic "scientific quality" performance-based evaluation provisions.

Evidence: Most recent general renewal solicitation (www.science.doe.gov/grants/Fr03-02.html). Memo from the DOE IG to the Director of the Office of Science. M&O contract performance evaluation provisions (WWW-accessible examples include: Oak Ridge National Lab, www.ornl.gov/Contract/UT-BattelleContract.htm; and, Lawrence Berkeley National Lab, www.lbl.gov/LBL-Documents/Contract-98/AppFTOC.html).

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: NO Question Weight: 10%

Explanation: ASCAC has conducted a fairly light review of the program's facilities to gauge relevance and quality, but there have not been similar portfolio-level peer reviews of the research program by an independent panel. The program does not yet have COV evaluations of any program elements, but expects to receive the first COV report by April 2004.

Evidence: ASCAC facilities review report (www.krellinst.org/esinfo/ASCAC-facilities-final.mhw.doc).

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: DOE has not yet provided a budget request that adequately integrates performance information.

Evidence:

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: In addition to active participation in a current interagency roadmapping task force on high end computing, ASCR has held a series of strategic planning workshops, participated in the drafting of a new Office of Science strategic plan, and new performance goals and targets have been developed in coordination with OMB. A new COV process is being organized, with the first program element review expected back by April 2004. However, the activity level of ASCAC is below that of other Office of Science advisory committees.

Evidence: Interagency task force (www.itrd.gov/hecrtf-outreach/index.html). Networking workshop (www.hep.anl.gov/may/ScienceNetworkingWorkshop). Science applications workshop (www.pnl.gov/scales). Program files, including COV charge letter to ASCAC chair. ASCAC report activity (www.sc.doe.gov/ascr/ascac_reports.htm).

Program Assessment Rating Tool (PART)

Program: Advanced Scientific Computing Research

Agency: Department of Energy

Bureau: Office of Science

Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

2.CA1 **Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity?** Answer: YES Question Weight: 10%

Explanation: One of a kind research facilities are not amenable to the same type of alternatives analysis as other captial asset investments. Nevertheless, the Exhibit 300s provided to OMB contain roughly equivalent analyses, which typically compare the attributes of various computer vendors systems--using appropriate "best value" metrics--before making a procurement decision.

Evidence: Brief description of "best value" procurement for program's production facility, National Energy Research Scientific Computing Center (NERSC, www.nersc.gov/research/annrep01/03systems.html#NERSC4).

2.RD1 **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NA Question Weight: 0%

Explanation: This is a basic R&D program, and the question is intended for industry-related R&D programs.

Evidence:

2.RD2 **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%

Explanation: Although not visible outside DOE, internal SC budget formulation practices include a priority ranking process. ASCR is currently drafting a strategic plan--with the input of external community workshops--as a part of the overall SC planning process. ASCR has engaged the advisory process for the computing components of other SC programs. However, the program has not yet fully engaged ASCAC in its prioritization process, and it is not always obvious that program level budget execution decisions are made within a prioritization framework.

Evidence: ASCAC reports (www.sc.doe.gov/ascr/adviscommittee.html; topical computing centers report not on Web site). Engagement with other SC programs advisory processes include: Genomes to Life (doegenomestolife.org) and computational nanoscience (www.sc.doe.gov/production/bes/besac/Theory%20and%20Modeling%20in%20Nanoscience.pdf).

3.1 **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: NO Question Weight: 8%

Explanation: Facility user surveys and benchmarking provide operational performance information. The program collects performance data from individual grantees and national labs, and uses peer review as a type of standardized quality control at the individual grant level. However, there is not yet a systematic process, such as regular COV evaluations, that conducts research portfolio quality and process validations. While DOE IG contracts with an outside auditor to check internal controls for performance reporting, and the IG periodically conducts limited reviews of performance measurement in SC, it is not clear that these audits check the credibility of performance data reported by DOE contractors.

Evidence: Facility user surveys and user groups/committees (hpcf.nersc.gov/about, www.es.net, www.ccs.ornl.gov/CHUG.html). Program files, including peer review of the facilities.Reporting requirements for grants (www.science.doe.gov/production/grants/605-19.html).

Program Assessment Rating Tool (PART)

Program: Advanced Scientific Computing Research

Agency: Department of Energy

Bureau: Office of Science

Type(s): Research and Development Competitive Grant Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 8%

Explanation: Senior Executive Service (SES) and Program Manager Performance Plans are directly linked to program goals. The Management and Operations (M&O) contracts for the Labs and User Facilities include performance measures linked to program goals. Research funding requirements ensure consideration of past performance.

Evidence: Program and personnel files. For performance-based fee adjustments on M&O contracts, see evidence for question 2.5. Grant rules for renewals (www.science.doe.gov/grants/#GrantRules).

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 8%

Explanation: Using DOE's monthly accounting reports, SC personnel monitor progress toward obligating funds consistent with an annual plan that is prepared at the beginning of the fiscal year to ensure alignment with appropriated purposes. SC programs consistently obligate more than 99.5% of available funds.

Evidence: Program files. DOE-wide audit reports.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 8%

Explanation: SC is currently undergoing a reengineering exercise aimed at flattening organizational structure and improving program effectiveness. The program will collect data necessary to track their "efficiency" measure. The system performance measures used by NERSC ensures maximum return on procurement investments.

Evidence: SC reengineering information (www.screstruct.doe.gov). See "Measures" tab for the programmatic efficiency measure. NERSC system performance measures (www.nersc.gov/aboutnersc/presentations/Sc99/SC99Kramer6/SC99Kramer6.PPT, and hpcf.nersc.gov/about/ERSUG/meeting_info/May03/May03_Presentations/Wong/NERSC_Perf_Eval_Activities.ppt).

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 8%

Explanation: The ASCR program is involved in numerous formal and informal collaborations with other programs in advanced scientific computing research, though primarily with national security agencies as opposed to other civilian science agencies. ASCR is a leading agency in the ongoing governmental Interagency Working Group on IT R&D of the National Science and Technology Council, including co-chairing a current task force on high end computing.

Evidence: Summary of joint activities with other agencies (www.sc.doe.gov/ascr/hitchcock.ppt). Interagency Working Group on IT R&D (www.itrd.gov/iwg).

Program Assessment Rating Tool (PART)

Program: Advanced Scientific Computing Research

Agency: Department of Energy

Bureau: Office of Science

Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

3.6 Does the program use strong financial management practices?

Answer: YES

Question Weight: 8%

Explanation: SC staff execute the ASCR program consistent with established DOE budget and accounting policies and practices. These policies have been reviewed by external groups and modified as required to reflect the latest government standards.

Evidence: Various Departmental manuals. Program files. Audit reports.

3.7 Has the program taken meaningful steps to address its management deficiencies?

Answer: YES

Question Weight: 8%

Explanation: SC is currently reengineering to improve program management efficiency. A new COV process is being organized by ASCR, with the first program element review expected back by April 2004.

Evidence: SC reengineering information (www.screstruct.doe.gov). COV charge letter to ASCAC chair, including scope, conflict of interest issues, and future schedule.

3.CA1 Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals?

Answer: YES

Question Weight: 8%

Explanation: Procurement contracts with computer vendors tie payments to specific deliverables, including the sustained system performance measured over the lifetime of the contract.

Evidence: Exhibit 300s submitted to OMB. Program files, including competitive performance proposals from vendors.

3.CO1 Are grants awarded based on a clear competitive process that includes a qualified assessment of merit?

Answer: NO

Question Weight: 8%

Explanation: First time grant applications are encouraged in all Request For Proposals. ASCR has a specific solicitation for a new Early Career Principal Investigator (ECPI) program, and investments in minority institutions under the HBCU/MI program. However, the award and merit review process has not yet been validated by a COV.

Evidence: There were 26 new and 9 renewed ASCR grantees in FY2002. In addition, there were 70 new and 9 renewed grantees in FY2001 (includes new programs for SciDAC & Microbial Cell). ECPI website (www.sc.doe.gov/production/grants/Fr02-16.html).

3.CO2 Does the program have oversight practices that provide sufficient knowledge of grantee activities?

Answer: YES

Question Weight: 8%

Explanation: In addition to grantee progress reports, program managers stay in contact with grantees through email and telephone, and conduct program reviews and site visits.

Evidence: Reporting requirements for grants (www.science.doe.gov/production/grants/605-19.html). Program files, including documentation of program manager site visits, etc.

Program Assessment Rating Tool (PART)

Program: Advanced Scientific Computing Research

Agency: Department of Energy

Bureau: Office of Science

Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

- 3.CO3 Does the program collect grantee performance data on an annual basis and make it available to the public in a transparent and meaningful manner?** Answer: NO Question Weight: 8%
- Explanation: In accordance with DOE Order 241.1A, the final and annual technical reports of program grantees are made publicly available on the web through the Office of Scientific and Technical Information's "Information Bridge". However, program-level aggregate data on the impact of the grants program is not adequately communicated in the annual DOE Performance and Accountability report.
- Evidence: DOE Order 241.1A. Information Bridge (www.osti.gov/bridge/). FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgt/doe02rpt.pdf).
- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: NO Question Weight: 8%
- Explanation: ASCAC facility reviews, facility steering committees, and user surveys validate the quality of the scientific user facilities. Unsolicited field work proposals from the Federal Labs are merit reviewed, but not competed. The funds for research programs and scientific user facilities at the Federal Labs are allocated through a limited competition analogous process to the unlimited process outlined in 10 CFR 605. However, the quality of the research funded via this process has not yet been validated by a COV.
- Evidence: ASCAC facility report (www.krellinst.org/esinfo/ASCAC-facilities-final.mhw.doc). Unsolicited proposals (See 10CFR600.6, professionals.pr.doe.gov/ma5/MA-5Web.nsf/FinancialAssistance/Part+600). Example of lab solicitation, with field work proposal reference (www.science.doe.gov/grants/LAB03_17.html). Merit Review procedures (www.sc.doe.gov/production/grants/merit.html). 10 CFR 605 (www.science.doe.gov/production/grants/605index.html). Facility user surveys and user groups/committees (hpcf.nersc.gov/about, www.es.net, www.ccs.ornl.gov/CHUG.html). Program files, including peer review of the facilities.
- 4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: LARGE EXTENT Question Weight: 20%
- Explanation: ASCAC will evaluate progress toward the new long term performance measures every three years, but no external portfolio-level reviews are available other than the generally positive facilities report by ASCAC. Early results indicate that the SciDAC effort appears to be successful, which is important for acheiving the future goals of the program.
- Evidence: ASCAC facilities review report (www.krellinst.org/esinfo/ASCAC-facilities-final.mhw.doc). SciDAC update at latest ASCAC meeting (www.sc.doe.gov/ascr/Laub031403.ppt).
- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: YES Question Weight: 20%
- Explanation: Although the three annual performance goals for FY05 are new, ASCR has met the targets for most of its former annual measures.
- Evidence: FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgt/doe02rpt.pdf). FY04 Annual Performance Plan (www.mbe.doe.gov/budget/04budget/content/perfplan/perfplan.pdf).

Program Assessment Rating Tool (PART)

Program: Advanced Scientific Computing Research

Agency: Department of Energy

Bureau: Office of Science

Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: YES Question Weight: 20%

Explanation: The sustained system performance metric used by NERSC for procurements has resulted in machines with more compute nodes delivered by the vendor than originally planned, which in turn allows more scientific simulations to be carried out.

Evidence: Program files, including procurement contracts.

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: NA Question Weight: 0%

Explanation: While user surveys regularly show a fairly high level of satisfaction with ASCR facilities, expert comparative analyses of the program as a whole have not been done. The program has a unique role to serve the needs of the other five SC research programs, and the DOE mission more broadly, so the value of such analyses is questionable at best given the interconnectedness of the U.S. computing community.

Evidence: NERSC Annual User Survey (hpcf.nersc.gov/about/survey/).

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: LARGE EXTENT Question Weight: 20%

Explanation: The ASCR facilities are effective in achieving desired results, based on assessment by the ASCAC in their facilities report, and based on external peer review of both NERSC and ESnet. However, no independent review process has been carried out to assess the program's research portfolio.

Evidence: ASCAC facilities review report (www.krellinst.org/esinfo/ASCAC-facilities-final.mhw.doc). Program files, including ESnet and NERSC peer review results.

4.CA1 Were program goals achieved within budgeted costs and established schedules? Answer: YES Question Weight: 20%

Explanation: Performance data for FY02 and FY03 demonstrate that the capital asset procurements, primarily for NERSC acquisitions, were almost exactly on schedule and on budget. This excellent performance can be primarily attributed to the sustained system performance metric used for these procurements, which focuses on the actual performance of the resource available to the end users rather than on the theoretical performance of a proposed system.

Evidence: Exhibit 300s submitted to OMB. FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgt/doi02rpt.pdf). Brief description of "best value" procurement for NERSC (www.nersc.gov/research/annrep01/03systems.html#NERSC4).

PART Performance Measurements

Program: Advanced Scientific Computing Research
Agency: Department of Energy
Bureau: Office of Science

Measure: Progress toward developing the mathematics, algorithms, and software that enable scientifically-critical models of complex systems, including highly nonlinear or uncertain phenomena, or processes that interact on vastly different scales, or contain both discrete and continuous elements. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: An external panel will conduct triennial reviews of progress. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Excellent		

Measure: Progress toward developing, through the Genomes to Life partnership with the Biological and Environmental Research program, the computational science capability to model a complete microbe and a simple microbial community. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: An external panel will conduct triennial reviews of progress. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Met Goal		

Measure: Focus usage of the primary supercomputer at the National Energy Research Scientific Computing Center on capability computing (percentage of the computing time used that is accounted for by computations that require at least 1/8 of the total resource).

Additional Information: There were two primary supercomputers, in different lifecycle stages, at the Center in 2002. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		75%, 22%	

PART Performance Measurements

Program: Advanced Scientific Computing Research
Agency: Department of Energy
Bureau: Office of Science

Measure: Focus usage of the primary supercomputer at the National Energy Research Scientific Computing Center on capability computing (percentage of the computing time used that is accounted for by computations that require at least 1/8 of the total resource).

Additional Information: There were two primary supercomputers, in different lifecycle stages, at the Center in 2002. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003		36%	
2004	50%		
2005	50%		

Measure: Maintain Procurement Cost/Performance Baselines. Percentages within: (1) original baseline cost for completed procurements of major computer systems or network services; and, (2) original performance baseline versus integrated performance over the life of the contract(s).

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	<10%, <10%	0%, 0%	
2003	<10%, <10%	0%, -1%	
2004	<10%, <10%		
2005	<10%, <10%		

Measure: Improve Computational Science Capabilities. Average annual percentage increase in the computational effectiveness (either by simulating the same problem in less time or simulating a larger problem in the same time) of a subset of the application codes within the Scientific Discovery through Advanced Computing effort.

Additional Information: Initial baseline set against 2002. See www.sc.doe.gov/measures for more information, including the declaration of the subset of application codes.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2003	10%	3181%	
2004	50%		
2005	50%		

OMB Program Assessment Rating Tool (PART)

Research & Development Programs

Name of Program: **Advanced Simulation and Computing (ASCI)**

Section I: Program Purpose & Design (Yes, No, N/A)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Is the program purpose clear?</i>	Yes	The Department of Energy (DOE) is responsible for enhancing U.S. national security through the military application of nuclear technology. The FY1994 National Defense Authorization Act directed the Secretary of Energy to "establish a stewardship program to ensure the preservation of the core intellectual and technical competencies of the US in nuclear weapons." The Advanced Simulation and Computing program is an essential component of the Stockpile Stewardship Program with the responsibility for creating simulation capabilities through the development of advanced weapons codes and high-performance computing that incorporate high-fidelity scientific models validated against experimental results, past tests, and theory.	Public Law 106-65, Public Law 130-160, DOE Stockpile Stewardship and Management Program 2001, ASCI Program Plan 2002-2003.	17%	0.2
2	<i>Does the program address a specific interest, problem or need?</i>	Yes	High-performance computing has been an important component of the weapons program for more than forty years. Computational capabilities underpin nuclear weapons design, engineering, and evaluation. This ASCI program provides the simulation capabilities necessary to assess and certify the safety, performance, and reliability of the U.S. nuclear stockpile in the absence of underground nuclear testing.	NNSA Strategic Plan 2002, ASCI Program Plan 2002-2003, Annual Implementation Plan, White Papers for the Task Force on Alternative Futures for the DOE Laboratories-Core Technical Capabilities 1994, DOE Stockpile Stewardship and Management Program 1995	17%	0.2
3	<i>Is the program designed to make a unique contribution in addressing the interest, problem or need (i.e., not needlessly redundant of any other Federal, state, local or private efforts)?</i>	No	While nuclear weapons are the sole province of the Federal Government, and the NNSA is the federal agency responsible for the safety, security and reliability of the stockpile, there are aspects of the ASCI program which may be redundant with other entities or unnecessary for the federal government.	ASCI Program Plan-Role of ASCI in Stockpile Stewardship 2002-2003	17%	0.0

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4	<i>Is the program optimally designed to address the interest, problem or need?</i>	Yes	The ASCI program evolved from the merging of the Accelerated Strategic Computing Initiative and Stockpile Computing programs. The program is broken into five supporting subprograms: procuring, operating and maintaining computers; reserach and development and constructing operating environments; developing nuclear weapons assessment tools; academic partnerships; and program integration. The program manager allocates fundsto each of these areas annually after consulting with the subprogram directors and laboratory executives.	ASCI Program Plan-Overview 2002-2003, DOE Stockpile Stewardship and Management Program 1995, ASCI Tri-lab and HQ Organization; Minutes of ASCI Executives 2001	17%	0.2
5 (RD 1)	<i>Does the program effectively articulate potential public benefits?</i>	Yes	As part of the nuclear Stockpile Stewardship Program, the program is of significant interest to the Departments of Energy and Defense. While the public benefit is, perhaps, transparent to most Americans, the program plays an important role in the Nation's security.	ASCI Program Plan-Overview 2002-2003	17%	0.2
6 (RD 2)	<i>If an industry-related problem, can the program explain how the market fails to motivate private investment?</i>	Yes	Federal investment has historically driven high-performance computing due to the limited requirements for super- and ultracomputing performance outside the Departments of Energy and Defense. In recent years high-performance computing has become more prevalent in business. However, there still does not appear to be a profit incentive or business need for the computing industry to commit significant resources to this area.	Although high-performance computing has become more prevalent in business, the capability level and some technologies used do not appear to meet the performance requirements of the program.	17%	0.2
Total Section Score					100%	83%

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
Section II: Strategic Planning (Yes,No, N/A)						
1	<i>Does the program have a limited number of specific, ambitious long-term performance goals that focus on outcomes and meaningfully reflect the purpose of the program?</i>	Yes	The program has two goals to achieve by 2010: 1) create predictive simulation capabilities necessary to support weapons system certification and refurbishment schedules; 2) Provide the computing environment to accomplish the Science-based Stockpile Stewardship Program mission. Upon reaching these goals, the program will provide a full set of validated stockpile assessment tools to designers. Major program milestones provide a roadmap to achieving these goals.	ASCI Program Plan 2002-2003	11%	0.1
2	<i>Does the program have a limited number of annual performance goals that demonstrate progress toward achieving the long-term goals?</i>	Yes	The program uses a set of major milestones to chart its path to its long-term goals. Annually, the program produces an Implementation Plan to define more detailed milestones, which are used by program directors to track laboratory progress towards achieving the major milestones. The program also expects DOE laboratories to use internal milestones in addition to DoE tracked milestones to plan and evaluate progress.	ASCI Program Plan-Appendix A 2002-2003; ASCI FY02 Implementation Plan Vol I-III, Oct 2001 (Vol I is classified).	11%	0.1
3	<i>Do all partners (grantees, sub-grantees, contractors, etc.) support program planning efforts by committing to the annual and/or long-term goals of the program?</i>	Yes	The Nuclear Weapons Complex commits to program goals at several levels. Program leadership, the headquarters program directors, and laboratory program executives develop strategic goals which are published in the Program Plan. Program leadership and scientific and engineering users collaborate to develop major milestones which are also published in the Program Plan. Program manager milestones are developed under the direction of individual program directors working with program leads at the laboratories and the work is published annually in the program Implementation Plan. University alliance partners commit to program goals through their contracting process and also publish their annual plan in the Implementation Plan.	ASCI Program Plan 2002-2003, ASCI FY02 Implementation Plan Vol I-III, Oct 2001 (Vol I is classified), Minutes of Inaugural Milestone Meeting, ASCI Program Integrated Management Chart.	11%	0.1

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4	<i>Does the program collaborate and coordinate effectively with related programs that share similar goals and objectives?</i>	Yes	The program maintains external programmatic coordination through formal membership in the Interagency Working Group on Information Technology Research and Development, as well as more informal collaboration with the DoE Office of Science, the National Security Agency, and the National Science Foundation.	Networking and Information Technology Research and development Supplement to the President's Budget 2002, ASCI Technology Prospectus 2001, Pathforward projects, Co-funding Fellowships, ASCI Response to DOE Inspector General Audit 2002.	11%	0.1
5	<i>Are independent and quality evaluations of sufficient scope conducted on a regular basis or as needed to fill gaps in performance information to support program improvements and evaluate effectiveness?</i>	Yes	Semi-annual computer code reviews provide program and lab leaders with semi-independent peer review evaluations of progress towards achieving the milestones. The DOE Inspector General review of the Department's High Performance Computing Program resulted in no negative findings, and only four recommendations issued in a letter report. In addition, the program has been reviewed in past years by several groups, to include Blue Ribbon Panels and the General Accounting Office and has received no negative reports.	Burn Code Panel Reports, Non-nuclear Code Review Report, DOE Inspector General Audit Report No. CR-L-0204, April 5, 2002, NA 114 response to DOE Inspector General Audit, JASONS 1996, Blue Ribbon 1999, GAO 1998/1999, Platform Review agendas.	11%	0.1
6	<i>Is the program budget aligned with the program goals in such a way that the impact of funding, policy, and legislative changes on performance is readily known?</i>	Yes	The program strategy consists of five components that correspond to the program's organizational structure. These components are broken into program elements that are aligned with the Budget and Reporting Code classification system. Since the program elements are directly related to the budget structure, impacts of funding, policy and legislative changes are readily identifiable.	ASCI Program Plan-The ASCI Strategy 2002-2003, Budget and Reporting Code System	11%	0.1

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
7	<i>Has the program taken meaningful steps to address its strategic planning deficiencies?</i>	Yes	The program recently revised its milestones and platforms acquisition strategy to better reflect stockpile needs. These changes resulted from an annual review of implementation plans and strategic milestones by managers which concluded that original strategic milestones needed revision based on knowledge gained over the first seven years of the program.	ASCI Program Plan-The ASCI Strategy 2002-2003; Minutes of Inaugural Milestone Meeting	11%	0.1
8 (RD 1)	<i>Is evaluation of the program's continuing relevance to mission, fields of science, and other "customer" needs conducted on a regular basis?</i>	Yes	In May 2000 an external Blue Ribbon Panel tasked to review the program and determine if it was properly aligned to support Science-based Stockpile Stewardship concluded that the program was on track. Currently, the program relies on code and Sandia National Laboratory reviews to determine if the program is making adequate progress. The results of the 2002 code reviews indicate that progress towards predictive code capabilities are on track.	2002 Sandia National Laboratory agenda; Blue Ribbon Panel report, May 2000	11%	0.1
9 (RD 2)	<i>Has the program identified clear priorities?</i>	Yes	The program has collaborated with nuclear weapon designers, manufacturers and repair specialists as well as with other NNSA science and technology program managers to develop priorities that are reflected in the major milestones that guide technical achievement of the Program.	Process for coordination with ASCI customers is in part performed at DOE headquarters, however, it is primarily carried out at the labs. ASCI Program Plan 2002-2003, ASCI Technology Prospectus 2001; Milestone Inaugural Meeting Attendance list.	11%	0.1
Total Section Score					100%	100%

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
Section III: Program Management (Yes,No, N/A)						
1	<i>Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?</i>	Yes	The laboratories report on progress on major and program manager milestones to DOE headquarters on a quarterly basis. In addition, headquarters program managers have periodic meetings, both in-person and telephonically, to keep abreast of progress and to chart future directions.	ASCI Program Plan- Program Management 2002-2003, Quarterly Progress Reports; meeting and telecon schedules.	9%	0.1
2	<i>Are Federal managers and program partners (grantees, subgrantees, contractors, etc.) held accountable for cost, schedule and performance results?</i>	Yes	Program managers allocate funding through the work authorization process and monitor costs monthly. Furthermore, they monitor schedule on a quarterly basis using major and program manager milestones. Performance is monitored using a set of milestone related targets and measures.	Financial Information System , Financial Data Warehouse reports from Finanacial Information System, Annual Implementation Plan, Work Authorizations	9%	0.1
3	<i>Are all funds (Federal and partners') obligated in a timely manner and spent for the intended purpose?</i>	Yes	Laboratory-level resource analysts report program execution results monthly for review by program management. NNSA tracks expenditures at the sub-program level using its official Budget and Reporting classification codes and the DOE Financial Information System. Unspent funds at the end of the year have been within acceptable parameters identified by DoE.	Financial Information System, Financial Data Warehouse reports from Financial Information System , Program sweep 1999 and internal audits 1999/2000/2001 performed by ASCI	9%	0.1
4	<i>Does the program have incentives and procedures (e.g., competitive sourcing/cost comparisons, IT improvements) to measure and achieve efficiencies and cost effectiveness in program execution?</i>	Yes	DoE uses distinct evaluation procedures and criteria to achieve efficiency and effectiveness of research and development investment dollars.	Pathforward Request for Proposal process.	9%	0.1

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
5	<i>Does the agency estimate and budget for the full annual costs of operating the program (including all administrative costs and allocated overhead) so that program performance changes are identified with changes in funding levels?</i>	No	The program is consistent with DOE practice in estimating and budgeting for the full cost of executing direct programmatic activity within the program budgets. However, DOE budgets separately in an administrative account for its Federal administrative oversight costs, to include federal employee salary and benefits, retirement, training, travel, rents, utilities, and support services due to direction from Congress. Therefore, the full annual cost of operating the program is not known.	Evidence: DOE Accountability Report for FY 2001.	9%	0.0
6	<i>Does the program use strong financial management practices?</i>	Yes	NNSA adheres to financial management practices through the implementation of its Planning, Programming, Budgeting and Evaluation system. This goal of the system is to formalize resource management, link program guidance with fiscal guidance, apply uniform and consistent budget practices across NNSA, and incorporate financial analysis into programmatic decisions. Finally, NNSA is re-engineering its Headquarters and field structures to improve accountability at the lowest levels. Part of this re-engineering will involve the financial management processes of the field elements, and the interface of those field processes with DOE headquarters.	Evidence: NNSA Future-Years Nuclear Security Program, March 20, 2002; NNSA FY 2004 Budget submittal.	9%	0.1
7	<i>Has the program taken meaningful steps to address its management deficiencies?</i>	Yes	The DOE Inspector General inspected several aspects of the department's high performance computing program and reported no adverse findings. They reported four areas as opportunities for improvement with no response required.	DOE Inspector General Audit Report No. CR-L-0204, April 5, 2002, NA 114 response to DOE Inspector General Audit,	9%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
8 (RD 1) <i>Does the program allocate funds through a competitive, merit-based process, or, if not, does it justify funding methods and document how quality is maintained?</i>	Yes	The program office allocates funds to the three weapons laboratories through a process that evaluates requirements and identifies the lab that can best meet those requirements. Program reviews evaluate the quality of the process. Performance bonuses are made at the Defense Programs level following an annual performance assessment in which the program is one element. However, one obstacle to a completely merit-based competitive process is the desire to keep all three labs operating to maintain competitive pressure.	Annual Implementation Plan amendment process, Pathforward Request for Proposal process, Alliances Request for Proposal Process, Annual Lab Assessment process.	9%	0.1
9 (RD 2) <i>Does competition encourage the participation of new/first-time performers through a fair and open application process?</i>	Yes	The program procures hardware systems by using fair and open competitions. The edge for large capital acquisitions goes to large, established companies, but NNSA also looks to smaller companies as much as possible.	LOTS, MSTI, KAI, Etnus, Linux NetworX and Cray are small US companies doing business with ASCI.	9%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
10 (RD 3) <i>Does the program adequately define appropriate termination points and other decision points?</i>	Yes	The major milestones, in conjunction with external reviews, serve as the primary technical decision points. The drafting process for the Implementation plan serves as the primary decision point to address annual events. The program plan process provides the same opportunity, but expands to include events in the out-years.	ASCI Program Plan 2002-2003, ASCI Implementation Plan 2002.	9%	0.1
11 (RD 4) <i>If the program includes technology development or construction or operation of a facility, does the program clearly define deliverables and required capability/performance characteristics and appropriate, credible cost and schedule goals?</i>	Yes	The program lays out a tiered milestone approach that at the highest level lays out a desired capability. The desired outcome is then supported by intermediate milestones that provide an incremental path to the end-state. Each of the intermediate milestones result from specific technology and performance advancements. These milestones are all laid out on a schedule which is supported by a program budget. Construction projects are managed using DOE's construction management system based on Critical Decision points throughout the project. In 2002, Los Alamos National Laboratory completed a new computing center which was built ahead of schedule and below budget.	Contracts for platforms and technology projects utilize a milestone payment system. A proposal offeror identifies milestones and deliverables for the entire project including quarter and year of completion, a milestone payment amount, and a brief description of the deliverable.	9%	0.1
Total Section Score				100%	91%

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
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Section IV: Program Results (Yes, Large Extent, Small Extent, No)

1	<i>Has the program demonstrated adequate progress in achieving its long-term outcome goal(s)?</i>	Large Extent	Accomplishment and/or meaningful progress made on all planned major milestones (level 1). Program manager milestones (level 2) are achieved or show meaningful progress.	Major milestones (level 1) review panel reports and quarterly progress reports.	22%	0.1
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<p>Long-Term Goal I: Creation of predictive simulation capabilities necessary to support weapons system certification and refurbishment schedules. Target: Transform a two dimensional simulation paradigm into one that is fully three dimensional. Actual Progress achieved toward goal: Progress was made this year according to plan.</p>					
<p>Long-Term Goal II: Provision of the computing environment to accomplish the science based Stockpile Stewardship Program mission, Target: Develop the computer science tools, platforms and computing centers necessary to support nuclear weapons designers needs. Actual Progress achieved toward goal: The majority of planned progress was made this year with minimal delay. Pending resolution of some budget issues, delayed progress should be completed in the new fiscal year.</p>					

2	<i>Does the program (including program partners) achieve its annual performance goals?</i>	Large Extent	Due to some technical challenges faced by Compaq (now Hewlett-Packard) installation of the Q, 30 TeraOPS supercomputer at Los Alamos national Laboratory was delayed 6 months. This will cause some delay in programmatic work.		22%	0.1
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<p>Key Goal I: Number of ASCI computer codes used to analyze weapon components as part of the annual certification and life extension processes. Performance Targets: Proof of principle capability for three dimensional, full system studies of weapon systems. Demonstration of software designed for evaluating key three dimensional mechanical responses of a reentry vehicle system to normal flight environments. Actual Performance: Successfully accomplished both.</p>					
<p>Key Goal II: Computer Science research and development Performance Target: Provide a tri-lab security infrastructure, improve development tools for highly scalable applications and improve throughput and stability on ASCI White. Actual Performance: Successfully accomplished.</p>					
<p>Key Goal III: Capability of systems, measured in trillions of operations per second, that are developed, installed, and tested. Performance Target: Full utilization of all ASCI systems. Actual Performance: Successfully accomplished.</p>					

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
3	<i>Does the program demonstrate improved efficiencies and cost effectiveness in achieving program goals each year?</i>	Yes	The mix of progress according to program plan and the resulting technical benefits yield increased productivity and effectiveness for the cost.		14%	0.1
4	<i>Does the performance of this program compare favorably to other programs with similar purpose and goals?</i>	Yes	From coordination and collaboration with DOE Office of Science, as well as external agencies, the program compares very favorably. From a platform performance perspective, the program compares very favorably.	Network and Information Technology Research and Development Blue Book 2002, Top500 list	14%	0.1
5	<i>Do independent and quality evaluations of this program indicate that the program is effective and achieving results?</i>	Yes	Each Level 1 milestone is evaluated by a review panel of experts for quality and completeness of results. Reviews and awards reinforce the programmatic contention that progress is being made in the areas of interest.	Review reports - IG 2001, Blue Ribbon 1996/1999, Milestone review panels; Awards - Presidential Early Career Award for Scientists and Engineers (PECASE) 2001	14%	0.1
6 (RD 1)	<i>If the program includes construction of a facility, were program goals achieved within budgeted costs and established schedules?</i>	Yes	NNSA Strategic Computing Complex at Los Alamos National Laboratory was finished early and below the original budget.	SCC Press release, Beckner CD-4 memorandum, June 2002	14%	0.1
Total Section Score					100%	85%

Program Assessment Rating Tool (PART)

Program: Basic Energy Sciences
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	92%	93%	

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The mission of the Basic Energy Sciences (BES) program is to foster and support fundamental research to expand the scientific foundations for new and improved energy technologies and for understanding and mitigating the environmental impacts of energy use. As part of its mission, the BES program plans, constructs, and operates major scientific user facilities.

Evidence: FY04 Budget Request (www.mbe.doe.gov/budget/04budget/index.htm). Public Law 95-91 establishing the Department of Energy (DOE).

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: BES supports focused Core Research Activities (CRAs) within the broad areas of materials sciences and engineering, chemical sciences, biosciences, and geosciences. BES also supports major scientific user facilities.

Evidence: The 21 CRAs are described in detail, including the specific needs addressed by each, at: www.sc.doe.gov/bes/CRA.html.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: The CRAs referenced above describe the unique contributions that this program makes to addressing the identified needs. BES is well coordinated with similar programs at the National Science Foundation (NSF) and other basic research Agencies to ensure complementarity and to avoid redundancy.

Evidence: Within the CRA write-ups on the web, specific coordination efforts with other federal agencies are itemized.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: The BES program is based on competitive merit-review (validated by Committees of Visitors and the General Accounting Office), independent expert advice, and community planning (through the Advisory Committee) This proves efficient and effective.

Evidence: Two Committee of Visitors (COV) reports, Basic Energy Sciences Advisory Committee (BESAC) reviews and reports, and scientific workshop reports (www.sc.doe.gov/production/bes/besac/reports.html). General Accounting Office (GAO) report on BES merit review (www.gao.gov/archive/2000/rc00109.pdf). Program files.

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?

Answer: YES

Question Weight: 20%

Explanation: BESAC ensures that research community input is regularly gathered to assess the priorities, projects, and progress of the program. Peer review is used to assess the relevance and quality of each project. User surveys and facility advisory committees help to prioritize facility research.

Evidence: BESAC reviews and reports (including facility reviews; www.sc.doe.gov/production/bes/besac/reports.html). Program files.

Program Assessment Rating Tool (PART)

Program: Basic Energy Sciences
Agency: Department of Energy
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Section Scores				Overall Rating
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100%	80%	92%	93%	

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 10%

Explanation: Four long-term measures focus on scientific or technical outcomes, and are meaningful indicators of progress in key fields relevant to DOE missions, as outlined by numerous advisory committee panels, interagency efforts such as the National Nanotechnology Initiative, and DOE's technology programs. The program has defined "successful" and "minimally effective" performance milestones for each measure, and an external panel will assess interim program performance on a triennial basis, and update the measures as necessary. It is inappropriate for a basic research program such as this one to have a quantitative long-term efficiency measure.

Evidence: Multitude of BESAC reports on the scientific drivers for the fields supported by BES (www.sc.doe.gov/production/bes/besac/reports.html). National Research Council report, "Condensed-Matter and Materials Physics: Basic Research for Tomorrow's Technology" (books.nap.edu/catalog/6407.html). A description of the "successful" and "minimally effective" milestones, and an explanation of the relevance of these measures to the field can be found on the SC Web site (www.sc.doe.gov/measures).

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: BESAC has reviewed the new long-term measures for this program and found them to be ambitious and meaningful indicators of progress in key fields. The external reviews described in 2.1 will update the measures, targets, and timeframes on an interim basis.

Evidence: Letter from BESAC chair regarding review of long-term measures.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: The facilities construction and operations measures, and the resolution measures should provide the capabilities that the scientific community needs to make discoveries directly connected to the long term measures. The quantifiable and trendable resolution measures reflect the key technological drivers to making discoveries at smaller spatial and temporal scales, which is vital to making progress toward the long-term goals of the scientific work supported by BES.

Evidence: FY04 Budget Request. Website with further information, including an explanation of why improved spatial and temporal resolution is important to progress (www.sc.doe.gov/measures).

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: All of the annual measures include quantifiable annual targets. Baseline data (FY02, and FY01 for older measures) and the reports referenced in 2.1 verify that the annual measures are ambitious, yet realistic.

Evidence: FY04 Budget Request. Construction variance target of <10% comes from OMB Circular A-11, especially Capital Programming Guide supplement.

Program Assessment Rating Tool (PART)

Program: Basic Energy Sciences
Agency: Department of Energy
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Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	92%	93%	

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: NO Question Weight: 10%

Explanation: A limited FY03 audit by the DOE Inspector General (IG) found that "performance expectations generally flowed down into the scope of work at the national laboratories." For individual grantees, BES relies mainly on general SC program solicitations, which do not explicitly include the program goals. A 2002 DOE IG report found a lack of performance measures to evaluate the use of beam lines at the BES user facilities.

Evidence: Most recent general renewal solicitation (www.science.doe.gov/grants/Fr03-02.html). Memo from the DOE IG to the Director of the Office of Science. M&O contract performance evaluation provisions (WWW-accessible examples include: Oak Ridge National Lab, www.ornl.gov/Contract/UT-BattelleContract.htm; and, Lawrence Berkeley National Lab, www.lbl.gov/LBL-Documents/Contract-98/AppFTOC.html). DOE IG report on light sources at Berkeley and Stanford (www.ig.doe.gov/pdf/ig-0562.pdf).

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: All research projects undergo Merit Review. Grants are reviewed triennially. Construction projects are reviewed quarterly. BESAC periodically reviews BES research and facilities, including the institution of a Committees of Visitors (COV) process to independently evaluate the quality of the BES research portfolio and organizational procedures. COVs will systematically evaluate all BES Core Research Activities on a 3-year cycle.

Evidence: SC Merit Review guidelines (www.sc.doe.gov/production/grants/merit.html). COV reports #1 ("Chemistry" Division, 2002) and #2 ("Materials" Division, 2003), and multiple BESAC facility reviews (www.sc.doe.gov/bes/BESAC/reports.html). BES actions in response to the recommendations of COV #1 (www.sc.doe.gov/bes/besac/BESAC%20Pat%207-22-02.ppt, slides 14-15). Program files, including Lehman review reports on construction projects.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: DOE has not yet provided a budget request that adequately integrates performance information.

Evidence:

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: New performance goals and targets have been developed in coordination with OMB. BES participated in the drafting of a new SC strategic plan. Several recent BESAC-related workshop studies examine potential future programmatic emphases for BES.

Evidence: FY04 Budget Request/Annual Performance Plan. SC strategic plan has yet to be officially provided to OMB for review. BESAC workshops on catalysis, assuring a secure energy future, and basic research for the hydrogen initiative (www.sc.doe.gov/bes/BESAC/reports.html).

Program Assessment Rating Tool (PART)

Program: Basic Energy Sciences
Agency: Department of Energy
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Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	92%	93%	

2.CA1 **Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity?** Answer: YES Question Weight: 10%

Explanation: One of a kind research facilities are not amenable to the same type of alternatives analysis as other captial asset investments. Nevertheless, the captial asset plans and business case documentation in the Exhibit 300s provided to OMB contain roughly equivalent analyses. Lehman reviews make recommendations concerning new and ongoing projects based on various cost, schedule, and risk assessments, and the program and/or project make changes accordingly. BESAC facility reviews recommended actions that involve trade-offs between upgrading a facility or building a new facility, but these are not reviews of the program's analyses.

Evidence: BESAC facility reports (www.sc.doe.gov/bes/BESAC/reports.html). Program files, including Lehman reports of ongoing projects such as the Spallation Neutron Source.

2.RD1 **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NA Question Weight: 0%

Explanation: This is a basic R&D program, and the question is intended for industry-related R&D programs.

Evidence:

2.RD2 **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%

Explanation: A BESAC 20-year facilities roadmap exercise, with clear priority recommendations, was conducted in conjunction with the SC strategic planning process. BES does not conduct similar roadmap exercises for the base research program within the context of the facilities.

Evidence: BESAC 20-year facilities roadmap report (www.sc.doe.gov/bes/BESAC/20year_facilities_report.pdf).

3.1 **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: YES Question Weight: 8%

Explanation: Lehman reviews provided performance information for facility construction projects, and panel peer reviews evaluate the performance of facility operations. The program collects performance data from individual grantees and national labs, and uses peer review as a type of standardized quality control. A recent GAO report validated the BES merit review processes. Thorough research portfolio quality and process validations are carried out by Committee of Visitors on a 3-year cycle, and management changes are made in response to these COV reports. While DOE IG contracts with an outside auditor to check internal controls for performance reporting, and the IG periodically conducts limited reviews of performance measurement in SC, it is not clear that these audits check the credibility of performance data reported by DOE contractors.

Evidence: Program files, including Lehman reviews. BESAC facility reports (www.sc.doe.gov/bes/BESAC/reports.html). BES actions taken in response to the recommendations of COV #1 (www.sc.doe.gov/bes/besac/BESAC%20Pat%207-22-02.ppt, slides 14-15). Response to COV #2 will occur at next BESAC meeting, and process changes will be implemented starting with FY 2004 execution. GAO report on BES merit review (www.gao.gov/archive/2000/rc00109.pdf).

Program Assessment Rating Tool (PART)

Program: Basic Energy Sciences
Agency: Department of Energy
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Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	92%	93%	

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 8%

Explanation: Senior Executive Service (SES) and Program Manager Performance Plans are directly linked to program goals. The Management and Operations (M&O) contracts for the Labs and User Facilities include performance measures linked to program goals. Actions are taken in response to findings in reviews of lab Field Work Proposal performance. Management changes were made in response to problems at the High Flux Isotope Reactor operations and Spallation Neutron Source construction at Oak Ridge National Lab. Changes were made to the Berkeley Lab's Advanced Light Source organizational structure and user program in response to a 1997 BESAC review. Research funding requirements ensure consideration of past performance.

Evidence: Program and personnel files. For performance-based fee adjustments on M&O contracts, see evidence for question 2.5. Grant rules for renewals (www.science.doe.gov/grants/#GrantRules). Briefing to OMB on problems, and subsequent management changes, at the High Flux Isotope Reactor and Spallation Neutron Source. 2000 BESAC assessment of response to 1997 review citing user concerns at the Advanced Light Source (ALS); www.sc.doe.gov/bes/BESAC/als%20report.pdf.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 8%

Explanation: Using DOE's monthly accounting reports, SC personnel monitor progress toward obligating funds consistent with an annual plan that is prepared at the beginning of the fiscal year to ensure alignment with appropriated purposes.

Evidence: SC programs consistently obligate more than 99.5% of available funds. Program files. Audit reports.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 8%

Explanation: SC is currently undergoing a reengineering exercise aimed at flattening organizational structure and improving program effectiveness. BES was restructured in FY02 to flatten the organizational structure and improve efficiencies. The program collects the data necessary to track their two "efficiency" measures for facility construction and operation management.

Evidence: SC reengineering information (www.screstruct.doe.gov). "Efficiency" measure data in FY04 Budget Request (www.mbe.doe.gov/budget/04budget/index.htm).

Program Assessment Rating Tool (PART)

Program: Basic Energy Sciences
Agency: Department of Energy
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Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	92%	93%	

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 8%

Explanation: The BES program is well coordinated with similar programs at the National Science Foundation and other agencies that support similar basic research to ensure complementarity and to avoid redundancy. BES is fairly well integrated with other relevant SC programs, and to a lesser degree with the energy technology programs at DOE. Partnerships with other agencies are rare, but typically important when they occur.

Evidence: A recent update by the Interagency Working Group on Neutron Science reported good progress on the DOE-NSF partnership for developing an instrument suite for the Spallation Neutron Source. The SPEAR 3 upgrade at the Stanford Sychrotron Radiation Lab (SSRL) was jointly and equally funded by BES and the National Institutes of Health (BES budget requests from FY04 and earlier). Some joint sponsorship of National Research Council studies.

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 8%

Explanation: SC staff execute the BES program consistent with established DOE budget and accounting policies and practices. These policies have been reviewed by external groups and modified as required to reflect the latest government standards.

Evidence: Various Departmental manuals. Program files. Audit reports.

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 8%

Explanation: SC is currently reengineering to improve program management efficiency. BES has worked with OMB to improve performance evaluation. BES management was "responsive" to DOE IG report recommendations on beamline-level problems at the ALS. Changes to merit review processes were made after the first COV report, and a few more are expected in response to the second COV report.

Evidence: SC reengineering information (www.screstruct.doe.gov). BES actions in response to the recommendations of the first COV ("Chemistry" division; www.sc.doe.gov/bes/besac/BESAC%20Pat%207-22-02.ppt, slides 14-15). DOE IG report on the synchrotron sources at LBNL and SLAC (www.ig.doe.gov/pdf/ig-0562.pdf).

3.CA1 Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals? Answer: YES Question Weight: 8%

Explanation: The BES program documents the capabilities and characteristics of new facilities in conceptual design reports that are reviewed by BESAC and an independent Lehman Reviews. Progress is tracked quarterly through program and Lehman reviews, and reported annually in predecisional and budget request documents.

Evidence: Program files, including Lehman reports. Predecisional Exhibit 300s submitted to OMB. Construction project data sheets in budget requests (www.mbe.doe.gov/budget/04budget/index.htm).

Program Assessment Rating Tool (PART)

Program: Basic Energy Sciences
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	92%	93%	

3.CO1 **Are grants awarded based on a clear competitive process that includes a qualified assessment of merit?** Answer: YES Question Weight: 8%

Explanation: First time grant applications are encouraged in all Request For Proposals. BES conducts outreach to under-represented groups including Historically Black College and Universities, Hispanic Serving College and Universities, and women researchers. Merit review guides all funding decisions, and the process has been validated by GAO and COV reviews. Since federal regulations prohibit lab proposals from directly competing with university proposals, the process is technically defined as one of "limited competition" according to OMB Circular A-11. The first ("Chemistry") COV report found a couple small areas that had low turnover.

Evidence: On average, the BES turnover rate is 10%. If there are new initiatives, such as the nanoscience initiative, the number of new awards is much larger. "How to Apply" (www.science.doe.gov/production/grants/guide.html). GAO (www.gao.gov/archive/2000/rc00109.pdf) and COV reviews (www.sc.doe.gov/bes/BESAC/reports.html).

3.CO2 **Does the program have oversight practices that provide sufficient knowledge of grantee activities?** Answer: YES Question Weight: 8%

Explanation: In addition to grantee progress reports, program managers stay in contact with grantees through email and telephone, conduct program reviews and site visits.

Evidence: Program files, including site visit logs.

3.CO3 **Does the program collect grantee performance data on an annual basis and make it available to the public in a transparent and meaningful manner?** Answer: NO Question Weight: 8%

Explanation: In accordance with DOE Order 241.1A, the final and annual technical reports of program grantees are made publicly available on the web through the Office of Scientific and Technical Information's "Information Bridge". However, program-level aggregate data on the impact of the grants program is not adequately communicated in the annual DOE Performance and Accountability report.

Evidence: DOE Order 241.1A. Information Bridge (www.osti.gov/bridge/). FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgt/doe02rpt.pdf).

3.RD1 **For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: YES Question Weight: 8%

Explanation: The funds for research programs and scientific user facilities at the Federal Labs are allocated through a limited competition analogous process to the unlimited process outlined in 10 CFR 605. A GAO report and the two COV reports validate both the BES merit review process, with the latter reports finding a generally high quality research portfolio, without separating university and lab work.

Evidence: SC Merit Review procedures (www.sc.doe.gov/production/grants/merit.html). 10 CFR 605 (www.science.doe.gov/production/grants/605index.html). BES Merit Review Procedures for Projects at DOE Labs (www.sc.doe.gov/bes/peerreview.html). GAO report on BES merit review (www.gao.gov/archive/2000/rc00109.pdf). BESAC and COV review reports (www.sc.doe.gov/bes/BESAC/reports.html). Program files.

Program Assessment Rating Tool (PART)

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1	2	3	4	Effective
100%	80%	92%	93%	

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: LARGE EXTENT Question Weight: 20%

Explanation: Future COVs will evaluate progress toward the new long term performance measures every three years, but no external reviews that address progress toward program goals (either past ones or the new ones proposed in the "measures" tab) are available to date other than the generally positive reviews by BESAC and the two COVs.

Evidence: BESAC & COV reports (www.sc.doe.gov/bes/BESAC/reports.html).

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: YES Question Weight: 20%

Explanation: Although three of the annual performance measures for FY05 are new, BES has met the targets for all of its former annual GPRA measures.

Evidence: FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgmt/doe02rpt.pdf). FY04 Annual Performance Plan (www.mbe.doe.gov/budget/04budget/content/perfplan/perfplan.pdf).

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: YES Question Weight: 20%

Explanation: The recent history of tracking the two "efficiency" measures for facility construction and operation management shows that, on average, the program continues to meet or exceed expectations. The most significant deviation being the 1999/2000 baseline change for the Spallation Neutron Source (SNS) project.

Evidence: Program files, including facilities usage data. Predecisional Exhibit 300s submitted to OMB. Construction project data sheets in budget requests (www.mbe.doe.gov/budget/04budget/index.htm).

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: NA Question Weight: 0%

Explanation: While the recent COV reports commented favorably upon the world-class nature of individual areas of the BES research portfolio, no other program with the range of activities and mission focus exists in the world. The National Academies recently conducted an international benchmarking study for U.S. materials science and engineering, but such studies are not able to parse accomplishments by funding agency, which dramatically reduces the value of such a comparison at the program level of the PART.

Evidence: COV reports (www.sc.doe.gov/bes/BESAC/reports.html). National Academies benchmarking study (www.nap.edu/catalog/9784.html).

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: YES Question Weight: 20%

Explanation: Numerous BESAC reviews (and to some extent the COV reviews) have demonstrated that the BES program is effective and achieving results, though the program rarely seeks additional independent advice outside BESAC or workshops. DOE IG report on SSRL and the ALS found that the ALS beamlines were not being fully utilized.

Evidence: BESAC and COV review reports (www.sc.doe.gov/bes/BESAC/reports.html). DOE IG report on the synchrotron sources at LBNL and SLAC (www.ig.doe.gov/pdf/ig-0562.pdf).

Program Assessment Rating Tool (PART)

Program: Basic Energy Sciences
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	92%	93%	

4.CA1 **Were program goals achieved within budgeted costs and established schedules?** Answer: YES Question Weight: 20%

Explanation: BES upgrade and construction project baselines were met for FY02. BES disagreed with a DOE IG report that found a reduction of scope in the SNS project was used to keep the project within cost. A 2002 National Research Council assessment of project management at DOE concluded that SC continues to "consider project scope as a contingency" as part of a "design-to-budget approach." Since the SNS is scientific research tool, a good argument can be made that the original scientific scope of the project will be met, regardless of what the IG declared a reduction in project scope.

Evidence: Program files, including Lehman reports. Predecisional Exhibit 300s submitted to OMB. Construction project data sheets in budget requests (www.mbe.doe.gov/budget/04budget/index.htm). NRC report, page 13 (www.nap.edu/catalog/10679.html).

PART Performance Measurements

Program: Basic Energy Sciences
Agency: Department of Energy
Bureau: Office of Science

Measure: Progress in designing, modeling, fabricating, characterizing, analyzing, assembling, and using a variety of new materials and structures, including metals, alloys, ceramics, polymers, biomaterials and more--particularly at the nanoscale--for energy-related applications. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: An external panel will conduct triennial reviews of progress. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Excellent		

Measure: Progress in understanding, modeling, and controlling chemical reactivity and energy transfer processes in the gas phase, in solutions, at interfaces, and on surfaces for energy-related applications, employing lessons from inorganic, organic, self-assembling, and biological systems. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: An external panel will conduct triennial reviews of progress. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Excellent		

PART Performance Measurements

Program: Basic Energy Sciences
Agency: Department of Energy
Bureau: Office of Science

Measure: Progress in developing new concepts and improving existing methods for solar energy conversion and other major energy research needs identified in the 2003 Basic Energy Sciences Advisory Committee workshop report, "Basic Research Needs to Assure a Secure Energy Future." An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: An external panel will conduct triennial reviews of progress. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Met Goal		

Measure: Progress in conceiving, designing, fabricating, and using new instruments to characterize and ultimately control materials. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: An external panel will conduct triennial reviews of progress. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Met Goal		

Measure: Average achieved operation time of the scientific user facilities as a percentage of the total scheduled annual operation time. (Scheduled annual operating time is roughly 31,350 hours in 2004 and 35,450 hours in 2005. The ambitiousness and appropriateness of the 90% target level is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2001	>90%	96%	

PART Performance Measurements

Program: Basic Energy Sciences
Agency: Department of Energy
Bureau: Office of Science

Measure: Average achieved operation time of the scientific user facilities as a percentage of the total scheduled annual operation time. (Scheduled annual operating time is roughly 31,350 hours in 2004 and 35,450 hours in 2005. The ambitiousness and appropriateness of the 90% target level is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2002	>90%	96%	
2003	>90%	91%	
2004	>90%		
2005	>90%		

Measure: Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.

Additional Information: Cost variance listed first. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2001	<10%, <10%	+0.4%, -6.3%	
2002	<10%, <10%	-0.2%, -1.8%	
2003	<10%, <10%	-0.5%, -1.4%	
2004	<10%, <10%		
2005	<10%, <10%		

Measure: Improve Spatial Resolution: Demonstrated spatial resolutions for imaging in the hard and soft x-ray regions, and spatial information limit for an electron microscope (measured in nanometers).

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		150, 24, 0.09	

PART Performance Measurements

Program: Basic Energy Sciences
Agency: Department of Energy
Bureau: Office of Science

Measure: Improve Spatial Resolution: Demonstrated spatial resolutions for imaging in the hard and soft x-ray regions, and spatial information limit for an electron microscope (measured in nanometers).

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003		130, 20, 0.09	
2004	<115,<19, <0.08		
2005	<100,<18, <0.08		

Measure: Improve temporal resolution: Demonstrated duration (measured in femtoseconds) and intensity (measured in millions photons per pulse) of an x-ray pulse.

Additional Information: The 2004 intensity target is at a greatly increased average brightness. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		100, 0.0003	
2003		500, 1.0	
2004	<200, >0.005		
2005	<100, >100		

Measure: Number of reacting species and billions of grid points in a three-dimensional combustion reacting flow computer simulation, as a part of the Scientific Discovery through Advanced Computing effort.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		8, 0.0005	
2003		8, 0.001	
2004	>44, >0.0005		

PART Performance Measurements

Program: Basic Energy Sciences

Agency: Department of Energy

Bureau: Office of Science

Measure: Number of reacting species and billions of grid points in a three-dimensional combustion reacting flow computer simulation, as a part of the Scientific Discovery through Advanced Computing effort.

Additional Information: See www.sc.doe.gov/measures for more information.

Year

2005

Target

>44, >7

Actual

Measure Term: Annual

Program Assessment Rating Tool (PART)

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development Competitive Grant

Section Scores				Overall Rating
1	2	3	4	Effective
100%	89%	67%	87%	

Capital Assets and Service Acquisitio

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The mission of the Biological and Environmental Research (BER) program is to advance environmental and biomedical knowledge that promotes national security through improved energy production, development, and use and contributes to international scientific leadership.

Evidence: FY04 Budget Request (www.mbe.doe.gov/budget/04budget/index.htm). Public Law 95-91 that established the Department of Energy (DOE). The BER Mission has been validated by the Biological and Environmental Research Advisory Committee (BERAC).

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: BER supports fundamental research across a broad range of the biological and environmental sciences including: (1) biotechnology solutions for clean energy, carbon sequestration, and environmental cleanup, (2) low dose radiation research to underpin risk protection and cleanup standards, (3) high throughput DNA sequencing for DOE and National needs, (4) understanding the response of the Earth system to different levels of greenhouse gases in the atmosphere, (5) developing and demonstrating novel solutions to DOE's most challenging environmental problems, and (6) developing innovative radiopharmaceuticals for diagnosis and treatment of human disease and novel imaging instrumentation/technologies to visualize and measure biological functions.

Evidence: BERAC reviews (www.sc.doe.gov/ober/berac/Reports.html).

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: BER supports long-term, fundamental, high risk research relevant to DOE missions. The BER program is well coordinated with similar programs across the Federal government including: the US Climate Change Science Program (CCSP), the National Institutes of Health (NIH), the Environmental Protection Agency, the National Science Foundation (NSF), and DOE Energy and Environmental Management programs.

Evidence: Program reviews (BERAC, National Academy, JASON). Joint program plans including: climate (USGCRP - Annual publication of Our Changing Planet); genomics/structural biology [www.sc.doe.gov/ober/berac/final598.html]; low dose radiation; Bioengineering [www.becon1.nih.gov/becon.htm].

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: The BER program is based on competitive merit-review, independent expert advice, and community planning. This proves efficient and effective. However, a Committee of Visitors (COV) has yet to validate the merit review system.

Evidence: BERAC reviews and reports. Program files.

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?

Answer: YES

Question Weight: 20%

Explanation: BERAC ensures that research community input is regularly gathered to assess the priorities, projects, and progress of the program. Peer review is used to assess the relevance and quality of each project.

Evidence: BERAC reviews and reports. Program files.

Program Assessment Rating Tool (PART)

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development Competitive Grant Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	89%	67%	87%	

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 11%

Explanation: The three key long-term measures focus on key scientific research outcomes and are meaningful indicators of progress in each of the three main program areas. The program has defined specific quantitative "successful" and "minimally effective" performance milestones for each measure, and an external panel will assess interim program performance on a triennial basis, and update the measures as necessary. It is inappropriate for a basic research program such as this one to have a quantitative long-term efficiency measure.

Evidence: Advisory committee reports discuss the key scientific drivers for the breadth of BER's diverse research portfolio (www.science.doe.gov/production/ober/berac/Reports.html). A description of the specific "successful" and "minimally effective" milestones, and an explanation of the relevance of these measures to the field can be found on the Office of Science (SC) Web site (www.sc.doe.gov/measures).

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 11%

Explanation: BERAC has reviewed the new long-term and annual measures for this program and found them to be ambitious and meaningful indicators of progress. The external reviews described in 2.1 will update the measures, targets, and timeframes on an interim basis.

Evidence: Letter from BERAC chair regarding review of long-term and annual measures.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 11%

Explanation: The facilities measure, sequencing rate measure and improvements to climate models should provide the capabilities that the scientific community needs to make discoveries directly connected to the long term measures. The measure on the scalability of field results is key to the success of the long-term measure for Environmental Remediation. The climate and environmental remediation measures are not trendable, and will have annual primary targets that continually evolve, and cannot be predicted more than one budget year in advance.

Evidence: FY04 Budget Request. Website with further information, including explanation of non-trendable measures and targets (www.sc.doe.gov/measures).

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 11%

Explanation: Half of the annual measures include quantifiable annual targets. The other half include specific annual scientific targets. Baseline data (FY01 and FY02) verify that the quantifiable annual measures are ambitious, yet realistic.

Evidence: FY04 Budget Request. Website with further information (www.sc.doe.gov/measures).

Program Assessment Rating Tool (PART)

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development Competitive Grant Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	89%	67%	87%	

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 11%

Explanation: A limited FY03 audit by the DOE Inspector General (IG) found that "performance expectations generally flowed down into the scope of work at the national laboratories." BER program targeted solicitations explicitly include program goals, however the new measures from 2.1/2.3 (once adopted) should be present in future solicitations.

Evidence: Memo from the DOE IG to the Director of the Office of Science. M&O contract performance evaluation provisions (WWW-accessible examples include: Oak Ridge National Lab, www.ornl.gov/Contract/UT-BattelleContract.htm; and, Lawrence Berkeley National Lab, www.lbl.gov/LBL-Documents/Contract-98/AppFTOC.html). Solicitation examples (www.science.doe.gov/grants/Fr03-05.html, www.science.doe.gov/grants/Fr03-13.html)

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 11%

Explanation: All research projects undergo Merit Review. Grants are reviewed triennially. Major facilities are reviewed annually. Construction projects are reviewed quarterly. BERAC evaluates all aspects of the BER program every 2-5 years. JASON reviews of specific programs are used. Several large pieces of the BER portfolio are also reviewed by outside panels as part of interagency programs. Even though the FY04 PART process did not require the initiation of a Committee of Visitors (COV) review process, BER is in the process of establishing a COV because the previous external reviews have not provided a process validation and detailed portfolio quality check.

Evidence: SC Merit Review guidelines (www.sc.doe.gov/production/grants/merit.html). BERAC reviews of climate change research, bioremediation program units, Free Air Carbon-dioxide Enrichment (FACE), and Atmospheric Radiation Measurement Unmanned Aerial Vehicles (ARM UAV) (www.sc.doe.gov/ober/berac/Reports.html). Program files, including Lehman review reports and JASON reviews. Letter to BERAC chair on creation of COV process, schedule for reviews, and conflict of interest issues.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 11%

Explanation: DOE has not yet provided a budget request that adequately integrates performance information.

Evidence:

Program Assessment Rating Tool (PART)

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development Competitive Grant Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	89%	67%	87%	

2.8 **Has the program taken meaningful steps to correct its strategic planning deficiencies?** Answer: YES Question Weight: 11%

Explanation: New performance goals and targets have been developed in coordination with OMB. BER participated in the drafting of a new SC strategic plan. BERAC has produced forward-looking reports on various aspects of the program, including most recently the Genomes to Life effort. BER participates in interagency planning groups on topics such as genomics and climate change, including the recent strategic plan for the U.S. Climate Change Science Program. BER is initiating a COV process to help in identifying research program strengths/weaknesses for strategic planning purposes.

Evidence: SC strategic plan has yet to be officially provided to OMB for review. BERAC reports, e.g., structural biology, Genomes to Life, and the NABIR program (www.sc.doe.gov/ober/berac/Reports.html). Climate change documents; both governmental and National Academy of Sciences (www.usgcrp.gov, dels.nas.edu/ccgc).

2.CA1 **Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity?** Answer: NA Question Weight: 0%

Explanation: The program did not have any construction or upgrade projects of sufficient scale during FY02, so no analyses were necessary.

Evidence:

2.RD1 **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NA Question Weight: 0%

Explanation: This is a basic R&D program, and the question is intended for industry-related R&D programs.

Evidence:

2.RD2 **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 11%

Explanation: Although not visible outside DOE, internal SC budget formulation practices include a priority ranking process. The program occasionally solicits prioritization recommendations from BERAC, though the program has a difficult time prioritizing across its diverse portfolio. BER typically appears to make priority-based decisions during program execution.

Evidence: Genomes to Life (doegenomestolife.org) is a priority of both BERAC and BER. A recent BERAC assessment of Biosphere 2 determined that it the science capability was not a priority for the program (www.science.doe.gov/production/ober/berac/Biosphere_2.pdf). Charge letter to BERAC chair asking for recommendations on priorities for atmospheric sciences program.

Program Assessment Rating Tool (PART)

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development Competitive Grant Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	89%	67%	87%	

3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance? Answer: NO Question Weight: 8%

Explanation: Performance information is collected for a number of program elements, e.g., amount and quality of DNA sequence determined, spatial resolution of improved climate models, as well as retrospective analyses by BERAC on broad program impacts. Project performance information is collected via Lehman reviews. The program collects performance data from individual grantees and national labs, and uses peer review as a type of standardized quality control at the individual grant level. However, there is not yet a systematic process, such as regular COV evaluations, that conducts research portfolio quality and process validations. While DOE IG contracts with an outside auditor to check internal controls for performance reporting, and the IG periodically conducts limited reviews of performance measurement in SC, it is not clear that these audits check the credibility of performance data reported by DOE contractors.

Evidence: JGI data (www.jgi.doe.gov). Climate models (www.cesm.ucar.edu). BERAC program reviews (www.science.doe.gov/production/ober/berac/Reports.html). Program files, including JASON studies, and Lehman review of "Mouse House."

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 8%

Explanation: Senior Executive Service (SES) and Program Manager Performance Plans are directly linked to program goals. The Management and Operations contracts for the Labs and Facilities include performance measures linked to program goals. Research funding requirements ensure consideration of past performance. All renewal requests are subject to competitive peer review, including earmarked projects after the first year.

Evidence: Program and personnel files. For performance-based fee adjustments on M&O contracts, see evidence for question 2.5. Grant rules for renewals (www.science.doe.gov/grants/#GrantRules).

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 8%

Explanation: Using DOE's monthly accounting reports, SC personnel monitor progress toward obligating funds consistent with an annual plan that is prepared at the beginning of the fiscal year to ensure alignment with appropriated purposes. SC programs consistently obligate more than 99.5% of available funds.

Evidence: Program files. DOE-wide audit reports.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 8%

Explanation: SC is currently undergoing a reengineering exercise aimed at flattening organizational structure and improving program effectiveness. The program collects the data necessary to track its one "efficiency" measure for facility operation management.

Evidence: FY04 Budget Request/Annual Performance Plan. SC reengineering information (www.screstruct.doe.gov).

Program Assessment Rating Tool (PART)

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development Competitive Grant Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	89%	67%	87%	

- 3.5 Does the program collaborate and coordinate effectively with related programs?** Answer: YES Question Weight: 8%
- Explanation: The program, by its nature as a smaller player in almost everything it funds, is well coordinated with similar programs across the Federal government including the USGCRP, NIH, EPA, NSF, and DOE Energy and Environmental programs. This coordination and cooperation includes both joint planning, priority setting, as well as joint solicitations, including recently cost-sharing a new beamline at the Stanford Sychrotron Radiation Lab with NIH.
- Evidence: Program and expert reviews detail coordination (e.g., www.sc.doe.gov/ober/berac/State%20of%20BER.pdf). Joint program planning with other agencies, especially for efforts such as the Human Genome Project and the U.S. global climate change program (www.ornl.gov/TechResources/Human_Genome/home.html, www.usgcrp.gov). Recent joint interagency solicitations (www.sc.doe.gov/grants/Fr03-04.html, www.sc.doe.gov/grants/Fr03-07.html)
- 3.6 Does the program use strong financial management practices?** Answer: YES Question Weight: 8%
- Explanation: SC staff execute the BER program consistent with established DOE budget and accounting policies and practices. These policies have been reviewed by external groups and modified as required to reflect the latest government standards.
- Evidence: Various Departmental manuals. Program files. Audit reports.
- 3.7 Has the program taken meaningful steps to address its management deficiencies?** Answer: YES Question Weight: 8%
- Explanation: SC is currently reengineering to improve program management efficiency. BER has worked with OMB to improve performance evaluation. Even though it was not recommended during the FY04 PART process, BER is organizing a new COV process under the auspices of BERAC.
- Evidence: SC reengineering information (www.screstruct.doe.gov). Letter to BERAC chair on creation of COV process, schedule for reviews, and conflict of interest issues.
- 3.CA1 Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals?** Answer: YES Question Weight: 8%
- Explanation: The BER program documents the capabilities and characteristics of new facilities in conceptual design reports that are reviewed by BERAC and independent Lehman Reviews. Progress on the one construction project is tracked quarterly through program and Lehman reviews.
- Evidence: Conceptual Design Reviews. Program files, including facility peer review on FACE, and Lehman report on the program's single construction project (Laboratory for Comparative and Functional Genomics, bio.lsd.ornl.gov/mgd).

Program Assessment Rating Tool (PART)

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development Competitive Grant Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	89%	67%	87%	

- 3.CO1 Are grants awarded based on a clear competitive process that includes a qualified assessment of merit?** Answer: NO Question Weight: 8%
- Explanation:** First time grant applications are encouraged in all Request For Proposals/Applications, and BER has a much higher percentage of new awards than other SC programs. Merit review guides all funding decisions, and the targeted solicitations ensure that a larger amount of research dollars are fully competed. However, the quality of the research funded via this process has not yet been validated by a COV. Also, BER has seen an increasing amount of Congressional earmarking in recent years, and this "research"--totaling almost \$100 million in FY 2004--does not go through any type of merit-based competitive review process.
- Evidence:** On average, BER funds 30% of new research applications. For calendar year 2001, BER received 495 new applications and 82 requests for renewals of currently funded projects. (www.sc.doe.gov/ober/ober_top.html) Targeted solicitations (universities: www.science.doe.gov/grants/closed03.html; labs: www.science.doe.gov/grants/clolab03.html).
- 3.CO2 Does the program have oversight practices that provide sufficient knowledge of grantee activities?** Answer: YES Question Weight: 8%
- Explanation:** In addition to grantee progress reports, program managers stay in contact with grantees through email and telephone, program reviews, and site visits.
- Evidence:** Program files, including travel logs and progress reports.
- 3.CO3 Does the program collect grantee performance data on an annual basis and make it available to the public in a transparent and meaningful manner?** Answer: NO Question Weight: 8%
- Explanation:** In accordance with DOE Order 241.1A, the final and annual technical reports of program grantees are made publicly available on the web through the Office of Scientific and Technical Information's "Information Bridge". However, program-level aggregate data on the impact of the grants program is not adequately communicated in the annual DOE Performance and Accountability report.
- Evidence:** DOE Order 241.1A. Information Bridge (www.osti.gov/bridge/). FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgt/doe02rpt.pdf).
- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: NO Question Weight: 8%
- Explanation:** The funds for research programs and scientific user facilities at the Federal Labs are allocated through a limited competition analogous process to the unlimited process outlined in 10 CFR 605, though BER funds very little work with this mechanism. More so than other SC programs, BER competes the lab research grants by developing a large number of targeted (rather than general) solicitations. However, the quality of the research funded via this process has not yet been validated by a COV.
- Evidence:** SC Merit Review procedures. (www.sc.doe.gov/production/grants/merit.html) 10 CFR 605. (www.science.doe.gov/production/grants/605index.html). Targeted solicitations (universities: www.science.doe.gov/grants/closed03.html; labs: www.science.doe.gov/grants/clolab03.html).

Program Assessment Rating Tool (PART)

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development Competitive Grant Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	89%	67%	87%	

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: **LARGE EXTENT** Question Weight: 20%

Explanation: BERAC will evaluate progress toward the new long term performance measures every three years, but no external reviews that address progress toward program goals (either past ones or the new ones proposed in the "measures" tab) are available to date other than the generally positive BERAC reviews.

Evidence: BERAC reports, especially the 2001 assessment of the entire program (www.er.doe.gov/production/ober/berac/Reports.html).

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: **LARGE EXTENT** Question Weight: 20%

Explanation: Although all but one of the annual performance measures for FY05 are new, BER hit over half of the targets for all of its former annual GPRA measures. The genome target was missed because of a programmatic decision to focus on completing DOE's piece of the human genome according to an accelerated interagency plan.

Evidence: FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgmt/doe02rpt.pdf). FY04 Annual Performance Plan (www.mbe.doe.gov/budget/04budget/content/perfplan/perfplan.pdf).

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: **YES** Question Weight: 20%

Explanation: The recent history of tracking the one "efficiency" measure for facility operation management shows that the program continues to meet or exceed expectations.

Evidence: Program files, including facilities usage data.

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: **NA** Question Weight: 0%

Explanation: The program is highly integrated with the activities of other agencies, and typically plays a relatively smaller--but important--leveraging role in interagency ventures: no other program with the range of activities (i.e., environmental remediation, climate change, life sciences, medical applications) and mission focus of BER exists in the world. Partly because of the highly integrated nature of BER, no expert panel comparison of performance (either with other agencies or countries) has been conducted at the program-wide level as would be appropriate for the PART.

Evidence: Internal government planning reviews to assess the strongest aspects of each agency. BERAC reports (www.er.doe.gov/production/ober/berac/Reports.html). BER role in human genome project, etc.

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: **YES** Question Weight: 20%

Explanation: BERAC, on a rotating schedule, reviews the major elements of the BER program against plans and scientific opportunities. The entire BER program was positively reviewed by BERAC in 2001, though this review did not have great depth. Other experts groups, such as JASON, also review pieces of BER as needed. However, BER needs a COV process to fill gaps in the normal BER review process.

Evidence: BERAC review reports (www.sc.doe.gov/ober/berac/Reports.html). Program files, including facility peer reviews and JASON reports.

Program Assessment Rating Tool (PART)

Program: Biological and Environmental Research

Agency: Department of Energy

Bureau: Office of Science

Type(s): Research and Development Competitive Grant Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	89%	67%	87%	

4.CA1 **Were program goals achieved within budgeted costs and established schedules?** Answer: YES Question Weight: 20%

Explanation: Construction of Laboratory for Comparative & Functional Genomics at Oak Ridge, to be completed in FY 2003, is on schedule and within cost.

Evidence: Program files, including 04/30/02 Lehman review report.

PART Performance Measurements

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science

Measure: Life Sciences -- Progress in characterizing the multi-protein complexes (or the lack thereof) involving a significant fraction of a microbe's proteins, and in developing computational models to direct the use and design of microbial communities toward DOE mission needs. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: An external panel will conduct triennial reviews of progress. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Excellent		

Measure: Climate Change Research -- Progress in delivering improved climate data & models for policy makers to determine safe levels of greenhouse gases, and by 2013, toward substantially reducing differences between observed temperature & model simulations at subcontinental scales using several decades of recent data. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: An external panel will conduct triennial reviews of progress. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Met Goal		

PART Performance Measurements

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science

Measure: Environmental Remediation -- Progress in developing science-based solutions for cleanup and long-term monitoring of DOE contaminated sites, and by 2013, toward employing advanced biology-based clean up solutions and science-based monitors at a significant fraction of DOE's long-term stewardship sites. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: An external panel will conduct triennial reviews of progress. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Met Goal		

Measure: Increase the rate of DNA sequencing -- Number (in billions) of base pairs of high quality (less than one error in 10,000 bases) DNA microbial and model organism genome sequence produced annually.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001		5.8	
2002		12.7	
2003	>14	18	
2004	>20		
2005	>20		

PART Performance Measurements

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science

Measure: Improve climate models -- Develop a coupled climate model with fully interactive carbon and sulfur cycles, as well as dynamic vegetation to enable simulations of aerosol effects, carbon chemistry and carbon sequestration by the land surface and oceans and the interactions between the carbon cycle and climate.

Additional Information: See www.sc.doe.gov/measures for more information, including a meaningful expansion of the abbreviated nonnumeric targets.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001		Consistency	
2002		Resolution	
2003		New Model	
2004	Testbed		
2005	3 parameters		

Measure: Determine scalability of laboratory results in field environments -- Determine actual in situ rates of metal reduction in subsurface environments and begin to develop a numerical model to describe and predict these rates.

Additional Information: See www.sc.doe.gov/measures for more information, including a meaningful expansion of the abbreviated nonnumeric targets.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		Sequence	
2003		Identify	
2004	Quantify		
2005	Predict		

PART Performance Measurements

Program: Biological and Environmental Research
Agency: Department of Energy
Bureau: Office of Science

Measure: Average achieved operation time of the scientific user facilities as a percentage of the total scheduled annual operation time. (Scheduled annual operating time is roughly 38,880 hours in 2004 and 2005. The ambitiousness and appropriateness of the 90% target level is currently under review in conjunction with a reevaluation of the program's suite of user facilities.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2001	>90%	98%	
2002	>90%	97%	
2003	>90%	97%	
2004	>90%		
2005	>90%		

OMB Program Assessment Rating Tool (PART)

Capital Assets & Service Acquisition Programs

Name of Program: Bonneville Power Administration

Section I: Program Purpose & Design (Yes,No)

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1 <i>Is the program purpose clear?</i>	Yes	The Bonneville Power Administration (BPA) exists to meet its public responsibilities established by Congress. Bonneville's mission is to market and reliably deliver to customers, all available Federally-owned or contracted power, at cost, giving preference to public entities, while protecting fish and wildlife, encouraging conservation, and repaying to the Treasury the full cost of producing and transmitting power, including the investment in hydropower facilities and meeting all other financial obligations entered into to conduct Federally authorized responsibilities.	See Attachment 1: BPA Statutes (DOE/BP-3415 February 2002). Key BPA statutory purposes include: provide electric power at its total system cost; build and maintain a reliable transmission system; provide preference to public power; share regional hydro system benefits; allow for public participation; protect mitigate, and enhance fish and wildlife; provide leadership in conservation and renewable energy; recover costs; and provide regional preference. See also the Canadian Treaty and treaties with Northwest tribes. In conjunction with its statutory responsibilities, BPA through its strategic planning efforts has developed a vision, mission statement and associated strategic business objectives (SBOs), strategic thrusts and performance measures. There is an ongoing review and evaluation process to assure that BPA's strategic direction is current.	20%	0.2

2	<i>Does the program address a specific interest, problem or need?</i>	Yes	<p>Bonneville markets and transmits power generated at 31 Corps of Engineers and Bureau of Reclamation dams, a portion of a nuclear plant and several other non-Federal plants. There are many unique responsibilities placed on BPA, such as the trust responsibility related to the federal government's relationships with Columbia River Treaty Tribes and representation of the federal government in relations with Canada relating to the Columbia River. The primary program components are transmission, power, and fish and wildlife.</p>	<p>There is a 65 year legislative history that underlies the program. (See response to question I.1).</p>	20%	0.2
			<p>(1) Transmission: Provide reliable transmission services to the Pacific Northwest. (2) Power: Market electric power produced by the Federal Columbia River Power System (FCRPS) at cost and improve the efficiency of power production and consumption. (BPA markets the power from thirty one Federal dams, one nuclear plant, and several nonfederal power plants.) (3) Fish and Wildlife: Mitigate effects of the FCRPS on the region's fish and wildlife resources and protect and enhance those resources.</p>			
3	<i>Is the program designed to have a significant impact in addressing the interest, problem or need?</i>	Yes	<p>(1) Transmission: BPA is the mainstay of the Northwest's power grid, (2) Power: BPA carries the legal obligation to market power to any utility in the region, public or investor-owned. (Northwest Power Act, 1980) (3) Fish and Wildlife: BPA's program is designed to mitigate for damage caused by construction of the Federal hydropower system and enhance migrating salmon and in-river fish species of the Columbia and Snake rivers and restore habitat to Federal lands impacted by the system.</p>	<p>(1) Transmission: BPA owns and operates about 75% of the region's transmission resources. (2) Power: BPA markets about 45% of the power consumed in the region. (3) Fish and Wildlife: In FY 2001 F&W program expenses were \$221 million and associated hydro operations costs were approximately \$1.5 billion. Accounting for all of BPA's costs since 1997, BPA has estimated a cost of more than \$3 billion in meeting its obligations to Columbia Basin fish and wildlife, including \$378 million attributed to direct program and off-site mitigation expenditures.</p>	20%	0.2

4	<i>Is the program designed to make a unique contribution in addressing the interest, problem or need (i.e., not needlessly redundant of any other Federal, state, local or private efforts)?</i>	No	<p>The generation and transmission of power is a well developed technology, largely provided by municipal and independently-owned utilities across the country. This function could be performed under contract or through non-federal ownership of transmission lines and generation capacity at the dams. The FCRPS resources contribute to BPA's role in balancing a large number of interests as it meets its program responsibilities. Stakeholders include power and transmission customers, environmental, Tribal, consumer, industrial and other interests. (1) Transmission: The Northwest power system is heavily reliant on long-distance, high-voltage transmission lines to connect load centers to generation sites. As new market-based models of transmission emerge that situation may change – at the margin. For example, other parties may solve some transmission congestion problems through using distributed generation. Transmission systems have been inherently unique, and that holds for BPA's system. They are too expensive to be duplicated, although BPA's transmission technology is not unique.</p>	<p>(1) Transmission: BPA owns and operates about 75 percent of the region's transmission grid. There is almost no duplication of transmission paths owned by BPA and other entities</p>	20%	0.0
			<p>(2) Power: BPA is the marketer for the federal hydropower that is generated in the Northwest, although it is one of many Northwest power providers. It makes that power accessible to both public-owned and investor-owned utilities. It works with its partner agencies – the Corps of Engineers and the Bureau of Reclamation – to ensure that power interests are in balance with other public interests (e.g., flood control, irrigation). As energy markets evolve BPA will re-examine its role to see how it can meet its responsibilities while being a market participant. (3) Fish and Wildlife: BPA funds almost all of the Columbia Basin's F&W program. There is no competition for this role.</p>	<p>(2) Power: BPA markets about 45 percent of the power consumed in the region. (3) Fish and Wildlife: Numerous entities participate in the Columbia Basin F&W program, but BPA funds almost all of their efforts.</p>		

Is the program optimally designed to address the interest, problem or need?

No

Bonneville benefits from Treasury loans whose principal value has been reduced through debt forgiveness. The reduced BPA obligation places part of the cost of the construction of the FCRPS system on the general taxpayer. In addition, the statutory application of preference in the sale of power creates administrative inefficiencies and restricts market activity. Market pricing of power and unrestricted sales would improve opportunities for more efficient operations. BPA, tries to optimize its authorized role in the region through an annual cycle of strategy review, objective and target setting, and program evaluation and feedback aimed at achieving continuous improvements throughout the agency.

See response to question I.1 on legislative history. Various reports, GAO/AIMD-97-110 and GAO/AIMD- 00-114. Also the Bonneville Appropriations Refinancing Act, P.L. 100-134.

20%

0.0

Total Section Score

100%

60%

Section II: Strategic Planning (Yes,No, N/A)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Does the program have a limited number of specific, ambitious long-term performance goals that focus on outcomes and meaningfully reflect the purpose of the program?</i>	Yes	BPA established seven "strategic business objectives" (SBOs) in 1994. They are reviewed annually, but have remained almost constant since then. These are BPA's "eternal verities" – long term objectives that it aspires to: SBO1: Achieve high and continually improving customer satisfaction. SBO2: Increase the value of its business and share the expanded benefits. SBO3: Be a low-cost provider of power and transmission services in the region. SBO4: Achieve and maintain financial integrity. SBO5: Keep the system safe, reliable, and available. SBO6: Invest in results to enhance the region's natural environment. SBO7: Continue to grow as a diverse, employee-centered, high-performing, business-oriented organization.	Annual measures for achieving these SBOs are discussed specifically in Section IV.	11%	0.1

These SBOs are in addition to the three performance measurement areas that BPA and the other power marketing agencies report on in GPRA-related reports. Those three areas are reliability (see SBO5), safety (see SBO5), and Treasury repayment (see SBO4). Those three areas reflect a good set of measures common to all PMAs taken together, but do not reflect on the breadth of BPA responsibilities.

2	No	<i>Does the program have a limited number of annual performance goals that demonstrate progress toward achieving the long-term goals?</i>	BPA annually establishes quantifiable and measurable one year targets for its strategic business objectives. It also has a nearer-term set of "strategic thrusts" (STs) that emphasize long-term results that are needed within the one to three year timeframe, and one year performance targets are also set for these. These targets are established through a cross-agency process that is led by the Chief Operating Officer.	The SBO-related targets for FY 2002 are: SBO1: Composite Agency customer satisfaction index is in the range from 7.3 to 7.7. SBO1: SBO2: Tribal government satisfaction index is in the range from 6.1 to 6.4; composite State/Federal entities and constituent satisfaction index is in the range from 6.8 to 7.4. SBO3: Agency internally managed costs are in the range from \$1,175 million to \$1,105 million. SBO4: Treasury payment is made on time and in full, with Agency net revenues in the range from \$75 million to \$150 million.	11%	0.0
				SBO5: High system reliability/sufficiency: Transmission: Outage frequency and duration for key circuits are within Control Chart limits; and Generation: No involuntary curtailments of firm load occur as a result of inadequate power supply. SBO5: Safety: Recordable, lost-time injuries are in the range from 1.6 to 1.1 per 200,000 hours worked (~100 employees) and no fatal injuries occur to BPA or contract employees working on BPA facilities. [Note: The "availability" component of SBO5 is new for FY 2003.] Wind power integration issues are resolved by end of performance year; cumulative total of 60 aMW of conservation is under ConAug contract by 9/30. Significant progress is made in BPA's Great Place to Work scores. Note: The measurement protocol for each target is specified in a "Measurement Notebook", which is developed by the Strategic Planning staff early in the year.		

3	<i>Do all partners (grantees, sub-grantees, contractors, etc.) support program planning efforts by committing to the annual and/or long-term goals of the program?</i>	Yes	BPA's partners in power production include hydropower from the U.S. Army Corps of Engineers (Corps) and U.S. Bureau of Reclamation (Bureau) – both providing hydropower – and Energy Northwest (Energy NW), which provides nuclear power. All partners share, support, and benefit from joint partner long term planning for power production. BPA has dedicated staffs that work with the Corps, Bureau, and Energy NW.	BPA staffs work directly with their partner agencies to support the identification of productivity improvements. BPA provides monetary incentives to Energy NW for increased nuclear power production efficiency, reliability, and cost reductions. BPA directly funds capital hydropower replacement projects to improve productivity. BPA's Power Business Line has annual measurable targets for Forced Outage Factor (amount of time a planned unit is down) and Capital Execution Rate (efficiency of executing planned capital projects) for Corps and Bureau generation units. See Attachment 2 for a discussion of current efforts in this area.	11%	0.1
4	<i>Does the program collaborate and coordinate effectively with related programs that share similar goals and objectives?</i>	Yes	Coordination occurs on a daily basis with the Corps and Bureau, and on a frequent basis with other constituents and shareholders. The Northwest Power Planning Council (Council) was created by Congress (Northwest Power Act of 1980) to give Northwest citizens a stronger voice concerning issues of electricity generated at, and fish and wildlife affected by the Columbia River Basin hydropower dams. The Council and the BPA are jointly engaging the region in a discussion of how BPA will market the power and distribute the costs and benefits of the FCRPS in the Northwest after 2006. The Western Electricity Coordinating Council (WECC) is one of the ten electricity reliability councils in North America. WECC also supports efficient competitive markets, ensures open and non-discriminatory transmission access for members, provides a forum for resolving transmission access disputes, and provides an environment for coordinating the operating and planning activities of its one hundred and forty five members.	The joint Council/BPA regional effort is described at: http://www.nwccouncil.org/energy/bparole/default.htm BPA is a WECC member and has several staff participating in various WECC committees and work groups. WECC and BPA's participation is described at: http://www.wecc.biz/committees/MR/committee/index.html	11%	0.1

5	<i>Are independent and quality evaluations of sufficient scope conducted on a regular basis or as needed to fill gaps in performance information to support program improvements and evaluate effectiveness?</i>	Yes	<p>SBO1 (Customer satisfaction): Since 1996 BPA annually has had an independent contractor conduct a customer survey to determine customer satisfaction and other information.</p> <p>SBO4 (Financial integrity): BPA's accounts are reviewed by an independent outside auditor.</p>	<p>SBO1 (Customer satisfaction): Since 1996 BPA annually has had an independent contractor conduct a customer survey to determine customer satisfaction and other information.</p> <p>SBO4 (Financial integrity): BPA's independent auditor is PricewaterhouseCoopers LLP. The recent audit opinion from PricewaterhouseCoopers dated January 4, 2002 indicated no material weaknesses in BPA's internal control structure and noted no instances of noncompliance. BPA's Annual Report for FY 2001 is available at: http://www.bpa.gov/Corporate/kc/home/ar/01ar/ar2001.pdf.</p>	11%	0.1
			<p>Reliability of Transmission(SBO5): BPA uses Institute of electrical and Electronics Engineers (IEEE) standard measures of SAIFI (System Average Interruption Frequency Index) and SAIDI (System Average Interruption Duration Index) to monitor and evaluate system reliability performance as reflected in the pattern of unplanned (automatic) outages on the system. In addition, BPA participates yearly in an independent Reliability Benchmarking study conducted by SGS Statistical Services of Tucson, AZ.</p>	<p>With SAIFI and SAIDI as the metrics, BPA uses accepted statistical quality control techniques to develop warning limits and control limits, which provide specific operational guidance to operations and field staff. BPA's reliability measures are very similar to those in use by the California Independent System Operator. Participants in the broad-based Reliability Benchmarking study account for over 1/2 of all the transmission line miles in the US.</p>		
			<p>(SBO5): Loss of load due to inadequate generation is a highly visible occurrence. BPA and other parties are able to note this circumstance without the intervention of independent evaluation.</p>	<p>Reliability of Generation (SBO5): The vice president of Generation Supply would make any determination of loss of load due to inadequacy of Corps or Bureau generation. The power market itself is a good independent watchdog of BPA power reliability programs. The acid test of power reliability is a power outage, which is so transparent that the entire market knows when it happens. In addition, BPA has contracts for power delivery. If BPA fails to deliver power reliably, the impacted parties have legal recourse for BPA's power contract violations, and thereby serve as independent evaluators.</p>		

6	<i>Is the program budget aligned with the program goals in such a way that the impact of funding, policy, and legislative changes on performance is readily known?</i>	Yes	BPA operates as a revolving fund and thus depends on revenue generated from the sale of power and transmission to finance its activities. BPA develops and adjusts its program budget through annual cycles of strategy review, objective and target setting, and program evaluation and feedback, working toward continuous improvements throughout the agency.	In conjunction with its statutory responsibilities, BPA through its strategic planning efforts has developed a vision, mission statement and associated strategic business objectives (SBOs), strategic thrusts and performance measures. There is an ongoing review and evaluation process to assure that BPA's strategic direction is current.	11%	0.1
7	<i>Has the program taken meaningful steps to address its strategic planning deficiencies?</i>	Yes	BPA fundamentally revamped its strategic planning process resulting, in part, with the following selected long-term strategic business objectives. SBO1 (Customer satisfaction): The two BPA business lines use the results of each customer survey to identify where they should focus the coming year's efforts. This process benefits particularly from hundreds of verbatim comments gathered by the survey interviewers and provided to the business lines. This process sometimes results in business-line targets that aim at meeting specific needs identified in the surveys, as well as improving overall customer satisfaction. SBO4 (Financial integrity): The final test of BPA's financial integrity is its ability to make its annual payments to the U.S. Treasury.	Since revamping its strategic planning process and implementing independent surveys of significant parties, BPA has seen continued improvement in the areas of client, customer and employee satisfaction levels. SBO4 (Financial integrity): BPA has taken the business actions necessary to ensure that it could make its payments to the Treasury on time and in full. These actions include a more robust treatment of risk in rate cases, reducing costs as needed, careful management of third party debt, and the prudent use of all cash management tools.	11%	0.1
			Reliability of Transmission (SBO5): The reliability of the transmission system is monitored constantly. Transmission Operations and Planning and its Network Planning function perform both real-time and long-term, strategic planning for the system.	Reliability of Transmission (SBO5): Deficiencies in system reliability are identified in the historical record through extensive, real-time monitoring of the system. Potential deficiencies are identified using system simulation models. Planning for reliable operation of the system, including planning for system reinforcement and remedial action schemes is ongoing.		

Reliability of Generation (SBO5): The conditions affecting BPA's planning for generation have changed significantly in the last ten years, with the emergence of the competitive market for wholesale power. Prior to that BPA conducted least-cost, integrated resource planning to encompass its potential long-term power supply obligations. Planning for the adequacy of power supply has now taken a different form, with reliance on power markets as well as indigenous supply. Even though the 1980 Regional Act gives BPA the authority for long-range power resource acquisition, it is not a legal mandate without BPA customer concurrence.

Reliability of Generation (SBO5): If any power outage occurs due to inadequate power supply, it signifies a significant business failure. In order to ensure an adequate supply, BPA staff constantly plan, model, and monitor power conditions considering many time frames, from 90 and 30 days all the way to real time. Should there be a power outage, an extensive review of the planning, modeling, and monitoring process is made to identify deficiencies. In addition, BPA has contracts for power delivery. If BPA fails to deliver power, the impacted parties have legal recourse. The potential monetary impact of failure is also a powerful tool for self-correction.

In 1996, BPA's customers conducted a Regional Review of BPA long-term power resource acquisition, and recommended at that time that BPA should cease the acquisition of power resources. BPA has been complying with that recommendation. Thus, BPA has now concentrated on short-term actions to address any short-term needs. This includes such activities as market purchases of power, short-term conservation, and load buy-down. Planning for maintenance and enhancement of existing Federally owned generation is conducted by the Power Business Line's office of Generation Supply. Planning for market supply is conducted by PBL's office of Bulk Marketing & Transmission Services.

8 (Cap 1.) *Are acquisition program plans adjusted in response to performance data and changing conditions?*

Yes

BPA has a Quarterly Review that includes an assessment of performance results. Business line management committees review significant changes in timelines or project scopes during the year. This includes developing updated capital spending estimates for quarterly review and other business line or agency financial reporting requirements. In addition program needs are reviewed periodically by system planners and engineers based upon load forecasts, power-flow studies, system and equipment monitoring programs, etc. The capital program needs/acquisition plans are updated regularly to reflect changing system performance criteria, electricity market conditions, and equipment conditions.

BPA establishes annual performance contracts for managers that are tied to financial targets in order to provide accountability. A similar process has been established for capital investments with contract and contract performance reviews undertaken at least annually. Throughout the year, BPA is responsive to unanticipated changes in the market and other areas resulting in applicable contract, budget or target amendments.

11%

0.1

Over past few years, the NERC (National Electricity Reliability Council) and the WECC (Western Electricity Coordinating Council) have issued new guideline on system reliability. BPA responded by reviewing all power-flow studies and scenario analyses to identify necessary changes to the transmission grid (capital acquisition) to comply with this requirement. Due to electricity deregulation and market conditions, many independent power producers proposed to build generating plants in the pacificnorthwest. BPA responded by identifying what is required for grid additions to bring these proposed generation resources to market. Since then, the electricity market and prices have stabilized causing the generation project developers to revise their plans and schedules. BPA is responding to this changing condition by revising capital acquisition plans and schedules.

9 (Cap 2.) <i>Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule and performance goals?</i>	Yes	In the budget cycle each business line performs a rigorous investment portfolio analysis that includes an analysis of trade-offs. At the very fundamental project level, program managers and sponsors identify a list of least cost alternatives that meet transmission reliability, generation, and/or other agency objective(s). For example after identification of a transmission routing problem or other requirement, agency analysts engage in a process to determine what design, including alternate routes, and/or types of facilities, would best meet agency objectives. One alternative that is always considered is the status quo and the implications of doing nothing. Analysts perform cost-effectiveness analyses for the consideration of the appropriate business line matrix team. The matrix teams use a multi-attribute criteria to balance cost-effectiveness, safety, reliability and other factors.	An example of BPA's success in this area is its equipment replacement program that has transitioned from a time-based replacement schedule to a requirement based replacement schedule based on "reliability centered maintenance" principles. This is the outcome of a review of tradeoffs between costs and performance goals, and adapting to evolving industry best practices. Also, BPA's "infrastructure" program is reviewed both internally and externally. The external review included a panel of the region's technical experts, customer group representatives, and stakeholder group representatives. The review included needs, schedules, and alternatives. Both the internal and external review identified potential alternatives other than capital additions for some projects. The capital program costs and schedules are adjusted accordingly.	11%	0.1
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Total Section Score	100%	89%
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Section III: Program Management (Yes,No, N/A)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?</i>	Yes	BPA collects timely performance information to measure annual progress against its strategic business objectives and strategic thrusts. Where appropriate some baseline results were established many years ago and progress has been measured against them. Variances in results are discussed with senior management as needed at monthly management meetings and are considered in developing performance targets for the next fiscal year.	BPA relies upon such information as independent third-party surveys of BPA's customers, employees, constituents and affected Tribes, standardized measures of reliability and workplace safety, and financial information produced in accordance with generally accepted accounting principles. Long-term results generally show improvements in most areas of BPA's performance.	9%	0.1

2	<p><i>Are Federal managers and program partners (grantees, subgrantees, contractors, etc.) held accountable for cost, schedule and performance results?</i></p>	Yes	<p><i>Federal Managers.</i> Each fiscal year BPA managers establish performance results contracts with their manager, which establish specific action items and measure(s) of results, to include cost, schedule and performance results, as appropriate. The accountable actions are also linked to agency Strategic Business Objectives and Strategic Thrusts.</p> <p><i>Program Partners (Contractors).</i> The Bonneville Purchasing Instructions (BPI) policy prescribes shared accountability and partnership between of the federal manager and the Contracting Officer (CO) to ensure that the contract performance expectations are clearly defined, and incentives used when appropriate to achieve expected contract cost, schedule and performance results.</p>	<p><i>Federal Managers.</i> Performance contract results.</p> <p><i>Program Partners (Contractors).</i> Bonneville Purchasing Instructions (BPI) policy prescribes measures for the federal manager and Contracting Officer (CO) to establish performance standards and measures to achieve cost, schedule and performance results, as follows: BPI 6.5 – Requires that federal manager (requisitioner) obtain and certify that all necessary approvals have been obtained. BPI 6.15 – Requires use by program office and CO of strategy panels to address all relevant factors necessary to develop a performance based contract to adequately define requirements of the contractor for achieving results and accountability to meet schedule and budget, including a management plan for the project.</p>	9%	0.1
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BPI 11.18 – Requires that the CO select firms on the basis of past performance, credit ratings and other relevant indicators of successful performance. BPI Part 14 – Requires that those persons with delegated authority who meet training and experience requirements, administer the contracts to ensure compliance with contract performance results, schedule and cost. BPA Appendix 4A – Prescribes approach and methodology for governance oversight of purchasing and financial assistance activities of BPA. The objective of the oversight review is to assure that adequate business systems and processes are in place, documented and supported to satisfactorily implement purchasing policy as set forth in the BPI, and financial assistance policy as contained in the Bonneville Financial Assistance Instructions (BFAI).

3	<i>Are all funds (Federal and partners') obligated in a timely manner and spent for the intended purpose?</i>	Yes	All funds spent are for their intended purposes. However, BPA as an enterprise fund does not receive annual appropriations. All aspects of BPA's programs are funded with money derived from ratepayers and debt proceeds. Since BPA is on a business-type budget, its focus is on ensuring that funds are spent prudently and are justifiable to both ratepayers and all other affected interest groups. Therefore, BPA is held accountable for the effectiveness of the results achieved by its overall spending, not the manner in which the funds are committed.	Since BPA is operated as a business in an increasingly competitive environment, the effectiveness of its spending is vitally important for its long-term success. Money may only be spent if it can be recovered through rates. In addition, as described in the answer to Question 6, Section 1, BPA shares its financial information in public forums and on the internet.	9%	0.1
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4	<i>Does the program have incentives and procedures (e.g., competitive sourcing/cost comparisons, IT improvements) to measure and achieve efficiencies and cost effectiveness in program execution?</i>	Yes	BPA competes in a market environment. It must recover its costs through the prices (rates) that it sets. This is a spur to efficiency. As part of the annual target-setting process, BPA establishes targets for "internally managed costs" of its business units and for the agency as a whole. These targets are tied to the agency-wide "Success Share" program and business-unit-level "Team Share" programs, which provide financial incentives to all staff to perform. These targets are also incorporated in performance contracts at the executive and managerial levels.	The agency's internally managed cost target is addressed in Section II.2. BPA's principal sub-units all have internally managed cost targets.	9%	0.1
5	<i>Does the agency estimate and budget for the full annual costs of operating the program (including all administrative costs and allocated overhead) so that program performance changes are identified with changes in funding levels?</i>	Yes	Bonneville's budget is developed and managed on a fully allocated costs basis in that both business lines are responsible for the full recovery of their proper costs including administrative and pension costs. All organizations capture actual costs using activity based costing and are accountable for results through incentive targets.	In terms of managing its capital investments, Bonneville has developed and is implementing a capital investment review process that provides significant benefits by both improving direction on what the FCRPS invests in (tying investments more closely to agency strategy) and by improving how those investments are made (better analysis and review of capital investments and their alternatives). As part of this process Bonneville established a Cross-Agency Capital Allocation Board. Near- term capital funding levels are based on Board decisions after extensive review. BPA will continue its efforts to refine and implement the revised capital investment review process to improve the value provided.	9%	0.1
			Bonneville utilizes a streamlined and integrated agency planning and budgeting process that sets forth outcome goals, output targets, and resources in the context of past results. Financial targets, including cost targets, are a component of agency performance targets.	BPA's transmission finance and estimating groups evaluate progress of capital projects relative to cost estimates and project schedules. These reviews are done monthly with formal reports to the executives also on a monthly basis. The Transmission Business Line is developing a set of net asset value measures for capital portfolio assessment to ensure the value added to the transmission system exceeds cost of capital investments.		

Projects that cost over \$500 thousand are required to have performance measures so that once the project is completed actual performance can be measured. Actual program results are used to inform and refine funding levels.

BPA regularly conducts economic and financial analyses of proposed capital investments using cost-benefit, net present value and internal rates of return analysis to assist in evaluating its program levels.

Financial performance is tied to delivery on set of balanced scorecard strategic objectives aimed at maximizing the value of the FCRPS.

6	<i>Does the program use strong financial management practices?</i>	Yes	<p>Each year BPA's independent external auditors, currently Pricewaterhouse Coopers, perform a financial statement audit. Since 1985, BPA has received an unqualified opinion that its financial statements conform with generally accepted accounting principles and are a fair representation of BPA's operations in all material respects. The opinion also considers BPA's internal control over financial reporting and compliance with certain provisions of laws and regulations.</p>	<p>The recent audit opinion from Pricewaterhouse Coopers dated January 4, 2002 indicated no material weaknesses in BPA's internal control structure and noted no instances of noncompliance.</p>	9%	0.1
			<p>The recent audit report noted no material weaknesses in BPA's internal control structure. The auditors classified significant internal control structures as follows: financial reporting, revenues, purchases and payables, treasury, payroll, and utility plant. The recent audit report also noted no instances of noncompliance with certain provisions of laws and regulations that are required to be reported under Government Auditing Standards. The auditors tested compliance in the following categories: debt authorization and restrictions, enabling legislation, authorizations and restrictions, environmental compliance, procurement policies and procedures, and revenues.</p>			

In compliance with the CFO Act, BPA's Administrator submits an annual management report both to the President and to Congress with a statement on internal accounting and administrative control systems. The Administrator's recent report indicated that the results of the financial management system evaluation and other information indicate that BPA's financial management systems generally conform to the principles and standards developed by the Comptroller General.

The recent "Administrator's Statement on Internal Accounting and Administrative Controls", submitted in February 2002, that reports in compliance with the CFO Act indicated that BPA's financial management systems generally conform to the principles and standards developed by the Comptroller General.

The Administrator's report also indicated that the systems of internal accounting and administrative control of BPA provide reasonable assurance that: programs and operational objectives are efficiently and effectively carried out consistent with BPA's mission; expenditures are in compliance with applicable law; funds, property, and other assets are safeguarded against waste, loss, mismanagement, unauthorized use, or misappropriation; and revenues and expenditures are recorded and accounted for properly, so that accounts and reliable financial and statistical reports may be prepared and accountability of assets maintained and security of the automated information system is adequate.

Additionally, BPA's rate case is an official legal proceeding. Public hearings are held and rates must be approved by the Federal Energy Regulatory Commission (FERC). This public rate-setting process, which requires approval from an independent regulatory organization, provides an independent and transparent process for setting rates, which ultimately translate into BPA's revenues. Recent rate case documents indicate that the rate case included public hearings and FERC approval of rates. Therefore rates were approved by an independent party and the rate setting process took place in a transparent manner.

BPA's recent rate case documents of May 2000 provide confirmation that BPA follows an independent and transparent process for setting rates.

7	<i>Has the program taken meaningful steps to address its management deficiencies?</i>	Yes	As a participant in national capital investment markets, BPA, through its net billing arrangements with Energy Northwest (formerly Washington Public Power Supply System), is independently rated on its financial health and business strategies by the three national bond rating agencies.	Over the last several years, despite volatility in the overall energy markets, BPA backed bonds have maintained ratings at the highest levels within the utility industry. The extent to which this rating is due to BPA's status as a federal entity and the implied backing of the U.S. Treasury is not clear.	9%	0.1
8 (Cap 1.)	<i>Does the program define the required quality, capability, and performance objectives of deliverables?</i>	Yes	BPA has established Strategic Business Objectives (SBO's) and program thrusts. Project sponsors propose projects that are evaluated by the matrix teams on the basis of the SBO's, program thrusts, and the cost-effectiveness, risk and other measures, described in question 10. The business line capital investment review panels determine ranking criteria for financial and non-financial factors and approve investments or classes of investments using those criteria. The criteria included: net present value, using market discount rates (described in question 10); discount rates based on market assessment of other firms with comparable risk profiles; compliance with regulatory requirements; reliability; safety; environmental impact; and the provision of public benefits.	Quality, capability, and performance objectives of deliverables are documented in design specifications, solicitations. The project deliverables' quantity, quality, and capability are tested and documented by BPA personnel and in the case of contractors performing the project, verified documented by the COR/COTR. For transmission grid related projects, the performance goals of the deliverables are further affirmed by system Operation's acceptance of said deliverables into the operating system.	9%	0.1

9 (Cap 2.) <i>Has the program established appropriate, credible, cost and schedule goals?</i>	Yes	Following approval by the Business Line Capital Investment Review Panels, all capital projects are required to have a preliminary cost estimate, a "work order quality" cost estimate and schedule before a work order is issued. The costs and schedules are monitored by the project manager and reported regularly. This information is updated monthly. In the case of management-directed schedule changes (changing needs, management priorities), this is communicated to the Scheduling and Estimating group and the project managers and implemented accordingly.	The capital program planning and review process documents costs and schedules. Project costs and schedules information reside in BPA's Business Enterprise System (BES) and updated regularly.	9%	0.1
10 (Cap 3.) <i>Has the program conducted a recent, credible, cost-benefit analysis that shows a net benefit?</i>	Yes	In each budget cycle BPA performs an agency-wide capital budget analysis. The analysis includes: general project information, project timeline, financial evaluation results (net present value, internal rate of return, and discounted payback period), key assumptions/treatment of uncertainty, impact of key sensitivities, non-financial benefits, and alternatives considered. Other optional criteria may be provided to each business line. For example, when it proves difficult to target and measure typical financial results such as revenue generation, the business case for each prospective project will recommend surrogate measures, such as use of pro forma financial statements to measure before and after financial results.	One measure of projected performance that BPA uses extensively is net present value analysis (NPV). The discount rates, used in the NPV, differ by business line. Agency financial analysts review the appropriateness of these rates each year. Currently, the rates are based on the best empirical data source available, found in the "Ibbotson Yearbook", a well-recognized and often used source of market and industry information. BPA's recent benchmarking of best practices within the utility and other industries confirmed both that Ibbotson was a good source and that our estimated discount rates were consistent with other, "best-practices" companies. The rate for the Power Business Line (PBL) is 13%.	9%	0.1

The rate for the Transmission Business Line (TBL) is 9%. The rate for Corporate is the blended rate of 11%. For PBL the rate was derived from the weighted average cost of capital (WACC) for the Telephone Communications Industry, SIC 481. This SIC was chosen because the telephone industry has moved from regulated to deregulated, similar to what is now occurring in the Power industry. For the TBL the WACC for the Electric Services Industry, SIC 491. This SIC includes generation, transmission, and distribution companies, much of which is still highly regulated. Because the Transmission Business will remain regulated, this still represents the best estimate of the return that investors would require on transmission investments.

11 (Cap 4.) *Does the program have a comprehensive strategy for risk management that appropriately shares risk between the government and contractor?*

Yes

The Bonneville Purchasing Instructions (BPI) policy prescribes measures to make a comprehensive procurement strategy plan that identifies technical, cost, and schedule risks, and describes how these risks will be isolated, minimized, monitored, and controlled. As a result of this planning, the CO selects contract type and pricing mechanisms that provide appropriate incentives for contractors to meet cost, schedule and performance goals.

BPI 6.15 – Requires use by program office and CO of strategy panels to address all relevant factors necessary to develop a performance based contract to adequately define requirements of the contractor for achieving results and accountability to meet schedule and budget, including a management plan for the project. BPI Part 7 – Prescribes policy and direction to the CO for selection of the most appropriate contract type based on an assessment of the nature of the project and associated risks. The objective is to select a contract type that results in the best business approach for BPA, considering contractor risk and incentives for high performance.

9%

0.1

From a broader perspective BPA shares its risk with rate payers through rate based credit risk adjustments that take into account financial and market changes over the rate period and has taken steps to assure a broad based agency risk assessment and management program.

Risk management includes the establishment of an executive risk management committee with an agency wide credit risk policy, rate based credit adjustment provisions, and the agency's current enterprise risk management evaluation process.

Total Section Score	100%	100%
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Section IV: Program Results (Yes, Large Extent, Small Extent, No)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Has the program demonstrated adequate progress in achieving its long-term outcome goal(s)?</i>	No	BPA needs to further refine its target statements. Current targets represent annual performance rather than longer term measures. BPA has made some progress toward the strategic business objectives cited earlier, while balancing the many interests that are served by the agency. SBO1 (Customer satisfaction): Up significantly since 1996. SBO4 (Financial integrity): See the answer to Question 7, Section II. SBO5 (Reliability of Transmission): BPA has maintained high levels of system reliability in the face of increasing loads, increasingly complex schedule transactions and market operations, and a more complex regulatory environment. BPA's reliability goals are not structured to necessarily improve reliability, but rather to maintain at least the same historical high levels of reliability that it has achieved in recent years. SBO5 (Reliability of Generation):	SBO1 (Customer satisfaction): The overall customer satisfaction index score that BPA received has risen from 5.8 in 1996 to 7.4 in 2002 (on a scale of 1-10). SBO4 (Financial integrity): The annual payments to the U.S. Treasury have been made on time for almost 20 years in a row. SBO5 (Reliability): Transmission - The record of maintaining high levels of reliability is available through the Transmission Business Line's internal web site; Generation -- Any loss of load would be determined in the Office of Generation Supply.	20%	0.0

<p>Long-Term Goal I: SBO1: Achieve high and continually improving customer satisfaction. Target: For FY 2002: Composite Agency customer satisfaction index is in the range from 7.3 to 7.7 (range of 0-10). Actual Progress achieved toward As of end of FY 2001: Customer satisfaction index at 7.4. This is a significant increase from 1996's score of 5.8. goal:</p>
<p>Long-Term Goal II: SBO4: Achieve and maintain financial integrity. Target: For FY 2002: Treasury payment is made on time with Agency net revenues in the range from \$75 million to \$150 million. Actual Progress achieved toward goal: BPA has made its Treasury payments on time for almost 20 years in a row; BPA is under strong pressure to meet its net revenue targets.</p>
<p>Long-Term Goal III: SBO5: Keep the system safe, reliable, and available. (The focus here is on the reliability component.) Target: For FY 2002: High system reliability/sufficiency. Transmission: Outage frequency and duration for key circuits are within Control Chart limits; and Generation: No involuntary curtailments of firm load occur as a result of inadequate power supply. Actual Progress achieved toward For both transmission and generation, BPA has maintained its extremely high reliability ratings. goal:</p>

Does the program (including program partners) achieve its annual performance goals?

Large Extent

BPA's has made an informed forecast of performance in FY 2002 for the larger set of targets that is the basis for the Success Share program. That forecast indicates that approximately 80% of the targets will be achieved by year's end. Some final results are now in for FY 2002. SBO1 (Customer satisfaction) came in with a score of 7.6 (near the high end of the target range of 7.3 – 7.7). The previous year's result was 7.4. The 1-year results for the other two SBOs being highlighted here are not yet in for FY 2002. But BPA has annual results for targets related to those SBOs as well as the other SBOs and Strategic Thrusts. For example, in FY 2001, SBO4 (Financial integrity): BPA made its payment to the U.S. Treasury on time; but the annual net revenue milestone was not met. And for SBO5 (Reliability): the transmission and generation components were both met. BPA has a well-established system of short-term (one-year) performance targets at both the Agency and business-unit levels. These performance targets address near-term expectations for each of BPA's

At the start of each fiscal year BPA sets one-year performance targets at the Agency and business-unit levels. It then tracks performance during the year. The one-year results are important determinants of performance ratings for senior executives and determine the year's recognition payout to all employees under the Success Share program. A variety of means of documentation of results is used. SBO1 (Customer satisfaction): The index value for 2002 is 7.6, the weighted average of the results of the Transmission and Power Business Line customer surveys, as documented in the respective contractor's reports. SBO4 (Financial integrity): This is a 2-part goal. BPA's net revenue for FY 2001 is reported in its Annual Financial Report for FY 2001. Reliability of Transmission (SBO5): The measures of outage duration and frequency were within limits, as documented on TBL's internal web site. Reliability of Generation (SBO5): There was no loss of load due to inadequate power supply, as reported by the office of Generation Supply.

20%

0.1

2

and Strategic Thrusts (which focus on shorter-term needs). These annual performance targets also roll down into performance contracts that BPA vice presidents have with their supervisors. The BPA Administrator's performance contract with the DOE Deputy Secretary is based on the Strategic Thrusts. BPA places great emphasis and invests considerable effort in establishing its annual performance targets and then manages to those targets. For example, at their monthly Management Committee meetings the Power Business Line and of the Transmission Business Line, report progress toward their targets. BPA does not meet all of its annual performance targets, largely because they are established to "stretch" the Agency; hence the "large extent" rating.

<p>Key Goal I: SBO1: Achieve high and continually improving customer satisfaction.</p> <p>Performance Target: For FY 2001: Composite Agency customer satisfaction index is in the range from 7.2 to 7.6.</p> <p>Actual Performance: As of end of FY 2001: The customer satisfaction index was 7.4, within the "success" range.</p>
<p>Key Goal II: SBO4: Achieve and maintain financial integrity.</p> <p>Performance Target: For FY 2002: Treasury payment is made on time and in full, with Agency net revenues in the range from \$75 million to \$150 million.</p> <p>Actual Performance: As of end of FY 2001: BPA made Treasury payment on time and in full, but that year's net revenue target was not achieved.</p>
<p>Key Goal III: SBO5: Keep the system safe, reliable, and available. (The focus here is on the reliability component.)</p> <p>Performance Target: For FY 2002: High system reliability/sufficiency. <u>Transmission</u>: Outage frequency and duration for key circuits are within Control Chart limits; and <u>Generation</u>: No involuntary curtailments of firm load occur as a result of inadequate power supply.</p> <p>Actual Performance: Transmission: Measures were within control limits in FY 2001. Generation: There were no involuntary curtailments in FY 2001.</p>

Footnote: Performance targets should reference the performance baseline and years, e.g. achieve a 5% increase over base of X in 2000.

3	<i>Does the program demonstrate improved efficiencies and cost effectiveness in achieving program goals each year?</i>	Yes	Since BPA recovers its costs from rates, it is under constant pressure to trim costs and demonstrate improved efficiencies. In an increasingly competitive environment, over time only those programs which are cost effective may be pursued in order to keep rates competitive.	BPA consistently meets its internally managed costs targets year after year. The ultimate test of BPA cost effectiveness is the competitiveness of its rates. Historically, BPA's rates have been very competitive.	20%	0.2
4	<i>Does the performance of this program compare favorably to other programs with similar purpose and goals?</i>	N/A			0%	
5	<i>Do independent and quality evaluations of this program indicate that the program is effective and achieving results?</i>	Yes	BPA utilizes several independent sources to provide evaluations for a wide variety of programs and processes. For example, each year BPA's independent external auditors, Pricewaterhouse Coopers, perform a financial statement audit. The recent audit report provided an opinion that BPA's financial statements conform with generally accepted accounting principles and are a fair representation of BPA's operations in all material respects. The opinion also considers BPA's internal control over financial reporting and compliance with certain provisions of laws and regulations.	The recent audit opinion from Pricewaterhouse Coopers dated January 4, 2002 indicated no material weaknesses in BPA's internal control structure and noted no instances of noncompliance.	20%	0.2
			BPA relies upon surveys of its customers, constituents, and affected Tribes conducted by independent parties.	Long-term survey results generally show improvements in most areas of BPA's performance.		

BPA's rate cases are official legal proceedings. Public hearings are held and rates must be approved by the FERC. On the transmission side, FERC confirms BPA's transmission rates after a finding that such rates recover BPA's costs and expenses during the rate period, and are sufficient to make full and timely payments to the U.S. Treasury.

Most recently, BPA's transmission rates were granted approval by FERC in May 2001 under the standards of the Northwest Power Act, and BPA's power rate proposal together with a supplemental rate proposal were granted interim approval by FERC in September 2001.

6 (Cap 1.)	<i>Were program goals achieved within budgeted costs and established schedules?</i>	Yes	BPA's capital programs have historically been implemented for less than the initial budget estimates. Schedules, however, have to remain flexible in order to accommodate changing market conditions, and environmental concerns.	Comparisons of budget estimates to actual costs for BPA capital programs over the years consistently shows that actual costs were less. Schedules are constantly monitored and revised as necessary to accommodate changing market conditions, as well as any other new information that becomes available.	20%	0.2
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Total Section Score				100%	73%
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Program Assessment Rating Tool (PART)

Program: Building Technologies
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	50%	88%	42%	

1.1 Is the program purpose clear?

Answer: Yes

Question Weight: 20%

Explanation: The mission of the Building Technologies Program is to develop technologies, techniques and tools for making residential and commercial buildings more energy efficient, productive, and affordable. This involves research, development, demonstration, and technology transfer activities in partnership with industry, government agencies, universities, and national laboratories. The program also develops building codes and appliance standards.

Evidence: FY 2004 Budget; P.L. 94-163, "Energy Policy and Conservation Act" (EPCA) (1975) and seven subsequent pieces of related authorizing legislation.

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The program aims to reduce energy use in buildings, which can help avoid emissions of pollutants and greenhouse gases. These potential benefits support the Administration's National Energy Policy, as well as the Administration's climate change goals.

Evidence: The program focuses R&D on activities that it considers too technologically risky for the private sector to undertake alone. Risk levels vary on a project-by project basis.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: The program coordinates its efforts with other entities as appropriate. For example, many Buildings subprograms (windows, lighting, commercial buildings, building envelope, space conditioning) work closely with industry to identify pre-competitive R&D needs and prepare "roadmaps." The program coordinates with HUD and others in certain multi-agency efforts, such as the Partnership for Advanced Technology in Housing (PATH). Through the efforts of the Association of States Research and Technology Transfer Institute (ASERTTI), coordinated research agendas are developed with the counterpart State research entities.

Evidence: The program identified market barriers to private sector investment in energy efficient building technologies. For example, building construction is a fragmented industry comprised of thousands of builders and manufacturers, none of which has the capacity to sustain research and development activities over multi-year periods. Another factor is the compartmentalization of the building industry, in which architects and designers, developers, construction companies, engineering firms, and energy services providers do not typically apply integrated strategies for siting, construction, operations, and maintenance.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: The majority of the program's activities are in the area of applied technology research and development to improve energy efficiency of buildings. The program also develops codes and standards and conducts technology transfer and information exchange to integrate R&D advances into new building construction and retrofits.

Evidence: The program found no studies to indicate that a more cost effective approach to improving energy efficiency in buildings exists.

Program Assessment Rating Tool (PART)

Program: Building Technologies
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	50%	88%	42%	

1.5 **Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: NO Question Weight: 20%

Explanation: In support of the Administration's R&D Investment Criteria initiative, the program was asked to prepare "bubble charts" that plot key program variables (e.g., expected public benefits, funding levels, years to commercialization). Bubble charts can serve as an informational tool to help determine, along with other considerations, whether the program appropriately targets its R&D funding. While the program has made progress estimating public benefits, the Department has not yet developed a methodology to estimate benefits consistently within and across programs. Therefore, the program could not prepare meaningful bubble charts.

Evidence: In general, the program appears to target its resources wisely, but a lack of ability to provide appropriate evidence mandates a "no" response. EERE continues to work internally and with other DOE program offices to improve consistency and accuracy in estimating benefits.

2.1 **Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program?** Answer: Yes Question Weight: 10%

Explanation: The program has established reasonable long-term goals that cover the majority of its R&D activities. The goals relate to residential and commercial building R&D (including Zero Energy Building R&D), and development of building-related products (e.g., lighting, windows, etc.). The measures and targets have been modified for FY 2005.

Evidence: FY 2004 Budget. Building Technologies Program Multi-Year Plan (Draft in Progress).

2.2 **Does the program have ambitious targets and timeframes for its long-term measures?** Answer: NO Question Weight: 10%

Explanation: The program is in the process of identifying targets and off-ramps that would help it redirect, down-select, or terminate efforts in its main R&D activities, but its efforts are not yet complete.

Evidence:

2.3 **Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals?** Answer: NO Question Weight: 10%

Explanation: The program has developed some acceptable annual measures for its activities related to development of building codes and appliance standards. However, the program has not developed annual performance measures for R&D activities that directly tie to the program's long-term R&D goals.

Evidence: Building Technologies Program Multi-Year Plan (Draft in Progress).

2.4 **Does the program have baselines and ambitious targets for its annual measures?** Answer: NO Question Weight: 10%

Explanation: The program has not yet developed acceptable annual measures for its R&D activities.

Evidence:

Program Assessment Rating Tool (PART)

Program: Building Technologies
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	50%	88%	42%	

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: Yes Question Weight: 10%

Explanation: The program develops annual operating plans which reflect the activities in the draft Multi-Year Plan. Once the operating plans are approved, grantees, sub grantees, contractors, etc. work with the program to develop specific statements of work to reflect milestones and deliverables that ultimately support achievement of the long term goals.

Evidence: Building Technologies Program Multi-Year Plan (Draft in Progress); Draft FY 2004 Annual Operating Plans for the Commercial Buildings Team, Residential Building Team, Emerging Technologies Team, and Appliance Standards Team.

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: Historically, the program has not planned for peer reviews. However, in FY 2003, each of the four teams of the Building Technologies Program developed an evaluation plan, which includes quality and control activities, such as peer reviews and third party evaluation. The program is working with EERE to develop guidelines for peer reviews which will be adopted and implemented. In the Emerging Technologies Team, the space conditioning R&D activity conducted a peer review in May 2003. In addition to technology specific peer reviews, the program should consider expanding the scope of peer reviews to include overall program effectiveness and relevance.

Evidence: Space Conditioning Peer Review (May 2003). Evaluation Plans for Building Technology Teams.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: Program funding requests are tied to specific activities that contribute to the program's long-term goals. However, budget documents do not clearly indicate the full costs of achieving the program goals. Salaries, benefits, and other administrative expenses to support the program are included in a separate budgetary line item ("Policy and Management"). EERE does not report the allocation of Policy and Management funding to the various programs it supports.

Evidence: FY 2004 Budget. Building Technologies Program Multi-Year Plan (Draft in Progress).

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: Yes Question Weight: 10%

Explanation: Among the deficiencies in strategic planning are inconsistencies and lack of clear links between goals and targets in budget submissions, program strategic plans, and annual performance plans. The program has begun a multi-year planning process that should address some of these deficiencies.

Evidence: Building Technologies Program Multi-Year Plan (Draft in Progress).

Program Assessment Rating Tool (PART)

Program: Building Technologies
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	50%	88%	42%	

- 2.RD1** **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NO Question Weight: 10%
- Explanation: Each year, the program estimates the public benefits of its activities in support of the Government Performance and Results Act (GPRA) and the Administration's R&D Investment Criteria initiative. However, the program has not yet developed a consistent and reliable methodology for comparing potential benefits within and across programs with similar goals.
- Evidence: FY 2004 Budget
-
- 2.RD2** **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%
- Explanation: For development of appliance standards, the program evaluates potential energy savings and prioritizes its proposals for rules accordingly. The program participated in EERE's zero-based budget exercise to help determine priorities for R&D activities. Priorities for the program were grouped and less clear than for other EERE programs, but the program did attempt to prioritize.
- Evidence: EERE Priority Ranking Tool, Zero Based Budget Exercise.
-
- 3.1** **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: Yes Question Weight: 12%
- Explanation: The EERE Strategic Management System -- which establishes at the beginning of each fiscal year an 18-month schedule for key planning, budget formulation, budget execution, and analysis / evaluation functions -- requires that each EERE program establish and track long-term and near-term program performance goals and measures. Program results as evaluated through the goals and measures are used annually and throughout the year to assess partners performance, adjust funding, and re-align R&D portfolios.
- Evidence: SMS Implementation Letter for FY 2002 - 2005 (October 2001). The program also reports on quarterly milestones in the Department's Joule database. However, in general, milestones in the Joule system are not necessarily meaningful or fully reflective of program progress. Thus, the Department's Joule system provides little value-added. The new I-MANAGE system, currently under development, will better integrate budget and performance.
-
- 3.2** **Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: Yes Question Weight: 12%
- Explanation: The Annual Performance Appraisals of all EERE Program Managers include criteria directly related to cost, schedule, and performance results. EERE reviews these criteria monthly in the EERE Monthly Management Reviews. Most EERE contracts include award fee and other performance criteria to hold those partners accountable.
- Evidence: Performance Plan and Performance Appraisal Form for Performance Management System Employees. EERE Award Fee and Performance Based contracts.

Program Assessment Rating Tool (PART)

Program: Building Technologies
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	50%	88%	42%	

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: Yes Question Weight: 12%

Explanation: EERE conducts an Annual Operating Plan (AOP) Review before each fiscal year to assure that new funding is obligated consistent with the appropriated purpose. EERE uses data from Departmental procurement and financial systems -- and similar data from National Laboratory partners -- to assure that actual expenditures occur for purposes and on a schedule consistent with the AOP. Unobligated balances brought forward to FY 2004 were \$713,000, 1.2 percent of the program's FY 2003 appropriation of approximately \$60 million.

Evidence: Annual Operating Plans for each of four Building Program teams. Monthly obligation and cost reports from the EERE Strategic Management System and Departmental financial systems. Building Technology Program FY 2003 Financial Status Report (June 2003), FY 2004 Apportionment

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: Yes Question Weight: 12%

Explanation: EERE's reorganization in 2002 clarified lines of responsibility and eliminated organizational "stovepipes" by consolidating planning, budgeting, and analysis into a single business administration office. The reorganization reduced management layers, although staff levels remained the same. EERE developed a new IT report to improve program managers access to EERE cost, obligation, and procurement data. EERE plans to consolidate several legacy IT systems into a single program management system that is intended to track all required information on a project by project basis (cost share, type of contract according to A-11 definitions, etc.). EERE is also developing a measure to reduce uncosted balances, which means obligated funds will be put to use more quickly. These recent actions should achieve efficiencies and improve cost effectiveness, although it will be difficult in some cases to demonstrate definitively.

Evidence: EERE Reorganization "All Hands" presentation: http://www.eere.energy.gov/office_eere/pdfs/eere_reorg.pdf. EERE IT Business Case Number 019-20-01-12-01-1011-00-304-101. Building Technology Program FY 2003 Financial Status Report (June 2003).

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: The program coordinates with HUD and the private sector in the Partnership for Advanced Technology in Housing (PATH). Through the efforts of the Association of States Research and Technology Transfer Institute (ASERTTI), coordinated research agendas are developed with the counterpart State research entities. The program has collaborated with industry on the development of several Technology Roadmaps.

Evidence: Building Envelope Technology Roadmap. Windows Industry Technology Roadmap. Lighting Industry Technology Roadmap. High Performance Commercial Buildings Technology Roadmap. PATH website (www.pathnet.org)

3.6 Does the program use strong financial management practices? Answer: Yes Question Weight: 12%

Explanation: Each year, EERE develops and maintains a Spend Plan and a Measures spreadsheet that links the Spend Plan to annual and long-term goals and measures for each EERE program. The program reviews quarterly costing reports and weekly project status reports. There is no evidence of erroneous payments or statutory violations.

Evidence: FY2003 Spend Plan, Measures spreadsheet, and sample weekly project status report.

Program Assessment Rating Tool (PART)

Program: Building Technologies
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	50%	88%	42%	

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: Yes Question Weight: 12%

Explanation: The National Association of Public Administrators (NAPA) found dozens of management deficiencies in the program's bureau (the Office of Energy Efficiency and Renewable Energy, or EERE) in a review published in 2000. EERE provided evidence that it addressed some of management deficiencies identified by NAPA, and has prepared a Management Action Plan that will address many of the remaining findings. While a few NAPA recommendations have not been addressed (e.g., that EERE conduct periodic audits to assure that cost-sharing partners actually provide funding they agree to), in general, EERE has taken meaningful steps to address most deficiencies.

Evidence: A Review of the Management in the Office of Energy Efficiency and Renewable Energy (NAPA, 2000). Letter Report from Assistant Secretary Garman to Chairman of the House Subcommittee on Interior and Related Agencies on implementation of NAPA recommendations (July 11, 2001). EERE Management Action Plan (August 2003)

3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality? Answer: NO Question Weight: 12%

Explanation: Currently, the program provides much of its research funding to "lead labs," which represent centers of knowledge in particular subject areas. The program reports that it is moving away from the "lead lab" concept in favor of more competitively funded research, including having national labs compete against each other. In addition, in 2003, the program developed a Quality, Control and Evaluation plan for each of its four teams, which is used to maintain quality and timeliness of the program's R&D. Despite these advances, the program could not document the conduct of its R&D activities in accordance with OMB Circular A-11 definitions (e.g., merit-reviewed with limited competitive selection, Congressionally directed, etc.). The program could also not demonstrate that research stage (basic, applied, development, demonstration) correlated with statutory and Administration guidelines for cost sharing.

Evidence: The program estimates that less than half of its FY 2003 funding was competitively awarded or supported work at the national labs.

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: Large Extent Question Weight: 25%

Explanation: The program's long term measures and targets have been modified for FY 2005. The program has not developed good indicators, so progress toward achieving the new long-term goals is difficult to assess. However, in FY 2003, the Residential Building Integration Team reportedly passed one milestone, the 30 percent energy savings in building design packages, on the path to designing net Zero Energy Homes, a key long-term goal. In addition, the National Academy of Sciences reviewed a small subset of historic program activities and concluded that the program has produced several technological successes in energy efficiency that have saved energy for the nation and energy costs for consumers.

Evidence: EERE FY 2005 OMB Budget Submission. Energy Research at DOE: Was It Worth It?: Energy Efficiency and Fossil Energy Research 1978 to 2000 (NAS, 2001).

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: No Question Weight: 25%

Explanation: The program's annual performance measures for R&D activities are under development. The program reports that it has met recent targets for development appliance standards, although it's not clear that these targets were ever explicitly identified in budget documents, GPRA performance plans, or other materials.

Evidence:

Program Assessment Rating Tool (PART)

Program: Building Technologies
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	50%	88%	42%	

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: No Question Weight: 25%

Explanation: The program largely supports R&D, and could not demonstrate improved efficiencies in achieving its long-term goals, which have been modified this year. For development of codes, the program reports that it has instituted a process improvement initiative to better collaborate with industry. The reported result is that the time to create a standard has been reduced from five plus years to three years or less. The program did not provide evidence of an accelerated timeline.

Evidence:

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: N/A Question Weight: 0%

Explanation: The program coordinates with, but does not compete with, other Federal, state, and private activities.

Evidence:

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: Yes Question Weight: 25%

Explanation: The National Academy of Sciences "found very positive returns on a relatively modest federal investment for all but one of the projects reviewed." NAS reviewed only seven Buildings projects out of hundreds that DOE has pursued since the 1970s. The program also reports that it has received nine R&D 100 awards, 15 Energy 100 awards, seven Popular Science "Best of..." awards, 10 Excellence in Technology Transfer awards, and over 90 patents. The awards indicate external recognition for program accomplishments, but it's difficult to assess whether the numbers are impressive given the investment of more than \$7 billion since the program began. It may be useful to benchmark awards/patents per dollar invested against similar applied R&D programs.

Evidence: Energy Research at DOE: Was It Worth It?: Energy Efficiency and Fossil Energy Research 1978 to 2000 (NAS, 2001).

PART Performance Measurements

Program: Building Technologies
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Number of design technology packages for new residential buildings (and percent increase in energy efficiency relative to the 2000 International Energy Conservation Code) at little or no incremental cost. (There are 15 potential design packages: 3 building types in each of 5 climate zones. Design packages incorporating renewable energy technologies can lead to Zero Energy Homes.)

Additional Information: Use of the design packages will reduce expected energy consumption of new residential buildings (single family homes, multi-family homes, and townhomes). The range in efficiency improvements reflects the range that can be expected in different climates.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003	5 (30%)	0 (30%)	
2004	2 (30%)		
2005	3 (30%)		
2007	5 (40-70%)		
2010	5 (40-70%)		

Measure: Percent increase in energy efficiency of the International Energy Conservation Code for residential buildings based on cost effective proposals developed by the program.

Additional Information: Code change proposals will increase the energy efficiency of all residential buildings constructed to the IEBC standard.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	5%	?	
2005	5%		
2006	5%		

Measure: Number of design technology packages for new commercial buildings (and percent increase in energy efficiency relative to the 2000 International Energy Conservation Code) at little or no incremental cost.

Additional Information: Use of the design packages will reduce expected energy consumption of new commercial buildings. The range in efficiency improvements reflects the range that can be expected in different climates.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2002			

PART Performance Measurements

Program: Building Technologies
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Percent increase in energy efficiency of the International Energy Conservation Code for commercial buildings based on cost effective proposals developed by the program.

Additional Information: Code change proposals will increase the energy efficiency of all commercial buildings constructed to the IECC standard.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	5%		
2005	5%		
2006	5%		

Measure: Efficiency of "white light" solid state lighting, in lumens per watt (LPW). (Solid state lighting, also known as light emitting diodes [LEDs], can potentially be more than twice as efficient as fluorescent lighting [currently about 85 LPW] and may be able to last 10 times as long [up to 100,000 hours].)

Additional Information: Improving the efficiency, reducing the cost, and improving the quality of white light produced by LEDs can lead to increased commercial deployment and significant energy savings as a result.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2002		25	
2003	29	30	
2005	50		
2007	65		
2010	100		

Measure: Windows R&D measure under development

Additional Information: Windows are a leading cause of energy loss from buildings.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2002			

PART Performance Measurements

Program: Building Technologies
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Number of proposals to update appliance standards and test procedures published in the Federal Register. (Based on potential energy savings, the program prioritizes rulemakings to reduce the backlog of legislatively mandated new rules and updates to existing rules.)

Additional Information: These standards and test procedures lead to improved energy efficiency of appliances and equipment, which reduces energy use and greenhouse gas emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	3	3	
2002	2	1	
2003	4	2	
2004	4		
2005	4		

Program Assessment Rating Tool (PART)

Program: Clean Coal Research Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
60%	67%	75%	40%	

- 1.1 Is the program purpose clear?** Answer: YES Question Weight: 20%
 Explanation: The program's purpose is to support research and development (R & D) of technologies that will promote the use of coal in an environmentally acceptable manner.
 Evidence: National Energy Policy (NEP, Chapter 5); Budget documents (e.g., FY 2004 Budget Congressional Justification).
- 1.2 Does the program address a specific and existing problem, interest or need?** Answer: YES Question Weight: 20%
 Explanation: The program is aimed at maintaining coal as an environmentally acceptable component in domestic energy supply mix.
 Evidence: NEP (Chapter 5), Budget documents.
- 1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?** Answer: YES Question Weight: 20%
 Explanation: The majority of effort in this area do not appear to have counterparts elsewhere in government, and the historically-regulated nature of the utility industry has resulted in few private programs that are not linked to this program.
 Evidence: Budget Documents; Clean Coal Power Initiative (CCPI) website and Coal Utilization Research Council (CURC) website (at <http://www.coal.org/rdmap.htm>).
- 1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?** Answer: NO Question Weight: 20%
 Explanation: Program has been too heavily weighted toward short-term projects and demonstrations rather than longer-term research and development. The program has not demonstrated how this concern will be addressed in the new CCPI program.
 Evidence: Budget Documents; DOE Round 1 project solicitation; Section V--Evaluation and Selection.
- 1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: NO Question Weight: 20%
 Explanation: Benefits from the program accrue from continued use of coal in the energy mix. Substantial future economic benefits have been postulated for lower cost technology to reduce mercury, NO_x, SO_x, and acid gases, but the Department has not established consistent measurement systems for future benefits, and the distribution of benefits between the public and private for-profit firms is not well examined. The program was unable to estimate public benefits consistently within and across programs to determine whether the program appropriately targets its R&D funding.
 Evidence: Program plans ([http://www.fe.doe.gov/coal_\[pwer/programplans/00/sects_3-7.pdf](http://www.fe.doe.gov/coal_[pwer/programplans/00/sects_3-7.pdf)).

Program Assessment Rating Tool (PART)

Program: Clean Coal Research Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
60%	67%	75%	40%	

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 11%

Explanation: Long-term goals are: 50% efficient coal based power generation (IGCC) in 2010; CO2 capture at 10% increase in cost of electricity by 2012; 90% reduction in mercury emissions at less than 75% current cost 2012; \$1000/kW capital cost for Integrated Gasification Combined Cycle (IGCC) technology in 2010.

Evidence: See "Measures" section of this PART; Joule system and DOE strategic objective ER 4 of performance targeting and measurement; Budget documentation.

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: NO Question Weight: 11%

Explanation: The program has ambitious targets and timeframes, however the program has not demonstrated that it has defined appropriate decision and termination points. Demonstration projects are generally for defined construction projects, and while those that go forward have a clear end point, those that encounter trouble with sponsors or siting have no clear termination point. No evidence submitted to demonstrate that R & D projects are required in advance to define thresholds of experimental success necessary to continue work.

Evidence: See "Measures" section of this PART; Joule system of performance targeting and measurement, budget documentation.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 11%

Explanation: See measures.

Evidence: See "Measures" section of this PART; Joule system of performance targeting and measurement, budget documentation.

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 11%

Explanation: The program has baselines and ambitious targets for annual measures.

Evidence: See "Measures" section of this PART; Joule system of performance targeting and measurement, budget documentation.

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 11%

Explanation: Private-sector stakeholders are actively involved in providing input and receiving output from the program. Industry experts critique and evaluate segments of the program and specific projects. Program planning has centered on input and interaction from a broad set of energy-sector stakeholders.

Evidence: Workshops; meeting proceedings (the CCPI website includes documentation of the three public meetings referenced for Round 1 and the feedback obtained from the first such meeting on Round 2); individual project cooperative agreements (Eight Round I project fact sheets stating individual project goals may be found at: <http://www.netl.doe.gov/coalpower/ccpi/>)

Program Assessment Rating Tool (PART)

Program: Clean Coal Research Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
60%	67%	75%	40%	

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need?

Answer: YES

Question Weight: 11%

Explanation: Recent review by the National Academy of Sciences/National Research Council (NAS/NRC).

Evidence: NSA/NRC report: "Energy Research at DOE - Was It Worth It?" (2001).

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget?

Answer: NO

Question Weight: 11%

Explanation: The Department has not submitted budget requests explicitly tied to annual and long-term performance goals, or resource needs in a complete and transparent manner.

Evidence: Budget documents.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies?

Answer: YES

Question Weight: 11%

Explanation: The programs use annual stakeholder program meetings, periodic meetings with industry, and evaluations by NAS and the American Society of Mechanical Engineers to adjust the R & D program focus and as input to the strategic planning process. Improvements in benefits modeling, and efforts to connect long- and short-term goals through the JOULE performance tracking system, and development of the Unified Coal Roadmap are all concrete steps that could help with planning efforts.

Evidence: CCPI website documenting stakeholder workshops.

2.RD1 If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?

Answer: NO

Question Weight: 0%

Explanation: The Department has been unable to articulate how it assesses and compares potential costs and benefits of programs with similar goals.

Evidence:

2.RD2 Does the program use a prioritization process to guide budget requests and funding decisions?

Answer: NO

Question Weight: 11%

Explanation: The program has been unable to articulate how it prioritizes budget requests and funding decisions.

Evidence:

Program Assessment Rating Tool (PART)

Program: Clean Coal Research Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
60%	67%	75%	40%	

3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance? Answer: YES Question Weight: 12%

Explanation: Major milestone are delineated (historically, and planned for CCPI), along with performance requirements, and the milestones tracked and performance measured through regular reporting procedures and project status meetings.

Evidence: DOE Round 1 solicitation, Project Management Information System (ProMIS).

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 12%

Explanation: The National Energy Technology Laboratory (NETL) has identified a schedule of incentives holding key product personnel responsible for results under their control. Recently, NETL was one of only two organizations in the entire Federal government to win the Office of Personnel Management's (OPM) Pillar Award for outstanding efforts in linking performance with accountability.

Evidence: OPM's Pillar Award for linking performance with accountability.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: NO Question Weight: 12%

Explanation: Historically the Clean Coal Technology program has had a history of high carryover balances. The program has not demonstrated how the CCPI program will address this potential concern in the new program.

Evidence: FY 2002 and FY 2003 Budget Documentation

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: NO Question Weight: 12%

Explanation: The program provided no efficiency or cost effectiveness measures for this program. It is unclear whether the program achieves administrative/program delivery efficiencies.

Evidence: CCPI Round 1 Solicitation, CCPI web-site.

Program Assessment Rating Tool (PART)

Program: Clean Coal Research Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
60%	67%	75%	40%	

3.5 Does the program collaborate and coordinate effectively with related programs?

Answer: YES

Question Weight: 12%

Explanation: The programs coordinate well on both an intra- and interagency level. For example, the Carbon Sequestration Program complements a number of other R & D efforts being conducted in the Federal sector. The program has established relationships with the United States Geological Survey, the United States Forest Service within USDA, and the Office of Surface Mining within the Department of the Interior to collaborate in the area of carbon sequestration. Another example is in the coal fuels program. The research to be performed in this effort encompasses the production of hydrogen from coal. Elements of the program are managed in conjunction with other power generation technologies in DOE's Energy Efficiency and Renewable Energy office, but explicit trade-off mechanisms are not well-defined.

Evidence: Coal & Power Systems Strategic Plan, CCPI Product and Multi-Year Plans.

3.6 Does the program use strong financial management practices?

Answer: YES

Question Weight: 12%

Explanation: No known deficiencies. Computer based systems exist for both financial and project management oversight. In addition, individual contract specialists keep detailed files of primary records. However, costs are not clearly allocated between appropriation accounts.

Evidence: DOE annual Performance and Accountability report; computer based project management control systems (BMIS, PADS, DISCAS).

3.7 Has the program taken meaningful steps to address its management deficiencies?

Answer: YES

Question Weight: 12%

Explanation: Most research efforts undergo routine review, a new performance tracking system is being implemented for applied R&D programs throughout the Department, and improved efforts at modeling benefits have been made. However, little effort to benchmark administrative costs or control them across appropriation accounts.

Evidence: Annual C&PS Program Review (most recently completed February 10, 2003). The DOE Product Team provides guidance to the implementing project team. JOULE System.

3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?

Answer: YES

Question Weight: 12%

Explanation: Approximately eighty five percent of funds are awarded competitively.

Evidence: OMB/DOE discussion.

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?

Answer: SMALL
EXTENT

Question Weight: 20%

Explanation: The CCPI program is just beginning. Projects were selected in January 2003. Most of DOE's coal research technologies have not penetrated the market, but the IEP program has contributed to cost reductions in emission control technology and taken mercury control from a concept in the mid-1990's to current field testing activities.

Evidence: CCPI Round 1 Solicitation; Factsheets for selected projects.

Program Assessment Rating Tool (PART)

Program: Clean Coal Research Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
60%	67%	75%	40%	

4.2 Does the program (including program partners) achieve its annual performance goals?

Answer: SMALL
EXTENT

Question Weight: 20%

Explanation: Annual performance goals are being met.

Evidence: Joule system; CCPI website; CCPI round 1 Solicitation.

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?

Answer: NO

Question Weight: 20%

Explanation: The program has provided no documentation of efficiency or cost-effectiveness improvements.

Evidence: CCPI website.

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?

Answer: YES

Question Weight: 20%

Explanation: There are no other efforts known that have similar goals.

Evidence: CCPI website.

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results?

Answer: SMALL
EXTENT

Question Weight: 20%

Explanation: Of 11 sub-programs evaluated by NAS, only two are credited with benefits that exceed costs.

Evidence: CCPI website.

PART Performance Measurements

Program: Clean Coal Research Initiative

Agency: Department of Energy

Bureau:

Measure: Efficiency of advanced coal-based energy plants. (Percentage of heat in fuel converted to electricity.) Demonstrate technologies at pilot scale which validate the feasibility of targets.

Additional Information: Complete one or more commercial-scale demonstration projects that prove the commercial feasibility of achieving the target. Current state-of-the-art IGCC plant are 40% efficient and cost \$1500/kw to construct. Conventional pulverized coal plants are 35 - 40% efficient and cost approximately \$1100/kw.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003		0.4	
2010	50%		

Measure: Capital cost of Integrated Gasification Combined Cycle (IGCC) coal plants. Demonstrate technologies at pilot scale which validate the feasibility of target costs. Such plants currently produce power at a cost of approximately \$1275 per kw.

Additional Information: First-of-a-kind clean coal technologies in CCT program had capital costs >\$1500/kW. Optimized designs are about \$1250-1300/kW. Advanced air separation, gas cleaning, combustion turbine, and gasifier technologies potentially reduce \$60-80/kW further each.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003		\$1250-1300	
2010	1000		

Measure: Mercury (Hg) removal cost and removal efficiencies from coal-fired power plants.

Additional Information: Have > 90% Hg capture technology, at < 75% conventional technology cost, ready for full-scale commercial demonstration. 2003 Baseline cost mercury removal is \$50000 - \$70000/lb at 70% - 90% removal efficiency.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003		70-90%HG removal*	
2010	>90% Hg removal**		

Measure: Reduce net cost of CO2 capture and sequestration. In 2003 the cost impact of state-of-the-art (amine scrubber @\$200/ton of C) increases cost of electricity (COE) by 30% for new plants, compared to non-sequestered counterpart.

Additional Information: Measure based on analysis of pilot scale tests of 90% carbon capture technologies. Current 90% capture technology increases COE by 30% or about 1 cent/kw.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003		30% increase COE	

PART Performance Measurements

Program: Clean Coal Research Initiative

Agency: Department of Energy

Bureau:

Measure: Reduce net cost of CO2 capture and sequestration. In 2003 the cost impact of state-of-the-art (amine scrubber @\$200/ton of C) increases cost of electricity (COE) by 30% for new plants, compared to non-sequestered counterpart.

Additional Information: Measure based on analysis of pilot scale tests of 90% carbon capture technologies. Current 90% capture technology increases COE by 30% or about 1 cent/kw.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2012	10% increase COE;		

Measure: Efficiency from advanced coal-based energy plants. (Percentage of heat in fuel converted to electricity.) Demonstrate at pre-commercial scale technologies which validate the feasibility of targets.

Additional Information: In 2005 advanced gas cleanup, in 2007 advanced air separation, in 2009 advanced gasifier and combustion turbine improve efficiency by 1-2%, 1-3%; and 3-5% respectively. Conventional PC coal plants are 35-40% efficient, today's IGCC is 38-40% efficient.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003		35-40% eff	
2005	43%		
2006	45%		
2007	46%		

Measure: Capital cost of IGCC coal plants. Demonstrate technologies at pre-commercial scale which validates the feasibility of target costs. Such plants currently produce power at a cost of approximately \$1275 per kw.

Additional Information: Gas cleaning is >10% of capital cost of IGCC plant; advanced technology can potentially reduce cost by \$60-80/kWe. Air separation is 12-15% of capital cost of IGCC plant; advanced technology can potentially reduce cost by \$75-100kWe.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003		\$1250-1300	
2005	\$1,200		
2006	\$1,200		
2007	\$1,150		

PART Performance Measurements

Program: Clean Coal Research Initiative

Agency: Department of Energy

Bureau:

Measure: Mercury (Hg) removal cost and removal efficiencies from coal-fired power plants.

Additional Information: 2005 pilot scale slip stream field testing of 50-70% Hg capture technology at current costs (carbon injection technology); 2006 initiate field testing of >90% Hg removal at current costs; 2007 complete field tests of 50-70% Hg removal at <75% current costs; 2008 have 50-70% Hg capture technology available for full-scale commercial demonstration; 2009 complete field testing of >90% Hg capture technology at <75% current costs; 2010 >90% Hg capture technology ready for full commercial demonstration. *at conventional cost.\$at <75% current cost. ^ at <75% cost.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003		70-90%eff/\$50-70k/lb	
2005	50-70% convt. cost		
2006	> 90% capt.*		
2007	50-70% removal\$		

Measure: Reduce net cost of CO2 capture and sequestration.

Additional Information: Measure based on analysis of pilot scale tests of 90% carbon capture technologies. Current 90% capture technology increases COE by 30% or about 1 cent /kW

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003		30% increase coe	
2005	25% increase COE		
2007	20% increase COE		
2009	17% increase COE		

Program Assessment Rating Tool (PART)

Program: Distributed Energy Resources
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

1.1 Is the program purpose clear?

Answer: Yes

Question Weight: 20%

Explanation: The mission of the Distributed Energy Resources Program is to strengthen America's affordable energy infrastructure and provide distribution utilities and consumers with a greater array of energy efficient technology choices for generation and thermal energy. To accomplish the mission, the program funds research, development, demonstration, technology transfer, and education and outreach activities in partnership with industries, businesses, utilities, States, other Federal programs and agencies, universities, national laboratories, and other stakeholders.

Evidence: FY 2004 OMB Budget Request; numerous program publications (in print and on EREN website). Authorizing legislation includes: P.L. 93-577, "Federal Non-nuclear Energy Research and Development Act of 1974"; P.L. 94-163, "Energy Policy and Conservation Act" (EPCA) (1975); P.L. 94-91, "Department of Energy Organization Act" (1977) ; P.L. 94-385, "Energy Conservation and Production Act" (ECPA) (1976); P.L. 95-619, "National Energy Conservation Policy Act" (NECPA) (1978); P.L. 101-218, "Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989"; P.L. 102-486, "Energy Policy Act of 1992".

1.2 Does the program address a specific and existing problem, interest or need?

Answer: Yes

Question Weight: 20%

Explanation: The program aims to help to upgrade America's aging electric power infrastructure, relieve congestion on transmission and distribution systems, reduce consumption and increase supplies and reliability during periods of peak demand, accelerate the introduction of advanced systems to improve the efficiency of market operations, support the transition from traditional monopoly regulation to more competitive markets, and reduce environmental emissions, including greenhouse gases. These efforts support the Administration's National Energy Policy as well as the Administration's climate change goals.

Evidence: The program focuses R&D on activities that it considers too technologically risky for the private sector to undertake alone. Risk levels vary on a project-by-project basis.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: Yes

Question Weight: 20%

Explanation: The program is the primary Federal program working to improve efficiency and reduce emissions from distributed generation technologies. In cases where potential overlap may exist with State activities, the program works closely with States. For example, the program's staff and California Energy Commission staff issued separate solicitations for work on microturbines, and staff from each program sat on the other's review panels to ensure that projects were synergistic. The program also works with industry to develop joint plans and establish mutual goals; other groups, such as the Electric Power Research Institute (EPRI), target areas not necessarily representing national public benefit or funded at a level necessary to mobilize national change.

Evidence: The program considers uncertain risk-to-return ratio and lack of industry capital to be market barriers to private sector investment in distributed energy technologies. The program considers its aggressive goals to improve efficiency, reduce emissions, and reduce cost simultaneously to be outside of industry's capability.

Program Assessment Rating Tool (PART)

Program: Distributed Energy Resources
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency? Answer: YES Question Weight: 20%

Explanation: The DER program is focused on increasing the efficiency and decreasing the emissions of distributed energy through research and development in order to achieve the outcomes of greater electricity reliability and reduced emissions of pollutant and greenhouse gases.

Evidence: A review RAND's web site (www.rand.org, energy and public policy research) has indicated no debate the relative costs and benefits of promulgating efficiency standards for generation technologies vs. conducting research and development.

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly? Answer: NO Question Weight: 20%

Explanation: In support of the Administration's R&D Investment Criteria initiative, the program was asked to prepare "bubble charts" that plot key program variables (e.g., expected public benefits, funding levels, years to commercialization). Bubble charts can serve as an informational tool to help determine, along with other considerations, whether the program appropriately targets its R&D funding. While the program has made progress estimating public benefits, the Department has not yet developed a methodology to estimate benefits consistently within and across programs. Therefore, the program could not prepare meaningful bubble charts.

Evidence: In general, the program appears to target its resources wisely, but a lack of ability to provide appropriate evidence mandates a "no" response. EERE continues to work internally and with other DOE program offices to improve consistency and accuracy in estimating benefits.

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: Yes Question Weight: 10%

Explanation: The program has two long-term goals that capture most of the activities supported in each of the two subprograms. One subprogram focuses on the development of next generation distributed energy technologies (e.g., microturbines, reciprocating engines, industrial gas turbines, thermally activated cooling and humidity control devices, combined heat and power systems) that are cleaner and more reliable, fuel efficient, fuel flexible and affordable than existing equipment. The second subprogram concentrates on the development of technologies, tools, and techniques to enable prospective users of distributed energy systems - regardless of the type of technology - to evaluate benefits, install, operate, control, and maintain those systems in an optimized manner to meet the needs of their facilities and business operations, and those of the electric power and natural gas utilities to which the systems are interconnected.

Evidence: FY 2004 Budget.

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: The program has developed a Multi-Year Program Plan (July 2003) that sets out the objectives and milestones for each program activity over the 2003 - 2009 time frame and links them to the program's long-term goals. For example, one long-term measure of the program is to demonstrate three 70% efficient integrated combined heat and power (CHP) systems. (The current state of the art for these systems is approximately 60%.) The program is investing in 17 proof-of-concept demonstrations with the hopes of achieving at least 3 successes.

Evidence: Multi-Year Program Plan (FY2003-2009) for the Distributed Energy Resources Program (May 2003).

Program Assessment Rating Tool (PART)

Program: Distributed Energy Resources
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: Annual measures are directly track to the program goals for increased efficiency and reduced pollution.

Evidence: Measures Tab.

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: The targets for the annual measures are quantifiable and provide a specific value with which performance (e.g. efficiency) can be compared. Baselines are clearly defined. These targets are ambitious and approach the theoretical efficiency maxima.

Evidence: Measures Tab.

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: Yes Question Weight: 10%

Explanation: Technical milestones outlined in cooperative agreements with industry are intended to ensure monitoring of progress towards overall program goals. Competitive solicitations link activities to long-term goals of the program.

Evidence: Sample solicitation that documents performance goals as Objectives for solicitation. Sample contract document that includes program goals.

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: Yes Question Weight: 10%

Explanation: The program regularly solicits opinions from experts outside of the U.S. Department of Energy to guide decision making about program directions and priorities. To accomplish this, the program develops technology roadmaps and holds peer reviews. In addition, over the past several years, the DER program has engaged in discussions with hundreds of stakeholders - manufacturers, businesses, utilities, laboratories, universities, state agencies, and public interest groups - as part of an extensive series of visioning, roadmapping, and multi-year planning processes.

Evidence: Distributed Energy Resources Peer Review (January, 2002). Microturbine Peer Review (March 2002). Reciprocating Engine Peer Review (April 2002). Gas Turbine Peer Review (March 2002). Thermal Activation Technology Peer Review (May 2002). End-use Systems Peer Review (January 2002). Peer reviewers were independent evaluators that received no program funding. Peer review questions were standard questions documenting effectiveness and progress on research, gaps and concerns.

Program Assessment Rating Tool (PART)

Program: Distributed Energy Resources
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: No Question Weight: 10%

Explanation: Program funding is explicitly tied to accomplishing the two long-term performance measures for the program. However, budget documents do not clearly indicate the full costs of achieving the program goals. Salaries, benefits, and other administrative expenses to support the program are included in a separate budgetary line item ("Policy and Management"). EERE does not report the allocation of Policy and Management funding to the various programs it supports.

Evidence: FY 2004 Budget.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: Yes Question Weight: 10%

Explanation: The DER Strategic Peer Review in November, 2000, identified weak coordination with States as a strategic planning deficiency. The program implemented better coordination with the states by participating on CEC/NYSERDA solicitation reviews. The program has also prepared a draft Multi-Year Program Plan.

Evidence: DER Strategic Peer Review (November 2000), Multi-Year Program Plan (FY2003-2009) for the Distributed Energy Resources Program (May 2003).

2.RD1 If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals? Answer: NO Question Weight: 10%

Explanation: Each year, the program estimates the public benefits of its activities in support of the Government Performance and Results Act (GPRA) and the Administration's R&D Investment Criteria initiative. However, the program has not yet developed a consistent and reliable methodology for comparing potential benefits within and across programs with similar goals.

Evidence: FY 2004 Budget

2.RD2 Does the program use a prioritization process to guide budget requests and funding decisions? Answer: Yes Question Weight: 10%

Explanation: At the beginning of each budget cycle, the program identifies a list of research priorities, based upon needs, issues, and trends -- not only for this budget, but for the next few years as well. These activities are ranked from lowest to highest. Without a formal Federal Advisory Committee, the program utilizes the peer review process to evaluate priorities for the program.

Evidence: The program prioritized its current activities as follows (highest to lowest priority): end-use systems integration, generation, combined heat and power, thermally activated technologies. EERE Priority Ranking Tool, Zero Based Budget Exercise.

Program Assessment Rating Tool (PART)

Program: Distributed Energy Resources
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance? Answer: Yes Question Weight: 12%

Explanation: The EERE Strategic Management System -- which establishes at the beginning of each fiscal year an 18-month schedule for key planning, budget formulation, budget execution, and analysis / evaluation functions -- requires that each EERE program establish and track long-term and near-term program performance goals and measures. Program results as evaluated through the goals and measures are used annually and throughout the year to assess partners performance, adjust funding, and re-align R&D portfolios.

Evidence: SMS Implementation Letter for FY 2002 - 2005 (October 2001). Sample Quarterly Progress Reports from Oak Ridge National Lab. Subprograms have quarterly reviews, with critical paths reviewed to ensure that program milestones are met. The program also reports on quarterly milestones in the Department's Joule database. However, in general, milestones in the Joule system are not necessarily meaningful or fully reflective of program progress. Thus, the Department's Joule system provides little value-added. The new I-MANAGE system, currently under development, will better integrate budget and performance.

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: Yes Question Weight: 12%

Explanation: The Annual Performance Appraisals of all EERE Program Managers include criteria directly related to cost, schedule, and performance results. EERE reviews these criteria monthly in the EERE Monthly Management Reviews. Most EERE contracts include award fee and other performance criteria to hold those partners accountable.

Evidence: Performance Plan and Performance Appraisal Form for Performance Management System Employees; EERE Award Fee and Performance Based contracts; Uncosted Reports; Cooperative Agreements. The program indicates that a contracting officer the Chicago Operations office monitors spending, performance, cost and schedule, and that headquarters staff monitor laboratory funding, performance, cost, and schedule.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: Yes Question Weight: 12%

Explanation: Each year, the program develops an Annual Operating Plan, which is reviewed internally to ensure that new funding is planned to be obligated consistent with the appropriated purpose. EERE also develops a Spend Plan for all of its programs. The program uses data from Departmental procurement and financial systems -- and similar data from National Laboratory partners -- to assure that actual expenditures occur for intended purposes and on a schedule consistent with the Spend Plan. Unobligated balances brought forward to FY 2004 were \$1.6 million, 2.6 percent of the program's FY 2003 appropriation of approximately \$61 million.

Evidence: EERE Spend Plan; monthly obligation and cost reports from the Departmental financial systems. FY 2002 AOP and 2002 spend plan showing planned expenditures vs. actuals. FY 2004 apportionment.

Program Assessment Rating Tool (PART)

Program: Distributed Energy Resources
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution?

Answer: Yes

Question Weight: 12%

Explanation: EERE's reorganization in 2002 clarified lines of responsibility and eliminated organizational "stovepipes" by consolidating planning, budgeting, and analysis into a single business administration office. The reorganization reduced management layers, although staff levels remained the same. EERE developed a new IT report to improve program managers access to EERE cost, obligation, and procurement data. EERE plans to consolidate several legacy IT systems into a single program management system that is intended to track all required information on a project by project basis (cost share, type of contract according to A-11 definitions, etc.). EERE is also developing a measure to reduce uncosted balances, which means obligated funds will be put to use more quickly. These recent actions should achieve efficiencies and improve cost effectiveness, although it will be difficult in some cases to demonstrate definitively.

Evidence: EERE Reorganization "All Hands" presentation: http://www.eere.energy.gov/office_eere/pdfs/eere_reorg.pdf. EERE IT Business Case Number 019-20-01-12-01-1011-00-304-101. DER Program FY 2003 Financial Status Report (June 2003). The program notes that it uses electronic formats (e.g. CD) and the web as the primary source for information transfer to stakeholders, saving on document production costs.

3.5 Does the program collaborate and coordinate effectively with related programs?

Answer: YES

Question Weight: 12%

Explanation: The program partners with EPA through an interagency agreement on combined heat and power (CHP) partnerships. The program also partners with Defense (Office of Naval Research) on materials R&D. Program staff peer review contract proposals received by the New York State Energy Research and Development Agency (NYSERDA) and the California Energy Commission (CEC). CEC's program plan for reciprocating engines shows the linkages to the DOE program.

Evidence: CEC web site: www.energy.ca.gov/distgen/equipment/reciprocating_engines/future.html; EPA web site: www.epa.gov/chp/index.htm. Sample "Funds Out Interagency Agreement" with Office of Naval Research (May, 2003).

3.6 Does the program use strong financial management practices?

Answer: Yes

Question Weight: 12%

Explanation: Each year, EERE develops and maintains a Spend Plan and a Measures spreadsheet that links the Spend Plan to annual and long-term goals and measures for each EERE program. The program reviews quarterly costing reports and weekly project status reports. There is no evidence of erroneous payments or statutory violations.

Evidence: Sample Quarterly Costing Report, EERE FY 2003 Spend Plan, measures spreadsheet

Program Assessment Rating Tool (PART)

Program: Distributed Energy Resources
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately Effective
80%	80%	100%	59%	

- 3.7 Has the program taken meaningful steps to address its management deficiencies?** Answer: Yes Question Weight: 12%
- Explanation: The National Association of Public Administrators (NAPA) found dozens of management deficiencies in the program's bureau (the Office of Energy Efficiency and Renewable Energy, or EERE) in a review published in 2000. EERE provided evidence that it addressed some of management deficiencies identified by NAPA, and has prepared a Management Action Plan that will address many of the remaining findings. While a few NAPA recommendations have not been addressed (e.g., that EERE conduct periodic audits to assure that cost-sharing partners actually provide funding they agree to), in general, EERE has taken meaningful steps to address most deficiencies.
- Evidence: A Review of the Management in the Office of Energy Efficiency and Renewable Energy (NAPA, 2000). Letter Report from Assistant Secretary Garman to Chairman of the House Subcommittee on Interior and Related Agencies on implementation of NAPA recommendations (July 11, 2001). EERE Management Action Plan (August 2003)
- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: YES Question Weight: 12%
- Explanation: All non-laboratory efforts are conducted under a competitive merit based solicitation. For the reciprocating engine program the laboratory and university funds were competed for phase I of the program. All funded activities are screened for merit on a scientific and technical basis and peer reviewed. The reciprocating engine program also conducted a capability review of the national laboratories.
- Evidence: Chicago Solicitation for Microturbines and Reciprocating Engines. Review of the National Laboratories by ARES. Table showing funding allocations as per OMB Circular A-11 definitions for "Conduct of Research and Development."
- 4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: Large Extent Question Weight: 25%
- Explanation: The program's 2002 peer review indicates that the program has generally met its short-term milestones that contribute the long-term performance goals. But the performance measures and targets were refined frequently each year before the FY 2004 Budget, making "large extent" a more reasonable response than "yes" to this question. Historically, the National Academy of Sciences notes that the program successfully completed its last long-term performance goal: develop and demonstrate an advanced industrial gas turbine (5MW) that achieves 40 percent efficiency and low NOx emissions (less than 10 lbs/MWh) by FY 2000. This program was completed in FY2000 and the program expects a commercial offering of this product in 2004.
- Evidence: DER 2002 Peer Review. Energy Research at DOE: Was It Worth It? (NAS, 2000)
- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: Large Extent Question Weight: 25%
- Explanation: The program's 2002 peer review indicates that the program has generally met its short-term milestones that contribute the long-term performance goals. But the performance measures and targets were refined frequently each year before the FY 2004 Budget, making "large extent" a more reasonable response than "yes" to this question.
- Evidence: DER 2002 Peer Review.

Program Assessment Rating Tool (PART)

Program: Distributed Energy Resources
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: No Question Weight: 25%

Explanation: The program identified several activities that would seem to promote efficiency and cost-effectiveness, including: adjustable cost sharing to provide opportunities for reassessment of performance, government role and cost share with partners; integrated planning and identification of most cost effective investments/roles in R&D consortia; shifting work previously done by labs that the private sector; and developing electronic collection, storage, management and reporting systems that eliminate historic but unneeded reporting, and integrate performance, planning, fiscal and management data. The program could not provide evidence that these activities have improved efficiency and cost effectiveness.

Evidence:

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: N/A Question Weight: 0%

Explanation: No studies available comparing DER program performance with other R&D activities designed to improve energy efficiency in the Nation.

Evidence:

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: Yes Question Weight: 25%

Explanation: The DER 2002 Peer Review provided mixed, but largely positive, comments. The National Academy of Sciences reviewed one technology (Advanced Turbine Systems) developed by the program and concluded: "All in all the ATS program is a good example of a successful industry-government RD&D Program. The focus on design and build of actual equipment with a parallel supporting technology and with well-defined measurable performance goals and intermedialte milestones lead to this success." The program indicates that numerous technologies associated with the program (e.g. commerical absorption chiller; cooled silicon nitride turbine vanes; coatings extend turbine performance) have been honored by R&D Magazine as among the 100 most technologically significant products for the year. The awards indicate external recognition for program accomplishments, but it's difficult to assess their significance. It may be useful to benchmark awards/patents per dollar invested against similar applied R&D programs.

Evidence: DER 2002 Peer Review. Energy Research at DOE: Was It Worth It? (NAS, 2000)

PART Performance Measurements

Program: Distributed Energy Resources

Agency: Department of Energy

Bureau: Energy Efficiency and Renewable Energy

Measure: Number of technologies developed with 25 percent increase in energy efficiency (2000 baseline), with NOx emissions less than 0.15 lbs per MWh, and an equivalent or 10 percent reduction in cost to comparable technologies.

Additional Information: The measure aims to increase energy efficiency of distributed generation and thermally activated technologies while reducing pollutant (nitrogen oxide) emissions and reducing cost, ensuring market acceptance. Deployment of the technologies can contribute to the Department's goals of increased energy efficiency and increased electricity reliability during periods of peak demand.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003	0	0	
2006	1		
2008	3		

Measure: Number of integrated combined heat and power systems developed that will achieve 70 percent efficiency and customer payback in less than 4 years.

Additional Information: The measure assesses the program's development highly efficient and cost effective CHP package systems, which can reduce baseload on the electric grid. The payback goal assumes commercial-scale production of CHP systems, which will reduce their capital costs.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003	0	0	
2004	0		
2005	1		
2006	1		
2007	2		
2008	3		

Measure: Efficiency of energy conversion for microturbines.

Additional Information: This measures tracks the improvements in efficiency for microturbines while maintaining or reducing pollutant emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2000	28%	28%	
2001	28%	28%	

PART Performance Measurements

Program: Distributed Energy Resources

Agency: Department of Energy

Bureau: Energy Efficiency and Renewable Energy

Measure: Efficiency of energy conversion for microturbines.

Additional Information: This measure tracks the improvements in efficiency for microturbines while maintaining or reducing pollutant emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	28%	28%	
2003	33%		
2004	33%		
2005	35%		
2006	35%		
2007	35%		
2008	37%		

Measure: Efficiency of energy conversion for reciprocating engines.

Additional Information: This measure tracks the improvements in efficiency for reciprocating engines while maintaining or reducing pollutant emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2000	36%	36%	
2001	38%	38%	
2002	38%	39%	
2003	38%		
2004	42%		
2005	42%		
2006	42%		

PART Performance Measurements

Program: Distributed Energy Resources

Agency: Department of Energy

Bureau: Energy Efficiency and Renewable Energy

Measure: Efficiency of energy conversion for reciprocating engines.

Additional Information: This measure tracks the improvements in efficiency for reciprocating engines while maintaining or reducing pollutant emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2007	42%		
2008	47%		

Measure: Amount of nitrogen oxide pollutant emitted per unit of power from small microturbines (less than 1 megawatt), in pounds per megawatt-hour (lbs/MWh).

Additional Information: Environmental emissions are relevant because there is a tradeoff between efficiency and emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	0.7	0.7	
2002	0.7	0.5	
2003	0.4		
2004	0.4		
2005	0.3		
2006	0.3		
2007	0.3		
2008	0.15		

Measure: Amount of nitrogen oxide pollutant emitted per unit of power from reciprocating engines (1-10 megawatts), in pounds per megawatt-hour (lbs/MWh).

Additional Information: Environmental emissions are relevant because there is a tradeoff between efficiency and emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	3.1	3.1	
2002	3.1	3.1	

PART Performance Measurements

Program: Distributed Energy Resources

Agency: Department of Energy

Bureau: Energy Efficiency and Renewable Energy

Measure: Amount of nitrogen oxide pollutant emitted per unit of power from reciprocating engines (1-10 megawatts), in pounds per megawatt-hour (lbs/MWh).

Additional Information: Environmental emissions are relevant because there is a tradeoff between efficiency and emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	3.1		
2004	3.1		
2005	1.5		
2006	1.5		
2007	1.5		
2008	0.15		

Measure: Amount of nitrogen oxide pollutant emitted per unit of power from industrial gas turbines (1-10 megawatts), in pounds per megawatt-hour (lbs/MWh).

Additional Information: Environmental emissions are relevant because there is a tradeoff between efficiency and emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	0.35	0.35	
2002	0.35	0.35	
2003	0.35		
2004	0.25		
2005	0.25		
2006	0.18		
2007	0.18		
2008	0.15		

PART Performance Measurements

Program: Distributed Energy Resources

Agency: Department of Energy

Bureau: Energy Efficiency and Renewable Energy

Measure: Efficiency of combined heat and power package systems.

Additional Information: Tracks only development of the most efficient CHP package systems.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003	60%	60%	
2004	60%		
2005	60%		
2006	60%		
2007	70%		
2008	70%		

Program Assessment Rating Tool (PART)

Program: Elimination of Weapons-Grade Plutonium Production Program
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Results Not Demonstrated
60%	89%	100%	0%	

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The EWGPP Program has a clear purpose to reduce the threat of nuclear terrorism by facilitating shutdown of the three remaining weapons-grade plutonium production reactors in the Russian Federation through: (1) Construction of a new fossil-fuel (coal) plant at Zheleznogorsk; (2) Refurbishment of an existing fossil-fuel (coal) power plant at Seversk; and (3) Execution of a Nuclear Safety Upgrades Project to improve reactor safety pending shutdown of the reactors.

Evidence: NNSA Strategic Plan (February 2002) ; Program Strategic Plan, (October 2002); Justification of Mission Need, approved by the Deputy Secretary on 12/20/03; Implementing Agreement between the Department of Energy and the Ministry for Atomic Energy of the Russian Federation, (signed 3/12/03).

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The three remaining plutonium production reactors in the Russian Federation (RF) represent a specific and existing problem to U.S. national security because they generate 1.2 metric tons of weapons-grade plutonium per year. The fossil energy replacement program will facilitate the shutdown of the reactors thereby preventing the production of several metric tons of weapons-grade plutonium which would compound an already substantial proliferation concern.

Evidence: National Security Council Review of EWGPP Program (December 2001); US/RF Govt-to-Govt Plutonium Production Reactor Agreement of 1997

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: The EWGPP Program offers a unique opportunity to reduce world-wide nuclear risk that is neither redundant nor duplicative of any other program. Although other programs address the disposition and safeguard of existing plutonium in the RF, no other program addresses ending the production of new plutonium in the RF.

Evidence: 2001 NSC Russian Program Review designated the EWGPP as a cost-effective, unique contribution to the nonproliferation initiative. An Implementing Agreement between DOE and the Russian Federation for Atomic Energy (March 12, 2003) has defined this unique method.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: NO

Question Weight: 20%

Explanation: The nature of the program is that the US Government must rely on the Russian Government to create conditions that would not limit the program's effectiveness and efficiency. This is largely out of the control of the program office, but still a potential flaw in the structure of the program. Notwithstanding this potential flaw, DOE has sought external, objective experience and insight to develop tools to establish program structure, monitor status and track costs for the program.

Evidence: DoD draft "Fossil Replacement Option" document (10/2000); TIP (Team of Independent Professionals) Report on Acquisition Strategy for EWGPP, (12/2002); NSC review, including cost/benefit analysis of the EWGPP concept (2001)

Program Assessment Rating Tool (PART)

Program: Elimination of Weapons-Grade Plutonium Production Program
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Results Not Demonstrated
60%	89%	100%	0%	

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly? Answer: NO Question Weight: 20%

Explanation: The nature of the program is that the US Government negotiate with the Russian Government to ensure that the funds are spent for the intended purpose. Therefore, it's possible that issues with the Russian government could interfere with program execution.

Evidence: U.S./Russian Federation commitment to cease plutonium production (1994); Implementing Agreement between DOE and the Russian Federation for Atomic Energy (March, 2003); Seversk & Zheleznogorsk Project Plans (June, 2003)

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 11%

Explanation: The EWGPP Program has one outcome oriented measure that encapsulates the overall effort: (1) Metric tons of weapons-grade plutonium produced in Russia per year.

Evidence: FY 2004-2008 FYNSP (Feb. 2003); FY 2004 Budget Submittal (2003); EWGPP Critical Decision #0; Briefing to the Deputy Secretary and Energy Systems Acquisition Advisory Board (Dec. 2002)

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 11%

Explanation: The EWGPP Program has identified ambitious, quantified targets for its long-term performance measures. The timeframes for accomplishment of the goals are also ambitious, driven by the need to terminate plutonium production as quickly as possible to reduce the threat from continuing production. The Program has established scope, cost, and schedule baselines in accordance with Critical Decision-0

Evidence: FY 2004-2008 FYNSP (Feb. 2003); FY 2004 Budget Submittal (2003); EWGPP Program Plan (June 2003)

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 11%

Explanation: The EWGPP Program has established specific annual performance goals. For FY 2005, they are:
 (1) Nuclear Safety Upgrades: Complete an additional 33% (for a total of 100%) of needed safety upgrades. (2)
 Seversk: Complete an additional 32% (for a total of 57%) towards construction of a fossil fuel plant. (3) Zheleznogorsk: Complete an additional 10% (for a total of 13%) towards construction of the fossil fuel plant for Zheleznogorsk. (4) Russian Plutonium Production: No more than 1.2 Metric Tons. See Measures tab for additional details.

Evidence: FY 2004-2008 FYNSP (Feb. 2003); FY 2004 Budget Submittal (2003)

Program Assessment Rating Tool (PART)

Program: Elimination of Weapons-Grade Plutonium Production Program
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Results Not Demonstrated
60%	89%	100%	0%	

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 11%

Explanation: The EWGPP Program has baseline ranges and ambitious targets for its annual measures to support the aggressive schedules. Baseline development is underway as part of the DOE 413.3 Critical Decision process. The EWGPP Program is adhering to the DOE standards for program/project management . The program has established scope, cost, and schedule baselines and ambitious targets as annual measures for its projects. The baseline ranges will provide a basis for measuring progress against ambitious targets identified for completion on an annual basis. Once firm baselines are established, an earned value performance measurement system will be instituted for the program.

Evidence: FY 2004-2008 FYNRP (Feb. 2003); FY 2004 Budget Submittal (2003); EWGPP Program Plan (June 2003); EWGPP Project Controls Plan (June 2003)

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 11%

Explanation: The EWGPP Program uses input from contractors, Russian subcontractors, and other stakeholders in development of annual targets and long-term goals for the program. Commitment of all partners to the annual and long-term goals of the program is achieved through implementation of bilateral agreements, program and project plans.

Evidence: EWGPP Program Plan (June 2003); US/Russia Implementing Agreement (March 2003); Team of Independent Professionals Acquisition Strategy Evaluation (2002)

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 11%

Explanation: To date, independent evaluations have been performed by : (1) Stone and Webster and Burns and Roe on the RF cost estimates; (2) National Security Council (NSC); (3) a Team of Independent Professionals on the acquisition strategy. A GAO review of the program is scheduled to be complete in the spring of 2004.

Evidence: Draft DOE Project Management Manual, 413.3-1; Draft EWGPP Quality Assurance Plan (May 2003); Draft EWGPP Management Assessment Plan (May, 2003); NSC Russian Program Review (2001); Independent Professional Review of Program Acquisition Strategy (TIP Team) (Dec. 2002); Stone and Webster & Burns and Roe Review of RF Cost Estimates (June 2002)

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 11%

Explanation: The funding profile for the EWGPP program is a flat \$50 million per year. While this profile represents what was transferred from DoD, NNSA needs to realign the profile to more accurately represent the amount of funding needed to accomplish its goals.

Evidence: NNSA PPBE Guidance Documents located on the NNSA web-site; FY04 Congressional Budget Request, FY 04 PDM; FY04-08 FYNRP

Program Assessment Rating Tool (PART)

Program: Elimination of Weapons-Grade Plutonium Production Program
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Results Not
60%	89%	100%	0%	Demonstrated

2.8 **Has the program taken meaningful steps to correct its strategic planning deficiencies?** Answer: YES Question Weight: 11%

Explanation: Through strategic planning, the EWGPP Program is assimilating Lessons Learned from other Russian programs such as International Nuclear Materials Protection and Cooperation, Highly Enriched Uranium Transparency, and Plutonium Disposition, which identify potential deficiencies such as training, communications, and site access. The Program is also assimilating lessons learned by two Cooperative Threat Reduction programs (1) the Fissile Material Storage Facility at Mayak and its use of incentive contracts and (2) EWGPP program when it was under the responsibility of CTR. The Program used the established DoD CTRIC process to gain the benefit of a high level of competition to select two technically qualified contactors with years of experience in completing this type of work in Russia while keeping acquisition costs low. The Program is also implementing Action Plans to provide project management training to program staff and Rosatomstroi, the Russian integrating contractor. In addition, the Program Office is establishing an Executive Review Group to evaluate planning and progress on an annual basis, identify deficiencies and address corrective actions.

Evidence: Draft Management Assessment Plan (June 2003); Draft Training Plan for EWGPP program staff and Rosatomstroi (June 2003); US/Russian Implementing Agreement (March 2003)

2.CA1 **Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity?** Answer: YES Question Weight: 11%

Explanation: The Program Office commissioned a Team of Independent Professionals (TIP Team) to identify and analyze alternative acquisition strategies for carrying out the mission. Data was used to establish acquisition strategy and support Mission Need approval by the Deputy Secretary. The DOD conducted extensive alternative analyses in 2000-2002, resulting in the decision to cancel plans for reactor core conversion and select fossil fueled power plants as the preferred alternative to meet the mission.

Evidence: Team of Independent Professionals (TIP) Report of Acquisition Strategy Alternatives (Dec. 2002); DOD Fossil Replacement Option Studies (Oct. 2000)

3.1 **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: YES Question Weight: 12%

Explanation: The EWGPP Program requires monthly reporting of progress for support contractors who are on board. The US Contractors, once on board, will be monitored against milestones and baselines identified to Work Breakdown Structure (WBS) elements through an earned value system. The program reporting systems apply to the US contractors and to Russian participants, and are used to identify management issues and improve performance.

Evidence: EWGPP Reporting Policy and Procedures (June 2003); EWGPP Program Plan (June 2003)

3.2 **Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: YES Question Weight: 12%

Explanation: The EWGPP Program is establishing clear and documented baseline change control, cost reporting, schedule tracking and performance review criteria and procedures. Each HQ manager has a critical element in his or her performance appraisal on project management that includes cost, schedule and quality criteria. Finally, the Program will provide payment in Russia only for work confirmed to be completed -- final management accountability.

Evidence: EWGPP Program Plan (June 2003); Performance Evaluation Plans (annual) Program/Project Controls Manual (June 2003)

Program Assessment Rating Tool (PART)

Program: Elimination of Weapons-Grade Plutonium Production Program
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Results Not
60%	89%	100%	0%	Demonstrated

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: In the past the Program experienced problems with uncosted carryover and the transfer of funds to support the program. Both problems were resolved and a corrective action is in place to ensure that funds are obligated in a timely manner and spent for the intended purpose. FY 2003 is the first fiscal year for DOE program responsibility, since until that time it resided under the cognizance of DoD's CTR program. The DOE Program got started late because funds were not fully transferred from DoD until May 2003. Plans have already been developed for obligating funds to the Nuclear Safety Upgrades project in FY2003. Plans for the Seversk and Zheleznogorsk projects are in development. Systems and procedures are being established to monitor and control program obligations.

Evidence: FY 2003 Budget Submittal (2002); FY 2003 Project Work Plans and WAS Monthly cost reports

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 12%

Explanation: The EWGPP Program is utilizing incentive-based contracting for implementing its work in the Russian Federation, and will make payment only on completion of work. Two contractors with years of experience in completing this type of work in Russia were awarded Cost Plus Incentive Fee contracts through the highly competitive DoD CTRIC contract mechanism. The established DoD CTRIC process allowed DOE to gain the benefit of a high level of competition to select technically qualified contactors while keeping acquisition costs low. Program and contract procedures are in place to measure and achieve efficiencies and cost effectiveness in program execution. For example, the U.S. contractor will pay for Russian subcontractor work only after inspection to ensure the work is complete and in accordance with contract specifications. The projects are being phased so that Zheleznogorsk will benefit from the lessons learned at Seversk.

Evidence: EWGPP Statement of Objectives for Seversk and Zheleznogorsk (March 2003); DOE contracts with US contractors (June 2003)

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: The EWGPP Program is coordinating with the MPC&A, HEU-T, and Pu Disposition programs, all of which have related efforts in the Russian Federation, to assimilate lessons learned, and identify areas of similarity and potential commonality where management solutions in those programs can be used in EWGPP. The program has coordinated with the Departments of State and Defense to ensure full collaboration and effective management. The program is also working actively to coordinate with the Russian Federation on this program, with several agreements already made, and further agreements being negotiated

Evidence: US/Russian Implementing Agreement (March 2003); Draft EWGPP Program Plan (June 2003)

Program Assessment Rating Tool (PART)

Program: Elimination of Weapons-Grade Plutonium Production Program
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Results Not
60%	89%	100%	0%	Demonstrated

3.6 Does the program use strong financial management practices?

Answer: YES

Question Weight: 12%

Explanation: NNSA is covered by DOE's financial management policies, procedures and practices that meet all statutory requirements. The accounting services for NNSA are provided by DOE, and these are free of material internal control weaknesses. The DOE's financial statements have been given a clean audit opinion in 6 of the last 7 years. Day-to-day NNSA operations are supported through the NNSA PPBE processes that require the integration of financial and performance management information systems at each phase. The DOE is well underway on a new initiative (I-MANAGE) in support of the President's Management Agenda to fully integrate all financial, performance and administrative data for the DOE in a single system within the next 5 years that will include all NNSA information.

Evidence: NNSA PPBE Guidance Documents located on the NNSA web-site; DOE Financial Management Orders

3.7 Has the program taken meaningful steps to address its management deficiencies?

Answer: YES

Question Weight: 12%

Explanation: Corrective actions and procedures are in place to identify and address management deficiencies. The EWGPP Program has augmented staff resources through direct hires, transfers and contractor personnel. Immediate, meaningful and decisive steps, such as, senior management involvement in weekly meetings and in the definition of all major milestones, have been taken to address past program problems. Systems and procedures to control program costs and obligations, schedules, and performance have been developed. The Program has an established Executive Review to evaluate program management activities, identify deficiencies and recommend corrective actions in accordance with DOE Orders. The Program is considering the use of an automated financial/project management system.

Evidence: EWGPP Program Plan (June 2003); Management Assessment Plan (June 2003)

3.CA1 Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals?

Answer: YES

Question Weight: 12%

Explanation: In accordance with DOE 413.3, the Program Functions and Requirements documents, as part of the design process for projects, clearly define capability and performance objectives. The program has developed a sophisticated acquisition strategy which defines the relations between the contractors and only allows payment for work completed. The Program Deliverable Acceptance Policy will only allow payment in Russia for work completed and inspected which addresses quality, capability and performance objectives for each deliverable. Cost and schedule goals for the three projects are contained in their respective draft Project Execution Plans, to be completed in FY 2003.

Evidence: Draft Project Execution Plans (Seversk & Zheleznogorsk, Nuclear Safety Upgrades) (June 2003); Draft EWGPP Deliverable Acceptance Policy, June 2003; Draft EWGPP Program Plan (June 2003); Implementing Agreement (March 12, 2003)

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?

Answer: NA

Question Weight: 0%

Explanation: Although CD-0 was approved and the US contractors have been selected, the EWGPP Program does not have the data to address this question.

Evidence:

Program Assessment Rating Tool (PART)

Program: Elimination of Weapons-Grade Plutonium Production Program
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Results Not Demonstrated
60%	89%	100%	0%	

- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: NA Question Weight: 0%
 Explanation: As a new project, the EWGPP Program does not have the data to address this question.
 Evidence:
- 4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?** Answer: NA Question Weight: 0%
 Explanation: As a new program, data does not yet exist to address this question.
 Evidence:
- 4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?** Answer: NA Question Weight: 0%
 Explanation: As a new program, data does not yet exist to address this question. However, the Program planning and development process compares favorably with other programs; EWGPP is being developed in accordance with DOE 413.3 and good management practices.
 Evidence:
- 4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results?** Answer: NA Question Weight: 0%
 Explanation: As a new program, data does not yet exist to address this question.
 Evidence:
- 4.CA1 Were program goals achieved within budgeted costs and established schedules?** Answer: NA Question Weight: 0%
 Explanation: As a new program, data does not yet exist to address this question.
 Evidence:

PART Performance Measurements

Program: Elimination of Weapons-Grade Plutonium Production Program

Agency: Department of Energy

Bureau: National Nuclear Security Administration

Measure: Percent of interim safety upgrades completed on three remaining plutonium producing nuclear reactors.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	5%	5%	
2004	67%		
2005	100%		

Measure: Percent of construction completed on fossil fuel plant in Seversk that will facilitate the shutdown of two weapons-grade plutonium producing reactors.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	25%		
2005	57%		
2006	80%		
2007	94%		
2008	100%		

Measure: Percent of construction completed on fossil fuel plant in Zheleznogorsk that will facilitate the shutdown of one weapons-grade plutonium producing reactor.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	3%		
2005	13%		
2006	27%		

PART Performance Measurements

Program: Elimination of Weapons-Grade Plutonium Production Program

Agency: Department of Energy

Bureau: National Nuclear Security Administration

Measure: Percent of construction completed on fossil fuel plant in Zheleznogorsk that will facilitate the shutdown of one weapons-grade plutonium producing reactor.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2007	44%		
2008	62%		

Measure: Metric tons of weapons-grade plutonium produced per year in the Russian Federation

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2004	1.2		
2006	1.2		
2009	0.4		
2012	0		

Program Assessment Rating Tool (PART)

Program: Environmental Management
Agency: Department of Energy
Bureau:
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	80%	100%	26%	

- 1.1 Is the program purpose clear?** Answer: YES Question Weight: 20%
Explanation: The Environmental Management (EM) program, created in 1989, is responsible for the cleanup of the legacy created by over 50 years of nuclear weapons production and energy research.
Evidence: FY 2004 Congressional Budget Justification.
- 1.2 Does the program address a specific and existing problem, interest or need?** Answer: YES Question Weight: 20%
Explanation: Fifty years of nuclear weapons production and nuclear energy research produced large volumes of nuclear materials, spent nuclear fuel, radioactive waste, and hazardous waste, resulting in contaminated facilities, soil, and groundwater at 114 geographic sites.
Evidence: FY 2004 Congressional Budget Justification.
- 1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?** Answer: YES Question Weight: 20%
Explanation: EM manages and funds almost all cleanup activities with limited cost sharing from the private sector or foreign countries.
Evidence: FY 2004 Congressional Budget Justification.
- 1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?** Answer: YES Question Weight: 20%
Explanation: The February 2002 Top-to-Bottom-Review of the EM program concluded that many of its business processes do not allow the program to efficiently and effectively accomplish its mission. The Top-to Bottom Review served as a catalyst that initiated EM's reevaluation of previously accepted cleanup strategies. EM is implementing a number of significant management reforms which will enable the program to more readily accelerate risk reduction and site closure, thereby reducing cost and schedule.
Evidence: FY 2004 Congressional Budget Justification; Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress (August 2003); Progress in Improving Project Management at the Department of Energy, 2002 Assessment.
- 1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: YES Question Weight: 20%
Explanation: EM's accelerated risk reduction cleanup initiatives are premised on four principal management reforms that have been implemented: a human capital revitalization, an improved acquisition strategy, a strict configuration management system, and a revised budget structure. The new budget structure complements the management reform initiatives by focusing on completion, clearly delineating how resources will be utilized (i.e., for direct cleanup activities versus other activities in the program that only indirectly relate to on-the-ground cleanup). The new structure also establishes three time-dependent accounts (2006, 2012, and 2035) to target resources to expected completion timeframes, thereby establishing accountability. These four reform initiatives, along with the establishment of new corporate performance measures, help ensure that program resources are focused on direct, on-the-ground cleanup activities, which lead to accelerated risk reduction and site closure.
Evidence: FY 2004 Congressional Budget Justification; Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress, (August 2003).

Program Assessment Rating Tool (PART)

Program: Environmental Management
Agency: Department of Energy
Bureau:
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	80%	100%	26%	

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 10%

Explanation: As part of the commitment to accelerating risk reduction and site closure, EM has taken on the long-term challenge of reducing life-cycle costs and the time to complete cleanup by more than \$50 billion and 35 years, respectively. The long-term goals will be met when EM: 1) reduces its life-cycle cost reported in the Department's FY 2001 Performance and Accountability Report by \$50 billion (in comparable dollars); 2) cuts the completion time for the EM mission from 2070 to 2035; and 3) demonstrates the ability to execute cleanup activities consistent with accelerated cost and schedule baselines. EM has successfully stopped the program's recent history of annual cost estimate increases and schedule slippages.

Evidence: FY 2004 Congressional Budget Justification; Performance and Accountability Reports; Top-to- Bottom Review of the EM Program: Status of Implementation, Report to Congress (August 2003).

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: EM has established ambitious long-term cost and schedule goals. New site baselines approved by the Assistant Secretary reflect the aggressive accelerated risk reduction and closure strategies found in each site's Performance Management Plan (PMP) or accelerated strategy. EM's new corporate performance measures were established in early FY 2003 to provide the basis for measuring both near-and long-term performance against the site baselines. The new measures are under strict change control and monitoring of these key performance measures facilitates a high level of confidence that the program's long-term goals can be met.

Evidence: FY 2004 Congressional Budget Justification; Top-to- Bottom Review of the EM Program: Status of Implementation, Report to Congress (August 2003).

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: NO Question Weight: 10%

Explanation: The EM program is in the process of developing performance measures that are logically linked to and demonstrate progress toward long-term cost and schedule goals. However, the Assistant Secretary has established a new set of sixteen corporate performance measures that demonstrates how the program is eliminating or reducing risk, not just managing them. The new measures are under strict change control, thereby establishing accountability to annual performance targets established by each Operations/Field Manager.

Evidence: Environmental Management Performance Measures (DOE/IG-0561, June 2002); FY 2004 Congressional Budget Justification; Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress (August 2003).

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: NO Question Weight: 10%

Explanation: To support the development of cost and schedule targets, existing baselines, where appropriate, are undergoing changes in FY 2003 to reflect a site's PMP or accelerated closure strategy. To ensure that acceleration goals depicted in a new resource-loaded site baseline are equally ambitious and achievable, each site's new baseline is to undergo a rigorous review, validation, and approval process. Once approved, certain elements (e.g., corporate performance measures, cost and schedule projections) of the baseline will be placed under strict change control. Regular senior management reviews between Headquarters and the Field are held on at least a quarterly basis to monitor progress toward achieving its annual performance targets.

Evidence: FY 2004 Congressional Budget Justification.

Program Assessment Rating Tool (PART)

Program: Environmental Management
Agency: Department of Energy
Bureau:
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	80%	100%	26%	

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 10%

Explanation: The contractors EM uses to carry out its mission commit to executing programs to achieve long-term goals as a condition of their contracts. EM contractors have developed site PMPs or accelerated strategies which are consistent with the goals of accelerating risk reduction, reducing costs, and accelerating cleanup schedules.

Evidence: Top-to- Bottom Review of the EM Program: Status of Implementation, Report to Congress (August 2003).

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: The General Accounting Office (GAO) regularly evaluates the EM program as part of its performance and accountability reports, issued every two years, covering major management challenges and program risk in each cabinet department. In addition, the February 2002 Top-to-Bottom Review (conducted under contract) was the first major, comprehensive evaluation done by the Department. This evaluation resulted in a significant refocusing of the EM program to assure accelerated risk reduction and cleanup. In addition,

Evidence: GAO 2003 Performance and Accountability Series and High Risk Update; Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress (August 2003).

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: YES Question Weight: 10%

Explanation: The EM budget reflects current program goals, with the annual budget request derived by estimating what is needed to accomplish the annual performance measures in the context of long-term goals. The corporate performance measures that appear in the budget are directly tied to accelerated site baselines, which reflect PMPs/accelerated closure strategies. The corporate measures are under strict change control. Additionally, the EM budget includes separate accounts supporting the goal of completing as many sites as possible by 2006, 2012, and 2035. Within these three time-dependent accounts, individual projects are identified that tie funding to performance. For these projects, the impact of funding and other changes such as new environmental requirements can be assessed.

Evidence: FY 2004 Congressional Budget Justification; Top-to- Bottom Review of the EM Program: Status of Implementation, Report to Congress (August 2003).

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: The February 2002 Top-to-Bottom Review concluded that many of EM's business processes do not allow the program to efficiently and effectively accomplish its mission. As a result of this review EM has aggressively implemented a number of management reforms to correct these deficiencies. Additionally, EM has also created Integrated Project Teams (IPTs) for 10 key initiatives identified in the top-to-bottom report. Whereas PMPs were developed for individual sites, the IPTs will be formulating corporate-level initiatives to accelerate risk reduction in a much -improved, more cost effective manner.

Evidence: FY 2004 Congressional Budget Justification; Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress (August 2003).

Program Assessment Rating Tool (PART)

Program: Environmental Management
Agency: Department of Energy
Bureau:
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	80%	100%	26%	

2.CA1 **Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity?** Answer: YES Question Weight: 10%

Explanation: In addition to the aggressive implementation of reforms as a result of the February 2002 Top-to-Bottom Review and creation of 10 integrated project teams, existing site baselines, where appropriate, are undergoing changes in FY 2003 to reflect a site's PMP or accelerated closure strategy. Reflected in the PMP/accelerated closure strategy and site baseline are the results of recent analysis of possible alternatives which take into consideration various reassessments of program cost, schedule, and performance goals.

Evidence: FY 2004 Congressional Budget Justification; Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress (August 2003).

2.RD1 **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NA Question Weight: 0%

Explanation: EM's Technology Development and Deployment (TDD) program is an applied R&D program dedicated to supporting the EM program's cleanup mission. This program does not address private industry issues.

Evidence: FY 2004 Congressional Budget Request

2.RD2 **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%

Explanation: EM's TDD program has prioritized its work based on the evaluation of cost and risk associated with each site's baseline, which is consistent with its PMP or accelerated strategy. Prior to initiation of a TDD project, the proposed impact is reviewed and compared against the site baseline to ensure that a real opportunity for substantial improvement exists. The reviews analyze the trade-offs between baseline cost, schedule, risk, and performance goals as well as competing approaches and technologies.

Evidence: FY 2004 Congressional Budget Request

3.1 **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: YES Question Weight: 12%

Explanation: EM's new corporate performance measures enable the program to more comprehensively track progress in risk reduction and closure. Sites input targets and actual performance data in the Integrated Planning, Accountability, and Budgeting System (IPABS). Each Field Manager is accountable for the performance data entered into the system. Based on an analysis of the performance data, management may decide to adjust program priorities in order to ensure annual targets are met. On a monthly basis, EM also enters earned value data for selected projects found in the Department's Project Assessment and Reporting System (PARS). As new site baselines are approved, other cleanup projects for a site will be entered into PARS. Once baselines are completed for all sites, approximately 80% of EM's life-cycle costs will be captured in projects found in PARS for which earned value data will be reported.

Evidence: Resource Management: Configuration Management Change Control Process for the Environmental Management Program (December 2002); Memorandum for the Assistant Secretary for Environmental Management from the Deputy Assistant Secretary Office of Policy, Planning, and Budget re: Configuration Control Board Mid-Year Report (May 2003).

Program Assessment Rating Tool (PART)

Program: Environmental Management
Agency: Department of Energy
Bureau:
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	80%	100%	26%	

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 12%

Explanation: In FY 2003, the EM program required that Field and Headquarters managers have in their performance plans activities that could be measured for which they are accountable. The measures have been benchmarked to the recommendations of the FY 2002 Top-to-Bottom Review; managers will be evaluated against these critical few elements on October 1, 2003. As an example, targets were established by each operations/field office manager using the new corporate performance measures. The FY 2003 targets, which are under change control, are in each manager's performance plan. Each Manger's performance against those targets will be evaluated.

Evidence: Department of Energy Senior Executive Service Performance Appraisal (DOE F 331.2).

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: Funds are obligated consistent with the overall EM program plan, with timeframes established for obligation of the funds that are reported in the Department's financial accounting system.

Evidence: FY 2004 Congressional Budget Justification; Department of Energy Performance and Accountability Reports.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 12%

Explanation: The EM program performs almost all of its cleanup activities through contracts. EM has recently increased the use of performance-based contractor fees as an incentive to improve program execution. However, the FY 2002 Top-to-Bottom Review recognized the need to utilize performance-based contracts by focusing fees on measurable results. As a result, procedures are being put in place to improve the acquisition and administration processes for performance-based contracts. This will require EM contractors to make significant improvements in efficiencies and cost effectiveness.

Evidence: Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress, (August 2003).

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: NA Question Weight: 0%

Explanation: The EM program is the only program responsible for cleaning up the legacy of waste and contamination from past DOE operations.

Evidence: FY 2004 Budget Congressional Justification.

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 12%

Explanation: In 1998, DOE received a qualified opinion due to EM's weakness in the documentation supporting its environmental liabilities. This problem was corrected in 1999 and since then EM has received unqualified opinions through FY 2002.

Evidence: DOE Performance and Accountability Reports.

Program Assessment Rating Tool (PART)

Program: Environmental Management
Agency: Department of Energy
Bureau:
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	80%	100%	26%	

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 12%

Explanation: The February 2002 Top-to-Bottom Review concluded many of EM's business processes do not allow the program to efficiently and effectively accomplish its mission. As a result of the review, EM is implementing significant reforms to the program. EM has made in significant progress in addressing issues related to its acquisition strategy, contract management, and regulatory agreements.

Evidence: Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress, (August 2003).

3.CA1 Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals? Answer: YES Question Weight: 12%

Explanation: Management reforms (i.e., a new budget structure, human capital revitalization, revised acquisition strategy, improved contract management, and strict change control) have been developed. In addition, site PMPs or accelerated cleanup strategies have been developed which describe end-states, strategies, and milestones that will achieve site cleanup faster and cheaper than originally anticipated. EM is using and managing the acquisition process as one tool to drive contract performance. Performance-based contracts are being implemented to establish more focused performance incentives and to restructure projects to accelerate risk reduction and site closure, thereby reducing life-cycle costs. EM has established a Contract Management Advisory Council that reviews contracts from a corporate perspective. Most contracts have been reevaluated and either renegotiated or announced for a new competitive procurement.

Evidence: FY 2004 Congressional Budget Justification; Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress, (August 2003).

3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality? Answer: YES Question Weight: 12%

Explanation: The Technology Development and Deployment program's competitive procurement strategy is to contract with "technology developers/integrators" using a multiple-award, phased, performance-based contracting approach. The projects are reviewed at the completion of each phase. Only projects meeting the stated objectives for that phase and still appear to represent a significant improvement over the baseline are continued.

Evidence: FY 2004 Congressional Budget Request.

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: SMALL EXTENT Question Weight: 20%

Explanation: The EM program's accelerated cleanup strategies are being incorporated into site cost, schedule, and performance baselines. EM has aggressively implemented management reforms and initiatives that have resulted in a significant downward revision of program life-cycle cost and schedule estimates. The EM program needs to demonstrate it can actually execute to these aggressive cost and schedule baseline and achieve the projected savings.

Evidence: FY 2004 Congressional Budget Justification; Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress, (August 2003).

Program Assessment Rating Tool (PART)

Program: Environmental Management
Agency: Department of Energy
Bureau:
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	80%	100%	26%	

- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: NO Question Weight: 20%
- Explanation: The EM program is in the process of developing annual performance measures and targets aligned with its long-term cost and schedule goals. However, the EM program has developed new corporate performance measures that align with EM's new approach of accelerated cleanup and risk reduction. Mid-year performance measure data indicate that EM is presently on track to achieve most of its annual risk reduction targets.
- Evidence: FY 2004 Congressional Budget Justification; Third Quarter Corporate Performance Measures Report (July 2003).
- 4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?** Answer: SMALL EXTENT Question Weight: 20%
- Explanation: The EM program is implementing numerous reforms to improve program performance. These initiatives include, for example, revising cleanup and closure strategies such as risk-based treatment and disposal of radioactive waste; consolidating overhead activities for several small cleanup sites into a single service center; and implementing performance-based contracts.
- Evidence: Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress, (August 2003).
- 4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?** Answer: NA Question Weight: 0%
- Explanation: There are no programs with similar purpose and goals for comparison.
- Evidence:
- 4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results?** Answer: SMALL EXTENT Question Weight: 20%
- Explanation: The GAO also continues to identify the EM program as a major performance and accountability challenge. Also, the February 2002 Top-to-Bottom Review (conducted under contract) was the first major, comprehensive evaluation done by the Department. The review indicated that EM is not as effective at achieving results as it should be. In FY 2003, EM is aggressively changing the approach to its risk reduction and cleanup mission in order to achieve greater risk reduction faster, accelerate site closure schedules, and reduce life-cycle costs.
- Evidence: GAO 2003 Performance and Accountability Series and High Risk Update; A Review of the Environmental Management Program (February 2002); Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress, (August 2003).
- 4.CA1 Were program goals achieved within budgeted costs and established schedules?** Answer: SMALL EXTENT Question Weight: 20%
- Explanation: Based on EM's latest data, the EM program is projecting significant cost and schedule reductions as a result of major changes made in the program since the February 2002 Top-to-Bottom Review. However, the recent \$1.4 billion (+33 percent) increase in the baseline for the Hanford Waste Treatment Plant indicates continuing problems in achieving program results within budgeted costs.
- Evidence: Top-to-Bottom Review of the EM Program: Status of Implementation, Report to Congress, (August 2003); Congressional Notification (May 2003).

PART Performance Measurements

Program: Environmental Management

Agency: Department of Energy

Bureau:

Measure: Reduce life-cycle costs of the EM program from 2001 baseline (amounts shown are 2003 dollars in millions)

Additional Information: This long-term goal measures EM's ability to control life-cycle costs. EM has successfully aborted the program's recent history of annual cost and schedule increases. Dollars shown under the "Actual" column are in FY 2002 constant dollars (billions). Once this goal is achieved, EM will face the additional challenge of maintaining, or further reducing, the life-cycle cost of the program.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2001		203	
2002	< 192	161	
2003	< 161	142	
2004	< 142		

Measure: Number of liquid tanks closed

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	1	0	
2004	9		
2005	9		

Measure: Canisters of high-level waste packaged for final disposition

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	130	115	
2004	250		
2005	250		

PART Performance Measurements

Program: Environmental Management

Agency: Department of Energy

Bureau:

Measure: Transuranic waste shipped for disposal at WISP (cubic meters)

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	4,522	6,361	
2004	12,952		
2005	13,318		

Measure: Number of nuclear facilities completed

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	2	4	
2004	5		

Measure: Number of radioactive facilities completed

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	7	24	
2004	45		
2005	57		

Measure: Number of industrial facilities completed

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	49	107	

PART Performance Measurements

Program: Environmental Management

Agency: Department of Energy

Bureau:

Measure: Number of industrial facilities completed

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	104		
2005	152		

Measure: Number of material access areas eliminated

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	0	0	
2004	1		
2005	1		

Measure: Low-level/mixed low-level waste disposed (m3)

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	75,030	118,362	
2004	89,070		
2005	84,635		

Measure: Number of release sites remediated

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	214	258	

PART Performance Measurements

Program: Environmental Management

Agency: Department of Energy

Bureau:

Measure: Number of release sites remediated

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	196		
2005	283		

Measure: Number of the 114 geographic sites where cleanup is completed

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	74	74	
2002	75	75	
2003	77	76	
2004	77		
2005	79		

Measure: Number of the 6,045 certified DOE storage, treatment, & disposal containers (3013 or equivalent) of plutonium metal or oxide packaged and ready for long-term storage

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		1,484	
2003	4,320	4,549	
2004	5,543		
2005	5,708		

PART Performance Measurements

Program: Environmental Management

Agency: Department of Energy

Bureau:

Measure: Number of certified containers of enriched uranium packaged ready for long-term storage

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	277	201	
2004	925		
2005	669		

Measure: Plutonium or uranium residues packaged for disposition (kg of bulk material)

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	934	1,140	
2004	254		
2005	76		

Measure: Spent Nuclear Fuel packaged for final disposition (metric tons of heavy metal)

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	857	807	
2004	633		
2005	1		

PART Performance Measurements

Program: Environmental Management

Agency: Department of Energy

Bureau:

Measure: Depleted and other Uranium packaged for disposition (metric tons)

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	1,815	4551	
2004	0		
2005	0		

Measure: Liquid waste eliminated (millions of gallons);

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	700	0	
2004	1,300		
2005	1,900		

OMB Program Assessment Rating Tool (PART)

Capital Assets & Service Acquisition Programs

Name of Program: Facilities and Infrastructure

Section I: Program Purpose & Design (Yes,No)

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Is the program purpose clear?</i>	Yes	The mission of the Facilities and Infrastructure Recapitalization Program (FIRP) is to restore, rebuild and revitalize the physical infrastructure of the nuclear weapons complex by directly funding maintenance and infrastructure activities above current operating levels. Programs across the entire National Nuclear Security Administration (NNSA) complex are integrated and prioritized on one list. The goal is to significantly increase the operational efficiency and effectiveness of the NNSA weapons complex sites.	Report to Congress on the Organization and Operations of the NNSA (Feb 02); NNSA Strategic Plan (Feb 02); NNSA Future Years Nuclear Security Program (FYNSP) March 02;	20% 0.2
2	<i>Does the program address a specific interest, problem or need?</i>	Yes	<p>Numerous internal and external reports, studies, and audits have highlighted the deteriorating condition of the existing Nuclear Weapons Complex. NNSA initiated the program to better direct resources against deteriorating infrastructure by:</p> <p>1) recapitalizing operational facilities, focusing on deferred maintenance and repair;</p> <p>2) disposing of excess facilities that are not radiologically contaminated (or have minimum fixed quantified contamination) to reduce long-term costs/ risk and the total complex footprint;</p> <p>3) continuing a disciplined planning, execution and evaluation effort to ensure effective outyear project execution of Recapitalization and Disposition projects.</p>	Documentation of the problem includes: Nuclear Posture Review (NPR); FY 2000 Report to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile (Foster Panel) (Feb 01);	20% 0.2
3	<i>Is the program designed to have a significant impact in addressing the interest, problem or need?</i>	Yes	The program is designed to improve the condition of facilities and infrastructure across the Nuclear Weapons complex by identifying, prioritizing, funding, and expeditiously correcting infrastructure problems. The program is intended to stop the deterioration of the NNSA's facilities and infrastructure, stabilize and then reduce deferred maintenance, and reduce the existing NNSA complex footprint by disposing of excess facilities that are no longer required for DOE/ NNSA's needs. If successful, the program will address deficiencies noted in numerous reports in recent years.	NNSA Strategic Plan; DOE FY 03 Annual Performance Plan; Ten Year Comprehensive Site Plan Guidance (including FIRP criteria); Site Ten Year Comprehensive Site Plans; Future Years Nuclear Security Program (March 02); FY 03 Congressional Budget Request; FY04 OMB Budget Request (draft); Report to Congress on the Organization and Operations of the NNSA (Feb 02); Foster Panel Report (Feb 01).	30% 0.3

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4	<i>Is the program designed to make a unique contribution in addressing the interest, problem or need (i.e., not needlessly redundant of any other Federal, state, local or private efforts)?</i>	No	The program focuses on renewing and sustaining NNSA facilities and infrastructure. These activities appear to overlap with activities under another NNSA program called Readiness in Technical Base and Facilities and, possibly, construction programs funded in the NNSA campaigns. Broadly speaking, all of these efforts play a role in restoring the complex to an acceptable condition. While the program is separate from the maintenance and infrastructure efforts funded out of the Readiness in Technical Base and Facilities, the extent to which it is unique remains to be determined.	Ten Year Comprehensive Site Plan Guidance (including FIRP project Criteria) NNSA Strategic Plan; Strategic Assessment Model, second edition (2001), Annual Budget request justification material.	20%	0.0
5	<i>Is the program optimally designed to address the interest, problem or need?</i>	Yes	The Facilities and Infrastructure Recapitalization (FIRP) is structured as a capital renewal and sustainability program that addresses significant facilities and infrastructure issues that are separate from the ongoing operations and maintenance programmatic base. The program uses a team which includes representatives from DOE headquarters and field facility operators and managers to develop Ten Year Comprehensive Site Plans that ensure a comprehensive look at NNSA facilities and infrastructure. The program is designed to address the worst/most urgent facilities and infrastructure problems first, consistent with the program criteria.	NNSA Strategic Plan; FIRP 5-Year Program Plan; Project Data Sheets; Project Work Authorizations; Annual Budget Requests; Ten Year Comprehensive Site Plans guidance; Former Administrator John Gordon letter to Congress.	10%	0.1
Total Section Score					100%	80%

Section II: Strategic Planning (Yes, No, N/A)

1	<i>Does the program have a limited number of specific, ambitious long-term performance goals that focus on outcomes and meaningfully reflect the purpose of the program?</i>	Yes	The Facilities and Infrastructure Recapitalization Program's (FIRP) long-term goals are to reduce the backlog of deferred maintenance and reduce the amount of facilities and infrastructure no longer needed. Deferred maintenance is a standard industry metric that refers to the deferred amount of maintenance required to keep a facility in a condition for which it was originally intended. NNSA's goal is to return its deferred maintenance level to industry standards by FY 2009 for mission-critical facilities. Reducing excess infrastructure is both a DOE/NNSA and Congressional item of interest and NNSA intends to dispose of 3,000,000 square feet of space by 2009. Achieving the goals will benefit NNSA by lowering total maintenance costs.	Source Documents: Annual Budget Request; Deferred Maintenance Reduction Summit	15%	0.2
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	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
2	<i>Does the program have a limited number of annual performance goals that demonstrate progress toward achieving the long-term goals?</i>	Yes	The program's annual performance goals are still a work in progress, but initial indications support the assertion that they will lead to achieving the long-term goals. For example, near-term performance goals include stabilizing the amount of deferred maintenance and reducing excess space by 435,000 gross square feet in FY 2004.	FY 03 DOE Annual Performance Plan; FY 03 Congressional Budget Request; Program Execution Plan; Monthly project reports; Project Data Sheets; Work Authorizations.	15%	0.2
3	<i>Do all partners (grantees, sub-grantees, contractors, etc.) support program planning efforts by committing to the annual and/or long-term goals of the program?</i>	Yes	FIRP partners with representatives from NNSA's eight sites and operating contractors to support program planning and execution. Field representatives submit infrastructure site plans to the FIRP program office as part of the overall vetting process. These site plans form the base of the annual and long-term goals. Furthermore, the FIRP program office shares best practices and attains broad agreement and commitment from Headquarters, Field, and operating contractors to support the achievement of corporate goals. NNSA Headquarters and each Site (Federal and operating contractor) committed to the NNSA corporate goals of deferred maintenance reduction at Deferred Maintenance Reduction Summit in July 2002.	Ten Year Comprehensive Site Plan Guidance; Site Ten Year Comprehensive Site Plans; Five-Year Program Plans; Deferred Maintenance Reduction Summit (Jul 25, 02)	10%	0.1
4	<i>Does the program collaborate and coordinate effectively with related programs that share similar goals and objectives?</i>	Yes	The program works with NNSA Defense Programs and the operating contractors in the field to ensure that the most critical facilities and infrastructure needs of the complex are addressed. In addition, the program office has worked with other DoE organizations (including the Office of Engineering and Construction Management) to support Departmental reporting requirements. The program office also informally collaborates with counterparts in the Department of Defense.	Ten Year Comprehensive Site Plan Guidance; Ten Year Comprehensive Site Plan Review Plan Deferred Maintenance Reduction Summit (Jul 25, 02); RTBF Implementation Plans; Integrated Construction Program Plan;	15%	0.2
5	<i>Are independent and quality evaluations of sufficient scope conducted on a regular basis or as needed to fill gaps in performance information to support program improvements and evaluate effectiveness?</i>	Yes	Within the NNSA, the Office of Project Management and Engineering Support is responsible for conducting Independent Project Reviews that provide NNSA program managers with feedback on the status of project development and execution. The purpose of the independent project reviews is to ensure rigorous and systematic reviews of projects at key stages of the program and project life-cycle. The review process provides a standard methodology and report format for independent project reviews of NNSA programs and projects. The personnel that perform the independent project reviews have no direct role or interest in the execution or outcome of the Program and projects being reviewed.	Project Review Facilities and Infrastructure Program Capabilities at NNSA Nevada June 11-13, 02; Independent project review Project Management Capabilities at Y-12 National Security Complex, Oak Ridge, TN, Jan 22-25, 2002.	10%	0.1

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
6	<i>Is the program budget aligned with the program goals in such a way that the impact of funding, policy, and legislative changes on performance is readily known?</i>	Yes	The program budget structure is aligned with key objectives thereby enabling the impact of funding decisions to be assessed by sub-program (i.e., Recapitalization, Facility Disposition, Infrastructure Planning) and by individual project. There are Budget and Reporting codes associated with each of the sub-programs against which funding is allocated and costs reported. This budget structure has enabled the program to readily respond to Congressional direction, such as the following: "The Committee directs that at least 25% of the facilities and infrastructure funding in FY 2003 be used to dispose of excess facilities that will provide the greatest impact on reducing long-term cost and risk."	Future Years Nuclear Security Plan (Mar 02); NNSA Program Decision Memorandum for FY 2004-2008 (Jul 02); Foster Panel report; Office of Secretary of Defense Program Analysis and Evaluation Review (1999); FY 04 NNSA Program/Subprogram/Major technical Elements Table (shows FIRP budget and reporting structure)	15%	0.2
7	<i>Has the program taken meaningful steps to address its strategic planning deficiencies?</i>	Yes	The program has developed a system of evaluating the effectiveness of its strategic planning efforts and makes improvements, as needed. As part of the annual update of the Ten Year Comprehensive Site Plans, NNSA Headquarters, the Field and operating contractors conduct a comprehensive review of the sites' draft Ten Year Comprehensive Site Plans and identify lessons learned and areas requiring improvement. Both site-specific and complex-wide issues (such as Deferred Maintenance, a general weakness noted during review of the draft FY 03 Ten Year Comprehensive Site Plans) are addressed. The most significant site-specific planning deficiencies are identified by formal memorandum to the site managers (for example a site's development of a draft Ten Year Comprehensive Site Plan that was not resource-constrained); the more detailed and less significant comments are distributed via e-mail to the site facility and infrastructure contacts. The comments are resolved by the sites working with their operating contractors and Headquarters (as needed). The final Ten Year Comprehensive Site Plans are reviewed by NN; that needed revisions have been appropriately incorporated.	FY 03 Ten Year Comprehensive Site Plan Guidance; Ten Year Comprehensive Site Plan Lessons Learned; Review Process for NNSA FY 2003 Ten Year Comprehensive Site Plans; Ten Year Comprehensive Site Plan Formal comments;	10%	0.1
8 (Cap 1.)	<i>Are acquisition program plans adjusted in response to performance data and changing conditions?</i>	Yes	Plans are adjusted twice a year in response to performance data and changing conditions. The program and NNSA headquarters conduct a comprehensive review of each sites' draft Ten Year Comprehensive Site Plan to identify corrective actions that must be reflected in the final Ten Year Comprehensive Site Plans to incorporate changing conditions or cost-effective alternatives. Project and related performance data reported in the site's draft and final Ten Year Comprehensive Site Plans are adjusted in response to changes to the budget.	Ten Year Comprehensive Site Plans; Review Process for NNSA FY 2003 Ten Year Comprehensive Site Plans; Ten Year Comprehensive Site Plan Formal comments; Roofing Partnership.	5%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
9 (Cap 2.) <i>Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule and performance goals?</i>	Yes	<p>The program considers alternatives and trade-offs as part of pre-project planning and during the establishment of project cost, schedule and performance baselines.</p> <p>The program recently conducted an analyses of alternatives on a project proposed by a site which resulted in a new funding strategy, schedule, and scope. The site initially requested approval of a project at a total cost of \$194M. Infrastructure and Facilities Management, in collaboration with the site, analyzed the scope, implementation schedule and costs and developed an alternative strategy that considered trade-offs between cost, schedule and performance goals. The new strategy reduced and realigned the scope to more manageable, smaller projects based upon priority and execution efficiencies; adjusted the funding profile, consistent with Future Years Nuclear Security Plan constraints; and ensured the program criteria for project selection were met.</p>	Ten Year Comprehensive Site Plan Guidance (including Facility and Infrastructure Recapitalization Program and Disposition Rating Matrices); Ten Year Comprehensive Site Plans;	5%	0.1

Total Section Score				100%	100%
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Section III: Program Management (Yes,No, N/A)					
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1	<i>Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?</i>	Yes	Facilities and Infrastructure Recapitalization Program establishes baselines for its projects and collects monthly and bi-monthly status reports from the operating contractors at each site for all projects. These status reports provide an assessment of each project's cost, scope, and schedule status and other key project information related to milestones, baseline changes, financial data, and program manager assessments. Additional oversight of projects is conducted through periodic program reviews, formal baseline change control, and continuous dialogue with Field program managers, including specific feedback on corrective action plans for all projects that are reported to be out-of-tolerance.	DOE Status Reporting (reference FY 02, 3rd Quarter FIRP Results); Guidance on Improving the Facilities Information Management System (FIMS) to Support Facilities and Infrastructure Management (Aug 01); FY 2004 NNSA Facilities and Infrastructure Crosscut Field Budget Data; FY 2004 NNSA Surplus Facilities Management Data (draft); Ten Year Comprehensive Site Plan Guidance; Monthly/bi-monthly project reports;	10%	0.1
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	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
2	<i>Are Federal managers and program partners (grantees, subgrantees, contractors, etc.) held accountable for cost, schedule and performance results?</i>	Yes	<p>NNSA incorporates program performance into the evaluation standards of senior Federal managers responsible for achieving program results. Senior level managers' Performance Appraisal Plans are required to include "Key Programmatic Accomplishments" that are specific and measurable.</p> <p>As an example, the Program Manager's FY 02 Performance Appraisal Plan included an objective to, "Develop/manage the program and budget" with the the associated measure to, "Manage the FIRP Program within approved scope, cost, and schedule".</p> <p>NNSA's operating contracts are performance-based, consistent with DOE Acquisition Regulations to emphasize contractor performance and accountability. Contractor Performance Evaluation Plans are used to hold contractors accountable for achieving key results, including the objectives and expectations of the program. Failure to achieve stated objectives results in reductions to the fee the contractor earns (for fee-based contracts).</p>	DOE Senior program managers Performance Appraisals; Example of Contractor Performance Evaluation Plan; Monthly Project Reports.	10%	0.1
3	<i>Are all funds (Federal and partners) obligated in a timely manner and spent for the intended purpose?</i>	Yes	<p>The program obligates funds in a timely manner, as evidenced by the following: (1) \$8.7 million of supplemental funding received in August 2001 was obligated by September 2001; 2) The FIRP FY 02 total obligational authority available is \$196.55M. As of July 2002, FIRP had obligated \$183.5M (93%) and anticipated no difficulty obligating the remaining \$13.1M by the end of the year.</p> <p>All program funds are spent for the intended purpose. As required by DOE/NNSA, the program utilizes the Approved Funding Plan and monthly performance-based Work Authorizations that provide the program guidance consistent with distribution of the Approved Funding Plan. The Approved Funding is the financial guidance controlling the distribution of DOE's obligational authority in compliance with all legal and administrative controls and also provides the funds necessary to support the monthly work authorizations. The sites submit monthly/bi-monthly project status reports that provide the Budget Outlay Profile and actual costs along with milestones, narratives and other data, providing accountability and fur that funds are being spent for the intended purpose.</p>	FIRP Work Authorizations; Approved Funding Program; Quarterly Allotment; Monthly status reports; FIRP Obligation Report (Financial Data Warehouse).	10%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4 <i>Does the program have incentives and procedures (e.g., competitive sourcing/cost comparisons, IT improvements) to measure and achieve efficiencies and cost effectiveness in program execution?</i>	Yes	<p>The program is implementing a program and project management process to ensure efficient use of funding. Sites establish project cost, schedule, and scope baselines and routinely measure and report their performance to Headquarters. Changes to the original baseline are monitored through a formal baseline change control process. To encourage efficient and effective project management and performance, project under runs remain at the sites to accomplish additional high-priority scope from the prioritized project list.</p> <p>In addition, cost efficiency is an important consideration for selection and validation of candidate projects. NNSA evaluates the cost efficiency of each project that appears on site lists for their immediate effect on the condition of a given facility and the savings of maintenance dollars.</p>	Program Execution Plan	10%	0.1
5 <i>Does the agency estimate and budget for the full annual costs of operating the program (including all administrative costs and allocated overhead) so that program performance changes are identified with changes in funding levels?</i>	No	<p>The program is in its infancy and, as yet, has not established a track record for estimating and budgeting for full program costs. Furthermore, the program's Federal Salary and Benefits, retirement, training, travel, rents, utilities, contractual and support services, and working capital fund costs are funded from a separate account and rolled up with other NNSA program direction funds consistent with Congressional direction.</p>		10%	0.0
6 <i>Does the program use strong financial management practices?</i>	Yes	<p>NNSA adheres to financial management practices through the implementation of its Planning, Programming, Budgeting and Evaluation system. This goal of the system is to formalize resource management, link program guidance with fiscal guidance, apply uniform and consistent budget practices across NNSA, and incorporate financial analysis into programmatic decisions. Finally, NNSA is re-engineering its Headquarters and field structures to improve accountability at the lowest levels. Part of this re-engineering will involve the financial management processes of the field elements, and the interface of those field processes with DOE headquarters.</p>	Evidence: NNSA Future-Years Nuclear Security Program, March 20, 2002;	10%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
7 <i>Has the program taken meaningful steps to address its management deficiencies?</i>	Yes	Although the program is in its early stages, it has established formal program and project management processes and procedures (i.e., Ten Year Comprehensive Site Plan Guidance, Program Execution Plan, various NNSA Planning and Budgeting requirements) that lay the groundwork to effectively manage the program. NNSA's eight sites appear to understand and concur with the processes established by the program office, and are part of continuous improvement efforts to correct deficiencies as they are identified. The program office collects lessons learned, benchmarks against other, similar, programs, and compares the program to the best practices of industry. Finally, facility management issues are routinely discussed and resolved during monthly Facilities and Infrastructure Team teleconferences.	Ten Year Comprehensive Site Plan Lessons Learned; Benchmarking with independent entities (including industry and other sites); Survey of NNSA F&I Best Management Practices (ongoing);	15%	0.2
8 (Cap 1.) <i>Does the program define the required quality, capability, and performance objectives of deliverables?</i>	Yes	NNSA operating contracts are performance-based. The quality, capability, and performance characteristics are specified in Performance Evaluation Plans consistent with Departmental guidance on performance based management. NNSA Headquarters programs formally concur on the Performance Evaluation Plans. The NNSA Headquarters Work Authorizations delineate the funding and provide a statement of work that includes a detailed description of the work to be performed including scope, deliverables, milestones, and performance measures/ expectations. The program work authorizations are performance-based and cascade down from the goals, objectives, strategies and indicators reported in the NNSA Strategic Plan, 5-Year Program Plans, work plans and other guidance specifically tasked and approved by the responsible headquarters program managers.	Performance Evaluation Plan; Program Execution Plan; Work Authorizations; Project Authorizations; Monthly Project Reports	10%	0.1
9 (Cap 2.) <i>Has the program established appropriate, credible, cost and schedule goals?</i>	Yes	The program has established appropriate, credible cost and schedule goals and is able to estimate unit costs, annual costs, and life-cycle costs which are incorporated into the Ten Year Comprehensive Site Plan. The planning goals are resource-constrained to reflect budget realities, consistent with the Future Years Nuclear Security Program. The FY 2003 Ten Year Comprehensive Site Plans include the sites' proposed FIRP projects for FYs 2003-12. The program's cost, schedule, and performance goals are established through a project management approach where sites establish cost and schedule baselines that the program office reviews. After the initial baselines are established, changes are managed through a formal baseline change control process. The program is able to estimate unit costs for excess facilities disposition (i.e., dollars/square foot of excess facilities disposed) based on data collected in the sites' Ten Year Comprehensive Site Plans and project status reports.	Ten Year Comprehensive Site Plan Guidance; Ten Year Comprehensive Site Plans; Future Years Nuclear Security Plan; Program Execution Plan; Project Authorization; Project Data Sheets; Monthly/bi-monthly project reports; Status Reporting (reference FY 02, 3rd Quarter FIRP Results);	10%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
10 (Cap 3.) <i>Has the program conducted a recent, credible, cost-benefit analysis that shows a net benefit?</i>	N/A	Although initial reviews of the program appear to be favorable, the program is still too new to have developed sufficient data for a cost-benefit analysis.	N/A	0%	0.0
11 (Cap 4.) <i>Does the program have a comprehensive strategy for risk management that appropriately shares risk between the government and contractor?</i>	Yes	The program manages risk by prioritizing the most critical areas that require attention and sequencing the work to address those areas. During program planning, risk is directly factored into the site's prioritization of projects and into the Office of Infrastructure and Facilities Management selection of projects for funding. The sites prioritize their Recapitalization projects using the program's Recapitalization prioritization matrix which factors in Health and Safety risk to workers and the public; Mission Risk; Environmental Risk; and Safeguards and Security Risk. The sites prioritize their excess facilities disposition projects using the Disposition Matrix which factors in the facility condition assessment and cost into the prioritization rating. Congress has specifically directed that funding be used to, "dispose of Excess Facilities that will provide the greatest impact on reducing long-term costs and risk."	Ten Year Comprehensive Site Plan Guidance; Ten Year Comprehensive Site Plan; Performance Evaluation Plan .	5%	0.1

Total Section Score	100%	90%
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Section IV: Program Results (Yes, Large Extent, Small Extent, No)

The Facilities and Infrastructure Recapitalization Program (FIRP) is a new program that received initial funding of \$8.7M in August 2001, and

1	<i>Has the program demonstrated adequate progress in achieving its long-term outcome goal(s)?</i>	large Extent	Although relatively new, the program appears to have a plan for achieving success. Notwithstanding previous DoE efforts at infrastructure maintenance and recapitalization, the program office appears to have the support of NNSA leadership, as demonstrated by a healthy funding profile in NNSA's Future Year Nuclear Security Plan. Given the numerous reports that have highlighted the poor state of the weapons complex infrastructure, significant attention will likely be given both internally and externally to this program.	FY 04 OMB Budget Request (draft) Deferred Maintenance Reduction Summit	100%	0.670
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<p>Long-Term Goal I: Stabilize deferred maintenance by FY 2005. Target: This is a new long-term goal included in the FY 04 Budget. Actual Progress N/A achieved toward goal:</p>
<p>Long-Term Goal II: Return facilities and infrastructure specific deferred maintenance to industry standards by FY 2009 for mission-critical facilities. Target: This is a new long-term goal included in the FY 04 Budget. Actual Progress N/A achieved toward goal:</p>

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
2	Does the program (including program partners) achieve its annual performance goals?	<p>The FY 2002 program annual goals, as reported in the DOE FY 2003 Annual Performance Plan are provided below, along with projected year-end results. These annual goals were established during the program's start-up year. The goals were recently updated to provide a more quantitative assessment of program progress and to align more closely with the program's long-term performance goals. The updated annual performance goals and targets for FY 2004 are shown under Key Goal 1 and Performance Target, and are included in the FY 2004 Budget.</p> <p>FY 02 Annual Goal: Execute oversight of more than 50 FY 2002 Recapitalization Projects consistent with scope, cost, and schedule baselines. Status: Currently executing 99% (80 of 81) FY 2002 Recapitalization projects within established baselines.</p> <p>FY 02 Annual Goal: Implement an excess prioritized project list to ensure high priority facilities are demolished, based on NNSA's TYCSPs that result in disposal of over 500,000 square feet of floor space. Status: On track to achieve footprint reduction of 500,000 gross square feet through execution of FY 2002 Program Facility Disposition projects.</p>	FY 04 OMB Budget Request (draft) FY 02 3rd Quarter Performance Results	0%	<p>Long-Term Goal III: Reduce excess space by 3,000,000 gross square feet by FY 2009. Target: This is a new long-term goal included in the FY 04 Budget. Actual Progress N/A achieved toward goal:</p>
<p>Key Goal I: Deferred Maintenance Reduction: Allocate 45% of the Recapitalization budget to facilities and infrastructure specific deferred maintenance activities, thereby achieving significant reductions in gross deferred maintenance.</p>					
<p>Performance Target: This is a new annual performance goal that is included in the FY 04 Budget and will be included in the DOE FY 04 Annual Performance Plan.</p>					
<p>Actual Performance: N/A</p>					
<p>Key Goal II: Footprint Reduction: Reduce the NNSA footprint by 435,000 gross square feet through FY 2004 FIRP Facility Disposition projects.</p>					
<p>Performance Target: This is a new annual performance goal that is included in the FY 04 Budget and will be included in the DOE FY 04 Annual Performance Plan.</p>					
<p>Actual Performance: N/A</p>					

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
3	<i>Does the program demonstrate improved efficiencies and cost effectiveness in achieving program goals each year?</i>	N/A		N/A	0%	
4	<i>Does the performance of this program compare favorably to other programs with similar purpose and goals?</i>	N/A	The House Energy Water Development and Appropriations Bill for FY 2003 provided a favorable assessment of the program. Specifically: "The Committee is encouraged by the execution of this program to date and expects the NNSA to ensure that the results of this funding are quantifiable and quickly show measured improvements at each site . . .The Committee directs the NNSA to ensure that funds for recapitalization are not diverted to fund ongoing maintenance and programmatic needs."	Congressional language	0%	
5	<i>Do independent and quality evaluations of this program indicate that the program is effective and achieving results?</i>	N/A			0%	
6 (Cap 1.)	<i>Were program goals achieved within budgeted costs and established schedules?</i>	N/A			0%	
Total Section Score					100%	67%

Program Assessment Rating Tool (PART)

Program: Fuel Cells (Stationary)
Agency: Department of Energy
Bureau: Office of Fossil Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	70%	88%	42%	

- 1.1 Is the program purpose clear?** Answer: YES Question Weight: 20%
Explanation: The program's purpose is to develop low-cost commercially competitive fuel cells that benefit the nation by providing enhanced energy security, reliability, environmental and health benefits, and economic choices.
Evidence: Distributed Generation Program Brochure; Solid State Energy Conversion Alliance (SECA) Program Plan; Hybrid Program Plan; budget documentation (e.g., FY 2004 Congressional Justification); internet sites (SCNG.doe.gov, SECA.doe.gov); Public Workshop Proceedings; National Energy Policy (NEP); DOE Fuel Cell Report to Congress.
- 1.2 Does the program address a specific and existing problem, interest or need?** Answer: YES Question Weight: 20%
Explanation: The program addresses increasing efficiency of electricity production from fossil fuels resulting in fuel conservation and CO2 reduction, transitioning to a hydrogen-based economy, and reducing pollutant emissions to negligible levels.
Evidence: Program Plans; NEP; Budget Documentation; Internet Sites.
- 1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?** Answer: YES Question Weight: 20%
Explanation: The program targets stationary fuel cells for utility- and distributed generation. The Fossil Energy (FE) program is the primary high-temperature fuel cell program within the Federal Government. Coordination meetings are held with other Department of Energy (DOE) offices, Department of Defense (DoD), National Aeronautics and Space Administration (NASA), Environmental Protection Agency (EPA), and National Institute of Standards and Technology (NIST) to ensure redundancy does not exist.
Evidence: Budget Documents (e.g., FY 2004 Congressional Justification), Internet Sites.
- 1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?** Answer: YES Question Weight: 20%
Explanation: There is no evidence of an alternative program design that would be more efficient or effective. Research and development (R&D) is considered the least-intrusive government action to address market failures and generate desired public benefits.
Evidence: Program plans; Budget Documents; Public Workshop Proceedings; Internet Sites; Bayh Dole Act Exceptional Circumstance
- 1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: NO Question Weight: 20%
Explanation: The Distributed Energy (DG) Program targets U.S. electricity user. Because of the high risk still associated with high temperature fuel cells, no significant industry-sector capital investment was available prior to the start of the SECA Program. The DG Program lowers this technical risk to allow increasingly greater industry investment. However, the Department has not presented R & D Investment Criteria information at a detailed level discussing variables such as years to commercialization, public benefits, technological risk, cost share, or plotting economic, environment or security benefits.
Evidence: Program Plans, Public Workshops Proceedings, Internet Sites.

Program Assessment Rating Tool (PART)

Program: Fuel Cells (Stationary)
Agency: Department of Energy
Bureau: Office of Fossil Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	70%	88%	42%	

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 10%

Explanation: The long-term and annual performance measures are as indicated in the PART Measures section. The measures address fuel cell system cost and efficiency. Year 2010 targets of \$400/kW and 75% fuel cell cost and efficiency are well defined.

Evidence: See the "Measures" section of this PART; also program plans; SECA Industry Team Solicitation.

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: The Program's long-term measures are ambitious: \$400/kW and 75% efficiency in 2015 will represent a 10-fold reduction in cost and almost 20-point improvement in efficiency compared to existing technology. SECA has 3 phases (2005, 2008) and the program is targeted to end in 2010. Program and individual projects are continually monitored. All Financial Assistance Awards permit substantial technical involvement of government personnel in decisions.

Evidence: See the "Measures" section of this PART; program plans; program solicitations.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: Annual performance measures of system cost and energy conversion efficiency quantifiably demonstrate incremental progress toward long-term goals. Detailed performance measures are provided by an annual JOULE performance plan and a project database of objectives.

Evidence: See the Measures section of this PART; ProMIS project database; Joule Milestones plans.

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: The program has baselines and ambitious targets for its annual measures. The baselines are indicated in the PART measures section as an actual without a target. These baselines exist for cost and efficiency of fuel cell and hybrid systems. The annual targets increase aggressively to 2010 and 2015 targets that are at the edge of feasibility.

Evidence: SECA Program Plan; Hybrid Program Plan; public workshop proceedings.

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 10%

Explanation: Every project award in the SECA program is focused on the targets of the PART measures section that were also goals included in the solicitation. The Core R&D solicitation topics are selected with input from the fuel cell system developers and DOE prioritization of the most important program issues/goals. Every project is also focused on prioritization of issues viewed most critical to achieving these goals. Each project within the program has milestones identified in the Scope of Work, frequently on a quarterly basis but no less than annual. These milestones are monitored through periodic reports, site visits, the PROMIS project management database, and JOULE quarterly milestones. Private sector cost share of the DG Program has been in excess of 40%. Industry-team elements of SECA have committed to increasing higher cost shares as system designs evolve, initial phases exceed 20%.

Evidence: PROMIS project management database; program solicitations, Quarterly Joule Milestones; PART measures.

Program Assessment Rating Tool (PART)

Program: Fuel Cells (Stationary)
Agency: Department of Energy
Bureau: Office of Fossil Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	70%	88%	42%	

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: The Fuel Cell program has been reviewed by the National Research Council and receives a continuous stream of industry and academia input. In developing the SECA program significant effort was expended to canvas the technology world-wide to ensure the most recent technology and commercial status were incorporated in the program. This effort continues to ensure that new information is assimilated including interaction with other government agencies. Other reviews include a due diligence of the fuel cell developers by a third party (Spencer Management and Argonne National Laboratory), and annual public Workshops that specifically encourages industry, university, and Nat Lab inputs.

Evidence: National Research Council reports, Due diligence summary, Public Workshop Proceedings.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: The Department has not submitted budget documents explicitly linking performance goals to request levels, or presented resource needs in a complete and transparent manner.

Evidence:

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: Improvements in benefits modeling, and efforts to connect long- and short-term goals through the JOULE performance tracking system are all concrete steps that help with planning efforts. The program also uses its annual stakeholder program meetings and other periodic meetings with industry to adjust the R&D program focus and as input to the strategic planning process.

Evidence: Public workshop proceedings; program plans; Joule Quarterly Reports.

2.RD1 If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals? Answer: NO Question Weight: 10%

Explanation: The program has not submitted R & D Investment Criteria information analyzing key program variables at a detailed level, such as years to commercialization, potential public benefits (economic, environmental, security), total project cost, technological risk, cost share.

Evidence:

2.RD2 Does the program use a prioritization process to guide budget requests and funding decisions? Answer: NO Question Weight: 10%

Explanation: The program has not explained how potential benefits and other factors are used in determining program priorities.

Evidence:

Program Assessment Rating Tool (PART)

Program: Fuel Cells (Stationary)
Agency: Department of Energy
Bureau: Office of Fossil Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	70%	88%	42%	

3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance? Answer: YES Question Weight: 12%

Explanation: In projects forming the crux of the program, major milestones are delineated, along with performance requirements, and the milestones tracked and performance measured through regular reporting procedures and project status meetings.

Evidence: ProMis database; websites (www.seca.doe.gov/scng, www.netl.doe.gov/scng); and program plans and roadmaps.

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 12%

Explanation: Industrial teams have clearly defined milestones to meet and senior DOE Office of Fossil Energy managers (SES) have their performance plans linked to goals. The performance criteria for individual Federal product and project managers are based on agreement between employee and supervisors; however, in most cases this will include rating criteria based on success of activities managed.

Evidence: Program roadmaps; program plans; contracts; Senior Executive Service Performance Management plans.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: All funds have been obligated in a timely manner and have funded the intended purpose identified in appropriations. Three solicitations have resulted in over thirty awards over three years and six national laboratories have been funded through Field Work Proposals.

Evidence: Program solicitation and selection documents. Program Field Work Proposals.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 12%

Explanation: About 75% of the program is implemented through the National Energy Technology Lab (NETL) competitive solicitation process resulting in a high level of cost sharing thereby illustrating a high level of industry relevance. The remainder of the program is largely congressionally earmarked. Beginning in FY 2002, this effort was peer-reviewed twice annually at invitation only SECA core technology workshops (public summary in draft) where industry teams critique the work of DOE Nat. Labs. Additionally, R & D performed in-house at NETL is peer reviewed annually (beginning in FY 2001) with results captured in an annual work plan/report as posted on the NETL web.

Evidence: Program websites (www.seca.doe.gov/scng, www.netl.doe.gov/scng).

Program Assessment Rating Tool (PART)

Program: Fuel Cells (Stationary)
Agency: Department of Energy
Bureau: Office of Fossil Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	70%	88%	42%	

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: Activities of the Fuel Cell hybrid program are fully integrated with those of the SECA program. Knowledge is shared between the low temperature, transportation fuel cell program in DOE's Energy Efficiency and Renewable Energy program via annual coordination meetings. There are also several fuel cell industry advisory groups that routinely interact with the various DOE fuel cell program R&D statagists. SECA is a relatively unique program although small efforts through NIST and DoD exist. Project and Program reveiw meetings are jointly attended in many cases.

Evidence: Websites (www.seca.doe.gov/scng, www.netl.doe.gov/scng); budget documents.

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 12%

Explanation: DOE received a clean audit in FY 2002; no known deficiencies specific to this program. Several computer-based project management controls are in place to assist in financial management. Systems exist both on the financial side and the project management side. In addition, individual contract specialists keep detailed files of primary records.

Evidence: DOE annual Performance and Accountability reports.

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 12%

Explanation: DG Program recently revamped to target deficiencies. Forty percent of SECA funding will support core R&D topics, through government financial assistance mechanisms, and will be selected by government personnel with input from industry through annual workshops. Results will be peer reviewed by industry and peer researchers semi-annually to ensure relevance and quality. 60% of funding will be used to establish Multiple Industrial Teams which will each incorporate the core R&D within their unique system approach. Clear, phased goals are provided to measure progress. If these strict requirements of aggressive cost and efficiency goals are not being met, corrective actions inclusive of off-ramping may be imposed. This approach supplants a previous program deficiency of extended government subsidy of costly demonstrations with a research and development focus.

Evidence: Budget documents; program plans, Reports to Congress.

3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality? Answer: YES Question Weight: 12%

Explanation: Approximately 75% of the program is subject to competitive solicitation. The remaining portion of the program is largely congressionally earmarked.

Evidence:

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: SMALL EXTENT Question Weight: 25%

Explanation: External review has questioned the ability of the program to discern industrial commitment to commercialization. However, some DOE stationary fuel cell programs have begun the transition to commercialization.

Evidence: National Academy of Sciences, National Researach Council report: "Energy Research at DOE: Was it Worth It? (2001).

Program Assessment Rating Tool (PART)

Program: Fuel Cells (Stationary)
Agency: Department of Energy
Bureau: Office of Fossil Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
80%	70%	88%	42%	

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: LARGE EXTENT Question Weight: 25%

Explanation: Deficiencies have been corrected with clarity of the linkage between annual and long-term performance goals. The JOULE performance tracking system resulted in a 100% performance score. FY 2003 year-to-date provides validation that all programmatic milestones were met. (In the DG Program, 100 percent of milestones were completed for the first two quarters of FY 2003.)

Evidence: NEMS methodology and results; JOULE system results; ProMIS database (NETL); public workshop proceedings; SCNG and SECA website accomplishments and results (www.seca.doe.gov/scng, www.netl.doe.gov/scng).

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: NO Question Weight: 25%

Explanation:

Evidence:

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: NA Question Weight: 0%

Explanation: No similar programs exist for comparison.

Evidence:

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: LARGE EXTENT Question Weight: 25%

Explanation: Enhancements in the processes for independent reviews have been made. Using a rigorous methodology that was developed to assess prior fuel cell development, this "Due Diligence" independent evaluation will be applied to the SECA program in June 2003. The SECA program strategy and progress is being reviewed publicly once annually and the R&D program is peer reviewed semi-annually. The NRC (NAS) has reviewed the DOE fuel cell program, comments were incorporated during the 2000 - 2002 redesign phase.

Evidence: SECA workshop proceedings and peer review summary (www.seca.doe.gov/scng); NAS/NRC report "Energy Research at DOE: Was it Worth It?" (2001); Due diligence summary report.

PART Performance Measurements

Program: Fuel Cells (Stationary)
Agency: Department of Energy
Bureau: Office of Fossil Energy

Measure: Efficiency of fuel cell turbine systems (percentage of heat in fuel converted to electricity).

Additional Information: Fuel cell turbine systems can achieve 60 -75% efficiency surpassing any known technology using fossil fuel or hydrogen. The measure is based on DC or AC power divided by fuel content as Lower Heating Value.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003		30%	
2015	60%		

Measure: Efficiency of fuel cell turbine systems.

Additional Information: This measure is based on independently audited estimates of system efficiency or complete-system verification tests. Scheduled verification tests years are 2005, 2008, & 2010.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003		30%	
2005	33%		
2006	34%		
2007	35%		
2008	36%		

Measure: Capital Cost of fuel cell system. Fuel cell systems currently produce power at a cost of \$4500 per kw.

Additional Information: SECA and Hybrid R&D plans were designed with specific cost goals that will result in economically competitive, free market deployment of fuel cell systems. This measure is based on actual cost or independently audited cost projected to high volume manufacturing.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003		4,500	
2014	400		

PART Performance Measurements

Program: Fuel Cells (Stationary)

Agency: Department of Energy

Bureau: Office of Fossil Energy

Measure: Capital Cost of fuel cell system. Fuel cell systems currently produce power at a cost of \$4500 per kw.

Additional Information: The outcome required to ensure fuel cells are economically competitive with other technologies in a free market. This measure is based on actual cost or independently audited cost of complete systems projected to high volume manufacturing.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003		4,500	
2005	1,500		
2006	1,000		
2007	800		
2008	750		

Program Assessment Rating Tool (PART)

Program: Fusion Energy Sciences
Agency: Department of Energy
Bureau: Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	67%	80%	Effective

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The mission of the Fusion Energy Sciences (FES) program is to advance plasma science, fusion science, and fusion technology--the knowledge base needed for an economically and environmentally attractive fusion energy source.

Evidence: FY04 Budget Request (www.mbe.doe.gov/budget/04budget/index.htm). Public Law 95-91 that established the Department of Energy (DOE).

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The Fusion Energy Sciences program goals are designed to address the scientific and technology issues facing fusion energy development:1. plasma chaos, turbulence, and transport, 2. magnetic configuration stability, reconnection, and dynamo,3. plasma sheaths and boundary layers, 4. wave-particle interaction in plasmas, and5. materials and technology engineering.

Evidence: FY04 Budget Request. National Research Council (NRC) report "Plasma Science". Fusion Energy Sciences Advisory Committee (FESAC) "Report on the Integrated Program Planning Activity for the DOE Fusion Energy Sciences Program" (www.ofes.fusion.doe.gov/More_HTML/FESAC_Charges_Reports.html).

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: FES is unique in funding fusion research for energy purposes. The program is coordinated with NNSA inertial confinement fusion program. FES also provides support for research in plasma science, and is coordinated with the National Science Foundation (NSF) program.

Evidence: Program funds all dedicated fusion energy research, and a significant share of the plasma physics research in the U.S. Coordinated planning with NNSA in inertial fusion. MOUs and joint solicitations with NSF.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: The FES program is based on competitive merit-review, independent expert advice, and community planning. This proves efficient and effective. However, a COV has yet to validate the merit review system.

Evidence: FESAC, NRC reviews and reports (www.ofes.fusion.doe.gov/More_HTML/FESAC_Charges_Reports.html, www.ofes.fusion.doe.gov/FusionDocs.html). Program files.

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?

Answer: YES

Question Weight: 20%

Explanation: FESAC ensures that input from the fusion research community is regularly gathered to assess the priorities, projects, and progress of the program. Peer review is used to assess the relevance and quality of each project.

Evidence: FESAC, NRC reviews and reports (www.ofes.fusion.doe.gov/More_HTML/FESAC_Charges_Reports.html, www.ofes.fusion.doe.gov/FusionDocs.html). Program files.

Program Assessment Rating Tool (PART)

Program: Fusion Energy Sciences
Agency: Department of Energy
Bureau: Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	67%	80%	Effective

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 10%

Explanation: While not comprehensive, the three key long-term measures focus on outcomes and are meaningful indicators of progress in fusion and plasma physics. The three long-term measures reflect critical areas of uncertainty as identified in the FESAC and NRC reports. The program has defined "successful" and "minimally effective" performance milestones for each measure, and an external panel will assess interim program performance on a triennial basis, and update the measures as necessary. It is inappropriate for a basic research program such as this one to have a quantitative long-term efficiency measure.

Evidence: National Research Council (NRC) report "Plasma Science" and Frontiers in High Energy Density Physics". Fusion Energy Sciences Advisory Committee (FESAC) "Report on the Integrated Program Planning Activity for the DOE Fusion Energy Sciences Program" (www.ofes.fusion.doe.gov/More_HTML/FESAC_Charges_Reports.html). A description of the "successful" and "minimally effective" milestones, and an explanation of the relevance of these measures to the field can be found on the SC Web site (www.sc.doe.gov/measures).

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: FESAC has reviewed the new long-term measures for this program and found them to be ambitious and meaningful indicators of progress in key fields. The external reviews described in 2.1 will update the measures, targets, and timeframes on an interim basis.

Evidence: Letter from FESAC chair regarding review of long-term measures.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: The facilities construction and operations efficiency measures should provide capabilities that the scientific community needs to make discoveries directly connected to the long term measures.

Evidence: FY04 Budget Request. Website with further information (www.sc.doe.gov/measures).

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: All of the annual measures include quantifiable annual targets. Baseline data (FY01 and FY02) is included in the attached measures sheet to verify that the annual measures are ambitious, yet realistic.

Evidence: FY04 Budget Request. Website with further information (www.sc.doe.gov/measures). Construction variance target of <10% comes from OMB Circular A-11, especially Capital Programming Guide supplement.

Program Assessment Rating Tool (PART)

Program: Fusion Energy Sciences
Agency: Department of Energy
Bureau: Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	67%	80%	Effective

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 10%

Explanation: A limited FY03 audit by the DOE Inspector General (IG) found that "performance expectations generally flowed down into the scope of work at the national laboratories." A recent FES program solicitation included links to programs goal documents, but future solicitation should explicitly include the PART measures.

Evidence: Program files. Memo from the DOE IG to the Director of the Office of Science. Example of recent research solicitation (www.science.doe.gov/grants/Fr03-19.html). PPPL contract (www.pppl.gov/common_pages/doe_pu_contract.html, Appendix B).

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: All research projects undergo Merit Review. Grants are reviewed triennially. Construction projects are reviewed quarterly. FESAC evaluates all aspects of the FES program. In addition to evaluating whether FES has achieved its goals in a timely fashion, it recommends how the program should be modified to improve its performance. The Presidential Council of Advisors in Science and Technology (PCAST) and the National Research Council (NRC) have reviewed aspects of the program. The program should initiate a Committee of Visitors (COV) review effort to provide the a process validation and detailed portfolio quality check.

Evidence: SC Merit Review guidelines (www.sc.doe.gov/production/grants/merit.html). Program files, including facility peer reviews and Lehman reviews. FESAC review reports on materials and theory (www.ofes.fusion.doe.gov/More_HTML/FESAC_Charges_Reports.html). SEAB, PCAST and NRC reports (www.ofes.science.doe.gov/FusionDocs.html).

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: DOE has not yet provided a budget request that adequately integrates performance information.

Evidence:

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: New performance goals and targets that have been developed in coordination with OMB and FESAC will be engaged in reviewing them. The program has not yet produced a new [Congressionally-requested] Administration strategic vision for the program given the decision to join ITER, and should do so as soon as all relevant advisory committee studies are complete. The program should initiate a COV process to help in identifying research program strengths and weaknesses for strategic planning purposes.

Evidence: FESAC development report (www.ofes.fusion.doe.gov/More_HTML/FESAC/Dev.Report.pdf). FES plans to develop an Administration plan once the current NRC review of burning plasma physics is complete (www7.nationalacademies.org/bpa/projects_bpac.html). 1996 FES program strategic plan (www.ofe.er.doe.gov/FusionDocuments/StrategicPlan.pdf).

Program Assessment Rating Tool (PART)

Program: Fusion Energy Sciences
Agency: Department of Energy
Bureau: Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	67%	80%	Effective

2.CA1 **Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity?** Answer: YES Question Weight: 10%

Explanation: FESAC recently provided advice to the program on the burning plasma effort, including the various options for pursuing a burning plasma experiment. A Lehman review of the ITER project cost estimate was conducted prior to the ITER decision. The justification provided to OMB for the NCSX project lacks a meaningful alternatives analysis.

Evidence: FESAC burning plasma report (www.ofes.fusion.doe.gov/More_HTML/FESAC/Austinfinalfull.pdf). Lehman report on ITER cost basis (ofes.fusion.doe.gov/News/ITERCostReport.pdf). NRC interim report on burning plasma program (ofes.fusion.doe.gov/News/BPAC_Letter_final_ns_122002.pdf). Program files, including predecisional Exhibit 300 for NCSX submitted to OMB.

2.RD1 **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NA Question Weight: 0%

Explanation: This is a basic R&D program, and the question is intended for industry-related R&D programs.

Evidence:

2.RD2 **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%

Explanation: FESAC and NAS recommendations identify strategic priorities, and the FES budget requests prior to the ITER decision closely followed FESAC guidance.

Evidence: 1995 National Research Council (NRC) "Plasma Science" report (www.nap.edu/catalog/4936.html). FESAC reports on "Integrated Program Planning" and "Priorities and Balance" (www.ofes.fusion.doe.gov/More_HTML/FESAC_Charges_Reports.html).

3.1 **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: NO Question Weight: 8%

Explanation: The program collects and acts upon performance information including weekly facilities reports, quarterly grantee progress reports, annual facility program advisory committee reports, and annual contractor performance assessments. Additional project performance information is collected via Lehman reviews. Research performance data from individual grantees and national labs is collected and assessed via peer review as a type of standardized quality control at the individual grant level. However, there is not yet a systematic process, such as regular COV evaluations, that conducts research portfolio quality and process validations. While DOE IG contracts with an outside auditor to check internal controls for performance reporting, and the IG periodically conducts limited reviews of performance measurement in SC, it is not clear that these audits check the credibility of performance data reported by DOE contractors.

Evidence: Program files, including Lehman reviews, action items based on contractor performance reports, weekly facility reports, and program advisory committee reports.

Program Assessment Rating Tool (PART)

Program: Fusion Energy Sciences
Agency: Department of Energy
Bureau: Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	67%	80%	Effective

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 8%

Explanation: Senior Executive Service (SES) and Program Manager Performance Plans are directly linked to program goals. The Management and Operations contracts for the Labs and Facilities include performance measures linked to program goals. Research funding requirements ensure consideration of past performance.

Evidence: 10 CFR 605 (www.science.doe.gov/production/grants/605index.html). Program and personnel files, including reviews and actions on poorly performing efforts at Los Alamos National Lab and Univ. of Texas. Performance-based fee arrangements in PPPL contract (Appendix B at www.pppl.gov/common_pages/doe_pu_contract.html). Statistics of PI renewals.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 8%

Explanation: Using DOE's monthly accounting reports, SC personnel monitor progress toward obligating funds consistent with an annual plan that is prepared at the beginning of the fiscal year to ensure alignment with appropriated purposes. SC programs consistently obligate more than 99.5% of available funds.

Evidence: Program files. Audit reports.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 8%

Explanation: SC is currently undergoing a reengineering exercise aimed at flattening organizational structure and improving program effectiveness. The program collects the data necessary to track their "efficiency" measure on facility operations.

Evidence: SC reengineering information (www.screstruct.doe.gov). Program files on facility operations.

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 8%

Explanation: FES reviews and coordinates research activities with NNSA's Inertial Confinement Fusion program. FES jointly sponsors research support for basic plasma physics with NSF.

Evidence: Joint program plans and reviews with NNSA. MOU with NSF for joint funding and oversight of plasma physics facility at UCLA. Joint solicitation with NSF (www.nsf.gov/pubs/2002/nsf02184/nsf02184.htm).

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 8%

Explanation: SC staff execute the FES program consistent with established DOE budget and accounting policies and practices. These policies have been reviewed by external groups and modified as required to reflect the latest government standards.

Evidence: Various Departmental manuals. Program files. Audit reports.

Program Assessment Rating Tool (PART)

Program: Fusion Energy Sciences
Agency: Department of Energy
Bureau: Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	67%	80%	Effective

3.7 Has the program taken meaningful steps to address its management deficiencies?

Answer: YES

Question Weight: 8%

Explanation: SC is currently re-engineering to improve program management efficiency. The FES program is reviewing the establishment of formal Committee of Visitors reviews for FY04. Program action on Lehman review findings are critical to success of construction projects.

Evidence: SC reengineering information (www.screstruct.doe.gov). Program files, including Lehman review of NCSX; actions taken in response to review of Tritium Systems Test Assembly at Los Alamos; review and corrective management actions at PPPL after NSTX coil failure.

3.CA1 Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals?

Answer: YES

Question Weight: 8%

Explanation: The FES program documents the capabilities and characteristics of new facilities in conceptual design reports that are reviewed by FESAC and an independent Lehman review. Progress is tracked quarterly through program and Lehman reviews.

Evidence: Program files, including Lehman report on NCSX critical decision review, and program milestones for DIII-D user facility. Predecisional Exhibit 300 for NCSX.

3.CO1 Are grants awarded based on a clear competitive process that includes a qualified assessment of merit?

Answer: NO

Question Weight: 8%

Explanation: First time grant applications are encouraged in all Requests For Proposals. FES has a specific solicitation for the Outstanding Junior Investigator (OJI) program, in which awards are made to young non-tenured faculty. "Merit Review" guides all funding decisions. However, the quality of the research funded via this process has not yet been validated by a COV.

Evidence: For FY 2002, FES received 169 proposals-73 new, 41 for renewals, and 55 for supplements. Of these 26 new proposals were approved, 40 renewals were approved, and 52 supplementals were approved. Thus, FES funded 36% of new research applications.

3.CO2 Does the program have oversight practices that provide sufficient knowledge of grantee activities?

Answer: YES

Question Weight: 8%

Explanation: In addition to grantee progress reports, program managers stay in contact with grantees through email and telephone, conduct program reviews and site visits.

Evidence: Program files, including progress reports, and on-site review reports.

3.CO3 Does the program collect grantee performance data on an annual basis and make it available to the public in a transparent and meaningful manner?

Answer: NO

Question Weight: 8%

Explanation: In accordance with DOE Order 241.1A, the final and annual technical reports of program grantees are made publicly available on the web through the Office of Scientific and Technical Information's "Information Bridge". However, program-level aggregate data on the impact of the grants program is not adequately communicated in the annual DOE Performance and Accountability report.

Evidence: DOE Order 241.1A. Information Bridge (www.osti.gov/bridge/). FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgt/doe02rpt.pdf).

Program Assessment Rating Tool (PART)

Program: Fusion Energy Sciences
Agency: Department of Energy
Bureau: Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	67%	80%	Effective

- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: NO Question Weight: 8%
- Explanation: The funds for research programs and scientific user facilities at the Federal Labs are allocated through a limited competition analogous process to the unlimited process outlined in 10 CFR 605. FES publishes its own specific grant guidelines, and manages the execution of the research program very closely. Solicitations for labs are somewhat targeted, though unsolicited work (typically defined as "inherently unique") is not competed. However, the quality of the research funded via this process has not yet been validated by a COV.
- Evidence: FES grant and merit review procedures (www.ofes.fusion.doe.gov/Grant/Grants.html). 10 CFR 605. (www.science.doe.gov/production/grants/605index.html) Program files. Example of lab solicitation (www.science.doe.gov/grants/LAB03_19.html).
- 4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: LARGE EXTENT Question Weight: 20%
- Explanation: FESAC will evaluate progress toward the long term performance measures every three years. External reports have found good scientific progress, though for the ultimate energy goal, critics question the credibly of the fusion community in continually promising "30 years to commercial fusion power"
- Evidence: FESAC reports (www.ofes.fusion.doe.gov/More_HTML/FESAC/Dev.Report.pdf). NRC quality assessment (www.nap.edu/books/0309073456/html). Article in July 20, 2002 edition of "The Economist."
- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: LARGE EXTENT Question Weight: 20%
- Explanation: FES met roughly half of its annual performance goals in FY02, though one missed target was due to a programmatic decision.
- Evidence: FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgmt/doe02rpt.pdf): "mixed results" in SC6-2 and SC7-6 goals.
- 4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?** Answer: LARGE EXTENT Question Weight: 20%
- Explanation: For construction efficiency, the Electron Cyclotron Heating upgrade at DIII-D was more than 10% behind schedule for FY02. The National Spherical Torus Experimental (NSTX) Facility has recently experienced serious operational difficulties, and it is not expected to meet its original scheduled operating time for FY03.
- Evidence: FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgmt/doe02rpt.pdf): "mixed results" for the efficiency measure on facility construction. Program files, including program review of NSTX coil failure.
- 4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?** Answer: NA Question Weight: 0%
- Explanation: FESAC, NRC, and PCAST reviews and interactions with foreign governments compare this program favorably to similar programs oversees. FES program is only 15% of world program in funding, and expert panels find an disproportionately large impact made by the U.S.
- Evidence: NRC report (www.nap.edu/books/0309073456/html/). PCAST report (www.ofes.fusion.doe.gov/More_HTML/PDFfiles/PCAST.pdf). FESAC reports (www.ofes.fusion.doe.gov/More_HTML/FESAC_Charges_Reports.html).

Program Assessment Rating Tool (PART)

Program: Fusion Energy Sciences
Agency: Department of Energy
Bureau: Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	67%	80%	Effective

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: YES Question Weight: 20%

Explanation: FESAC, on a rotating schedule, reviews the major elements of the FES program. These reviews examine scientific progress, assess the scientific opportunities, and recommend reordering priorities based upon existing budget profiles. The program's performance has received generally positive marks by external panels from National Research Council and President's Council of Advisors on Science and Technology. NRC report found that the fusion community is too isolated, and this impacts its effectiveness.

Evidence: Burning Plasma Physics and Theory were reviewed by FESAC in 2001 (www.ofes.fusion.doe.gov/More_HTML/FESAC_Charges_Reports.html). External reports by PCAST, NRC, and SEAB (www.ofes.fusion.doe.gov/FusionDocs.html).

4.CA1 Were program goals achieved within budgeted costs and established schedules? Answer: YES Question Weight: 20%

Explanation: NCSX, the only new large project in FES, had not been baselined yet. The problems at NSTX (see Question 4.3) are a potential concern for ITER since one reason given for the coil failure on the much smaller NSTX project was the inadequate number of qualified engineers at Princeton Lab.

Evidence: Program files, including Lehman review of NSTC coil failure. FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgt/doe02rpt.pdf). FY04 Annual Performance Plan (www.mbe.doe.gov/budget/04budget/index.htm).

PART Performance Measurements

Program: Fusion Energy Sciences
Agency: Department of Energy
Bureau: Science

Measure: Progress in developing a predictive capability for key aspects of burning plasmas using advances in theory and simulation benchmarked against a comprehensive experimental database of stability, transport, wave-particle interaction, and edge effects. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Excellent		

Measure: Progress in demonstrating enhanced fundamental understanding of magnetic confinement and in improving the basis for future burning plasma experiments through research on magnetic confinement configuration optimization. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Met Goal		

Measure: Progress in developing the fundamental understanding and predictability of high energy density plasma physics, including potential energy producing applications. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		

PART Performance Measurements

Program: Fusion Energy Sciences
Agency: Department of Energy
Bureau: Science

Measure: Progress in developing the fundamental understanding and predictability of high energy density plasma physics, including potential energy producing applications. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2009	Excellent		
2012	Excellent		
2015	Met Goal		

Measure: Average achieved operation time of the major national fusion facilities as a percentage of the total planned operation time. (Scheduled annual operating time is roughly 2,160 hours in 2004 and 1,680 hours in 2005. The ambitiousness and appropriateness of the 90% target level is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2001	>90%	100%	
2002	>90%	94%	
2003	>90%	81%	
2004	>90%		
2005	>90%		

Measure: Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2001	<10%, <10%	-6%, -6%	
2002	<10%, <10%	+5%, 0%	

PART Performance Measurements

Program: Fusion Energy Sciences

Agency: Department of Energy

Bureau: Science

Measure: Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2003	<10%, <10%	0%, 0%	
2004	<10%, <10%		
2005	<10%, <10%		

Program Assessment Rating Tool (PART)

Program: Generation IV Nuclear Energy Systems Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	100%	60%	Effective

- 1.1 Is the program purpose clear?** Answer: YES Question Weight: 20%
Explanation: The purpose of the program is to expand U.S. nuclear power generation to meet economic and environmental needs with next-generation reactor technologies.
Evidence: National Energy Policy; Appropriation Language; Secretary Abraham statements; A Technology Roadmap for Generation IV Nuclear Energy Systems, FY 2004 Budget Request, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program; Generation IV Nuclear Energy Systems Initiative Program Plan
- 1.2 Does the program address a specific and existing problem, interest or need?** Answer: YES Question Weight: 20%
Explanation: The need to expand U.S. power sources, including the development of nuclear energy, is defined in the National Energy Policy.
Evidence: National Energy Policy; A Technology Roadmap for Generation IV Nuclear Energy Systems, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program; Generation IV Nuclear Energy Systems Initiative Program Plan
- 1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?** Answer: YES Question Weight: 20%
Explanation: The program has been designed with extensive government-industry-academia and international collaboration. Nuclear Energy Programs have discrete objectives. The near term deployment of existing technologies falls under the Nuclear Power 2010 initiative. The deployment of next-generation technologies from 2015-2030 falls under Generation IV.
Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems, FY 2004/2005 Budget Request, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program; Generation IV Nuclear Energy Systems Initiative Program Plan
- 1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?** Answer: YES Question Weight: 20%
Explanation: Extensive interactions with other government programs, international partners, and external review groups have minimized the potential for flaws. No flaws presently known.
Evidence: National Energy Policy; Secretary Abraham statements; A Technology Roadmap for Generation IV Nuclear Energy Systems, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program
- 1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: YES Question Weight: 20%
Explanation: Funded R&D directly contributes to program goals. Funding is allocated to R&D performers based on prioritization of program objectives and past performance.
Evidence: National Energy Policy; Generation IV Nuclear Energy Systems Initiative Program Plan; A Technology Roadmap for Generation IV Nuclear Energy Systems, FY 2004 Budget Request, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program

Program Assessment Rating Tool (PART)

Program: Generation IV Nuclear Energy Systems Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	100%	60%	Effective

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 10%

Explanation: The long-term goal of the Generation IV program is to develop next-generation nuclear energy systems for deployment before 2030, which provide significant improvements in four performance areas: sustainability, proliferation resistance and security, safety and reliability, and economics. Each performance area has one or more associated performance measures as described in both the Generation IV Roadmap and the Generation IV Program Plan, where they are called technology goals. In the long term, the program's outcome is measured by how well the system(s) developed under this program advance the performance measures.

Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems ; FY 2004 Budget Request; Generation IV Nuclear Energy Systems Initiative Program Plan, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program. Goal 4.1 of the FY 2004 Annual Performance Plan; FY 2003 Joule.

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: DOE has developed both long-term and intermediate outcome measures that are supported by annual output measures to support ambitious program goals and schedules. One ambitious long term goal is the demonstration of economic hydrogen production with nuclear energy by 2015. This will require completion of supporting R&D, design, construction and startup of an advanced reactor within 12 years. Supporting annual goals include the development of the reactor point design, pre-conceptual design, conceptual design, preliminary design and then final design.

Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems ; FY 2004 Budget Request; FY 2004 Annual Performance Plan, FY 2003 Joule, Generation IV Nuclear Energy Systems Initiative Program Plan, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: The linkage between annual performance measures and long-term goals is established in the Gen IV Program Plan. Sustainability, proliferation resistance and security, safety and reliability, and economics can be evaluated with any degree of confidence only at a level of system definition provided by a well-developed preconceptual or even a conceptual design, the target for FY 2005. With the conceptual design in hand, broader and more quantitative evaluation criteria and metrics will be developed to evaluate Generation IV designs.

Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems ; FY 2005 Budget Request; Generation IV Nuclear Energy Systems Initiative Program Plan, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: Annual program performance baselines and targets have been established to measure performance in attaining the annual targets. The targets include extending scientific knowledge of materials and chemistry into high temperature regions not previously explored on a schedule to support early deployment of Generation IV technologies. Efforts are underway to refine performance measures as preconceptual designs are completed.

Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems ; FY 2005 Budget Request; Generation IV Nuclear Energy Systems Initiative Program Plan, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program

Program Assessment Rating Tool (PART)

Program: Generation IV Nuclear Energy Systems Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	100%	60%	Effective

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 10%

Explanation: Several international agreements have been signed in the past year, and the International Nuclear Energy Research Initiative (I-NERI) has made five bilateral project awards.

Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems ; FY 2005 Budget Request; Generation IV Nuclear Energy Systems Initiative Program Plan, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program, program guidance letters and associated statements of work for DOE contractors. Monthly Performance Reports.

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: A comprehensive program evaluation is planned for February 2004.

Evidence: Charter for the Nuclear Energy Research Advisory Committee (NERAC) Generation IV Technology Planning Subcommittee and associated meeting reports, A Technology Roadmap for Generation IV Nuclear Energy Systems ; FY 2005 Budget Request; Generation IV Nuclear Energy Systems Initiative Program Plan

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: Beginning with the FY 2005 OMB and Congressional Budget submissions, the Department will utilize a unique format to link budget and performance data; however, such linkages were not established in prior year budgets. Departmental deficiencies notwithstanding, however, the Generation IV program maintains a detailed program plan, initially developed in 2003, that is updated on an as-needed basis to accommodate budget changes. This document makes fully transparent the adjustments in program priorities, costs, schedules, and achievement of long- and short-term performance measures to meet budget requirements. It is also the document used to set priorities on which future budget requests are based.

Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems ; FY 2004 Budget Request; Generation IV Nuclear Energy Systems Initiative Program Plan, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program, draft 17 of DOE Strategic Plan General Goals

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: Instituted a new plan for external reviews, instituted earned value accounting and reporting, wrote new program planning documents, FY 2005 budget is outcome and output driven in support of National goals. No management deficiencies have been identified.

Evidence: Annual DOE Performance Plan and Performance Appraisal Form; DOE/NE Program Guidance Letters and associated Statements of Work, detailed and executive level program plans written for Gen IV, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program

Program Assessment Rating Tool (PART)

Program: Generation IV Nuclear Energy Systems Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately Effective
100%	90%	100%	60%	

- 2.RD1** **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: YES Question Weight: 10%
- Explanation: The program has continually re-examined, analyzed and assessed its potential benefits, most recently in the U.S. Generation IV Implementation Plan to be submitted to Congress in July 2003. Quantitative benefits depend on the success of the program and the degree of deployment of Generation IV reactors; they will be assessed in later years using tools developed by the program. Qualitative benefits include new commercial options for generating economic electricity and hydrogen without harmful air emissions.
- Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems ; FY 2005 Budget Request; Generation IV Nuclear Energy Systems Initiative Program Plan, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program, U.S. Generation IV Implementation Plan
- 2.RD2** **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%
- Explanation: R&D priorities are established in the Technology Roadmap for Generation IV Nuclear Energy Systems and in the U.S. Generation IV Implementation Plan.
- Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems ; FY 2004 Budget Request; Generation IV Nuclear Energy Systems Initiative Program Plan, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program, The U.S. Generation IV Implementation Plan.
- 3.1** **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: YES Question Weight: 12%
- Explanation: The Department monitors program performance and uses the information to manage the program, improve performance, and determine future funding requirements. In FY 2003, monthly earned value reporting was instituted.
- Evidence: Annual DOE Performance Plan and Performance Appraisal Form; Quarterly updates to the Annual Performance Plan, Monthly Earned Value Reporting.
- 3.2** **Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: YES Question Weight: 12%
- Explanation: Program performance goals are incorporated into the annual performance plans for the Federal senior manager and Federal program manager. Program performance goals are also incorporated into the contractor's annual performance plan.
- Evidence: Annual DOE Performance Plan and Performance Appraisal Form; DOE/NE Program Guidance Letters and associated Statements of Work, Monthly Earned Value Reporting. Performance Based Incentives in M&O contracts.

Program Assessment Rating Tool (PART)

Program: Generation IV Nuclear Energy Systems Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately Effective
100%	90%	100%	60%	

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: Funds are obligated in a timely manner and program is executed in conformance with Congressional language and established program plan.

Evidence: DOE/NE Program Guidance Letters and associated Statements of Work; DOE/NE's Monthly Obligation and Cost and Performance Tracking Report; Generation IV Nuclear Energy Systems Initiative Program Plan

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 12%

Explanation: DOE contractor performance is judged against project costs, schedule and technical baselines. Decisions to continue funding are based on these evaluations. Incentives are included in participants contracts but not on a program-specific basis. Additionally, starting in June, 2003, efficiency will be monitored on a monthly basis via earned value reporting.

Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems; DOE/NE Program Guidance Letters and associated Statements of Work; DOE/NE's Monthly Obligation and Cost and Performance Tracking Report; Generation IV Nuclear Energy Systems Initiative Program Plan, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program. Contracts and Award Fee Determinations for program participants, Monthly status of work packages and earned value reports.

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: The program is coordinated with other DOE nuclear energy R&D programs including the Nuclear Power 2010 program, the Nuclear Hydrogen Initiative, and the Advanced Fuel Cycle Initiative to capitalize on existing synergies and to ensure no duplication of effort. In addition, the program is coordinated with the NRC and the State Department.

Evidence: FY 2005 Budget Request; A Technology Roadmap for Generation IV Nuclear Energy Systems, Generation IV Nuclear Energy Systems Initiative Program Plan, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 12%

Explanation: Internal controls are used in the execution of the program. The Department monitors program performance and uses the information to manage the program, improve performance, and determine future funding requirements. In FY 2003, monthly earned value reporting was instituted.

Evidence: Annual Reporting for Federal Managers Financial Integrity Act. Annual DOE Performance Plan and Performance Appraisal Form; Quarterly updates to the Annual Performance Plan, Monthly Earned Value Reporting.

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 12%

Explanation: No management deficiencies have been identified. Program performance goals are incorporated into staff and contractor annual performance plans and progress against these goals are monitored. The Department uses this information to evaluate contractor performance and resulting award fees. Weekly review meetings are held with the project management team, problems are highlighted, and corrective actions implemented.

Evidence: Annual DOE Performance Plan and Performance Appraisal Form; DOE/NE Program Guidance Letters and associated Statements of Work

Program Assessment Rating Tool (PART)

Program: Generation IV Nuclear Energy Systems Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	100%	60%	Effective

- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: YES Question Weight: 12%
- Explanation: The program incorporates both merit-based competitive awards and national laboratory-directed awards based on technical capabilities and facilities.
- Evidence: FY 2005 budget; Generation IV Nuclear Energy Systems Initiative Program Plan; A Technology Roadmap for Generation IV Nuclear Energy Systems. Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program
- 4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: YES Question Weight: 30%
- Explanation: The program is on track to achieve its long-term performance goals. The program established overall goals in FY 2002 as documented in the final draft Generation IV Technology Roadmap (September 2002) The U.S. chose four specific technologies to fund with emphasis on VHTR beginning in FY 2003. Related programs are managed in a single organization. Earned value reporting was initiated in FY 2003. Detailed program plans have been written.
- Evidence: Final Draft of A Technology Roadmap for Generation IV Nuclear Energy Systems (September 2002). FY 2004 Budget, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program, Gen IV Program Plan [note: the September 2002 draft Roadmap is cited above rather than the final published Roadmap to show actual continuity in the development and execution of the program]
- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: YES Question Weight: 30%
- Explanation: All annual performance goals have been achieved. Annual measures and targets are tracked on a monthly basis.
- Evidence: FY 2002 and FY 2003 Budgets; A Technology Roadmap for Generation IV Nuclear Energy Systems, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program, FY 2002 Performance and Accountability Report, FY 2004 Annual Performance Plan, FY 2003 Joule
- 4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?** Answer: NO Question Weight: 20%
- Explanation: This new program has begun significant cost-sharing with foreign partners. Further, the Department has initiated collaboration web sites that limit foreign travel by allowing international committees to jointly draft documents, keep a calendar, chat, and otherwise manage committee business. DOE contracts do not reward program-specific efficiencies, but the program employs program controls that collect information on contractor performance and efficiency monthly, including an earned value management system beginning in 2003 (although detailed evidence for such efficiencies has not yet been presented). The program inputs the results of these reviews into the various contractors award fee determinations at the Departmental level.
- Evidence: A Technology Roadmap for Generation IV Nuclear Energy Systems, Program Planning Documents, FY 2004 Budget, Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program

Program Assessment Rating Tool (PART)

Program: Generation IV Nuclear Energy Systems Initiative
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately Effective
100%	90%	100%	60%	

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?

Answer: NA

Question Weight: 0%

Explanation: There are no comparable programs.

Evidence: R&D Portfolio Management Report, National Energy Policy, Generation IV Nuclear Energy Systems Initiative Program Plan; A Technology Roadmap for Generation IV Nuclear Energy Systems. FY 2004 Budget. Technical Program Plan for the Advanced Gas Reactor Fuel Development and Qualification Program

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results?

Answer: NO

Question Weight: 20%

Explanation: A comprehensive evaluation is planned for February 2004.

Evidence: Charter for the NERAC Generation IV Technology Planning Subcommittee and associated meeting reports; Communiqué from GIF Tokyo Meeting (September 2002), Generation IV Program Plan

PART Performance Measurements

Program: Generation IV Nuclear Energy Systems Initiative

Agency: Department of Energy

Bureau:

Measure: Develop a next-generation nuclear energy systems for deployment before 2020, which provides 20 percent improvement in safety and reliability, 20 percent improvement in economics, and equal or better performance in sustainability, and proliferation resistance and security.

Additional Information: The long-term goal of the Generation IV program is to develop next-generation nuclear energy systems for deployment before 2030, which provide significant improvements in four performance areas: sustainability, proliferation resistance and security, safety and reliability, and economics. Each performance area has one or more associated performance measures as described in the Generation IV Roadmap where they are called technology goals. The program's outcome is measured by how well the system(s) developed under this program advance the performance measures.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2020	1		
2020	1		
2020	1		

Measure: Develop a next-generation nuclear energy system for deployment between 2015 and 2030. *Targets: 10X improvement in sustainability, 2X improvement in proliferation resistance and security, 20% improvement in safety and reliability, and 20% improvement in economics.

Additional Information: Three concepts are in development for deployment before 2030. Viability assessments will be complete and a down selection to just one or two concepts will occur in 2014.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2015	*		
2030	1		
2030	1		
2030	1		

Measure: Variance from cost and schedule baselines

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2005	1		

PART Performance Measurements

Program: Generation IV Nuclear Energy Systems Initiative

Agency: Department of Energy

Bureau:

Measure: Advance Generation IV Nuclear Plant reactor system concepts Targets (1) Complete preconceptual design for Next Generation Nuclear Plant (NGNP)
(2) Complete reference point design for NGNP (3) Technology roadmap completion

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2005	(1)		
2004	(2)		
2003	(3)		

Measure: Variance from cost and schedule baselines

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2005	<10%		

Measure: Issue the Generation IV Technology Roadmap to develop the most promising next generation nuclear energy system concepts.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	1	1	

Measure: Develop preliminary functional requirements for the Generation IV Very-High-Temperature Reactor.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	1		

PART Performance Measurements

Program: Generation IV Nuclear Energy Systems Initiative

Agency: Department of Energy

Bureau:

Measure: Complete the draft Generation IV Technology Roadmap for development of the next generation nuclear energy systems.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	1	1	

Measure: Formally establish the Generation IV International Forum to assist in identifying and conducting cooperative R&D. Initiate development of a Generation IV Technology Roadmap for development of next generation nuclear energy systems.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	1	1	

Program Assessment Rating Tool (PART)

Program: Geothermal Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	59%	Effective

1.1 Is the program purpose clear?

Answer: Yes

Question Weight: 20%

Explanation: The purpose of the Geothermal Technology program is to establish geothermal energy as an economically competitive contributor to the U. S energy supply, capable of meeting a significant portion of the Nation's heat and power needs.

Evidence: FY 2004 Budget. P.L. 93-410, "Geothermal Energy Research, Development and Demonstration Act " (1974); P.L. 101-218, "Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989"; P.L. 101-575, "Solar, Wind, Waste, and Geothermal Power Production Incentives Act of 1990"; P.L. 102-1018, "Energy Policy Act of 1992"

1.2 Does the program address a specific and existing problem, interest or need?

Answer: Yes

Question Weight: 20%

Explanation: The program aims to expand the use of geothermal energy, which can increase domestic energy supplies and avoid emissions of pollutants and greenhouse gases associated with conventional methods of power production. These potential benefits support the Administration's National Energy Policy, as well as the Administration's climate change goals. The program focuses on reducing drilling costs, improving finding rates of exploratory drilling, expanding geothermal resource base, and reducing surface system costs of producing electricity.

Evidence: The program focuses R&D on activities that it considers too technologically risky for the private sector to undertake alone. Risk levels vary on a project-by project basis.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: Yes

Question Weight: 20%

Explanation: The program's activities are unique in that there is no other entity in the United States mounting a significant research effort to improve geothermal technologies. Both the California Energy Commission and the U.S. Navy have small geothermal programs. (The Navy program focuses only on the Coso geothermal development in California.) The Department's program coordinates with these other programs, usually through the exchange of experts for technical proposals review. While Federal and private sector research efforts on oil and gas drilling may complement some of the program's R&D efforts, the results are not completely transferrable because geothermal resources occur in a much more challenging (deeper, hotter, harder, more chemically aggressive) environment that requires specialized technologies for exploration and production.

Evidence: The program considers uncertain risk-to-return ratio and lack of industry capital to be market barriers to private sector investment in geothermal technologies.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: Yes

Question Weight: 20%

Explanation: The program focuses on reducing costs of geothermal power through technology development in order to achieve the outcomes of increased domestic energy supply and reduced emissions of pollutants and greenhouse gases.

Evidence: The program found no studies that indicate a production tax credit, regulatory driver, or other policy mechanism would be a more cost effective approach than R&D.

Program Assessment Rating Tool (PART)

Program: Geothermal Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	59%	Effective

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly? Answer: No Question Weight: 20%

Explanation: The program focuses resources and technologies that are not yet commercially competitive. In support of the Administration's R&D Investment Criteria initiative, the program was asked to prepare "bubble charts" that plot key program variables (e.g., expected public benefits, funding levels, years to commercialization). Bubble charts can serve as an informational tool to help determine, along with other considerations, whether the program appropriately targets its R&D funding. While the program has made progress estimating public benefits, the Department has not yet developed a methodology to estimate benefits consistently within and across programs. Therefore, the program could not prepare meaningful bubble charts.

Evidence: Although unable to prepare bubble charts, the program did estimate years to commercialization for its major R&D activities as follows: enhanced geothermal system (EGS) technology (15 years); non-invasive resource verification (15 years); advanced drilling system (10 years); advanced surface systems (10 years). The program's estimates have not been peer reviewed. In general, the program appears to target its resources wisely, but a lack of ability to provide appropriate evidence mandates a "no" response. EERE continues to work internally and with other DOE program offices to improve consistency and accuracy in estimating benefits.

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: Yes Question Weight: 10%

Explanation: The program has identified three long-term performance measures that reasonably capture most program activities.

Evidence: FY 2004 Budget. Geothermal Multiyear Program Plan (September 2003).

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: Yes Question Weight: 10%

Explanation: The Program has established multi-year Program goals that target specific areas of improvement in drilling costs, cost of constructing geothermal power plants, and expansion of economic geothermal resources, all of which affect the long-term measure of reducing geothermal power costs. Every year the Program reassesses progress of the research efforts, and makes adjustments in R&D.

Evidence: The program has identified "off-ramps" to redirect, down-select, or terminate efforts in its main R&D activities. For example, Surface system R&D will be terminated if it is unable to meet annual goals for reducing surface systems cost for three consecutive years.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: Yes Question Weight: 10%

Explanation: The program has developed three new annual performance measures that demonstrate progress toward the long-term goals. The program also monitors a suite of annual milestones and indicators that are designed to track progress toward meeting long-term goals.

Evidence: Geothermal Multiyear Program Plan (September 2003).

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: Yes Question Weight: 10%

Explanation: The program's new annual performance measures have baselines and the targets appear to be reasonably ambitious.

Evidence:

Program Assessment Rating Tool (PART)

Program: Geothermal Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately Effective
80%	80%	88%	59%	

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: Yes Question Weight: 10%

Explanation: National laboratories and other contractors are required to define, monitor, and report on meaningful measures of program accomplishment that are consistent with long-term goals of the program. Those goals are used to guide the formulation of the Annual Operating Plan (AOP) that documents the specific accomplishments to which each performer commits in accepting financial support.

Evidence: FY 2003 Annual Operating Plan. Sample contract document identifying program performance goals.

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: Yes Question Weight: 10%

Explanation: The program regularly organizes independent peer reviews to evaluate research projects and establish directions for future work. Peer reviewers typically evaluate individual projects based on technical performance to date. The program should consider expanding the scope of peer reviews to include overall program effectiveness and relevance.

Evidence: Geothermal peer review conferences: August 23-24, 2001, March 25-27, 2002, and July 29-August 1, 2003.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: No Question Weight: 10%

Explanation: Program funding is explicitly tied to specific priority activities that are designed to lower drilling costs, improve exploration success rates, and lower the cost of constructing geothermal power plants. However, budget documents do not clearly indicate the full costs of achieving the program goals. Salaries, benefits, and other administrative expenses to support the program are included in a separate budgetary line item ("Program Direction"). EERE does not report the allocation of Program Direction funding to the various programs it supports.

Evidence: FY 2004 Budget.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: Yes Question Weight: 10%

Explanation: The program has consulted with industry and other stakeholders on priority needs and has formulated a multiyear research plan.

Evidence: Geothermal Multiyear Program Plan (September 2003).

2.RD1 If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals? Answer: No Question Weight: 10%

Explanation: Each year, the program estimates the public benefits of its activities in support of the Government Performance and Results Act (GPRA) and the Administration's R&D Investment Criteria initiative. However, the program has not yet developed a consistent and reliable methodology for comparing potential benefits within and across programs with similar goals.

Evidence: FY 2004 Congressional Budget Justification materials.

Program Assessment Rating Tool (PART)

Program: Geothermal Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	59%	Effective

- 2.RD2 Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: Yes Question Weight: 10%
- Explanation: The program indicates that each activity that it supports is assigned a relative impact based upon factors such as system cost, risk of achieving success, and cost to market and other technology variables. While the program did not provide information on these relative impacts or use bubble charts to inform its decisions, it did participate in an EERE-wide zero-based budget exercise in which priorities at the activity level were clearly laid out.
- Evidence: Program prioritized its activities as follows (highest to lowest priority): drilling R&D, enhanced geothermal systems, detection and mapping, core geothermal research, advanced heat and power, and Geopowering the West. EERE Priority Ranking Tool, Zero Based Budget Exercise.
- 3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: Yes Question Weight: 12%
- Explanation: The EERE Strategic Management System -- which establishes at the beginning of each fiscal year an 18-month schedule for key planning, budget formulation, budget execution, and analysis / evaluation functions -- requires that each EERE program establish and track long-term and near-term program performance goals and measures. Program results as evaluated through the goals and measures are used annually and throughout the year to assess partners performance, adjust funding, and re-align R&D portfolios.
- Evidence: SMS Implementation Letter for FY 2002 - 2005 (October 2001). The program also reports on quarterly milestones in the Department's Joule database. However, in general, milestones in the Joule system are not necessarily meaningful or fully reflective of program progress. Thus, the Department's Joule system provides little value-added. The new I-MANAGE system, currently under development, will better integrate budget and performance.
- 3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: Yes Question Weight: 12%
- Explanation: The Annual Performance Appraisals of all EERE Program Managers include criteria directly related to cost, schedule, and performance results. EERE reviews these criteria monthly in the EERE Monthly Management Reviews. Most EERE contracts include award fee and other performance criteria to hold those partners accountable.
- Evidence: Performance Plan and Performance Appraisal Form for Performance Management System Employees; EERE Award Fee and Performance Based contracts

Program Assessment Rating Tool (PART)

Program: Geothermal Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	59%	Effective

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: Yes Question Weight: 12%

Explanation: Each year, the program develops an Annual Operating Plan, which is reviewed internally to ensure that new funding is planned to be obligated consistent with the appropriated purpose. EERE also develops a Spend Plan for all of its programs. The program uses data from Departmental procurement and financial systems -- and similar data from National Laboratory partners -- to assure that actual expenditures occur for intended purposes and on a schedule consistent with the Spend Plan. Unobligated balances brought forward to FY 2004 were \$129,000, less than one percent of the program's FY 2003 appropriation of approximately \$29 million.

Evidence: FY 2003 Annual Operating Plan. Geothermal Technology Program FY 2003 Financial Status Report (June 2003). FY 2004 Apportionment, FY 2003 Spend Plan.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: Yes Question Weight: 12%

Explanation: EERE's reorganization in 2002 clarified lines of responsibility and eliminated organizational "stovepipes" by consolidating planning, budgeting, and analysis into a single business administration office. The reorganization reduced management layers, although staff levels remained the same. EERE developed a new IT report to improve program managers access to EERE cost, obligation, and procurement data. EERE plans to consolidate several legacy IT systems into a single program management system that is intended to track all required information on a project by project basis (cost share, type of contract according to A-11 definitions, etc.). EERE is also developing a measure to reduce uncosted balances, which means obligated funds will be put to use more quickly. These recent actions should achieve efficiencies and improve cost effectiveness, although it will be difficult in some cases to demonstrate definitively.

Evidence: EERE Reorganization "All Hands" presentation: http://www.eere.energy.gov/office_eere/pdfs/eere_reorg.pdf. EERE IT Business Case Number 019-20-01-12-01-1011-00-304-101. Geothermal Technology Program FY 2003 Financial Status Report (June 2003).

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: Yes Question Weight: 12%

Explanation: The program collaborates with the DOE Fossil Energy program on oil and gas drilling activities and with the US Geologic Survey (USGS) on geothermal resource assessment. The program also actively participates in activities at the State level when opportunities arise. The USGS and California Energy Commission were panel members in the 2002 Drilling and ESR&T Peer Review and the 2001 Geoscience Peer Review. The program shares in the development of high temperature electronic drilling components in a Joint Industry Partnership with the oil & gas industry.

Evidence: Interagency agreements with USGS: DE-AI07-92ID13207 and DE-AI07-98ID13673. Drilling/ESR&T Peer Review Report (2002). Geoscience Peer Review Report (2001). Collaborative projects with DOE Office Fossil Energy. Joint project with California Energy Commission under Public Interest Energy Research and the State's Geothermal Resources Development Account.

Program Assessment Rating Tool (PART)

Program: Geothermal Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	59%	Effective

3.6 Does the program use strong financial management practices?

Answer: Yes

Question Weight: 12%

Explanation: Each year, EERE develops and maintains a Spend Plan and a Measures spreadsheet that links the Spend Plan to annual and long-term goals and measures for each EERE program. The program reviews quarterly costing reports and weekly project status reports. There is no evidence of erroneous payments or statutory violations.

Evidence: FY 2003 Spend Plan and Measures spreadsheet. Sample quarterly costing report.

3.7 Has the program taken meaningful steps to address its management deficiencies?

Answer: Yes

Question Weight: 12%

Explanation: The National Association of Public Administrators (NAPA) found dozens of management deficiencies in the program's bureau (the Office of Energy Efficiency and Renewable Energy, or EERE) in a review published in 2000. EERE provided evidence that it addressed some of management deficiencies identified by NAPA, and has prepared a Management Action Plan that will address many of the remaining findings. While a few NAPA recommendations have not been addressed (e.g., that EERE conduct periodic audits to assure that cost-sharing partners actually provide funding they agree to), in general, EERE has taken meaningful steps to address most deficiencies.

Evidence: A Review of the Management in the Office of Energy Efficiency and Renewable Energy (NAPA, 2000). Letter Report from Assistant Secretary Garman to Chairman of the House Subcommittee on Interior and Related Agencies on implementation of NAPA recommendations (July 11, 2001). EERE Management Action Plan (August 2003).

3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?

Answer: No

Question Weight: 12%

Explanation: The program uses a lead National Lab concept in managing technical activities. The program allocates funds based on technical program goals, utilizing the expertise at the National Labs. The program could not document the conduct of its R&D activities in accordance with OMB Circular A-11 definitions (e.g., merit-reviewed with limited competitive selection, Congressionally directed, etc.). Program could also not demonstrate that research stage (basic, applied, development, demonstration) correlated with statutory and Administration guidelines for cost sharing.

Evidence:

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?

Answer: Large Extent

Question Weight: 25%

Explanation: The key long-term measure is cost of geothermal power. Since 1980, the cost of geothermally generated electricity has dropped from 16 cents/kWh to 5-8 cents/kWh today, in part due to DOE-sponsored R&D. The program has contributed to improvements in geothermal drilling subsystems (drill bit design, lost circulation control, high temperature cements, etc), energy conversion surface facilities (advanced direct contact condensers, metastable turbine expansions, etc.), and other geothermal technologies, many of which have contributed to reduced geothermal power cost.

Evidence:

Program Assessment Rating Tool (PART)

Program: Geothermal Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	59%	Effective

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: Large Extent Question Weight: 25%

Explanation: The program's annual performance measures are new, so it is too early to assess progress on achieving targets. However, peer review data and available historic data on the annual measures indicates that the program has contributed to progress on the measures.

Evidence:

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: No Question Weight: 25%

Explanation: The program could not demonstrate that actions it has taken have resulted in tangible productivity or efficiency gains.

Evidence:

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: N/A Question Weight: 0%

Explanation: DOE geothermal program activities are unique in that there is no other large entity in the United States mounting a significant research effort in geothermal technologies. The U.S Navy and the State of California each sponsor small geothermal R&D programs. The programs coordinate (usually through the proposal review process) to ensure no duplication of effort, but there is little evidence on which to base a value judgement of whether one program is "better" than the others.

Evidence: <http://www.energy.ca.gov/geothermal/index.html>

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: Yes Question Weight: 25%

Explanation: In a review in 2000, the National Academy of Sciences wrote: "Significant progress has been made in drilling technology and down-hole diagnostic methods, resevoir modeling..., and power conversion methods. In addition, DOE accelerated the development of ground source heat pump technology as a very reliable, cost-effective means of increasing heating and air conditioning efficiency." The program also conducts annual peer reviews of its project to evaluate progress and technical merit on a project-by- project basis. While the scope of these reviews is limited and does not include evaluation of program success in achieving annual and long-term goals, most projects have generally received favorable reviews. The program also reports receiving the following awards: 1995 R&D 100 award for advanced direct contact condensers; 1999 R&D 100 award for high temperature cements; 2002 R&D 100 award for PPS coating for tubes; 2003 R&D 100 awards for acoustic telemetry for drilling and a low emissions separator system. It's difficult to assess whether the number of awards is significant given the investments to date. It may be useful to benchmark awards/patents per dollar invested against similar applied R&D programs.

Evidence: Renewable Power Pathways: A Review of the U.S. Department of Energy's Renewable Energy Programs (NAS, 2000). Proceedings from geothermal program peer review conferences: August 23-24, 2001, March 25-27, 2002, and July 29-August 1, 2003.

PART Performance Measurements

Program: Geothermal Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Cost of "flash power" from geothermal resources, in cents per kilowatt-hour (*¢/kWh*). (Flash power means power produced by "flashing" geothermally pressurized water into steam to turn a turbine.)

Additional Information: Reducing the cost of power can help increase domestic use of the resource, which will contribute to the Department's goals of increased energy security and reduced greenhouse gas and pollutant emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
1995		4.2	
2000	3.5	3.8	
2005	3.4		
2007	3.2		
2010	3.0		

Measure: Cost of "binary power" from geothermal resources, in cents per kilowatt-hour (*¢/kWh*). (Binary power plants transfer the heat of the geothermal fluid to a separate working fluid, which boils to vapor and is directed into a turbine for power production.)

Additional Information: Reducing the cost of power can help increase domestic use of the resource, which will contribute to the Department's goals of increased energy security and reduced greenhouse gas and pollutant emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
1995		7.7	
2000	5.5	5.6	
2005	5.0		
2007	4.8		
2010	4.5		

PART Performance Measurements

Program: Geothermal Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Cumulative number of homes and businesses using geothermal heat directly and/or using geothermal electricity in the U.S, in millions of homes and businesses.

Additional Information: Tracks extent to which cost reductions and outreach activities contribute to increased deployment, although State and Federal policies may also have a significant impact on results. Assumes the average American home uses about 10,500 kWh of electricity per year.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2000		1.3 million	
2004	1.3 million		
2008	2.3 million		
2012	4.5 million		
2015	7.0 million		

Measure: Cost of drilling geothermal wells based on program estimates, in dollars per foot (\$/ft).

Additional Information: Cost of drilling is a major contributing factor to overall geothermal cost of energy.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2000		300	
2002	282	282	
2003	273		
2006	246		
2008	225		

Measure: Capital cost of geothermal surface systems based on program estimates, in dollars per kilowatt (\$/kW)

Additional Information: Surface systems refer to the power plant components. Capital cost of surface systems is a major contributing factor to overall geothermal cost of energy.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001		1,960	

PART Performance Measurements

Program: Geothermal Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Capital cost of geothermal surface systems based on program estimates, in dollars per kilowatt (\$/kW)

Additional Information: Surface systems refer to the power plant components. Capital cost of surface systems is a major contributing factor to overall geothermal cost of energy.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		1,920	
2003	1,880		
2007	1,720		
2010	1,600		

Measure: Amount of economic geothermal resources available using enhanced geothermal system (EGS) technology based on program estimates, in gigawatts (GW)

Additional Information: An EGS is an engineered reservoir created to extract heat from economically unproductive geothermal resources. "Economic" means a particular geothermal resource could be used to produce power at competitive prices.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2000		5	
2004	5.3		
2008	10		
2012	24		
2015	40		

Program Assessment Rating Tool (PART)

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The mission of the High Energy Physics (HEP) program is to understand the universe at a more basic level by investigating the elementary particles that are the fundamental constituents of matter and the forces between them.

Evidence: FY 2004 Budget Request (www.mbe.doe.gov/budget/04budget/index.htm). Public Law 95-91 that established the Department of Energy (DOE).

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The HEP program addresses several key questions: Can we realize Einstein's dream of a unified description of fundamental particles and forces in the universe? Where is the fundamental particle that endows all other particles with their masses? Are there additional or hidden dimensions of space-time? What are the masses of the neutrinos, and what is their role in the universe? Why is there more matter than anti-matter in the universe? What is the nature of the dark matter and the dark energy, which together make up more than 95% of the universe?

Evidence: FY04 Budget Request/Annual Performance Plan. High Energy Physics Advisory Panel (HEPAP) Long-Range Plan (doe-hep.hep.net/hepap_reports.html). Portions of the HEP program address: the National Research Council (NRC) reports "Physics in a New Era: An Overview"; "Connecting Quarks with the Cosmos: Eleven Science Questions for the New Century"; and "Astronomy & Astrophysics in the New Millennium" (www7.nationalacademies.org/bpa/BPA_Reports.html).

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: The Office of Science (SC) HEP program is the principal source of federal funding for basic, long-term High Energy Physics research and much of particle astrophysics and cosmology research.

Evidence: About 90% of U.S. High Energy Physics research is supported by the HEP program. Much of the remaining portion is supported by the National Science Foundation and is coordinated through HEPAP, a joint advisory committee.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: The HEP program is based on competitive, merit-review, independent expert advice, and community planning. However, a COV has yet to validate the merit review system.

Evidence: HEPAP reviews and reports. (doe-hep.hep.net/hepap_reports.html). Program files.

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?

Answer: YES

Question Weight: 20%

Explanation: HEPAP ensure that input from the high energy physics research community is regularly gathered to assess the priorities, projects, and progress of the program. Peer review is used to assess the relevance and quality of each project.

Evidence: HEPAP reviews and reports. (doe-hep.hep.net/hepap_reports.html). Program files.

Program Assessment Rating Tool (PART)

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 10%

Explanation: The six long-term measures, listed in priority order, reflect the key scientific drivers that the U.S. high energy physics community has outlined for the field for roughly the next decade. The program has defined "successful" and "minimally effective" performance milestones for each measure, and an external panel will assess interim program performance on a triennial basis, and update the measures as necessary. It is inappropriate for a basic research program such as this one to have a quantitative long-term efficiency measure.

Evidence: HEPAP Long-Range Plan (doe-hep.hep.net/hepap_reports.html). National Research Council (NRC) reports "Physics in a New Era: An Overview"; "Connecting Quarks with the Cosmos: Eleven Science Questions for the New Century"; and "Astronomy & Astrophysics in the New Millennium" (www7.nationalacademies.org/bpa/BPA_Reports.html). A description of the "successful" and "minimally effective" milestones, and an explanation of the relevance of these measures to the field can be found on the SC Web site (www.sc.doe.gov/measures).

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: HEPAP has reviewed the long-term measures for this program and found them to be ambitious and meaningful indicators of progress in the field. The external reviews described in 2.1 will update the measures, targets, and timeframes on an interim basis.

Evidence: Letter from HEPAP chair regarding review of long-term measures.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: The quantitative annual output measures for facility construction and operations, and the data delivery goals for the two primary accelerators, serve as proxies for progress, because the efficient on-cost and on-schedule delivery of scientific data from these large facilities provides a critical resource necessary for continuing scientific discoveries that are directly connected to the long term goals of the program.

Evidence: FY04 Budget Request, previous GPRA reports. Website with further information, including explanation of units for data delivery measures (www.sc.doe.gov/measures).

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: All of the annual measures have baseline data (FY01 and/or FY02) that demonstrate that the targets are ambitious, yet realistic. Based on past experience with the data delivery measures, a 20 percent tolerance is used to guard against facilities unwisely stressing hardware near the end of the fiscal year.

Evidence: FY04 Budget Request, previous GPRA reports. Construction variance target of <10% comes from OMB Circular A-11, especially Capital Programming Guide supplement.

Program Assessment Rating Tool (PART)

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: NO Question Weight: 10%

Explanation: A limited FY03 audit by the DOE Inspector General (IG) found that "performance expectations generally flowed down into the scope of work at the national laboratories." For individual grantees, HEP uses general solicitations that do not explicitly include program goals.

Evidence: Memo from the DOE IG to the Director of the Office of Science. M&O contract performance evaluation provisions (Fermilab, www.fnal.gov/directorate/documents/DOE_Contract/appendixb.html; SLAC, www-group.slac.stanford.edu/bsd/contract/). Most recent general renewal solicitation (www.science.doe.gov/grants/Fr03-02.html).

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: NO Question Weight: 10%

Explanation: All research projects undergo merit review, ongoing grants are reviewed triennially, major facilities are reviewed annually, and construction projects are reviewed quarterly. While the program has a great number of reviews on its construction projects and facility operations in the case of the Tevatron at Fermilab, any portfolio-level reviews of the research program conducted by HEPAP have typically concerned the lab program only, and have lacked sufficient scope and depth. HEP is working to begin a Committee of Visitors (COV) review process for the program, and hopes to review the first program element in 2003.

Evidence: SC Merit Review guidelines (www.sc.doe.gov/production/grants/merit.html) . Project reviews by advisory bodies (doe-hep.hep.net/general_reports.htm). HEPAP reports (doe-hep.hep.net/hepap_reports.html). Program files, including Lehman review reports, and post-meeting summary letters from HEPAP chair to DOE and NSF.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: DOE has not yet provided a budget request that adequately integrates performance information.

Evidence:

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: New long-term and annual performance goals and targets have been developed in coordination with OMB. A new COV process is being organized, with the first program element review to occur in 2003. The new Particle Physics Project Prioritization Panel ("P5") report is expected in September, 2003, though the Panel is only looking at a select number of new projects. HEP does not yet have independent reviews or a program strategic plan that considers new and ongoing projects, early project R&D, and facility operations within the context of the research program.

Evidence: COV charge letter from DOE to HEPAP chair. HEPAP Long-Range Plan and 20-year facilities plan (doe-hep.hep.net/hepap.html). P5 Report due September, 2003 (doe-hep.hep.net/p5/index.html).

Program Assessment Rating Tool (PART)

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

2.CA1 **Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity?** Answer: YES Question Weight: 10%

Explanation: One of a kind research facilities are not amenable to the same type of alternatives analysis as other captial asset investments. Recent Lehman review of Tevatron complex considered cost, schedule, risk, and performance issues within the effort. The analysis provided to OMB in the predecisional Exhibit 300s is frequently not meaningful.

Evidence: Program files, including Lehman reviews and Exhibit 300s. Summary of recent Tevatron review (doe-hep.hep.net/HEPAP/Jul2003/Lehman_HEPAP.pdf).

2.RD1 **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NA Question Weight: 0%

Explanation: This is a basic R&D program, and the question is intended for industry-related R&D programs.

Evidence:

2.RD2 **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%

Explanation: Although not visible outside DOE, internal SC budget formulation practices include a priority ranking process. The HEPAP long range plan identified strategic priorities for the U.S. particle physics community. Priorities for specific large projects will be independently evaluated by the Particle Physics Project Prioritization Panel ("P5"). HEPAP recommened a 20-year facilities plan for DOE as a part of the SC strategic planning process.

Evidence: HEPAP Long-Range Plan and 20-year facilities plan (doe-hep.hep.net/hepap.html). P5 Report due September, 2003 (doe-hep.hep.net/p5/index.html).

3.1 **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: NO Question Weight: 8%

Explanation: A great deal of project performance information collected via Lehman facility construction and operations reviews, annual lab reviews, etc., and management changes are made in response to these reviews. The program collects performance data from individual grantees and national labs, and uses peer review as a type of standardized quality control at the individual grant level. However, there is not yet a systematic process, such as regular COV evaluations, that conducts research portfolio quality and process validations. While DOE IG contracts with an outside auditor to check internal controls for performance reporting, and the IG periodically conducts limited reviews of performance measurement in SC, it is not clear that these audits check the credibility of performance data reported by DOE contractors.

Evidence: Program files, including Lehman reviews and subprogram reviews. Reporting requirements for grants (www.science.doe.gov/production/grants/605-19.html).

Program Assessment Rating Tool (PART)

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 8%

Explanation: Senior Executive Service (SES) and Program Manager Performance Plans are directly linked to program goals, and several high level management changes were recently carried out, partially in response to ongoing problems at the Tevatron. The Management and Operations contracts for the Labs and Facilities include performance measures linked to program goals. Research funding requirements ensure consideration of past performance.

Evidence: 10 CFR 605 (www.science.doe.gov/production/grants/605index.html). Program and personnel files, including consequences for underperforming lab and university research, grant renewal statistics, and implications for performance-based fee for the Fermilab contractor.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 8%

Explanation: Using DOE's monthly accounting reports, SC personnel monitor progress toward obligating funds consistent with an annual plan that is prepared at the beginning of the fiscal year to ensure alignment with appropriated purposes.

Evidence: SC programs consistently obligate more than 99.5% of available funds. Program files. Audit reports.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 8%

Explanation: SC is currently undergoing a reengineering exercise aimed at flattening organizational structure and improving program effectiveness. The program collects the data necessary to track the two "efficiency" measures for facility construction and operations management.

Evidence: SC reengineering information (www.screstruct.doe.gov).

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 8%

Explanation: The HEP program is well coordinated with similar programs at NSF and NASA through joint advisory and assessment groups (HEPAP and SAGENAP) and joint oversight groups (JOGs) for specific projects. The program jointly funds a range of international and interagency projects.

Evidence: HEPAP (doe-hep.hep.net/hepap.html) and SAGENAP (doe-hep.hep.net/general_reports.htm). JOG Minutes. International agreements with Europe, Japan, and China. MOU with National Science Foundation for HEPAP and the Large Hadron Collider in Europe. Implementing agreement with NASA for primary instrument on the GLAST mission. Early planning process for a potential joint dark energy mission.

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 8%

Explanation: SC staff execute the HEP program consistent with established DOE budget and accounting policies and practices. These policies have been reviewed by external groups and modified as required to reflect the latest government standards.

Evidence: Various Departmental manuals. Program files. Audit reports.

Program Assessment Rating Tool (PART)

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 8%

Explanation: SC is currently reengineering to improve program management efficiency. A Committee of Visitors (COV) process is being implemented. A layer of management above HEP was removed. Several management changes were recently made, partially in response to ongoing problems at the program's largest facility.

Evidence: SC reengineering information (www.screstruct.doe.gov). SC reorganization memoranda.

3.CA1 Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals? Answer: YES Question Weight: 8%

Explanation: Facility critical decision points are documented and reviewed an independent Lehman review, and occasionally via an assessment by HEPAP or SAGENAP. Progress for ongoing efforts is tracked quarterly through program and Lehman reviews. The Tevatron luminosity upgrade was not "projectized," and this was a key problem that is finally being addressed.

Evidence: Program files, including Lehman reports and program peer reviews. SAGENAP reviews (doe-hep.hep.net/general_reports.htm). Exhibit 300s.

3.CO1 Are grants awarded based on a clear competitive process that includes a qualified assessment of merit? Answer: NO Question Weight: 8%

Explanation: First time grant applications are encouraged in all Requests For Proposals. In addition, new or first-time scientists apply for funding through the Outstanding Junior Investigator award program. "Merit Review" guides all funding decisions. However, the award and merit review process has not yet been validated by a COV.

Evidence: In FY 2002, the HEP program funded 15 new research grants out of a total of 160 grants. Several of the new grants for junior investigators are incorporated as new "tasks" within existing grants.

3.CO2 Does the program have oversight practices that provide sufficient knowledge of grantee activities? Answer: YES Question Weight: 8%

Explanation: In addition to grantee reports, program managers stay in contact with grantees through email and telephone, conduct program reviews, video conferences and site visits, and have grantees participate in independent reviews of other projects.

Evidence: HEPAP and SAGENAP reports (doe-hep.hep.net/general_reports.htm). Program files, including site visits and reviews.

3.CO3 Does the program collect grantee performance data on an annual basis and make it available to the public in a transparent and meaningful manner? Answer: NO Question Weight: 8%

Explanation: In accordance with DOE Order 241.1A, the final and annual technical reports of program grantees are made publicly available on the web through the Office of Scientific and Technical Information's "Information Bridge". However, program-level aggregate data on the impact of the grants program is not adequately communicated in the annual DOE Performance and Accountability report.

Evidence: DOE Order 241.1A. Information Bridge (www.osti.gov/bridge/). FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgt/doe02rpt.pdf).

Program Assessment Rating Tool (PART)

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: NO Question Weight: 8%
- Explanation: Priorities are determined in accord with guidance from the HEPAP Long-Range Plan, and construction projects are reviewed regularly. Unsolicited field work proposals from the Federal Labs are merit reviewed, but not competed. The funds for research programs and scientific user facilities at the Federal Labs are allocated through a limited competition analogous process to the unlimited process outlined in 10 CFR 605. However, the quality of the research funded via this process has not yet been validated by a COV.
- Evidence: HEPAP long range plan (doe-hep.hep.net/lrp_panel/index.html). SC Merit Review procedures (www.sc.doe.gov/production/grants/merit.html, www.science.doe.gov/production/grants/605index.html) Program files, including example of merit review for lab work.
- 4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: LARGE EXTENT Question Weight: 20%
- Explanation: HEPAP will evaluate progress toward the new long term performance measures every three to five years. HEPAP reports discuss exciting recent discoveries in several areas of particle physics. Ongoing challenges and uncertainties in reaching expected luminosity levels at the Tevatron (currently the world's highest energy particle accelerator) may continue to present barriers to the mid-term scientific progress for much of the program.
- Evidence: HEPAP long range plan (doe-hep.hep.net/lrp_panel/index.html). Post-meeting summary letters from HEPAP chair to DOE/NSF managers. Summary of recent Tevatron review (doe-hep.hep.net/HEPAP/Jul2003/Lehman_HEPAP.pdf).
- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: YES Question Weight: 20%
- Explanation: HEP has met most of its annual performance goals in FY02, with the one schedule slip on the Large Hadron Collider project due to international partners. It appears that BABAR detector at SLAC's B-Factory might miss its luminosity goal for FY03.
- Evidence: FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgmt/doe02rpt.pdf). FY04 Annual Performance Plan (www.mbe.doe.gov/budget/04budget/content/perfplan/perfplan.pdf).
- 4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?** Answer: YES Question Weight: 20%
- Explanation: The recent history of tracking the two "efficiency" measures for facility construction and operation management shows that, on average, the program continues to meet expectations.
- Evidence: Program files.
- 4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?** Answer: NA Question Weight: 0%
- Explanation: High energy physics is, by its very nature, an integrated worldwide effort, which makes comparison to similar programs in other countries questionable at best. An international benchmarking study has not been done, due in large part to its questionable value.
- Evidence: 50% of collaborators at BaBar, CDF, and D-Zero experiments in U.S. are foreign. Half of collaborators on SuperK experiment in Japan are from the U.S. The U.S. has a significant stake in the Large Hadron Collider being built in Europe.

Program Assessment Rating Tool (PART)

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	70%	67%	87%	Effective

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: YES Question Weight: 20%

Explanation: Somewhat superficial HEPAP reviews of scientific progress in the program have found good research performance except for the Tevatron, though this was in part to mismanaged expectations by HQ and FNAL. Recent performance of the Tevatron accelerator (Run-II) has been a concern, and a recent Lehman review found decent progress, with many key hurdles for the project stretching through 2004. DOE-run reviews of laboratory programs include outside researchers, and have generally found good results.

Evidence: HEPAP reports (doe-hep.hep.net/hepap.html). Post-meeting summary letters from HEPAP chair to DOE/NSF managers. Program files, including lab peer reviews. Summary of recent Tevatron review (doe-hep.hep.net/HEPAP/Jul2003/Lehman_HEPAP.pdf).

4.CA1 Were program goals achieved within budgeted costs and established schedules? Answer: LARGE EXTENT Question Weight: 20%

Explanation: NuMI/MINOS has maintained its new baseline cost and schedule since 2001 rebaselining. All three components of the US contribution to the LHC project have maintained cost and schedule, though CERN has delayed the official completion of the LHC project. The Gamma-ray Large Area Space Telescope (GLAST/LAT) project, a collaborative venture with NASA, has maintained its baseline cost and schedule, though the recent departure of France as a partner causes concern. There are positive signs for the Tevatron complex, but there are significant technical and managerial hurdles remaining in order to meet cost and schedule "baselines" once the effort is finally "projectized" in early 2004. Since "finding the Higgs" was a major driver for the program in the past several HEP budget requests, the program should be held to this standard until they advance more realistic expectations.

Evidence: Lehman review reports for NuMI/MINOS, GLAST/LAT and US LHC projects (doe-hep.hep.net/general_reports.htm). Program files. Exhibit 300s. Summary of recent Tevatron review (doe-hep.hep.net/HEPAP/Jul2003/Lehman_HEPAP.pdf).

PART Performance Measurements

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science

Measure: Progress (excellent, adequate, poor) in measuring the properties and interactions of the heaviest known particle (the top quark) in order to understand its particular role in the so-called "Standard Model" of particle physics. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Excellent		

Measure: Average achieved operation time of the scientific user facilities as a percentage of the total scheduled annual operation time. (Scheduled annual operating time is roughly 8,770 hours in 2004 and 8,740 hours in 2005. The ambitiousness and appropriateness of the 80% target level is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2002	>80%	87%	
2003	>80%	83%	
2004	>80%		
2005	>80%		

Measure: Progress in measuring the matter-antimatter asymmetry in many particle decay modes with high precision. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		

PART Performance Measurements

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science

Measure: Progress in measuring the matter-antimatter asymmetry in many particle decay modes with high precision. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2009	Excellent		
2012	Excellent		
2015	Excellent		

Measure: Progress in discovering or ruling out the Standard Model Higgs particle, thought to be responsible for generating mass of elementary particles. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Excellent		

Measure: Progress in determining the pattern of the neutrino masses and the details of their mixing parameters. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		

PART Performance Measurements

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science

Measure: Progress in determining the pattern of the neutrino masses and the details of their mixing parameters. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2015	Excellent		

Measure: Progress in confirming the existence of new supersymmetric (SUSY) particles, or ruling out the minimal SUSY "Standard Model" of new physics. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Excellent		

Measure: Progress in directly discovering, or ruling out the existence of, new particles which could explain the cosmological "dark matter." An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a triennial basis.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	Excellent		
2009	Excellent		
2012	Excellent		
2015	Excellent		

PART Performance Measurements

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science

Measure: Total integrated amount of data (within 20%; measured in inverse picobarns) delivered to the CDF and D-Zero detectors at the Tevatron. (Targets are set in part by the funding requested/appropriated during that fiscal year. The ambitiousness of the target error bar of 20% is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	80	83	
2003	225	240	
2004	240		
2005	390		

Measure: Total integrated amount of data (within 20%; measured in inverse femtobarns) delivered to the BABAR detector at the SLAC B-factory. (Targets are set in part by the funding requested/appropriated during that fiscal year. The ambitiousness of the target error bar of 20% is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	25	25	
2002	35	42	
2003	45	40	
2004	45		
2005	50		

PART Performance Measurements

Program: High Energy Physics
Agency: Department of Energy
Bureau: Office of Science

Measure: Cost-weighted mean percentage variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2002	<10%	1.4%, -2.1%	
2003	<10%	3.1%, -3.4%	
2004	<10%		
2005	<10%		

Program Assessment Rating Tool (PART)

Program: High Temperature Superconducting R&D
Agency: Department of Energy
Bureau: Electric Transmission & Distribution
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	70%	88%	59%	Effective

- 1.1 Is the program purpose clear?** Answer: YES Question Weight: 20%
 Explanation: The High Temperature Superconductivity (HTS) program conducts research and development on technologies that will transmit and use electricity with near perfect efficiency and much higher capacity.
 Evidence: FY 2004 Budget Congressional Justification; PL 100-697 (1988) and PL 102-486 (1992).
- 1.2 Does the program address a specific and existing problem, interest or need?** Answer: YES Question Weight: 20%
 Explanation: While electricity demand increases 1.8% each year, grid losses have grown to more than 10% of all electricity generated, and transmission limitations have recently caused blackouts in the U.S.
 Evidence: P.L. 100-697 (1988) and P.L. 102-486 (1992).
- 1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?** Answer: YES Question Weight: 20%
 Explanation: The private sector is not willing to conduct R&D without DOE participation because of the high risk and long-term nature of the effort. Additionally, laws prohibit utilities from funding research and development (R&D) with rate increases. The program has ranked cost/performance/ancillary benefit market barriers.
 Evidence: 2002 Annual Programmatic Evaluation Peer Review Panels and other internal documents.
- 1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?** Answer: YES Question Weight: 20%
 Explanation: There is no evidence that an alternative design would be more efficient or effective. The program uses "cooperative agreements" for the major cost-shared projects. Contracts (intended for acquisition of goods and services) are the alternative, which was rejected because the government is not the customer of these technologies and is not in a position to develop the necessary requirements. Cooperative agreements allow strong government involvement, while meeting the needs of the power industry.
 Evidence: Annual Programmatic Evaluation Peer Review Panels.
- 1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: NO Question Weight: 20%
 Explanation: The program has not provided information on its R&D investment criteria at a detailed level demonstrating how years to commercialization, public benefits, total federal costs, technical risk, and/or cost sharing information is used in determining funding priorities.
 Evidence:

Program Assessment Rating Tool (PART)

Program: High Temperature Superconducting R&D
Agency: Department of Energy
Bureau: Electric Transmission & Distribution
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	70%	88%	59%	Effective

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 10%

Explanation: The program's long-term goal is: By 2010, develop the capability for industry to produce generators, motors, cables, and transformers incorporating HTS technologies.Expl_1.4

Evidence: See "Measures" section of this PART.

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: Projects last for only 3-4 years with new competition required at that point. New proposals are judged against new proposals.

Evidence: See "Measures" section of this PART.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: Annual measures exist for each of four types of HTS power equipment: motors, generators, transformers, and cables.

Evidence: See "Measures" section of this PART.

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: The program has a specific baseline and quantifiable and measureable targets for its annual goals, which are linked to the long-term goal and targets.

Evidence: See "Measures" section of this PART.

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 10%

Explanation: Program staff ensure that all program-sponsored work addresses program goals, and conducts frequent reviews to monitor progress toward these goals.

Evidence: Superconductivity for Electric Systems Strategic Plan FY 2003-7 (Draft of April 2002); Partner contracts.

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: Annual independent peer reviews, consisting of industry, government and academia, foreign and domestic, representation, annually evaluate all major office/program activities, help shape long-term program direction and evaluate program's progress toward these goals and mission.

Evidence: Superconductivity for Electric Systems Annual Peer Review Programmatic Evaluation; Cryogenic Roadmap Assessment, April 2002.

Program Assessment Rating Tool (PART)

Program: High Temperature Superconducting R&D
Agency: Department of Energy
Bureau: Electric Transmission & Distribution
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately Effective
80%	70%	88%	59%	

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: The Department has not submitted budget requests linking annual and long-term performance goals with resource needs in a complete and transparent manner.

Evidence:

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: In accord with the NEP, Office of Electric Transmission and Distribution (OETD) has evaluated HTS at the program level and is re-evaluating its strategic planning based on OETD's visioning and roadmapping meetings, and independent peer reviews.

Evidence: Roadmap July 2001; Update in July 2003.

2.RD1 If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals? Answer: NO Question Weight: 10%

Explanation: The program did not submit R & D Investment Criteria information demonstrating how DOE prioritizes programs based on potential benefits.

Evidence:

2.RD2 Does the program use a prioritization process to guide budget requests and funding decisions? Answer: NO Question Weight: 10%

Explanation: The program did not submit R & D Investment Criteria information demonstrating how risk, years to commercialization etc are used in prioritizing. However, proposals must make case for national energy benefits, judged on teams capabilities, costs, cost share, scheduling compared to other proposals.

Evidence:

3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance? Answer: YES Question Weight: 12%

Explanation: OTED's Spend Plan, an 18-month schedule for key planning, budget formulation, budget execution, and analysis/evaluation functions, requires that each OETD program to establish and track long-term and near-term program performance goals and measures. Program results, as evaluated through the goals and measures, are used annually and throughout the year to assess partners performance, adjust funding, and re-align R&D portfolios. Program personnel visit sites regularly (at least once per year). The program's annual and long-term goals and targets are tracked through DOE's Joule (a performance measurement tracking system), which informs DOE's management of programs.

Evidence: FY 2003 Spend Plan & Report; Joule System.

Program Assessment Rating Tool (PART)

Program: High Temperature Superconducting R&D
Agency: Department of Energy
Bureau: Electric Transmission & Distribution
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	70%	88%	59%	Effective

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 12%

Explanation: The annual performance appraisals of all OETD Program Managers include criteria directly related to cost, schedule and performance results. Most OETD contracts include award fee and other performance criteria to hold partners accountable for results.

Evidence: Annual Performance Appraisals; OETD contracts.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: OETD will conduct a Spend Plan Review before each fiscal year to ensure that obligation planning for new funding is consistent with the appropriated purpose. OETD uses data from departmental procurement and financial systems (and similar data from national laboratory partners) to ensure that actual expenditures occur for purposes, and on a schedule, consistent with the Spend Plan.

Evidence: Spend Plan Review documentation; monthly Financial Information Service statements.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: NO Question Weight: 12%

Explanation: Program did not provide documentation of cost-effectiveness procedures or measures.

Evidence:

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: Program collaborates with related Federal and State programs, as well as partners with industry. Each partnership has specific and quantifiable goals and objectives.

Evidence: DOD-DOE partnership on superconductivity. DOD - DOE MOU

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 12%

Explanation: No known deficiencies.

Evidence: DOE annual Performance and Accountability reports.

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 12%

Explanation: There is constant improvement in program management through a competitive, merit-based, review process. In addition, quality is maintained through the annual performance-based peer review.

Evidence: 2002 Peer Review Report

Program Assessment Rating Tool (PART)

Program: High Temperature Superconducting R&D
Agency: Department of Energy
Bureau: Electric Transmission & Distribution
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately Effective
80%	70%	88%	59%	

- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: YES Question Weight: 12%
- Explanation: The Spend Plan and site visit reviews are used to assess partner's progress and re-allocate funding accordingly, and annual independent peer reviews impact program funding and direction.
- Evidence: FY 2003 Spend Plan & Report; Annual Programmatic Evaluation Peer Reviews; Cooperative Agreements; R&D Investment Criteria information categorizing type of research funding.
- 4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: LARGE EXTENT Question Weight: 25%
- Explanation: Demonstrated First Generation Wire in distribution system (Southwire) beginning in 1999; and is making progress toward lower cost second generation wire. Successful equipment prototypes include first-of-a-kind cables, transformers, motors and generators, and the program is moving forward towards final power and voltage goals for these technologies.
- Evidence: Annual Performance Plan.
- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: LARGE EXTENT Question Weight: 25%
- Explanation: In 2000 and 2001 the program achieved its annual performance goals. It achieved the FY 2003 wire development goal ahead of schedule.
- Evidence: Annual Performance Plan
- 4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?** Answer: NO Question Weight: 25%
- Explanation:
- Evidence:
- 4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?** Answer: NA Question Weight: 0%
- Explanation: No comparisons available.
- Evidence:

Program Assessment Rating Tool (PART)

Program: High Temperature Superconducting R&D
Agency: Department of Energy
Bureau: Electric Transmission & Distribution
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	70%	88%	59%	Effective

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: YES Question Weight: 25%

Explanation: Program annually reassesses program activities (via peer reviews) and redirects or eliminates projects based on evaluation of their effectiveness, management and technical progress toward achieving program goals. As an additional indicator, as of 2002, program-generated intellectual property: more than 574 invention disclosures, 209 patents & 239 pending.

Evidence: Superconductivity for Electric Systems Annual Peer Review Programmatic Evaluation; Program patent history.

PART Performance Measurements

Program: High Temperature Superconducting R&D
Agency: Department of Energy
Bureau: Electric Transmission & Distribution

Measure: Ability to produce increasingly powerful superconducting Power Equipment prototypes: power (megawatts), voltage, and/or length.

Additional Information: By 2010 develop capability for industry to produce electric motors, generators, cables, and transformers at 1/2 the size (or twice the capacity - MW) and half the energy losses of conventional equipment with the same power rating. Measured from current research baseline.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2012	5MW motor		
2012	850MW Gen.		
2012	340MW transf		
2012	2 mile Cable		

Measure: Maintain progress in achieving milestones for voltage, power, and cable length

Additional Information: For motors, generators, transformers, and cables power, voltage, and/or length increases over time. Selected yearly targets due to limited PART space.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	1.8MW gen		
2003	.02 mile cable		
2004	10MW Transf		
2006	.2 mile cable		
2008	300MW Gen		

Measure: HTS Wire capacity, length, and cost

Additional Information: By 2015 develop wire prototype at 1/2 the price per kilo-amp of copper wire and 100 times the amps/square centimeter of copper wire. 2002 target was 1st generation wire. 2005-2006: 100 meter; 2008 500 meter, \$200; 2010: 300A/cm, 1000 meter, \$100/kA-M

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	\$200/kA-M	\$200/kA-M	
2005	100 A/cm		

PART Performance Measurements

Program: High Temperature Superconducting R&D
Agency: Department of Energy
Bureau: Electric Transmission & Distribution

Measure: HTS Wire capacity, length, and cost

Additional Information: By 2015 develop wire prototype at 1/2 the price per kilo-amp of copper wire and 100 times the amps/square centimeter of copper wire. 2002 target was 1st generation wire. 2005-2006: 100 meter; 2008 500 meter, \$200; 2010: 300A/cm, 1000 meter, \$100/kA-M

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2006	200A/cm		
2008	300A/cm		
2010	300A/cm		

Measure: HTS Wire capacity, length, and cost

Additional Information: By 2015 develop wire prototype at 1/2 the price per kilo-amp of copper wire and 100 times the amps/square centimeter of copper wire. 2002 target was 1st generation wire. 2005-2006: 100 meter; 2008 500 meter, \$200; 2010: 300A/cm, 1000 meter, \$100/kA-M

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2002	\$200/kA-M	\$200/kA-M	
2017	\$10/kA-M		

Program Assessment Rating Tool (PART)

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The mission of the DOE's Hydrogen Program is to research, develop, and validate fuel cell and hydrogen production, delivery, and storage technologies. The long-term aim is to accelerate progress toward an energy future for the Nation where hydrogen plays a more significant role as an energy carrier in all sectors of the economy and all regions of the country, so that environmental and energy security benefits can be realized.

Evidence: FY 2004 Budget. Hydrogen Futures Act of 1996.

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The hydrogen program develops hydrogen-based technologies for transportation and electricity production in an effort to reverse America's growing dependence on foreign oil, enhance energy diversity and energy security, and reduce greenhouse gas emissions. These potential benefits support the Administration's National Energy Policy, as well as the Administration's climate change goals. The program is a key component of the President's Hydrogen Fuel Initiative announced on January 28, 2003.

Evidence: The program focuses R&D on activities that it considers too technologically risky for the private sector to undertake alone. Risk levels vary on a project-by project basis.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: The program collaborates with other Federal agencies, State agencies, industry groups, and non-profit organizations to avoid duplication of efforts. The program participates in a Hydrogen R&D Interagency Task Force to better coordinate hydrogen-related activities among relevant Federal agencies. The program led the formulation of a Hydrogen Posture Plan (under review), which was collaboratively developed with the Department's Offices of Energy Efficiency & Renewables Energy (EERE), Fossil Energy (FE), and Nuclear Energy (NE), with input from the Office of Science. The Plan helps coordinate planned hydrogen-related activities within the Department. The National Hydrogen Energy Roadmap, released on November 12, 2002, was developed by approximately 220 technical experts and industry practitioners from public and private organizations.

Evidence: National Hydrogen Energy Roadmap (November 2002). DRAFT Hydrogen Posture Plan (September 2003). DOE Hydrogen Program Management and Operations Plan (July 2003). In May 2003, the program participated in a Hydrogen Coordinating Meeting, which brought together the program managers and reserach leads for the Department's EERE, FE, and NE offices. The program aims to accelerate private sector efforts on hydrogen technologies for which markets do not yet exist.

Program Assessment Rating Tool (PART)

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency? Answer: YES Question Weight: 20%

Explanation: The long term goal of establishing hydrogen as the primary fuel for cars and trucks, as stated in the President's 2003 State of the Union Address, cannot be achieved without substantial advances in hydrogen research. Regulations can play a facilitating role by providing codes and standards specifications for hydrogen production and storage. Similarly, once initial hydrogen facilities and fuel cells are available, use of hydrogen in Federal fleets and facilities could be mandated. Such regulations, however, cannot mandate the development of an entirely new energy source. The same is true for market-incentive policies, which require the technology basis for targeted markets to develop. At this early stage in the R&D cycle for hydrogen production and storage, alternative policy options cannot substitute for or adequately induce the needed technology improvements.

Evidence: The program found no studies that indicate a tax credit, regulatory driver, or other policy mechanism would be a more cost effective approach than R&D, since most of the technologies being researched are so far from commercialization.

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly? Answer: No Question Weight: 20%

Explanation: The program funds national laboratories and co-sponsors industry research and development to overcome the high risk, critical path barriers. These barriers include hydrogen production efficiency and cost, hydrogen storage, fuel cell cost, hydrogen delivery cost, lack of approved codes and standards, and lack of hydrogen infrastructure. In support of the Administration's R&D Investment Criteria initiative, the program was asked to prepare "bubble charts" that plot key program variables (e.g., expected public benefits, funding levels, years to commercialization). Bubble charts can serve as an informational tool to help determine, along with other considerations, whether the program appropriately targets its R&D funding. While the program has made progress estimating public benefits, the Department has not yet developed a methodology to estimate benefits consistently within and across programs. Therefore, the program could not prepare meaningful bubble charts.

Evidence: In general, the program appears to target its resources wisely, but a lack of ability to provide appropriate evidence mandates a "no" response. EERE continues to work internally and with other DOE program offices to improve consistency and accuracy in estimating benefits.

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 10%

Explanation: The program has developed one key outcome measure (displacing petroleum). The program can track progress against this measure directly, but significant progress will not occur until major technical barriers that the program's R&D addresses are overcome. The program has several output measures that cover most of the programs key activities, including R&D on the production of hydrogen from renewable and non-renewable resources, hydrogen storage, and infrastructure validation, as well as public education efforts. The program is developing measures for its efforts to support the development of codes and standards and to conduct systems analyses.

Evidence: FY 2004 Budget, DRAFT Multi-Year Research, Development, and Demonstration Plan (June 2003).

Program Assessment Rating Tool (PART)

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: Targets and timeframes are ambitious. The program's multi-year research identifies R&D technical targets, off-ramps, and endpoints. Projects (including cooperative agreements and national laboratory efforts) are negotiated to include milestones and go/no-go decision points that support the achievement of the program performance goals.

Evidence: DRAFT Multi-Year Research, Development, and Demonstration Plan (June 2003). DRAFT Hydrogen Posture Plan (September, 2003).

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: Most of the long-term measures can be tracked directly on an annual basis, and therefore can also be considered annual measures. The program also has milestones for its projects, each of which directly support a long-term goal.

Evidence: FY 2004 Budget, DRAFT Multi-Year Research, Development, and Demonstration Plan (June 2003).

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: Baselines have been established for all annual performance measures, and targets appear to be ambitious.

Evidence: DRAFT Multi-Year Research, Development, and Demonstration Plan (June 2003). DRAFT Hydrogen Posture Plan (September, 2003).

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 10%

Explanation: Partners are funded based on commitment to the subprogram's annual performance goals through a competitive, cost-shared solicitation process. Long-term goals are developed in partnership with a wide spectrum of public and private industry representation. Industry partners in the Administration's FreedomCAR partnership have committed to the partnership's goals.

Evidence: FreedomCAR Partnership Plan (April, 2003). Sample competitive solicitation. FY 2003 Annual Operating Plan.

Program Assessment Rating Tool (PART)

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: The program regularly conducts external merit reviews of its R&D projects. In addition, the National Research Council (NRC) is currently reviewing the program's Multi-Year Research, Development and Demonstration Plan and is evaluating the multiple pathways to hydrogen production, delivery and storage. The NRC has provided an interim report to the program, which offers four recommendations addressing: a systems approach to hydrogen energy RD&D; exploratory research as the foundation for breakthroughs in technology; safety issues; and coordination of R&D strategy and programs. The program has a track record of being responsive to the recommendations of program evaluators and continues to work to address recommended actions as they are identified.

Evidence: Merit Review and Peer Evaluation of the Hydrogen, Fuels Cells and Infrastructure Technologies Program (May 19-22, 2003). 2002 Annual Hydrogen Program Review Meeting (May 6-8, 2002). Merit Review and Peer Evaluation National Laboratory R&D (May 9-10, 2002). NRC Letter Report (April, 2003).

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: In general, the budget identifies the resources needed to achieve each of its performance goals. However, budget documents do not clearly indicate the full costs of achieving the program goals. That is, salaries, benefits, and other administrative expenses to support the program are included in a separate budgetary line item ("Program Direction"). EERE does not report the allocation of Program Direction funding to the various programs it supports.

Evidence: FY 2004 Budget.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: Yes Question Weight: 10%

Explanation: The program is developing a Multi-year Research, Development, and Demonstration Plan. The program led the development of the Hydrogen Posture Plan, in collaboration with the Offices of Fossil and Nuclear Energy, with input from the Office of Science, to ensure planning is aligned with Departmental strategic priorities.

Evidence: DRAFT Multi-Year Research, Development, and Demonstration Plan (June 2003). DRAFT Hydrogen Posture Plan (September, 2003).

2.RD1 If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals? Answer: NO Question Weight: 10%

Explanation: Each year, the program estimates the public benefits of its activities in support of the Government Performance and Results Act (GPRA) and the Administration's R&D Investment Criteria initiative. However, the program has not yet developed a consistent and reliable methodology for comparing potential benefits within and across programs with similar goals.

Evidence: FY 2004 Congressional Budget Justification materials

Program Assessment Rating Tool (PART)

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

- 2.RD2 Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%
- Explanation:** The program defines technical priorities based both on market needs and detailed trade-off analyses between system requirements, performance and cost. Projects are judged annually by a combination of process analysis, and independent and peer review to assess performance against objectives. In addition, workshops with industry experts and Nobel laureate scientists were conducted to support the development of targeted solicitations on hydrogen storage. The program participated in an EERE-wide zero-based budget exercise in which priorities at the activity level were clearly laid out.
- Evidence:** Proceedings of the Hydrogen Storage Think Tank Meeting (March 2002). DRAFT Multi-Year Research, Development, and Demonstration Plan (June 2003). EERE Priority Ranking Tool, Zero Based Budget Exercise.
- 3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: Yes Question Weight: 12%
- Explanation:** The EERE Strategic Management System -- which establishes at the beginning of each fiscal year an 18-month schedule for key planning, budget formulation, budget execution, and analysis / evaluation functions -- requires that each EERE program establish and track long-term and near-term program performance goals and measures. Program results as evaluated through the goals and measures are used annually and throughout the year to assess partners performance, adjust funding, and re-align R&D portfolios. The program also conducts annual peer review meetings and regular meetings with the industry partners (e.g., USCAR) technical teams to review projects and assess performance towards meeting the program goals. The program also conducts independent analysis of the various technological solutions. Using this process, the program has eliminated funding for biological water gas shift R&D because analysis indicated this technology would not be economically competitive in the long run.
- Evidence:** SMS Implementation Letter for FY 2002 - 2005 (October 2001). The program also reports on quarterly milestones in the Department's Joule database. However, in general, milestones in the Joule system are not necessarily meaningful or fully reflective of program progress. Thus, the Department's Joule system provides little value-added. The new I-MANAGE system, currently under development, will better integrate budget and performance.
- 3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: YES Question Weight: 12%
- Explanation:** The Performance Appraisal and Management Plan for each Technology Development Manager includes an element to provide technical direction to industry, laboratories and universities to support the achievement of program level milestones and to keep projects on schedule and within cost. Solicitations identify the key technology challenges and associated technical targets. Proposals are evaluated on their ability to contribute solutions to these key technology challenges. Projects (including cooperative agreements and national laboratory efforts) are negotiated to include milestones and go/no-go decision points that support the achievement of the program performance goals.
- Evidence:** Performance Plan and Performance Appraisal Form for Performance Management System Employees; Sample contract documents.

Program Assessment Rating Tool (PART)

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: Each year, the program develops an Annual Operating Plan, which is reviewed internally to ensure that new funding is planned to be obligated consistent with the appropriated purpose. EERE also develops a Spend Plan for all of its programs. The program uses data from Departmental procurement and financial systems -- and similar data from National Laboratory partners -- to assure that actual expenditures occur for intended purposes and on a schedule consistent with the Spend Plan. Unobligated balances brought forward to FY 2004 were \$82,000, less than one percent of the program's FY 2003 appropriation of approximately \$39 million. The program reports that cooperative agreement invoices are paid only after verification that the costs are in accordance with the approved budget.

Evidence: FY 2003 Annual Operating Plan. Hydrogen Technology Program FY 2003 Financial Status Report (June 2003). FY 2004 Apportionment. FY 2003 Spend Plan.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: Yes Question Weight: 12%

Explanation: EERE's reorganization in 2002 clarified lines of responsibility and eliminated organizational "stovepipes" by consolidating planning, budgeting, and analysis into a single business administration office. The reorganization reduced management layers, although staff levels remained the same. EERE developed a new IT report to improve program managers access to EERE cost, obligation, and procurement data. EERE plans to consolidate several legacy IT systems into a single program management system that is intended to track all required information on a project by project basis (cost share, type of contract according to A-11 definitions, etc.). EERE is also developing a measure to reduce uncosted balances, which means obligated funds will be put to use more quickly. These recent actions should achieve efficiencies and improve cost effectiveness, although it will be difficult in some cases to demonstrate definitively.

Evidence: EERE Reorganization "All Hands" presentation: http://www.eere.energy.gov/office_eere/pdfs/eere_reorg.pdf. EERE IT Business Case Number 019-20-01-12-01-1011-00-304-101. Hydrogen Technology Program FY 2003 Financial Status Report (June 2003).

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: The program coordinates informally with EERE's wind, solar, and biomass programs, and formally through Memoranda of Understanding (MOU) with NASA and the Department's Office of Fossil Energy. The program participates in a Hydrogen R&D Interagency Task Force to better coordinate hydrogen-related activities among relevant Federal agencies. The program led the formulation of a Hydrogen Posture Plan (under review), which was collaboratively developed with the Department's Offices of Energy Efficiency & Renewables Energy, Fossil Energy, and Nuclear Energy, with input from the Office of Science. The Plan helps coordinate planned hydrogen-related activities within the Department.

Evidence: DRAFT Hydrogen Posture Plan (September 2003). MOUs with Office of Fossil Energy and NASA

Program Assessment Rating Tool (PART)

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

3.6 Does the program use strong financial management practices?

Answer: Yes

Question Weight: 12%

Explanation: Each year, EERE develops and maintains a Spend Plan and a Measures spreadsheet that links the Spend Plan to annual and long-term goals and measures for each EERE program. The program requires monthly cost reports that are evaluated against progress and used to make financial adjustments. The program works with the Golden Field Office to manage cooperative agreements, audit partners, ensure invoices are in accordance with the agreements and to issue reimbursement. There is no evidence of erroneous payments or statutory violations.

Evidence: FY 2003 Spend Plan and Measures spreadsheet. Sample quarterly costing report.

3.7 Has the program taken meaningful steps to address its management deficiencies?

Answer: YES

Question Weight: 12%

Explanation: The National Association of Public Administrators (NAPA) found dozens of management deficiencies in the program's bureau (the Office of Energy Efficiency and Renewable Energy, or EERE) in a review published in 2000. EERE provided evidence that it addressed some of management deficiencies identified by NAPA, and has prepared a Management Action Plan that will address many of the remaining findings. While a few NAPA recommendations have not been addressed (e.g., that EERE conduct periodic audits to assure that cost-sharing partners actually provide funding they agree to), in general, EERE has taken meaningful steps to address most deficiencies. At the program level, the program has drafted a Management and Operations Plan that links the research, development, demonstration, and education activities to policies, requirements and the process for selecting options; organizing the program; and managing and monitoring the program. The program also developed a Systems Integration Plan to provide a disciplined approach to the design, development, and validation of complex systems.

Evidence: A Review of the Management in the Office of Energy Efficiency and Renewable Energy (NAPA, 2000). Letter Report from Assistant Secretary Garman to Chairman of the House Subcommittee on Interior and Related Agencies on implementation of NAPA recommendations (July 11, 2001). EERE Management Action Plan (August 2003). DRAFT DOE Hydrogen Program Management and Operations Plan (June 2003). DRAFT Systems Integration Plan (2003).

3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?

Answer: YES

Question Weight: 12%

Explanation: Competitive Procurement Processes are used for all financial assistance awards (except some earmarks), such that all proposed activities are evaluated for scientific and technical merit. The program conducts an annual peer review using the OMB scorecard criteria to guide peer evaluations. In FY 2003, 23 percent of the funds were earmarked, and 40 percent went to national labs. The program competitively awarded all of remaining R&D funds, mostly using merit review with external (peer) evaluation.

Evidence: FY 2003 Spend Plan; Table showing funding allocations as per OMB Circular A-11 definitions for "Conduct of Research and Development."

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?

Answer: Large Extent

Question Weight: 25%

Explanation: Generally, the program appears to be making reasonable progress, although some measures and targets are new, and a few are still under development. In addition, in 2000, the National Academy of Sciences noted that the program has made significant R&D advances.

Evidence: National Academy of Sciences, "Renewable Power Pathways: A Review of The U.S. Department of Energy's Renewable Energy Programs" (2000)

Program Assessment Rating Tool (PART)

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: Large Extent Question Weight: 25%

Explanation: Generally, the program appears to be making reasonable progress, although some measures and targets are new, and a few are still under development. The program reports that it has met its first and second quarter milestones toward achievement of its FY 2003 targets.

Evidence:

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: No Question Weight: 25%

Explanation: The program identified several activities that would seem to promote efficiency and cost-effectiveness, including: integrated planning and identification of most cost effective investments/roles in R&D consortia; shifting work previously done by labs that the private sector; and developing electronic collection, storage, management and reporting systems that eliminate historic but unneeded reporting, and integrate performance, planning, fiscal and management data. The program could not provide evidence that these activities have improved efficiency and cost effectiveness.

Evidence:

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: N/A Question Weight: 0%

Explanation: The program works closely with industry and other Federal programs to advance the state of the art in hydrogen technologies. There are no studies comparing this program to similar programs.

Evidence:

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: YES Question Weight: 25%

Explanation: According to a National Academy of Sciences review, the program is "well defined and well managed...The research itself appears to be well done, and an organized peer review system is in place." The program "has established a firm foothold in critical technical areas that can provide incremental improvements." Other peer reviews generally report positively on technical progress of projects.

Evidence: National Academy of Sciences, "Renewable Power Pathways: A Review of The U.S. Department of Energy's Renewable Energy Programs" (2000). Merit Review and Peer Evaluation of the Hydrogen, Fuels Cells and Infrastructure Technologies Program (May 19-22, 2003). 2002 Annual Hydrogen Program Review Meeting (May 6-8, 2002). Merit Review and Peer Evaluation National Laboratory R&D (May 9-10, 2002).

PART Performance Measurements

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Cost of hydrogen produced from natural gas (at 5,000 pounds per square inch (psi), untaxed, at the pump, with no carbon sequestration), in dollars per gasoline gallon equivalent (\$/gge).

Additional Information: Reducing hydrogen production costs accelerate the market viability and deployment of hydrogen technologies, which contribute to the Department's goal of increased energy security and reduced greenhouse gas and pollutant emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	5	5	
2004	5		
2006	3		
2008	2		
2010	1.5		

Measure: Cost of hydrogen produced from renewables (at 5,000 pounds per square inch (psi), untaxed, at the pump), in dollars per gasoline gallon equivalent (\$/gge).

Additional Information: Reducing hydrogen production costs accelerate the market viability and deployment of hydrogen technologies, which contribute to the Department's goal of increased energy security and reduced greenhouse gas and pollutant emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		8.5	
2003	6	6.2	
2004	5.7		
2005	5.7		
2008	4.6		
2010	3.9		

PART Performance Measurements

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Energy density of hydrogen storage system using compressed gas storage tanks, in kilowatt-hours per liter (kWh/l)

Additional Information: Reducing hydrogen storage volume will enable the development of hydrogen fuel cell vehicles that are competitive with gasoline powered vehicles for driving range. The metric is for volume, but weight and cost targets must also be met. The 2010 target will enable a driving range of about 300 miles in some vehicles.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	0.7	0.7	
2003	1	1	
2004	1		
2005	1.2		
2010	1.5		

Measure: Energy density of hydrogen storage system using solid state storage technologies, in weight percent. (Six weight percent will enable a 300-mile driving range in some vehicles.)

Additional Information: Reducing hydrogen storage volume will enable the development of hydrogen fuel cell vehicles that are competitive with gasoline powered vehicles for driving range. The metric is for volume, but weight and cost targets must also be met. The 2015 target will enable a driving range of greater than 300 miles in all light-duty vehicles.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2000	5.0	2.3	
2004	3.0		
2005	4.5		
2008	5.5		
2010	6.0		

PART Performance Measurements

Program: Hydrogen Technology
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Number of U.S. students and teachers (kindergarten through 12th grade) who understand the concept of a hydrogen economy and how it may affect them, based on response to survey questions, determined by statistical sample and extrapolation

Additional Information: Educating the public about hydrogen properties and safety may facilitate a more rapid transition to a hydrogen economy.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long Term
2004	Baseline survey		
2008	2 fold inc.		
2010	4 fold inc.		

Measure: Validated cost of hydrogen production, untaxed, including co-generation of electricity, in dollars per kilogram (\$/kg). The unit is roughly equivalent to the cost of a gallon of gasoline.

Additional Information: This measure tracks demonstration activities intended to validate modeled or estimated costs of hydrogen production. Reducing hydrogen production costs can help accelerate the market viability and deployment of hydrogen technologies, which contribute to the Department's goal of increased energy security and reduced greenhouse gas and pollutant emissions.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long Term
2004	3.6		
2005	3.6		
2008	3		
2013	1.5		

Measure: Displacement of petroleum, in millions of barrels of oil per day (m bbl/d)

Additional Information: As technical targets are met in this and other related programs, hydrogen fuel cell vehicles and other hydrogen-powered technologies may become commercially viable, thereby displacing oil consumption.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long Term
2002	0	0	
2020	0.5		
2030	4		

PART Performance Measurements

Program: Hydrogen Technology

Agency: Department of Energy

Bureau: Energy Efficiency and Renewable Energy

Measure: Displacement of petroleum, in millions of barrels of oil per day (m bbl/d)

Additional Information: As technical targets are met in this and other related programs, hydrogen fuel cell vehicles and other hydrogen-powered technologies may become commercially viable, thereby displacing oil consumption.

Year

2040

Target

11

Actual

Measure Term: Long Term

Program Assessment Rating Tool (PART)

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Research and Development Capital Assets and Service Acquisition

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	89%	60%	Effective

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The purpose of the Inertial Confinement Fusion Ignition and High Yield Campaign (ICF Campaign) is to support current & future National Nuclear Security Administration (NNSA) Stockpile Stewardship Program (SSP) objectives by developing laboratory capabilities to create and measure extreme conditions of temperature, pressure, and radiation approaching those in a nuclear explosion and by conducting weapons-related research in these environments. This capability is required to support assessments and certification of the nation's nuclear weapons stockpile.

Evidence: The NNSA Strategic Plan, 2002; NNSA FY 2004-08 Future-Years Nuclear Security Program (FYNSP), February 2003; Stockpile Stewardship and Management Programmatic Environmental Impact Statement (SSM PEIS); ICF Program Plan/Strategic Plan; annual ICF Campaign Implementation Plans; 2001 and 2003 Report to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile ("Foster Panel"); High Energy Density Physics Study; National Academy of Sciences and JASON reviews of the ICF Program and NIF Project; Inertial Confinement Fusion Advisory Committee Reviews; Pulsed Power Review Committees ("Garwin" & "Trivelpiece" Reviews); ICF Campaign/Program external review history; and National Ignition Facility Key Decision Zero document.

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The ICF Campaign addresses the NNSA need to examine conditions of extreme temperature and pressure present in a nuclear weapon and to provide experimental data to develop and support computational models related to the performance of these weapons. Achievement of technical goals in this field, known as "high energy density physics," is recognized as essential to success of the SSP mission of ensuring the safety, security and reliability of weapons in the stockpile. As such, the ICF Campaign is addressing a specific requirement for the Department of Energy (DOE), which is to enhance national security through the military application of nuclear technology. The FY 1994 National Defense Authorization Act directed the Secretary of Energy to "establish a stewardship program to ensure the preservation of the core intellectual and technical competencies of the U.S. in nuclear weapons."

Evidence: The FY 1994 National Defense Authorization Act; NNSA Strategic Plan; NNSA FY 2004-08 FYNSP; SSM PEIS; ICF Program Plan/Strategic Plan; annual ICF Campaign Implementation Plans; 2001 and 2003 Report to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile ("Foster Panel"); High Energy Density Physics Study; National Academy of Sciences and JASON reviews of the ICF Program and NIF Project; Inertial Confinement Fusion Advisory Committee Reviews; Pulsed Power Review Committees ("Garwin" & "Trivelpiece" Reviews); ICF Campaign/Program external review history; and National Ignition Facility Key Decision Zero document.

Program Assessment Rating Tool (PART)

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Research and Development Capital Assets and Service Acquisition

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	89%	60%	Effective

1.3 **Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?** Answer: YES Question Weight: 20%

Explanation: Nuclear weapons are the sole province of the Federal Government, and NNSA is the federal agency responsible for the safety, security and reliability of the nuclear weapons stockpile. The ICF Campaign capabilities are unique and address the specific needs of the SSP. No equivalent laboratory experimental capabilities (facilities and diagnostics) for conducting research in nuclear weapons-relevant temperature/ pressure regimes are available or being planned elsewhere in the U.S. According to the 2003 National Research Council report (Frontiers in High Energy Density Physics), "Existing and future NNSA High Energy Density Facilities... are uniquely capable of probing the behavior of macroscopic collections of matter under extreme conditions." The National Ignition Facility (NIF) will be the only laboratory facility capable of accessing conditions for nuclear burn applicable for the SSP, and the Z pulsed-power facility is the only laboratory facility with sufficiently high energy x-rays for certain radiation tests of weapons components.

Evidence: The NNSA Strategic Plan; NNSA FY 2004-08 FYNSP; Stockpile Stewardship and Management Programmatic Environmental Impact Statement (SSM PEIS); ICF Program Plan/Strategic Plan; annual ICF Campaign Implementation Plans; 2001 and 2003 Report to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile ("Foster Panel"); High Energy Density Physics Study; National Academy of Sciences and JASON reviews of the ICF Program and NIF Project; Inertial Confinement Fusion Advisory Committee Reviews; Pulsed Power Review Committees ("Garwin" & "Trivelpiece" Reviews); ICF Campaign/Program external review history; National Ignition Facility Key Decision Zero document; and Frontiers in High Energy Density Physics (National Research Council, 2003).

1.4 **Is the program design free of major flaws that would limit the program's effectiveness or efficiency?** Answer: YES Question Weight: 20%

Explanation: NNSA has greatly improved overall management of the program since it identified problems in the structure and management of the NIF Project in FY 2000. Since that time, NNSA has created the NIF Project Office and has applied proven project management methods. However, some recommendations stemming from the previous difficulties remain unfulfilled and some major technical challenges to achieving the project's objectives remain.

Evidence: The NNSA Strategic Plan; ICF Program Plan/Strategic Plan; annual ICF Campaign Implementation Plans; list of ICF Campaign Reviews; ICF periodic milestone status reports; ICF site monthly updates; 2001 and 2003 Report to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile ("Foster Panel"); High Energy Density Physics Study; National Academy of Sciences and JASON reviews of the ICF Program and NIF Project; Inertial Confinement Fusion Advisory Committee Reviews; Pulsed Power Review Committees ("Garwin" & "Trivelpiece" Reviews); ICF Campaign/Program external review history; and National Weapons Laboratories Annual Contractor Performance Evaluations.

Program Assessment Rating Tool (PART)

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Research and Development Capital Assets and Service Acquisition

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	89%	60%	Effective

1.5 **Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: YES Question Weight: 20%

Explanation: The composition of the ICF Campaign is uniquely structured to meet the needs of the national nuclear weapons program. The SSP and ICF Campaign resources are targeted, in accordance with the NNSA Strategic Plan, toward ensuring the long term vitality of the scientific and engineering base at the weapons laboratories in order to assess and certify the nuclear stockpile. The ICF Campaign provides nuclear weapons-relevant facilities and research, including fusion ignition capabilities, at the weapons laboratories and leading U.S. scientific laboratories.

Evidence: The NNSA Strategic Plan; NNSA FY 2004-08 FYNSP; SSM PEIS; ICF Program Plan/Strategic Plan; annual ICF Campaign Implementation Plans; 2001 and 2003 Report to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile ("Foster Panel"); High Energy Density Physics Study; National Academy of Sciences and JASON reviews of the ICF Program and NIF Project; Inertial Confinement Fusion Advisory Committee Reviews; Pulsed Power Review Committees ("Garwin" & "Trivelpiece" Reviews); ICF Campaign/Program external review history; and National Ignition Facility Key Decision Zero document.

2.1 **Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program?** Answer: YES Question Weight: 10%

Explanation: NNSA has made significant progress in developing tangible, concrete measures for a research and development program that is inherently difficult to measure. While, perhaps, not as clear and concise as measures for other programs, NNSA's intent is to continue to refine the ICF measures to link outputs and outcomes.

Evidence: The NNSA Strategic Plan; NNSA FY 2004-08 FYNSP; Stockpile Stewardship and Management Programmatic Environmental Impact Statement (SSM PEIS); Draft FY 2004-09 ICF Program Plan; ICF Strategic Plan; FY 2003 and Draft FY 2004-05 ICF Campaign Implementation Plans; High Energy Density Physics Study; National Ignition Facility Key Decision One document; National Academy of Sciences and JASON reviews of the ICF Program and NIF Project; Inertial Confinement Fusion Advisory Committee Reviews; ICF Campaign/Program external review history; and NIF Construction Project Data Sheet, milestone list, and Project Execution Plan.

2.2 **Does the program have ambitious targets and timeframes for its long-term measures?** Answer: YES Question Weight: 10%

Explanation: The performance targets for the ICF Campaign long-term measures are ambitious and technically challenging. They also have a defined target date. Independent external reviews have validated the technical value and ambitious nature of the goals.

Evidence: The NNSA FY 2004-08 FYNSP; NNSA FY 2004 Congressional Budget Request; Draft FY 2004-09 ICF Program Plan; ICF Strategic Plan; FY 2003 and Draft FY 2004-05 ICF Campaign Implementation Plans; NIF Construction Project Data Sheet, milestone list, and Project Execution Plan; National Academy of Sciences and JASON reviews of the ICF Program; and ICF Level 1 & 2 milestone list.

Program Assessment Rating Tool (PART)

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Research and Development Capital Assets and Service Acquisition

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	89%	60%	Effective

2.3 **Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals?** Answer: YES Question Weight: 10%

Explanation: The ICF Campaign has a limited number of specific annual performance measures designed to demonstrate progress toward achieving the Campaign's long-term goals. Annual performance measures exist in the form of FYNSP Performance Indicators that are consistent with ICF Campaign and NIF Project Milestones (Level 1 & 2 milestones) and with ICF Campaign Implementation Plans. These annual performance measures are listed, for FY 2002- FY 2008, in the separate Performance Measures Tab.

Evidence: NNSA FY 2004-08 FYNSP; FY 2004 Congressional Budget Request; Draft FY 2004-09 ICF Program Plan; ICF Strategic Plan; ICF Annual Campaign Implementation Plans; NIF Construction Project Execution Plan, milestone list, and Project Data Sheet; ICF Level 1 & 2 milestone list; ICF periodic milestone status reports; ICF site monthly updates; and annual budgets.

2.4 **Does the program have baselines and ambitious targets for its annual measures?** Answer: YES Question Weight: 10%

Explanation: The ICF Campaign has ambitious targets and baselines for its annual measures. Annual measures provide a quantitative means of measuring progress in major technical efforts critical to achieving long-term goals and outcome targets. Technical scope, cost and schedule baselines have been established for NIF construction-related activities and adherence to these baselines is monitored and formally reported per established requirements. A system of annual performance indicators and targets was introduced with the FY2004 NNSA FYNSP. Annual ICF performance targets are established to meet expected SSP technical baselines. Progress on technical milestones is monitored closely by NNSA and senior-level laboratory management. This progress is reported in NNSA FYNSP and Government Performance Results Act documentation.

Evidence: The NNSA FY 2004-08 FYNSP; Draft FY 2004-09 ICF Program Plan; ICF Strategic Plan; ICF Campaign Implementation Plans; NIF Construction Project Execution Plan, milestone list, and Project Data Sheet; ICF Level 1 & 2 milestone list; ICF periodic milestone status reports; ICF site monthly updates; and annual budgets.

2.5 **Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program?** Answer: YES Question Weight: 10%

Explanation: The Nuclear Weapons complex commits to program goals at several levels. Top-level goals are codified via NNSA Level 1 milestones. An ICF Program Executive Group ("HEDP Executives"), consisting of representatives from all laboratories involved in the ICF Campaign and related work for SSP Science Campaigns, oversees the formulation of long-term program goals and associated milestones. This same group oversees the management and execution of the annual work-scope for the ICF Campaign, which is documented in ICF Campaign Implementation Plans and site-owned Project Execution Plans. Actual progress in achieving results against these plans is reported by ICF sites to the NNSA Campaign Manager periodically throughout the year and is also tracked via NNSA reviews as part of the NNSA Planning, Programming, Budgeting, and Evaluation/Execution (PPBE) process, which is further described in the responses to questions 2.7 and 3.1.

Evidence: The NNSA Strategic Plan; NNSA FY 2004-08 FYNSP; Draft FY 2004-09 ICF Program Plan; ICF Strategic Plan; ICF Campaign Implementation Plans; NIF Construction Project Execution Plan; and ICF Level 1 & 2 milestone list.

Program Assessment Rating Tool (PART)

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Research and Development Capital Assets and Service Acquisition

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	89%	60%	Effective

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: External committees, to include the Secretary of Energy's Advisory Board, the Inertial Confinement Fusion Advisory Committee, National Academy of Sciences, JASON, and, more recently, the High Energy Density Physics Study, have validated the program's purpose, direction, and long-term strategy. External reviews of the NIF Construction Project are conducted as needed. Recent NIF reviews include the General Accounting Office (GAO) in June 2001 and the DOE Inspector General (IG) in April 2003. Other topic-specific reviews are conducted as needed. OMB recommends an additional independent evaluation (from the DoD/national security standpoint) that addresses the relevance of the program to the overall stockpile stewardship effort.

Evidence: National Academy of Sciences and JASON reviews of the ICF Program and NIF Project; High Energy Density Physics Study; Inertial Confinement Fusion Advisory Committee reviews of the ICF Program; DOE Stockpile Stewardship Program, 30-Day Review, Nov. 1999; ICF Campaign/Program external review history; JASON High Energy Laser Study; ZR Mission Need Review; OMEGA EP Mission Need Review; Garwin Review of Pulsed Power Sciences; Trivelpiece Review of Pulsed Power Sciences; Lawrence Livermore National Laboratory NIF Program Advisory Committee Reviews; Los Alamos National Laboratory Physics Division Review Committee Reports; NNSA Reviews of the Naval Research Laboratory ICF Program; Inspector General Report on NIF; National Weapons Laboratory Performance Assessments; JASON High Power Laser Study; National Ignition Facility Key Decision Zero document; 2001 & 2003 Reports to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile ("Foster Panel"); GAO-01-677R, Follow-up Review of DOE's National Ignition Facility, June 1, 2001; and DOE IG Audit Report, DOE/IG-0598, Status of the National Ignition Facility Project, April 2003.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: YES Question Weight: 10%

Explanation: The NNSA budget requests are explicitly tied to anticipated annual and long-term performance goals via the comprehensive PPBE process. Long-term performance goals established/validated during the Planning Phase are linked in a performance cascade to annual targets and detailed technical milestones. During the Programming Phase, budget and resource trade-offs and decisions are evaluated based on impact to annual and long-term performance measures. These NNSA performance-planning-budgeting decisions are documented in the Program Decision Memorandum (PDM) and used to develop the budget requests during the Budgeting Phase. Program and financial performance for each measure is corporately monitored and assessed during the Execution and Evaluation Phase. The resource needs for NNSA programs are presented in a complete and transparent manner. The budget requests for NNSA programs are "fully loaded" - that is, the direct and indirect costs of program execution by program performers are reflected in the budget. Only about 4% of NNSA's personnel are Federal employees who provide direction, oversight, and administration of the technical efforts. These resources are also specifically and separately identified in NNSA budget requests, as required by the Congress.

Evidence: The NNSA PPBE Guidance Documents located on the NNSA web-site; FY 2004 NNSA Congressional Budget Request; NNSA FY 2004 & FY 2005 PDMs; and NNSA FY 2004-08 FYNSP.

Program Assessment Rating Tool (PART)

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Research and Development Capital Assets and Service Acquisition

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	89%	60%	Effective

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: Comprehensive improvement of strategic planning is occurring within NNSA and also within the ICF Campaign. The recently completed NNSA Strategic Plan defines the overall goals, strategies, and strategic indicators for the SSP. Strategic guidance issued by NNSA as part of the PPBE process defines objectives and provides guidance for budget formulation. The ICF Campaign continually reexamines its long term goals, most recently via the High Energy Density Physics Study and ICF Campaign specific strategic planning exercises documented in the ICF Program Plan. The NIF Construction Project has improved its prior planning deficiencies by creating the NNSA Office of the NIF Project (now NA-10.1) and by establishing, validating, and certifying a new Project baseline to Congress in September 2000. This new baseline established key milestones to monitor and track the various phases of the Project, implemented an earned value management reporting system, and established a project management review process. All of these steps, along with enhancing the significance of the NIF in the University of California contract performance measures, have increased the direct involvement of senior laboratory management in oversight of the Project.

Evidence: The NNSA Strategic Plan; NNSA FY 2004-08 FYNSP; SSM PEIS; Draft FY 2004-09 ICF Program Plan; ICF Strategic Plan; ICF Campaign Implementation Plans; High Energy Density Physics Study; NNSA Defense Programs FY2005 PPBES Strategic Guidance; and 2001 & 2003 Report to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile ("Foster Panel").

2.CA1 Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity? Answer: YES Question Weight: 10%

Explanation: The High Energy Density Physics Study, which included participation by stockpile stewardship stakeholders from outside NNSA and the laboratories, was conducted in 2001. This study affirmed the need for the ICF Campaign and validated the technical goals for the Campaign. As part of this study, alternatives to constructing the full 192-beam NIF were examined and reviewed, including half- and quarter-sized NIF. The study concluded that the full NIF Project, including the ignition goal, was the best option for stockpile stewardship.

Evidence: High Energy Density Physics Study; NNSA Strategic Plan; SSM PEIS; Draft FY 2004-09 ICF Program Plan; ICF Strategic Plan; ICF Campaign Implementation Plans; and NNSA Defense Programs FY2005 PPBES Strategic Guidance.

2.RD1 If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals? Answer: NA Question Weight: 0%

Explanation: There are no U.S. efforts outside of the ICF Campaign that have the same or similar goals or capabilities. The nature and scope of the SSP and ICF Campaign are uniquely defined by the needs for appropriate stewardship of the nation's nuclear weapons stockpile and for maintaining a U.S. technology base adequate to provide this support. Relevance and validity of efforts are reviewed and evaluated on a regular basis with the stakeholder community.

Evidence:

Program Assessment Rating Tool (PART)

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Research and Development Capital Assets and Service Acquisition

Section Scores				Overall Rating
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100%	90%	89%	60%	Effective

- 2.RD2** **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: NO Question Weight: 10%
- Explanation: It does not appear that there has been a concerted effort to evaluate and prioritize this program relative to other SSP programs and the benefit they provide to overall national security.
- Evidence: The NNSA Strategic Plan; NNSA FY 2004-08 FYNSP; NNSA FY 2004 Congressional Budget Request; SSM PEIS; Draft FY 2004-09 ICF Program Plan; ICF Strategic Plan; ICF Campaign Implementation Plans; High Energy Density Physics Study; and NNSA Defense Programs FY2005 PPBE Strategic Guidance.
- 3.1** **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: YES Question Weight: 12%
- Explanation: The ICF Campaign has conducted periodic program reviews; these are now a requirement of the NNSA PPBE evaluation process. The NIF Construction Project reports progress and adherence to baselines on a monthly and quarterly basis. The National Weapons Laboratory contracts include requirements and criteria for annual assessment of performance. Semi-annual reviews of ICF Campaign progress are held. The status of Level 1 and 2 milestone accomplishment is updated several times per year. The Campaign's major university contractor provides quarterly and annual technical reports. The Campaign's industrial contractor is reviewed semi-annually. Other specific activities oriented towards construction, such as ZR and OMEGA EP, provide quarterly reporting per standard DOE procedure (DOE Order 413.3). Sites also produce annual reports of progress. Data from all ICF Campaign participants is collected and incorporated in campaign planning and budget formulation.
- Evidence: NIF Project monthly reports; ICF Campaign semi-annual reviews; ICF periodic milestone status reports; National Laboratory contract performance reports; University of Rochester quarterly and annual reports; General Atomics, Inc. semi-annual review reports; NIF Diagnostics Program Quarterly review; ZR Project Quarterly review; site monthly updates; and DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets, October 13, 2000.

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Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
Bureau: National Nuclear Security Administration
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Section Scores				Overall Rating
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3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 11%

Explanation: Responsibility and accountability for technical quality of stewardship work performed are key elements of NNSA and national lab culture. Responsible managers for the ICF Program have been identified at NNSA headquarters and field offices and also at participating laboratory sites. Performance standards, usually in the form of specific milestones, are defined for each individual program element and manager. Construction projects are executed via externally reviewed project execution plans; progress is reviewed on a regular basis. Cost and schedule data is collected and tracked for the ICF Campaign and NIF Construction Project. Technical progress is tracked via milestones. Award of contract fees is based on Annual Performance assessments of the three National Weapons Laboratories. Review criteria for these assessments include ICF and NIF Construction Project objectives. The NIF Construction Project's industrial contracts include performance thresholds and appropriate incentives. Federal managers are held accountable for program performance in manager evaluations.

Evidence: National Weapons Laboratory Performance Assessments; University of Rochester quarterly and annual progress reports; University of Rochester contract renewal review; General Atomics, Inc. semi-annual review; ICF Program Plan/Strategic Plan; NIF Construction Project Execution Plan; ZR Project Execution Plan; ICF Level 1 & 2 milestone list and updates; and NNSA Federal Employee evaluations

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 11%

Explanation: The NNSA tracks expenditures at the sub-program level using its official Budget and Reporting (B&R) classification codes and the DOE Single Integrated Financial Management System. Program and Project Managers allocate funding through the work authorization process and monitor costs monthly. Funding B&R code structure is based on Campaign major technical efforts (MTEs) and instructions that are included with Approved Funding Program/Work Authorization Statements when funds are released to sites make the intended purposes clear. Sites are required to report obligations and expenditures to NNSA in a timely fashion.

Evidence: NNSA Financial Plan and monthly Work Authorization Statements; laboratory financial reports; and NIF Construction Project monthly reports.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 11%

Explanation: The DOE and NNSA use distinct evaluation procedures and criteria to achieve efficiency and effectiveness of research and development investment dollars. There are clear criteria for laboratories to use in make/buy decisions when it is appropriate to have competition for subcontracted/outsourced work. For NIF construction, Lawrence Livermore National Laboratory has worked extensively with industrial sources to develop required technologies and control component production costs. Multiple vendors have been employed where appropriate to maintain competition and reduce costs. Fabrication of targets for ICF experimental facilities has been outsourced to General Atomics, Inc. This has centralized target fabrication capabilities and reduced costs. All University grants are awarded on a competitive basis.

Evidence: NNSA Critical Decision Process (see DOE Order 413.3); NIF Construction Project Execution Plan; NNSA Contract with General Atomics, Inc.; DP Stockpile Science Academic Alliance Grant Solicitation and Selection Process; and National Weapons Laboratory Performance Assessments.

Program Assessment Rating Tool (PART)

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
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Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	89%	60%	Effective

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 11%

Explanation: There is strong collaboration and coordination between the ICF Campaign and other activities within the SSP/NNSA, DOE, and other government agencies. An HEDP Executives group facilitates interactions with other portions of the SSP. At NNSA direction, individual sites have established review committees to ensure experiments on major facilities are coordinated and dedicated to high priority activities. Regular meetings are held with the DOE Office of Science to coordinate management of congressionally mandated activities relevant to production of energy from inertial fusion.

Evidence: NNSA Strategic Plan; Draft FY 2004-09 ICF Campaign Program Plan; ICF Strategic Plan; SSM PEIS; DP FY 2005 PPBE Strategic Guidance; NIF Experiment Planning Advisory Committee (EPAC); OMEGA and Z scheduling committees; National Weapons Laboratory Performance Assessments; ICF Campaign Implementation Plans; High Energy Density Physics Study; 2002 National Research Council Report on High Energy Density Physics - "Frontiers in High Energy Density Physics"; and 2002 National Academy of Science Report on the Physics of the Universe - "Quarks to Cosmos Report."

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 11%

Explanation: The NNSA is covered by DOE's financial management policies, procedures, and practices that meet all statutory requirements. The accounting services for NNSA are provided by DOE, and these are free of material internal control weaknesses. The DOE's financial statements have been given a clean audit opinion in 6 of the last 7 years. Day-to-day NNSA operations are supported through the NNSA PPBE processes that require the integration of financial and performance management information systems at each phase. The DOE is well underway on a new initiative (I-MANAGE) in support of the President's Management Agenda to fully integrate all financial, performance, and administrative data for the DOE into a single system within the next 5 years that will include all NNSA information.

Evidence: DOE Financial Management Orders and NNSA PPBE Guidance Documents located on the NNSA web-site

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 11%

Explanation: The setting of clear goals (long-term and annual) for the overall program and integration of research and development activities are the major management issues requiring attention. The NNSA has developed and implemented a strategic plan, FYNSP, and associated PPBE process to address the first issue of setting clear goals. The integration issue has been addressed via the formation of the Office of Program Integration (NA-13) within DP. Within the ICF Campaign, the NNSA implemented an "HEDP Executive Group," consisting of senior managers from NNSA and the National Laboratories, to address integration issues. This group examines overall ICF Campaign strategic direction and integration and works to ensure that program resources are used in the most efficient and effective manner. The oversight of the NIF Construction Project was improved several years ago by creating a specific NNSA Office of the National Ignition Facility Project (now NA-10.1). The Foster Panel noted that, when problems developed in the NIF, "NNSA took action to clarify roles and responsibilities in a manner that has significantly improved management effectiveness, program performance, and confidence in the program plan."

Evidence: NNSA Defense Programs documentation on PPBES; Program Progress Reviews and Program Self Assessments; NNSA/DP documentation on NA-13; Draft FY 2004-09 ICF Campaign Program Plan; ICF Strategic Plan; and 2001 & 2003 Report to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile ("Foster Panel")

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Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Research and Development Capital Assets and Service Acquisition

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	89%	60%	Effective

3.CA1 **Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals?** Answer: NO Question Weight: 11%

Explanation: In September 2000, the NNSA rebaselined the NIF Project because of significant cost over-runs and schedule delays. Given this need to rebaseline, the program will exceed original cost and schedule estimates. (However, since the rebaselining the program has met all of its interim goals within cost and schedule and has been commended for good program management.)

Evidence: The NNSA FY 2004-08 FYNSP; Draft FY 2004-09 ICF Campaign Program Plan; ICF Strategic Plan; FY 2003 and Draft FY 2004-05 ICF Campaign Implementation Plans; National Weapons Laboratory Performance Assessment Criteria; NIF Construction Project Data Sheet, milestone list, and Project Execution Plan; ICF Level 1 & 2 milestone list; and annual work scope authorization statements/agreements for the three National Weapons Laboratories, University of Rochester Laboratory for Laser Energetics, Naval Research Laboratory, and General Atomics, Inc.

3.CO1 **Are grants awarded based on a clear competitive process that includes a qualified assessment of merit?** Answer: NA Question Weight: 0%

Explanation:

Evidence:

3.CO2 **Does the program have oversight practices that provide sufficient knowledge of grantee activities?** Answer: NA Question Weight: 0%

Explanation:

Evidence:

3.CO3 **Does the program collect grantee performance data on an annual basis and make it available to the public in a transparent and meaningful manner?** Answer: NA Question Weight: 0%

Explanation:

Evidence:

3.RD1 **For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: YES Question Weight: 11%

Explanation: The program manager allocates research & development funds to participating laboratories through a process that evaluates stockpile stewardship requirements and identifies the technical means that can best meet those requirements. Program reviews evaluate the quality of implementation and execution. Weapons laboratory contract award fees are paid following an annual performance assessment in which the quality of program management and technical executions are assessment criteria elements.

Evidence: Draft FY 2004-09 ICF Campaign Program Plan; ICF Strategic Plan; ICF Campaign Implementation Plans; NIF Construction Project Execution Plan, milestone list, and Project Data Sheet; ICF Level 1 & 2 milestone list; National Weapons Laboratory Performance Assessments; and technical progress reports.

Program Assessment Rating Tool (PART)

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Constructi
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Research and Development Capital Assets and Service Acquisition

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	89%	60%	Effective

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: **SMALL EXTENT** Question Weight: 20%

Explanation: The 2001 GAO "Follow-Up Review of the National Ignition Facility" expressed concern over the role and performance of NIF. It is not clear that NNSA has addressed all of these concerns and, therefore, demonstrated adequate progress towards achieving its long-term goals. However, NNSA has met all of its interim goals since the September 2000 program rebaselining.

Evidence: NNSA FY 2004-08 FYNSP; Draft FY 2004-09 ICF Campaign Program Plan; ICF Strategic Plan; ICF Campaign Implementation Plans; ICF Program Level 1 & 2 milestone list and updates; NIF Construction Project Execution Plan; Inertial Confinement Fusion Advisory Committee reviews of the ICF Program; ICF Campaign/Program external review history; and 2000 "Garwin" and 2002 "Trivelpiece" Pulsed Power Program Reviews

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: **LARGE EXTENT** Question Weight: 20%

Explanation: Annual performance goals are established based upon technical milestones expected to be completed each year. Milestone scheduling and progress are tracked by NNSA in the campaign's annual Implementation Plan. The NIF Construction Project is meeting all of its cost, schedule and technical objectives. (In March 2003, the Project achieved its goal of demonstrating full performance in a single laser beam, thus proving the laser design.) Research and Development (R&D) milestones are achieved with some modifications in schedule because of funding availability and the difficulty inherent in forecasting scientific progress. For example, as documented under the measures tab, in 2002 the campaign achieved all of its annual targets with the exception of those related to procurement of some items needed to support NIF experiments.

Evidence: The NNSA FY 2004-08 FYNSP; Draft FY 2004-09 ICF Campaign Program Plan; ICF Implementation Plans; ICF Level 1 & 2 milestone list and updates; National Weapons Laboratory Performance Assessments; and DOE/IG-0598.

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: **YES** Question Weight: 20%

Explanation: Throughout its history, the ICF Campaign has taken positive actions to improve efficiency and cost effectiveness. Examples include competitive procurements using a multiple vendor base to reduce program costs for facility components and support equipment, developing a common diagnostic platform for use at all ICF facilities, and integrating efforts across ICF facilities to achieve national long-term goals. Understanding of learning curves on existing facilities increases efficiency and results in cost savings on new or upgraded facilities. Efficiency improvements include development of specific techniques on a facility, which are then applied to other facilities. Additional improvements in efficiency and cost savings result from obtaining more accurate data or from a reduction in the time devoted to facility maintenance or hardware installation (e.g., the increased efficiency in installing single laser beams at the NIF). Information technologies (e.g., video conferencing, e-mail, web pages, and electronic data transfer) are used to control costs and increase effectiveness by reducing the need for face-to-face meetings and facilitating communications and coordination among participants.

Evidence: Lawrence Livermore National Laboratory ICF Annual Reports; University of Rochester Laboratory for Laser Energetics quarterly and annual reports; ICF site monthly updates; NIF Project monthly status reports; ZR Project monthly status reports; ZR Mission Need Report; Z and OMEGA scheduling committees; NIF diagnostics quarterly progress reports; and international agreements on pulsed power science and/or laser technology.

Program Assessment Rating Tool (PART)

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Agency: Department of Energy
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100%	90%	89%	60%	Effective

4.4 **Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?** Answer: NA Question Weight: 0%

Explanation: No private or governmental programs have the same or similar purpose and goals. However, the use of ICF expertise and facilities to make positive contributions to the success of other governmental programs and initiatives in science validates that the program is of high technical quality and delivers results. In 2003, the National Research Council (NRC), in its Frontiers in High Energy Density Physics Report, concluded that "Recent advances....make extremely high energy density matter accessible in the laboratory," and NNSA's state-of-the-art ICF facilities "allow repeatable experiments and controlled parameter variations to elucidate the important underlying physics." Comparison of ICF program performance to other scientific research programs can also be measured in terms of professional awards. ICF managers and technical staff have received a number of awards and accolades, including membership in the National Academies of Science and Engineering, fellowship in professional societies (2-3/year), RD100 awards, and major American Physical Society and Institute of Electrical and Electronic Engineers awards.

Evidence: NIF Construction Project National Safety Council Occupational Safety/Health Award; NIF Project Construction Users Roundtable award for outstanding achievement in construction Industry Safety Excellence; 2002 Joint NNSA-Office of Science Review of ICF-managed High Average Power Laser Program (HAPL); NIF Project Director and ZR Project Director DOE/NNSA M&O Contractor management excellence awards; Industry Week Award for Z Accelerator; National Research Council Report on High Energy Density Physics - "Frontiers in High Energy Density Physics," 2003; National Academy of Science Report on the Physics of the Universe - "Quarks to Cosmos Report," 2002; NIF Construction Project monthly reports and Press releases; Office of Engineering and Contract Management Project Status Reports; NNSA monthly Project Status Snapshots for Management Reports; and file on ICF Program/NIF Project awards, accomplishments, and publications.

4.5 **Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results?** Answer: YES Question Weight: 20%

Explanation: The effectiveness of the ICF Campaign has been reviewed separately and as part of the overall SSP. Internal NNSA reviews and independent external reviews have validated the need for the ICF Campaign and the progress of the ICF effort. The DOE Inspector General (IG) reviewed the NIF Project in June 2001 and reported significant progress towards constructing the facility within the revised schedule and cost baselines. In addition, the Project has demonstrated full performance in a single laser beamline, setting a world record for laser performance.

Evidence: High Energy Density Physics Study; National Weapons Laboratory Performance Assessments; Inertial Confinement Fusion Advisory Committee reviews of the ICF Program; ICF Campaign/Program external review history; Inspector General Report on the NIF, 2003; 2000 "Garwin" and 2002 "Trivelpiece" Pulsed Power Program Reviews; 2001 & 2003 Reports to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile ("Foster Panel"); National Research Council Report on Frontiers in High Energy Density Physics, 2003; National Academy of Sciences and JASON reviews of the ICF Program and NIF Project; JASON High Energy Laser Study; ZR Mission Need Review; OMEGA EP Mission Need Review; Los Alamos National Laboratory Physics Division Advisory Committee reviews; NNSA Reviews of the Naval Research Laboratory ICF Program; National Weapons Laboratory Contractor Performance Assessments; and DOE Stockpile Stewardship Program 30-Day Review, November 1999.

Program Assessment Rating Tool (PART)

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Agency: Department of Energy
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Section Scores				Overall Rating
1	2	3	4	Moderately
100%	90%	89%	60%	Effective

4.CA1 Were program goals achieved within budgeted costs and established schedules? Answer: NO Question Weight: 20%

Explanation: Significant cost over-runs and schedule delays resulted in NNSA having to rebaseline the NIF project in September 2000. Given this need to rebaseline, the program will exceed original estimates. However, since the rebaselining the program has met all of its interim goals within cost and schedule and has been commended for good program management.

Evidence: The NIF Project Execution Plan; NNSA FY 2004-08 FYNRP; NNSA FY 2004 Congressional Budget Request; Draft FY 2004-09 ICF Campaign Program Plan; ICF Implementation Plans; ICF Level 1 & 2 milestone list and updates; Congressional correspondence on NIF/Ignition program; University of California Lawrence Livermore National Laboratory Performance Assessments; and DOE/IG-0598.

PART Performance Measurements

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Construction Project
Agency: Department of Energy
Bureau: National Nuclear Security Administration

Measure: Cumulative percentage of progress (measured by program milestones completed) towards creating and measuring extreme temperature and pressure conditions -- a 2010 stockpile stewardship requirement.

Additional Information: This measure supports NNSA goals and strategies expressed in the NNSA Strategic Plan. Specifically, NNSA Goal 1 and NNSA Strategy 1-2 . Annual ICF measures # 5, 6, 9, & 10 (below) support this measure and its associated targets.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2002	52%	52%	
2003	57%	57%	
2004	63%		

Measure: Cumulative percentage of progress towards simulating conditions of a nuclear explosion at the National Ignition Facility (NIF) to increase confidence in modeling the performance of nuclear weapons.

Additional Information: This measure supports NNSA goals and strategies expressed in the NNSA Strategic Plan. Specifically, NNSA Goal 1 and NNSA Strategy 1-2. Annual ICF measures # 5, 7, 8, 9, & 10 (below) support this measure and its associated targets.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2002	51%	51%	
2003	56%	55%	
2004	63%		
2007	78%		
2014	100%		

Measure: Cumulative percentage of construction completed on the NIF.

Additional Information: This measure supports NNSA goals and strategies expressed in the NNSA Strategic Plan. Specifically, NNSA Goal 1 and NNSA Strategy 1-2. Annual ICF measures # 7, 8, & 10 (below) support this measure and its associated targets.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	57%	57%	
2003	65%	65%	

PART Performance Measurements

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Construction Project

Agency: Department of Energy

Bureau: National Nuclear Security Administration

Measure: Cumulative percentage of construction completed on the NIF.

Additional Information: This measure supports NNSA goals and strategies expressed in the NNSA Strategic Plan. Specifically, NNSA Goal 1 and NNSA Strategy 1-2. Annual ICF measures # 7, 8, & 10 (below) support this measure and its associated targets.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	74%		
2006	88%		
2008	100%		

Measure: Cumulative percentage of equipment fabricated to support ignition experiments at the National Ignition Facility.

Additional Information: This measure supports NNSA goals and strategies expressed in the NNSA Strategic Plan. Specifically, NNSA Goal 4 and NNSA Strategy 4-1.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	18%	2%	
2003	24%	7%	
2004	40%		
2007	73%		
2010	100%		

Measure: Annual number of days available to conduct stockpile stewardship experiments. (Total includes all ICF facilities.)

Additional Information: This measure tracks efficiency and effectiveness of ICF facilities in meeting support commitments coordinated with SSP Science and Engineering Campaigns and ICF Campaign objectives. It supports long-term measures #1, 2, & 3 (above) and associated long-term targets 1.2, 2.1, 2.2, 2.3, & 3.1.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2002	500	580	
2003	500	580	
2004	500		
2007	500		

PART Performance Measurements

Program: Inertial Confinement Fusion Ignition and High Yield Campaign/NIF Construction Project

Agency: Department of Energy

Bureau: National Nuclear Security Administration

Measure: Annual number of days available to conduct stockpile stewardship experiments. (Total includes all ICF facilities.)

Additional Information: This measure tracks efficiency and effectiveness of ICF facilities in meeting support commitments coordinated with SSP Science and Engineering Campaigns and ICF Campaign objectives. It supports long-term measures #1, 2, & 3 (above) and associated long-term targets 1.2, 2.1, 2.2, 2.3, & 3.1.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2010	800		

OMB Program Assessment Rating Tool (PART)

Service Acquisition Program

Name of Program: International Nuclear Materials Protection and Cooperation

Section I: Program Purpose & Design (Yes, No, N/A)

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1 <i>Is the program purpose clear?</i>	Yes	The International Nuclear Materials Protection and Cooperation (MPC&A) program reduces the likelihood of nuclear terrorism by working in Russia and other regions of concern to 1) secure and eliminate vulnerable nuclear weapons and weapons-usable material; 2) locate, consolidate and secure radiological materials that can be used in a dirty bomb and; 3) install detection equipment at border crossings to detect and prevent the illicit transfer of nuclear material.	Soviet Nuclear Threat Reduction Act of 1991 (Nunn-Lugar); "U.S. Policy on Improving Nuclear Material Security in Russia and other Newly Independent States" of September 1995; Program Agreements; Annual Congressional Legislation; MPC&A Strategic Plan/Mission Statement, July 2001; National Security Council reviews of 2001	20%	0.2
2 <i>Does the program address a specific interest, problem or need?</i>	Yes	The breakup of the Soviet Union has resulted in vast quantities of poorly secured nuclear materials and warheads. The security system that protected this material during the Soviet period has weakened considerably due to a sustained period of political and economic upheavals. There have been 12 confirmed cases of weapon-usable material thefts from Russia and other states of the former Soviet Union since May 1992	Site visits, media reports, Congressional and Intelligence reports, and the Administration's National Security Council Review of 2001, confirm the problem.	20%	0.2
3 <i>Is the program designed to have a significant impact in addressing the interest, problem or need?</i>	Yes	Russia's ongoing economic crisis has destroyed its ability to account fully for and secure its 600 metric tons (MTs) of nuclear material. US/DOE financial and technical contributions are critical in effectively and rapidly securing these materials. Leveraging of funds are done where possible with host countries, international partners and non-profit organizations. However, given the size and complexity of these facilities, the extent of US/DOE provided assistance drives the rate at which these upgrades can be completed.	National Security Council reviews of 2001; GAO reports; Life-Cycle Cost and Schedule Estimate Revision 3, March 28, 2002; Supplemental Appropriations in FY2002 to accelerate upgrades	20%	0.2

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4 <i>Is the program designed to make a unique contribution in addressing the interest, problem or need (i.e., not needlessly redundant of any other Federal, state, local or private efforts)?</i>	Yes	The program's mission focuses on nuclear material security and is based on expertise in securing nuclear material at DOE facilities, and work to secure nuclear warheads is closely coordinated with the Department of Defense and via regular interagency meetings. There is, however, the possibility that other nations (to include Russia) and non-government agencies could fund at least a portion of the work that is currently supported by the US.	National Security Council review of Russian and Non-Russian Nonproliferation programs; "U.S. Policy on Improving Nuclear Material Security in Russia and other Newly Independent States" of September 1995; Interagency meetings	20%	0.2
5 <i>Is the program optimally designed to address the interest, problem or need?</i>	Yes	The program is optimally designed and organized into offices, budget and reporting structure and projects to cooperate with specific partner organizations in Russia (Navy, Strategic Rocket Forces, Ministry of Atomic Energy, etc). The program has developed a clear set of criteria that optimizes cost-effectiveness by 1) prioritizing which nuclear material is more attractive as a weapon and which should be secured first; 2) establishing an orderly sequence of security upgrades to ensure that the first money spent will result in the greatest threat reduction; and 3) established an independent review board to evaluate annually every project against the criteria.	MPC&A Strategic Plan, July 2001; Guidelines for Material Protection, Control and Accounting Upgrades at Russian Facilities Revision 2, September 13, 2001; Life-Cycle Cost and Schedule Estimate Revision 3, March 28, 2002; General Accounting Office reports; National Security Council review of nonproliferation programs	20%	0.2
Total Section Score				100%	100%

Section II: Strategic Planning (Yes,No, N/A)

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1 <i>Does the program have a limited number of specific, ambitious long-term performance goals that focus on outcomes and meaningfully reflect the purpose of the program?</i>	Yes	The program has three specific ambitious long-term goals: 1.) secure all 4000 nuclear warheads and 60 tons of material at Russian Navy sites by 2006; 2.) secure all 540 tons of nuclear material at Russian Ministry of Atomic Energy sites by 2008; and 3.) eliminate 29 tons of Highly Enriched Uranium by 2009.	DOE Strategic Plan; NNSA Strategic Plan, February 2002; MPC&A Strategic Plan, July 2001; Life-Cycle Cost and Schedule Estimate Revision 3, March 28, 2002	14%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
2 <i>Does the program have a limited number of annual performance goals that demonstrate progress toward achieving the long-term goals?</i>	Yes	The program has established and regularly tracks and updates a series of annual performance goals and measures to produce a scorecard of program progress to ensure progress toward achieving long-range outcomes. See section IV for detailed information.	Life-Cycle Cost and Schedule Estimate Revision 3, March 28, 2002; Nuclear Material Directory, March 2002; MPC&A scorecard, April 2002; Annual budget requests include performance goals.	14%	0.1
3 <i>Do all partners (grantees, sub-grantees, contractors, etc.) support program planning efforts by committing to the annual and/or long-term goals of the program?</i>	Yes	All DOE laboratories, U.S. and Russian subcontractors commit to annual and long-term goals via input to developing and implementing the Life-Cycle Cost and Schedule Estimate Revision 3, March 28, 2002; Project Work Plans, and contracts, follow-on upgrades criteria. Each project receives an annual independent audit. Performance reviews of installed systems in Russia are conducted.	Life-Cycle Cost and Schedule Estimate Revision 3, March 28, 2002; Project Work Plans; Contracts and Statements of Work; MPC&A Agreement	14%	0.1
4 <i>Does the program collaborate and coordinate effectively with related programs that share similar goals and objectives?</i>	Yes	The program coordinates closely with the Department of Defense's Cooperative Threat Reduction program, State Department, the Nuclear Regulatory Commission and U.S. Customs as well as international partners in Russia, other former Soviet states and the International Atomic Energy Agency.	Interagency coordination meetings and memorandums of understanding; International agreements and protocols, contracts, and Statements of Work	14%	0.1
5 <i>Are independent and quality evaluations of sufficient scope conducted on a regular basis or as needed to fill gaps in performance information to support program improvements and evaluate effectiveness?</i>	Yes	The program has an independent group that reviews all projects each year against performance criteria. In addition, several independent external reviews have been conducted by the General Accounting Office, DOE Inspector General, Secretary of Energy Advisory Board, National Security Council, and National Academy of Science over the past three years.	Independent project review team reports; General Accounting Office report, February 2001; DOE Inspector General reports; Secretary of Energy Advisory Board reports; National Security Council recommendation in December 2001; and National Academy of Science reports.	14%	0.1
6 <i>Is the program budget aligned with the program goals in such a way that the impact of funding, policy, and legislative changes on performance is readily known?</i>	Yes	The program's budget structure is aligned with both program goals and performance measures at the program and project level via Budget and Reporting Structure, accounting systems, and the Life-Cycle Cost and Schedule Estimate Revision 3, March 28, 2002; the MPC&A scorecard; Project Work Plans; and budget formulation so that the impact of funding and policy changes can be readily known and quickly implemented.	Life-Cycle Cost and Schedule Estimate Revision 3, March 28, 2002; MPC&A scorecard, April 2002; Project Work Plan; Annual budget plans	14%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
7 <i>Has the program taken meaningful steps to address its strategic planning deficiencies?</i>	Yes	The program has developed and successfully implemented Action Plans to improve internal communication and training for new employees identified during strategic planning sessions.	Action plans; New Employee Handbook, April 2002; Training Curriculum; Communication Action Plan	14%	0.1
Total Section Score				100%	100%

Section III: Program Management (Yes,No, N/A)					
Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1 <i>Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?</i>	Yes	The program regularly collects and updates performance information. On a monthly basis the program collects and updates cost and deliverables at the project level. And at least once a year, all project data is integrated to update program short-term and long-range plans to improve performance. Each project receives an independent annual review. The program regularly reports and tracks performance via the DOE annual budget performance tracking databases.	Life-Cycle Cost and Schedule Estimate Revision 3, March 28, 2002; Monthly cost reports; Project Work Plans; MPC&A scorecard, April 2002; TST reports; DOE Solomon system	14%	0.1
2 <i>Are Federal managers and program partners (grantees, subgrantees, contractors, etc.) held accountable for cost, schedule and performance results?</i>	Yes	The program has clear and documented cost control, cost reporting, schedule tracking and performance review criteria. Also, each headquarters manager has a critical element in their performance appraisal on project management that includes cost, schedule, and quality criteria.	Project Management Document Revision 5, May 17, 2002; Guidelines for Material Protection, Control and Accounting Upgrades at Russian Facilities Revision 2, September 13, 2001; Performance Appraisals	14%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
3 <i>Are all funds (Federal and partners') obligated in a timely manner and spent for the intended purpose?</i>	No	Program funds have been slow to spend out. (As of July 2002, roughly 60% of the 2002 funds were costed with 70% projected by the end of the year.) While some of this may be due to additional funds provided by emergency supplementals and the difficulty in negotiating access with the Russian government, there is room for improvement. The program subcontracts about 50% of its funds to Russian nuclear facilities and private vendors which requires extra oversight to ensure funds are spent for intended purposes. This oversight is successfully accomplished by frequent visit by U.S. experts to Russian sites to validate and provide Assurance Reports, as well as to conduct performance tests of completed security systems.	Monthly cost reports; Project Work Plans; Review of contracts and Statements of Work; Trip reports, Performance test results; Site Photographs	14%	0.0
4 <i>Does the program have incentives and procedures (e.g., competitive sourcing/cost comparisons, IT improvements) to measure and achieve efficiencies and cost effectiveness in program execution?</i>	Yes	The MPC&A program has used incentive based contracting to accelerate security upgrades at sites. In addition, the program has developed several procedures ranging from security upgrades criteria to common contracting practices to control costs and performance monitoring to ensure effective program execution.	General Accounting Office reports; National Security Council reviews; Contracts and Statements of Work; Project Management Document Revision 5, May 17, 2002; Contracts Policy; and Guidelines for Material Protection, Control and Accounting Upgrades at Russian Facilities Revision 2, September 13, 2001	14%	0.1
5 <i>Does the agency estimate and budget for the full annual costs of operating the program (including all administrative costs and allocated overhead) so that program performance changes are identified with changes in funding levels?</i>	No	The NNSA programs are consistent with DOE practice in estimating and budgeting for the full cost of executing direct programs within the program budgets. However, consistent with Congressional requirements, DOE budgets separately for its Federal administrative oversight and allocable costs in Program Direction accounts applicable to each Program Office.	Evidence: DOE Accountability Report for FY 2001.	14%	0.0
6 <i>Does the program use strong financial management practices?</i>	No	NNSA adheres to strict financial management practices through the implementation of a new Planning, Programming, Budgeting and Evaluation system that is formalizing program and resource management processes. However, questions remain about the ability to track funds at the program level.	Evidence: NNSA Future-Years Nuclear Security Program, March 20, 2002; NNSA FY 2004 Budget submittal.	14%	0.0

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
7 <i>Has the program taken meaningful steps to address its management deficiencies?</i>	Yes	The program updates financial and program management guidelines annually to incorporate lessons learned. For example, the program has recently increased both budget and reporting codes and sub-budget and reporting code/Sub-project level cost reporting to better track the funds associated with Russian vs. U.S. costs for equipment, travel, labor and overhead rates. This has resulted in identifying ways of decreasing U.S. overhead and labor costs; thus, accelerating security upgrades in Russia.	Project Work Plan; Monthly cost reports; MPC&A website; GAO reports; National Security Council reviews	14%	0.1
Total Section Score				100%	57%

Section IV: Program Results (Yes, Large Extent, Small Extent, No)

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1 <i>Has the program demonstrated adequate progress in achieving its long-term outcome goal(s)?</i>	Large Extent			20%	0.1
<p>Long-Term Goal I: Secure nuclear warheads and weapons-usable material at Russian Navy sites Target: Complete security upgrades on all 4000 nuclear warheads and 60 tons of weapons-usable material at 53 Russian navy nuclear sites by 2006. Actual Progress achieved toward Percentage of total Navy Warheads completed: 18% by FY01; 40% by FY02; 60% by FY03; 90% by FY04; 98% by FY05; 100% by FY06 e of total</p> <p>Long-Term Goal II: Secure all weapons-usable nuclear material at Russian Ministry of Atomic Energy and Russian and other former Soviet States Civilian sites Target: Complete security upgrades on all 540 tons of weapons-usable material at 29 Russian and 13 former Soviet Union nuclear sites by 2008. Actual Progress achieved toward Percentage of total Russian Ministry of Atomic Energy and Russian and other States of the former Soviet Union Civillian material completed: 6% by goal: FY01; 8% by FY02; 18% by FY03; 22% by FY04; 41% by FY05; 46% by FY06; 76% by FY07; 100% by FY08</p> <p>Long-Term Goal III: Eliminate excess weapons-usable material Target: Convert 29 tons of Highly Enriched Uranium (HEU) to Low Enriched Uranium (LEU) by 2009. HEU is a greater proliferation risk than LEU. Actual Progress achieved toward Percentage of 29MT HEU converted: 8% by FY01; 12% by FY02; 22% by FY03; 32% by FY04; 44% by FY05; 57% by FY06; 69% by FY07; 81% by goal: FY08; 100% by FY09</p>					
2 <i>Does the program (including program partners) achieve its annual performance goals?</i>	Large Extent			20%	0.1

<p>Key Goal I: Secure 4000 Russian navy warheads Performance Target: July 2001 Strategic Plan projected 18% completed by FY01 Actual Performance: Actual reported in April 2002 MPC&A scorecard is 16%</p>
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Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
		Key Goal II: Secure 600 tons nuclear material Performance Target: July 2001 Strategic Plan projected 16% completed by FY01 Actual Performance: Actual reported in April 2002 MPC&A scorecard is 18%			
		Key Goal III: Complete security upgrade at 95 sites Performance Target: July 2001 Strategic Plan projected 38 completed by FY01 Actual Performance: Actual reported in April 2002 MPC&A scorecard is 38			
3 <i>Does the program demonstrate improved efficiencies and cost effectiveness in achieving program goals each year?</i>	Yes	The program has over the past six years continued to increase funds spent on security upgrades and decrease costs for U.S. lab oversight, travel, and procurement rates. The pace of the security upgrades has also increased, leading to greater schedule efficiencies and decreased program costs.	Monthly cost reports; Life-Cycle Cost and Schedule Estimate Revision 3, March 28, 2002	20%	0.2
4 <i>Does the performance of this program compare favorably to other programs with similar purpose and goals?</i>	Yes	The program was reviewed by National Security Council (NSC) in 2001 along with all other U.S.-Russian nonproliferation programs for cost effectiveness and received a high rating relative to other nonproliferation programs. The NSC recommended additional funding to accelerate schedules.	National Security Council recommendations, December 2001	20%	0.2
5 <i>Do independent and quality evaluations of this program indicate that the program is effective and achieving results?</i>	Yes	Several reviews by the General Accounting Office, DOE Inspector General, Secretary of Energy Advisory Board, National Security Council, and National Academy of Science over past years have all indicated the program is effective.	National Security Council recommendations; General Accounting Office report, February 2001; Secretary of Energy Advisory Board report	20%	0.2
Total Section Score				100%	87%

Program Assessment Rating Tool (PART)

Program: Natural Gas Technologies
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
40%	60%	88%	25%	

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The program goal is to accelerate technology development for exploration and production of nonconventional resources, to advance technology development aimed at maximizing the productivity of each well and to reduce the impact of production. For methane hydrates, the purpose is to understand the role of gas hydrates in seafloor stability and the global carbon cycle, and to develop, by 2015, the knowledge and technology necessary for commercial production of methane from hydrates while protecting the environment. This goal is shared by the five agencies that cooperate on gas hydrate research and development (R&D): The Departments of Energy (DOE), Commerce, Interior, Defense and the National Science Foundation (NSF).

Evidence: Budget documentation (e.g., FY 2004 Budget Congressional Justification); web pages; workshop proceedings; Methane Hydrate Research and Development Act of 2000 PL 106-193; Methane Hydrates Strategic Plan; and Multi-Year R&D Plan.

1.2 Does the program address a specific and existing problem, interest or need?

Answer: NO

Question Weight: 20%

Explanation: The gas industry has stated that "Sufficient resources exist to meet growing demand well into the twenty-first century." However an ongoing National Petroleum Council Natural Gas Study is revisiting this issue. While the industry identifies technology development as important, the need for Federal involvement isnt clear, since the industry's average annual capital budget for E & P was over \$27 billion from 1991 to 1998 and is expected to grow. The FY 2004 President's Budget request refocused the program on longer-term, higher risk efforts such as hydrogen from natural gas, sustainable supply, and ultra-deep drilling.

Evidence: National Petroleum Council "Natural Gas: Meeting the Challenges of Adding Reserves".

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: NO

Question Weight: 20%

Explanation: The program funds projects comparable to those funded by private industry, and generally for the benefit of private industry. The Methane Hydrate program is designed to make a unique contribution. It addresses research to develop domestic hydrate reserves. It is unique in the US in aiming toward future production. Other Federal agencies address other aspects of gas hydrates(e.g. United States Geological Survey (USGS), resource assessments; National Oceanic and Atmospheric Administration, biota of subsea hydrates.) DOE's long-term reserach on hydrates is beyond the capital investment horizon of most companies.

Evidence: FY 2004 DOE R&D Investment Criteria submission for Oil Exploration and Production (E&P) states: "The independent operator's business model approach (including the largest independents) is to buy technology from the service companies as needed." This statement, which also applies to the gas production business, illustrates that a market for these technologies exists, and that DOE research is often duplicative of, or competes with and potentially crowds out, private investement. See also the Hydrate Strategic Plan and Interagency Coordination Plan.

Program Assessment Rating Tool (PART)

Program: Natural Gas Technologies
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
40%	60%	88%	25%	

- 1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?** Answer: YES Question Weight: 20%
- Explanation: There is no evidence that an alternative design would be more efficient or effective at developing pre-competitive knowledge and technology. For the Hydrates program, tax incentives for production have been shown to be ineffective in stimulating industry in the absence of needed technology. The international cooperation in the research underscores the importance and approval of the approach.
- Evidence: FY 2004 R&D Investment Criteria submission; <http://www.netl.doe.gov/publications/proceedings/00/hydrates/00hydrate.html> (Note the original hydrate strategy (see Section 1, Q 1) was developed and critiqued at two national hydrate workshops).
- 1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: NO Question Weight: 20%
- Explanation: DOE has not presented R&D Investment Criteria information at a detailed level discussing variables such as years to commercialization, public benefits, technological risk, cost share or plotting economic, environmental and/or security benefits.
- Evidence:
- 2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program?** Answer: YES Question Weight: 10%
- Explanation: Long-term goals are: 1) by 2015, develop technologies to expand the 2002 domestic gas economically recoverable resource base by 100 trillion cubic feet (Tcf); 2) develop technologies that will by 2025 add 20 Tcf of technically recoverable resources of natural gas from methane hydrates; 3) by 2013, reduce the cost of hydrogen production from natural gas by 25% from current baseline of \$5.54/MM Btu (steam reforming of methane at Natural gas price of \$3.15/MM Btu.)
- Evidence: See "Measures" section of this PART; Joule System.
- 2.2 Does the program have ambitious targets and timeframes for its long-term measures?** Answer: YES Question Weight: 10%
- Explanation: Ambitious targets and timeframes have been established for long-term measures. Projects last for three to five years, with new competition required at that point. New proposals are judged against new proposals.
- Evidence: See "Measures" section of this PART.
- 2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals?** Answer: YES Question Weight: 10%
- Explanation: Achievement of the annual measures (as well as long term goals) for this program is assessed through the GSAM model. Further detailed analysis is necessary to ensure that the critical assumptions in this model are valid and transparent, and to ensure that any resource base expansion is actually attributable to DOE activities. Additionally, annual measures for methane hydrates need to be agreed upon.
- Evidence: See "Measures" section of this PART.

Program Assessment Rating Tool (PART)

Program: Natural Gas Technologies
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
40%	60%	88%	25%	

2.4 Does the program have baselines and ambitious targets for its annual measures?

Answer: YES

Question Weight: 10%

Explanation: Program has established baselines and ambitious target for annual measures.

Evidence:

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program?

Answer: YES

Question Weight: 10%

Explanation: Each cooperative agreement between DOE and participating partners has detailed milestones and key decision points. These milestones are reviewed annually between the DOE management and the performing organization, as well as at all project funding decision points. If a partner is not meeting stated requirements, then that cooperative agreement does not go into the next budget period. A Federal Advisory Committee and an Interagency Coordinating Committee oversee, coordinate, and integrate Methane Hydrates research to a common mission. Regular national and international meetings of researchers strengthen understanding of the DOE goal. The National Academy of Sciences National Research Council (NAS/NRC) is planning to start periodic peer reviews of the program in 2003. All funding awards focus on a statement of work related to program goals.

Evidence: PROMIS project management database; program solicitations; quarterly JOULE Milestones. The Methane Hydrate program's work is tied to the goals and oversight requirements in the Methane Hydrate R&D Act of 2000.

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need?

Answer: NO

Question Weight: 10%

Explanation: The program was recently reviewed by the NAS/NRC. However, the program has previously used industry reviews to evaluate effectiveness and performance. These efforts do not meet the requirements for independent review. The program will explore including third-party reviews. The Methane Hydrate Federal Advisory Committee conducts meetings to address issues that may arise. The NAS/NRC will start periodic peer reviews in 2003.

Evidence: NAS/NRD report: "Energy Research at DOE: Was it Worth It?" (July 2001).

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget?

Answer: NO

Question Weight: 10%

Explanation: The Department has not submitted budget documents linking performance goals to resource levels in a complete or transparent manner.

Evidence:

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies?

Answer: YES

Question Weight: 10%

Explanation: Improvements in benefits modeling, and efforts to connect long and short term goals through the JOULE performance tracking system are concrete steps that could help with planning efforts.

Evidence: JOULE System, budget documents.

Program Assessment Rating Tool (PART)

Program: Natural Gas Technologies
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
40%	60%	88%	25%	

- 2.RD1** **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NO Question Weight: 10%
- Explanation: The program did not submit R&D Investment Criteria information demonstrating how DOE prioritizes programs based on potential benefits.
Evidence: Public Workshop Proceedings, EIA NEMS benefit analysis.
- 2.RD2** **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: NO Question Weight: 10%
- Explanation: Program did not submit R&D Investment Criteria information demonstrating how risk, years to commercialization, and other key factors are used in setting priorities. However, the GSAM model is used to prioritize gas projects based on supply impact and R&D success.
Evidence: GSAM
- 3.1** **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: YES Question Weight: 12%
- Explanation: The cooperative agreements in the gas program clearly outline the major milestones and performance requirements that the participating partner must meet. These milestones are tracked and performance measured through quarterly and other technical reporting requirements. Accomplishments and key milestones are reported weekly to the Laboratory Director. Significant accomplishments are transmitted to the Assistant Secretary of Fossil Energy (FE) and are reported in technical fact sheets (TechLines), available to the public on the DOE/FE web site. Project reviews are held on an annual basis. JOULE is used as a performance management tool to track results on a quarterly basis.
Evidence: Progress is tracked through progress, management, and financial reports from the participating partner required by the cooperative agreement. Project databases (ProMis) facilitate and inform project and program management decisions. Websites (such as www.netl.doe.gov/scng) have information regarding the projects and programs. The SCNG website contains information regarding the reporting requirements of cooperative agreements.
- 3.2** **Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: YES Question Weight: 12%
- Explanation: The National Energy Technology Laboratory (NETL) has identified a schedule of incentives holding key product personnel responsible for results under their control. Recently, NETL was one of only two organizations in the entire Federal Government to win Office of Personnel Management's Pillar Award for outstanding efforts in linking performance with accountability. However, the program has not demonstrated that an earned value system for tracking cost, schedule, and performance currently exists.
Evidence: OPM's Pillar Award for linking performance with accountability.

Program Assessment Rating Tool (PART)

Program: Natural Gas Technologies
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
40%	60%	88%	25%	

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: Funds are obligated based on an annual Program Implementation Plan approved by DOE management and consistent with appropriations. Essentially all funds are obligated in the budget year. Spending of cooperative agreements is audited as required by procurement rules.

Evidence: Program implementation plan signed by the Director of NETL and the Deputy Assistant Secretary includes all planned funding obligations and a schedule of procurements; DOE's annual Performance and Accountability reports.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: NO Question Weight: 12%

Explanation: The program has not demonstrated that procedures exist to measure and achieve efficiencies and cost effectiveness in program administration. Although Headquarters staff has been reduced by 13% over the past five years, DOE did not demonstrate cost-savings from this, or highlight whether field/lab staff has shown efficiencies.

Evidence:

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: The program is fairly well integrated with other programs with similar goals at DOE, and with non-Federal parties. Methane hydrates R&D is integrated through the interagency coordination committee consisting of representatives from the Departments of Energy, Interior, Commerce, Defense and the National Science Foundation (NSF).

Evidence: NETL Operations Plan, Program plans, including the Methane Hydrates Interagency Coordination Plan <http://www.netl.doe.gov/scng/hydrate/pdf/InteragencyPrint.pdf>

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 12%

Explanation: DOE received clean audits in FY 2001 and FY 2002; no known deficiencies specific to this program. Several computer-based project management controls are in place to assist in financial management. Systems exist both on the financial side and the project management side.

Evidence: DOE annual Performance and Accountability report.

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 12%

Explanation: Recent and continuing efforts to develop adequate performance measures is a positive step. As the "Top to Bottom" review is fully implemented additional areas will be addressed.

Evidence: Fossil Energy Top-to-Bottom Review, JOULE results.

Program Assessment Rating Tool (PART)

Program: Natural Gas Technologies
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
40%	60%	88%	25%	

- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: YES Question Weight: 12%
- Explanation: About 97 percent of program funds are subject to competitive selection.
 Evidence: Selection Process for In-house R&D Projects; proceedings/summary of peer review meetings; annual in-house work proposals
- 4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: SMALL EXTENT Question Weight: 25%
- Explanation: Between 1978 and 2000, the gas program has provided over 4 Tcf of incremental production (a subset of economically recoverable resources) or about 1.4 % of consumption.
 Evidence: NAS/NRC report: "Energy Research at DOE: Was it Worth it?" (2001)
- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: SMALL EXTENT Question Weight: 25%
- Explanation: Achievement of annual measures (as well as long term goals) is based on measurement using the GSAM model. Further detailed analysis is necessary to ensure that the critical assumptions in the model are valid and transparent, and to ensure that resource base expansion is actually attributable to DOE. Under old measures, program has 100% performance score through 2nd quarter of FY 2003.
 Evidence: JOULE results, ProMIS project database of accomplishments.
- 4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?** Answer: NO Question Weight: 25%
- Explanation: Program did not demonstrate improved efficiencies or cost effectiveness in achieving program goals.
 Evidence:
- 4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?** Answer: NA Question Weight: 0%
- Explanation:
 Evidence:
- 4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results?** Answer: SMALL EXTENT Question Weight: 25%
- Explanation: Incremental production attributed to program by NAS/NRC study. However, the NAS/NRC also stated that it is difficult to accurately attribute DOE contributions versus private industry contributions.
 Evidence: NAS/NRD report: "Energy Research at DOE: Was it Worth It?" (2001).

PART Performance Measurements

Program: Natural Gas Technologies
Agency: Department of Energy
Bureau:

Measure: Additional economically recoverable domestic gas resource (trillion cubic feet).

Additional Information: By 2015 develop technologies to expand the 2002 domestic gas economically recoverable resource base by 100Tcf. (\$3.50/mcf price/AEO 03 assumptions).

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2010	28		
2015	50		

Measure: Additional economically recoverable domestic gas resource (trillion cubic feet).

Additional Information: Annual performance will be measured by modeling, and assumes that 8 projects from current potfolio will succesfully achieve critical milestones in each year, thereby contributing additional Tcf. Technology products include prototype and/or field-tests of innovative means for resource characterization, exploration success rate, production cost reduction, and/or increased productivity. Critical technology areas include advanced drilling, stripper-well enhancement, and gas storage.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2005	1.5		
2006	4		
2007	10		
2008	16		

Measure: Technically recoverable resources of natural gas from methane hydrates (trillion cubic feet).

Additional Information: Without DOE R&D, initial production of natural gas from methane hydrates is unlikely until about 2025. With DOE R&D, initial production can be accelerated by about 5 years to 2020 (at the FY05 level-of-R&D-effort which is a reduction from the current FY03 effort). Based on estimated ratios of technically-recoverable resources (TRR) to production levels, the TRR in 2025 will be roughly 25 Tcf, approximately 20 Tcf greater than in the no-DOE case."

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2015	0		
2020	5		
2025	20		

PART Performance Measurements

Program: Natural Gas Technologies
Agency: Department of Energy
Bureau:

Measure: Percent cost reduction for production of hydrogen from natural gas (with carbon capture and sequestration)

Additional Information: Cost reduction is achieved via development of advanced technologies of ITM synthesis gas generation, advanced membrane separation, and CO2 capture. The 25% cost reduction is needed to achieve the target of \$0.56/kg hydrogen at the plant gate. The baseline cost of current hydrogen production technology is based on steam reforming of methane at \$5.54/MM Btu and a natural gas price of \$3.15/MM Btu.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003		\$5.54/MMBtu	
2013	25%		

Measure: Completion the critical-path milestones as listed by year and target.

Additional Information: The critical path milestones (listed in the target column) begin with the award of technology projects and initiation several protoype tests in FY04. *Demonstrate a 0.5 MMscfd hydrogen ITM production unit; **Demo bench scale ITM alt feasibility; ***Demo bench scale ITM alt feasibility; \$Select H2 delivery module concept (from competing bench demos); \$\$Select concept for semi-plant scale demo (from competing pilot demos)

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2005	*		
2006	**		
2007	***		
2008	\$		
2009	\$\$		

OMB Program Assessment Rating Tool (PART)

Research & Development Programs

Name of Program: Nuclear Energy Research Initiative

Section I: Program Purpose & Design (Yes, No, N/A)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Is the program purpose clear?</i>	Yes	This program addresses expanding U.S. nuclear power generation by enhancing the performance of light-water reactors and addressing the barriers to advanced reactors that provide greater sustainability, increased safety and reliability, improved economics, and greater proliferation resistance and physical protection.	National Energy Policy; Secretary Abraham statements; Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002); FY 2004 Budget.	17%	0.2
2	<i>Does the program address a specific interest, problem or need?</i>	Yes	The program addresses the need defined in the <i>National Energy Policy</i> to expand nuclear power generation in the United States. This goal is supported by leveraging R&D investment through international collaborative efforts.	National Energy Policy; Secretary Abraham statements; Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002); FY 2004 Budget.	17%	0.2
3	<i>Is the program designed to make a unique contribution in addressing the interest, problem or need (i.e., not needlessly redundant of any other Federal, state, local or private efforts)?</i>	Yes	In addition to merit-based, peer-reviewed project selection process, the program management team evaluates the projects with respect to other R&D being conducted within the Department to prevent redundancies.	Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002)	17%	0.2
4	<i>Is the program optimally designed to address the interest, problem or need?</i>	Yes	Consistent with the recommendations of the PCAST, program is structured to solicit the best investigator-initiated, innovative proposals to address the major barriers to expanding nuclear generation in the U.S. and internationally. The Nuclear Energy Research Advisory Committee (NERAC) provides close oversight of the program.	1997 PCAST report on Federal Energy R&D for the Challenges of the 21st Century; 1999 PCAST report on the Federal Role in International Cooperation on Energy Innovation; Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002); FY 2004 Budget.	17%	0.2

FY 2004 Budget

5 (RD 1)	<i>Does the program effectively articulate potential public benefits?</i>	Yes	The program is designed to address the major barriers - economics, waste management, and proliferation resistance - to expanding nuclear power generation in the United States and internationally. Clear public benefits will be realized with successful implementation of the program.	National Energy Policy; Secretary Abraham statements; Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002)	17%	0.2
6 (RD 2)	<i>If an industry-related problem, can the program explain how the market fails to motivate private investment?</i>	Yes	Private industry is unable to finance long-term, high-risk nuclear R&D programs; the potential public and environmental benefits from the program justify government sponsorship of these high-risk, leading-edge technologies.	National Energy Policy; 1997 PCAST report on Federal Energy R&D for the Challenges of the 21st Century; International Nuclear Energy Research Initiative Program Plan (September 2002); Nuclear Energy Research Initiative Program Plan (September 2002).	17%	0.2

Total Section Score					100%	100%
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Section II: Strategic Planning (Yes,No, N/A)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Does the program have a limited number of specific, ambitious long-term performance goals that focus on outcomes and meaningfully reflect the purpose of the program?</i>	Yes	The long-term, ambitious goals of the program are to enhance the performance of light-water reactors and address the barriers to advanced reactors that provide greater sustainability, increased safety and reliability, improved economics, and greater proliferation resistance and physical protection.	Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002); 1997 PCAST report on Federal Energy R&D for the Challenges of the 21st Century; 1999 PCAST report on the Federal Role in International Cooperation on Energy Innovation.	12%	0.1
2	<i>Does the program have a limited number of annual performance goals that demonstrate progress toward achieving the long-term goals?</i>	No	The program funds projects annually through grants and cooperative agreements for up to three years. It evaluates projects quarterly to monitor progress and annually to determine qualification for continued funding. Research projects not meeting the established criteria at the specific decision points will be subject to termination via provisions included in the awarded contract. Projects' contributions to long-term goals are not quantified and measurable.	Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002).	11%	0.0
3	<i>Do all partners (grantees, sub-grantees, contractors, etc.) support program planning efforts by committing to the annual and/or long-term goals of the program?</i>	Yes	Program funds investigator-initiated, innovative R&D projects annually through grants and cooperative agreements for up to three years with specific milestones and deliverables. Projects are selected based on their contribution toward annual and long-term program goals.	Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002).	11%	0.1
4	<i>Does the program collaborate and coordinate effectively with related programs that share similar goals and objectives?</i>	Yes	The program is coordinated with other DOE nuclear energy R&D programs including Nuclear Power 2010, Gen IV, and Advanced Fuel Cycle Initiative to capitalize on existing synergies and to ensure no duplication of effort. In addition, the program is coordinated with the NRC and the State Department, however, these agencies do not have programs with similar goals and objectives.	FY 2003 and FY 2004 Budgets; Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002)	11%	0.1

5	<i>Are independent and quality evaluations of sufficient scope conducted on a regular basis or as needed to fill gaps in performance information to support program improvements and evaluate effectiveness?</i>	No	NERAC's Subcommittee on Long-Term Planning for Nuclear Energy Research Initiative Nuclear Energy Research, composed of experts in the nuclear field from industry, laboratories, and universities, provides close oversight of program activities, and Subcommittee staff participate in annual project evaluations. NERAC will establish an independent program evaluation.	Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002); Charter for the NERAC Long-Term Planning Subcommittee and associated meeting reports.	11%	0.0
6	<i>Is the program budget aligned with the program goals in such a way that the impact of funding, policy, and legislative changes on performance is readily known?</i>	No	The program budget request, which focuses on output measures, e.g., projects initiated and completed, does not show contribution to achievement of long-term goals	FY 2003 and FY 2004 Budgets; Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002)	11%	0.0
7	<i>Has the program taken meaningful steps to address its strategic planning deficiencies?</i>	No	NERAC's Subcommittee on Long-Term Planning for Nuclear Energy Research provides close oversight of program activities. Further work is needed to link measure individual project contributions to long-term goals.	Charter for the NERAC Long-Term Planning Subcommittee and associated meeting reports.	11%	0.0
8 (RD 1)	<i>Is evaluation of the program's continuing relevance to mission, fields of science, and other "customer" needs conducted on a regular basis?</i>	Yes	The Subcommittee on Long-Term Planning for Nuclear Energy Research of DOE's independent Nuclear Energy Research Advisory Committee provides close oversight of all program activities.	Charter for the NERAC Long-Term Planning Subcommittee and associated meeting reports.	11%	0.1
9 (RD 2)	<i>Has the program identified clear priorities?</i>	Yes	The program solicits investigator-initiated proposals on identified areas of research, i.e. advanced reactor systems, advanced fuels/fuel cycles, fundamental science, and nuclear production of hydrogen. The program is reviewed, at a minimum, on an annual basis to review the technology areas to be addressed by the program.	Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002)	11%	0.1

Total Section Score	100%	56%
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Section III: Program Management (Yes,No, N/A)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?</i>	Yes	Through quarterly and annual internal and independent reviews, the Department monitors program performance and uses the information to manage the program, improve performance, and determine future funding requirements.	FY 2003 and FY 2004 Budgets; Annual DOE Performance Plan and Performance Appraisal Form; Quarterly updates to the Annual Performance Plan.	10%	0.1
2	<i>Are Federal managers and program partners (grantees, subgrantees, contractors, etc.) held accountable for cost, schedule and performance results?</i>	Yes	Program performance goals are incorporated into the annual performance plans for the federal senior manager and federal program manager. Program performance goals are also incorporated into the contractor's annual performance plan.	Annual DOE Performance Plan and Performance Appraisal Form; NE program guidance memos and associated Statements of Work	9%	0.1
3	<i>Are all funds (Federal and partners') obligated in a timely manner and spent for the intended purpose?</i>	Yes	The program is executed in conformance with Congressional language and established Program Plan.	NE program guidance memos and associated Statements of Work; NE's Monthly Obligation and Cost and Performance Tracking Report; Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002)	9%	0.1
4	<i>Does the program have incentives and procedures (e.g., competitive sourcing/cost comparisons, IT improvements) to measure and achieve efficiencies and cost effectiveness in program execution?</i>	Yes	The program involves investigator-initiated, merit-based, peer-reviewed R&D projects for which such incentives and procedures cannot be readily developed; however, the award process is managed by the Oak Ridge Operations office, which is subject to reviews for efficiency and cost effectiveness.	Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002).	9%	0.1
5	<i>Does the agency estimate and budget for the full annual costs of operating the program (including all administrative costs and allocated overhead) so that program performance changes are identified with changes in funding levels?</i>	No	Salaries, benefits, retirement funding, and other administrative expenses to support the program are included in a separate budgetary line-item ("Program Direction"). These costs are not allocated to the various programs they support.	FY 2004 Budget.	9%	0.0
6	<i>Does the program use strong financial management practices?</i>	Yes	Internal controls are used in the execution of the program.	Annual Reporting for Federal Managers Financial Integrity Act	9%	0.1

7	<i>Has the program taken meaningful steps to address its management deficiencies?</i>	Yes	The Subcommittee on Long-Term Planning for Nuclear Energy Research of DOE's independent Nuclear Energy Research Advisory Committee provides close oversight of all program activities. No management deficiencies have been identified.	Charter for the NERAC Long-Term Planning Subcommittee and associated meeting reports.	9%	0.1
8 (RD 1)	<i>Does the program allocate funds through a competitive, merit-based process, or, if not, does it justify funding methods and document how quality is maintained?</i>	Yes	Awards are based on the results of the merit-based, peer-reviewed evaluations of planned scope and technical competence of proposals.	Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002); FY 2003 and FY 2004 Budget Requests.	9%	0.1
9 (RD 2)	<i>Does competition encourage the participation of new/first-time performers through a fair and open application process?</i>	Yes	Awards are based on the results of the merit-based, peer-reviewed evaluations of planned scope and technical competence of proposals.	Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002); FY 2003 and FY 2004 Budget Requests.	9%	0.1
10 (RD 3)	<i>Does the program adequately define appropriate termination points and other decision points?</i>	Yes	Awards are made for one - three years and funded annually subject to satisfactory project performance.	Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002); FY 2003 and FY 2004s.	9%	0.1
11 (RD 4)	<i>If the program includes technology development or construction or operation of a facility, does the program clearly define deliverables and required capability/performance characteristics and appropriate, credible cost and schedule goals?</i>	Yes	The program conducts technology development projects that clearly define scope, deliverables, end products, and planned cost and schedule.	FY 2002 NERI solicitation; NERI Program Plan (September 2002).	9%	0.1

Total Section Score	100%	92%
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Section IV: Program Results (Yes, Large Extent, Small Extent, No)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Has the program demonstrated adequate progress in achieving its long-term outcome goal(s)?</i>	Large Extent	The program has made progress with the completion of NERI projects and ongoing NERI and I-NERI projects. Further effort is needed to assess individual projects' contributions to long-term goals.	NERI Annual Report; I-NERI Research Abstracts report; FY 2003 and 2004 Budgets; Nuclear Energy Research Initiative Program Plan; International Nuclear Energy Research Initiative Program Plan; NERI Annual Report 2001.	40%	0.3

<p>Long-Term Goal I: Remove barriers to the deployment of advanced nuclear energy systems that provide significant improvements in sustainability, proliferation and terrorism resistance, safety and reliability, and economics. Specific outcome measures are under development.</p> <p>Target: In FY 2002, continue projects initiated in FY 2000 and FY 2001. In FY 2002, initiate approximately 24 new NERI projects. In FY 2002, complete 25 NERI R&D projects. In FY 2003, complete 22 NERI R&D projects. In FY 2003, establish bilateral I-NERI agreements and initiate new projects with Brazil, Canada, and the Republic of South Africa; also initiate new projects with the Republic of Korea. In FY 2004, complete 12 projects. In FY 2004, complete 3 I-NERI projects initiated in FY 2001.</p> <p>Actual Progress achieved toward goal: Completed 25 NERI projects and continued projects initiated in FY 2000 and FY 2001. Initiated 24 new NERI projects. Initiated 9 new I-NERI projects--two with France, six with Korea, and one with the Nuclear Energy Agency.</p>
<p>Long-Term Goal II:</p> <p>Target:</p> <p>Actual Progress achieved toward goal:</p>
<p>Long-Term Goal III:</p> <p>Target:</p> <p>Actual Progress achieved toward goal:</p>

2	<i>Does the program (including program partners) achieve its annual performance goals?</i>	No	Outcome measures are needed that can be used to determine individual projects' contributions to NERI's long-term goals.	2002 & 2003 Budget Requests; Nuclear Energy Research Initiative Program Plan; International Nuclear Energy Research Initiative Program Plan; NERI Annual Report 2001.	40%	0.0
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Key Goal I: Measures under development.						
Performance Target:						
Actual Performance:						
Key Goal II:						
Performance Target:						
Actual Performance:						
Key Goal III:						
Performance Target:						
Actual Performance:						

3	<i>Does the program demonstrate improved efficiencies and cost effectiveness in achieving program goals each year?</i>	N/A	Projects are managed independently of one another and only last 1-3 years.		0%	
4	<i>Does the performance of this program compare favorably to other programs with similar purpose and goals?</i>	N/A	Program is unique (innovative, investigator-initiated R&D), and its performance therefore can not be compared to that of other programs..		0%	
5	<i>Do independent and quality evaluations of this program indicate that the program is effective and achieving results?</i>	No	DOE's independent Nuclear Energy Research Advisory Committee provides reviews and oversight of program activities. These reviews have confirmed that the program is effective in achieving program goals. Independent program evaluations have yet to begin.	Nuclear Energy Research Initiative Program Plan (September 2002); International Nuclear Energy Research Initiative Program Plan (September 2002)	20%	0.0
	<i>If the program includes construction of a facility, were program goals achieved within budgeted costs and established schedules?</i>	N/A	Facility funding has been insignificant to date.		0%	

Total Section Score	100%	26%
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Program Assessment Rating Tool (PART)

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	67%	87%	

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The mission of the Nuclear Physics (NP) program is to foster fundamental research in nuclear physics that will provide new insights and advance our knowledge on the nature of matter and energy and develop the scientific knowledge, technologies and trained manpower that are needed to underpin DOE missions.

Evidence: FY04 Budget Request (www.mbe.doe.gov/budget/04budget/index.htm). Public Law 95-91 that established the Department of Energy (DOE). The NP Mission has been validated by the Nuclear Science Advisory Committee (NSAC).

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The NP program addresses five key questions:(1) What is the structure of the nucleon? (2) What is the structure of nucleonic matter? (3) What are the properties of hot nuclear matter? (4) What is the nuclear microphysics of the universe? (5) What is to be the new Standard Model?

Evidence: NSAC Long-Range Plan (www.sc.doe.gov/production/henp/np/nsac/docs/LRP_5547_FINAL.pdf).

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: The Office of Science (SC) NP program is the principal source of federal funding for basic, long-term research in Nuclear Physics.

Evidence: More than 90% of U.S. Nuclear Physics research is supported by this program. The remaining 10% is supported by the National Science Foundation (NSF) and coordinated through NSAC - a joint advisory committee.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: The NP program is based on competitive merit review, independent expert advice, and community planning. However, a Committee of Visitors (COV) has yet to validate the merit review system.

Evidence: NSAC reviews and reports (www.sc.doe.gov/production/henp/np/nsac/nsac.html). Program files.

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?

Answer: YES

Question Weight: 20%

Explanation: NSAC ensures that input from the nuclear physics research community is regularly gathered to assess new opportunities, priorities, and progress of the program. Peer review is used to assess the relevance and quality of each project.

Evidence: NSAC reviews and reports (www.sc.doe.gov/production/henp/np/nsac/nsac.html). Program files.

Program Assessment Rating Tool (PART)

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	67%	87%	

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 10%

Explanation: The four long-term measures reflect the key scientific drivers that the U.S. nuclear physics community has outlined for the field for roughly the next decade. The program has defined "successful" and "minimally effective" performance milestones for each measure, and an external panel will assess interim program performance, and update the measures as necessary, every five years. It is inappropriate for a basic research program such as this one to have a quantitative long-term efficiency measure.

Evidence: NSAC Long-Range Plan (www.sc.doe.gov/production/henp/np/nsac/docs/LRP_5547_FINAL.pdf). National Research Council report, "Nuclear Physics: The Core of Matter, the Fuel of Stars" (books.nap.edu/catalog/6288.html). A description of the "successful" and "minimally effective" milestones, and an explanation of the relevance of these measures to the field can be found on the SC Web site (www.sc.doe.gov/measures).

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: NSAC has reviewed the new long-term measures for this program and found them to be ambitious and meaningful indicators of progress in the field. The external reviews described in 2.1 will update the measures, targets, and timeframes on an interim basis.

Evidence: Letter from NSAC chair regarding review of long-term measures.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: The quantitative annual output measures for facility construction and operations, and the data delivery goals for the program's major facilities, serve as proxies for progress, because the efficient on-cost and on-schedule delivery of scientific data from these large facilities provides a critical resource necessary for continuing scientific discoveries that are directly connected to the long term goals of the program.

Evidence: FY04 Budget Request. Website with further information, including explanation of data delivery measures (www.sc.doe.gov/measures).

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: All of the annual measures have baseline data (FY01 and/or FY02) that demonstrate that the targets are ambitious, yet realistic. A 20-30 percent tolerance is used to guard against facilities unwisely stressing hardware near the end of the fiscal year.

Evidence: FY04 Budget Request. Website with further information (www.sc.doe.gov/measures). Construction variance target of <10% comes from OMB Circular A-11, especially Capital Programming Guide supplement.

Program Assessment Rating Tool (PART)

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	67%	87%	

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: NO Question Weight: 10%

Explanation: A limited FY03 audit by the DOE Inspector General (IG) found that "performance expectations generally flowed down into the scope of work at the national laboratories." For individual grantees, NP uses general solicitations that do not explicitly include program goals.

Evidence: Memo from the DOE IG to the Director of the Office of Science. M&O contract performance evaluation provisions (e.g., Appendix B in contracts for Jefferson Lab, www.sura.org/DOE/m&o_contract.html; and, Brookhaven Lab, www.bnl.gov/prime/searchprime.asp). Example of recent general renewal solicitation (www.science.doe.gov/grants/Fr03-01.html).

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: All research projects undergo merit review; ongoing grants are reviewed triennially; major facilities are reviewed annually; and, construction projects are reviewed quarterly. NSAC produces planning documents and assessments of various components of the NP program on a rotating basis. NP is working to begin a Committee of Visitors (COV) review process for the program on a triennial basis, and expects the first review in 2003.

Evidence: SC Merit Review guidelines (www.sc.doe.gov/production/grants/merit.html). Program files, including Lehman review reports and program advisory committee reports. NSAC reports, including Long-Range Plan, reviews of Low and Medium Energy subprograms, and recent charge letter to NSAC for review of education, theory, and neutron program elements (www.sc.doe.gov/production/henp/np/nsac/nsac.html). Letter from DOE to NSAC establishing a regular evaluation process utilizing a COV.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: DOE has not yet provided a budget request that adequately integrates performance information.

Evidence:

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: New performance measures and targets have been developed in coordination with OMB. A new COV process is being organized, with the first program review in 2003. The U.S. nuclear physics community has recently completed a long-range strategic plan for the field. As part of the SC strategic planning process, NSAC recently issued a 20-year facilities priority plan for NP.

Evidence: Letter from DOE to NSAC establishing a regular evaluation process utilizing a COV. NSAC Long-Range Plan (www.sc.doe.gov/production/henp/np/nsac/docs/LRP_5547_FINAL.pdf).

Program Assessment Rating Tool (PART)

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	67%	87%	

2.CA1 **Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity?** Answer: YES Question Weight: 10%

Explanation: NSAC provides advice to the program on alternative approaches to addressing key physics questions. The program relies on the Lehman review process and program reviews to monitor construction projects. Facility scientific program advisory committees help prioritize facility research. The program does not currently support a capital project for which a Exhibit 300 is required, so no PART-level project-specific alternatives analyses have been necessary.

Evidence: NSAC reviews and reports (www.sc.doe.gov/production/henp/np/nsac/nsac.html). Program files, including Lehman reports and program advisory committee reports.

2.RD1 **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NA Question Weight: 0%

Explanation: This is a basic R&D program, and the question is intended for industry-related R&D programs.

Evidence:

2.RD2 **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%

Explanation: Although not visible outside DOE, internal SC budget formulation practices include a priority ranking process. The NSAC Long-Range Plan identified strategic priorities for the U.S. nuclear physics community. Previous regular NSAC reviews of subprograms make recommendations, including constant-level-funding scenarios and shutting down facilities. Such reviews prove useful for program planning and should serve as a model for responsible committee advice.

Evidence: NSAC Long-Range Plan, Low Energy, and Medium Energy reviews (www.sc.doe.gov/production/henp/np/nsac/nsac.html).

3.1 **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: NO Question Weight: 8%

Explanation: A great deal of project performance information collected via Lehman facility operations reviews, annual facility reviews, and management changes are made in response to these reviews. The program collects performance data from individual grantees and national labs, and uses peer review as a type of standardized quality control at the individual grant level. However, there is not yet a systematic process, such as regular COV evaluations, that conducts research portfolio quality and process validations. While DOE IG contracts with an outside auditor to check internal controls for performance reporting, and the IG periodically conducts limited reviews of performance measurement in SC, it is not clear that these audits check the credibility of performance data reported by DOE contractors.

Evidence: Program files, including Lehman reviews and subprogram reviews. Reporting requirements for grants (www.science.doe.gov/production/grants/605-19.html).

Program Assessment Rating Tool (PART)

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	67%	87%	

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 8%

Explanation: Senior Executive Service (SES) and Program Manager Performance Plans are directly linked to program goals. The Management and Operations contracts for the Labs and Facilities include performance measures linked to program goals. Research funding requirements ensure consideration of past performance.

Evidence: Program and personnel files, including grant renewal statistics. Performance-based contract fee evaluation provisions (e.g., Jefferson Lab, www.sura.org/DOE/m&o_contract.html; and, Brookhaven Lab, www.bnl.gov/prime/searchprime.asp). 10 CFR 605 (www.science.doe.gov/production/grants/605index.html).

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 8%

Explanation: Using DOE's monthly accounting reports, SC personnel monitor progress toward obligating funds consistent with an annual plan that is prepared at the beginning of the fiscal year to ensure alignment with appropriated purposes.

Evidence: SC programs consistently obligate more than 99.5% of available funds. Program files. Audit reports.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 8%

Explanation: SC is currently undergoing a reengineering exercise aimed at flattening organizational structure and improving program effectiveness. The program collects the data necessary to track the two "efficiency" measures for facility construction and operations management.

Evidence: SC reengineering information (www.screstruct.doe.gov). Program files.

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 8%

Explanation: The program is well coordinated with a similar program at NSF through a joint Advisory Committee (NSAC) that has produced a recent coordinated strategic plan for nuclear physics. Several experiments at large facilities are jointly funded with NSF and/or international partners. The program has yet to demonstrate adequate coordination and collaboration with other countries (namely Germany and Japan) on future rare isotope accelerators.

Evidence: NSAC Long-Range Plan (www.sc.doe.gov/production/henp/np/nsac/docs/LRP_5547_FINAL.pdf), including chapter on international collaboration. List of joint projects with other offices/agencies/countries.

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 8%

Explanation: SC staff execute the NP program consistent with established DOE budget and accounting policies and practices. These policies have been reviewed by external groups and modified as required to reflect the latest government standards.

Evidence: Various Departmental manuals. Program files. Audit reports.

Program Assessment Rating Tool (PART)

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	67%	87%	

3.7 Has the program taken meaningful steps to address its management deficiencies?

Answer: YES

Question Weight: 8%

Explanation: SC is currently reengineering to improve program management efficiency. A Committee of Visitors (COV) process is being implemented. A layer of management above NP in the SC structure was recently removed.

Evidence: SC reengineering information (www.screstruct.doe.gov). Program files.

3.CA1 Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals?

Answer: YES

Question Weight: 8%

Explanation: Community input, through NSAC, is gathered on what capabilities are needed to address scientific opportunities. The NP program documents the capabilities and characteristics of new facilities at critical decision points that are reviewed by an independent Lehman review. Progress is tracked quarterly through program reviews and annually through Lehman reviews.

Evidence: NSAC reviews, including 1999 ISOL task force report (www.sc.doe.gov/production/henp/np/nsac/nsac.html). Program files, including Lehman operations review reports, and the STAR Barrel Electromagnetic Calorimeter Enhancement project management plan.

3.CO1 Are grants awarded based on a clear competitive process that includes a qualified assessment of merit?

Answer: NO

Question Weight: 8%

Explanation: First time grant applications are encouraged in all Requests For Proposals. The NP Program has a specific solicitation for the Outstanding Junior Investigator (OJI) program, in which awards are made to young non-tenured faculty. Merit review guides all funding decisions. However, the award and merit review process has not yet been validated by a COV.

Evidence: In FY 2002 the NP Program received 31 new research proposals, of which 8 (26%) were approved for funding. 5 OJI awards were made. "How to apply" (www.science.doe.gov/production/grants/guide.html).

3.CO2 Does the program have oversight practices that provide sufficient knowledge of grantee activities?

Answer: YES

Question Weight: 8%

Explanation: In addition to grantee progress reports, program managers stay in contact with grantees through e-mail and telephone, conduct program reviews and site visits .

Evidence: Program files, including a list of multiple annual site visits to lab and university groups.

3.CO3 Does the program collect grantee performance data on an annual basis and make it available to the public in a transparent and meaningful manner?

Answer: NO

Question Weight: 8%

Explanation: In accordance with DOE Order 241.1A, the final and annual technical reports of program grantees are made publicly available on the web through the Office of Scientific and Technical Information's "Information Bridge". However, program-level aggregate data on the impact of the grants program is not adequately communicated in the annual DOE Performance and Accountability report.

Evidence: DOE Order 241.1A. Information Bridge (www.osti.gov/bridge/). FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgt/doe02rpt.pdf).

Program Assessment Rating Tool (PART)

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	67%	87%	

- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: NO Question Weight: 8%
- Explanation:** Priorities are determined in accord with guidance from the NSAC plans and reviews. Unsolicited field work proposals from the Federal Labs are merit reviewed, but not competed. The funds for research programs and scientific user facilities at the Federal Labs are allocated through a limited competition analogous process to the unlimited process outlined in 10 CFR 605. Lehman and other peer reviews of user facilities are conducted annually. However, the quality of the research funded via this process has not yet been validated by a COV.
- Evidence:** NSAC Long-Range Plan (www.sc.doe.gov/production/henp/np/nsac/docs/LRP_5547_FINAL.pdf). SC Merit Review procedures. (www.sc.doe.gov/production/grants/merit.html) 10 CFR 605 (www.science.doe.gov/production/grants/605index.html) Separate university and lab solicitations for RIA R&D. Program files, including Lehman reviews of operation at major facilities, and a Jefferson Lab facility peer review.
- 4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: LARGE EXTENT Question Weight: 20%
- Explanation:** NSAC will evaluate progress toward the long-term performance measures every five years. NSAC and National Research Council (NRC) reviews of progress in the program over the past decade have found good scientific progress.
- Evidence:** NSAC Long-Range Plan ("Recent accomplishments, p. 4, www.sc.doe.gov/production/henp/np/nsac/docs/LRP_5547_FINAL.pdf). NRC Decade Survey report ("Schiffer Report," Introduction, www.nap.edu/catalog/6288.html)
- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: LARGE EXTENT Question Weight: 20%
- Explanation:** NP has met all but one of its annual performance goals in FY02. The one goal, not timely met, resulted in no adverse effect on the facility.
- Evidence:** FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgmt/doe02rpt.pdf). FY04 Annual Performance Plan (www.mbe.doe.gov/budget/04budget/content/perfplan/perfplan.pdf).
- 4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?** Answer: YES Question Weight: 20%
- Explanation:** The recent history of tracking the two "efficiency" measures for facility construction and operation management shows that, on average, the program continues to meet expectations.
- Evidence:** FY04 Budget Request. Program files.

Program Assessment Rating Tool (PART)

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science
Type(s): Research and Development

Competitive Grant

Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Effective
100%	80%	67%	87%	

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: NA Question Weight: 0%

Explanation: The DOE supports over 90% of the U.S. nuclear physics basic research program via this program; the balance is supported by the NSF. The two programs are highly coordinated including a common Advisory Committee (NSAC). A significant number of the projects have international collaborations. An international benchmarking study has not been done, due in part to its questionable value.

Evidence: Program files, including list of international projects. "International collaborations and cooperation" chapter in NSAC Long-Range Plan (www.sc.doe.gov/production/henp/np/nsac/docs/LRP_5547_FINAL.pdf)

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: YES Question Weight: 20%

Explanation: NSAC and of the major NP program elements have determined that the program is effective in achieving results. These reviews examine scientific progress against the long-range plan, assess scientific opportunities, and recommend priorities based upon realistic budget profiles. Program advisory committees and Lehman facility operations reviews are generally favorable.

Evidence: NSAC reports, including Low- and Medium Energy programs reviews (www.sc.doe.gov/production/henp/np/nsac/nsac.html). Program files, including Lehman reviews. Also see evidence from Question 4.1.

4.CA1 Were program goals achieved within budgeted costs and established schedules? Answer: YES Question Weight: 20%

Explanation: All NP construction/operation projects met cost and schedule performance goals during the first two quarters of FY03. No contingency remains in the FY04 data collection schedule for the new BLAST detector at MIT/Bates.

Evidence: FY02 Performance and Accountability Report (www.mbe.doe.gov/stratmgt/doe02rpt.pdf). FY04 Annual Performance Plan (www.mbe.doe.gov/budget/04budget/content/perfplan/perfplan.pdf). List of FY03 quarterly milestones. Program files.

PART Performance Measurements

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science

Measure: Progress in realizing a quantitative understanding of the quark substructure of the proton, neutron, and simple nuclei by comparison of precision measurements of their fundamental properties with theoretical calculations. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a quinquennial basis.

Additional Information: An external panel will conduct reviews of progress every 5 years. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2007	Excellent		
2012	Excellent		
2017	Excellent		

Measure: Progress in searching for, and characterizing the properties of, the quark-gluon plasma by recreating brief, tiny samples of hot, dense nuclear matter. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a quinquennial basis.

Additional Information: An external panel will conduct reviews of progress every 5 years. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2007	Excellent		
2012	Excellent		
2017	Excellent		

Measure: Progress in investigating new regions of nuclear structure, studying interactions in nuclear matter like those occurring in neutron stars, and determining the reactions that created the nuclei of atomic elements inside stars and supernovae. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a quinquennial basis.

Additional Information: An external panel will conduct reviews of progress every 5 years. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2007	Excellent		
2012	Excellent		
2017	Excellent		

PART Performance Measurements

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science

Measure: Progress in determining the fundamental properties of neutrinos and fundamental symmetries by using neutrinos from the sun and nuclear reactors and by using radioactive decay measurements. An independent expert panel will conduct a review and rate progress (excellent, adequate, poor) on a quinquennial basis.

Additional Information: An external panel will conduct reviews of progress every 5 years. See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2007	Excellent		
2012	Excellent		
2017	Excellent		

Measure: Weighted average number (within 20%) of billions of events recorded by experiments in Hall A, Hall B, and Hall C, respectively, at the Continuous Electron Beam Accelerator Facility. (Targets are set in part by the funding requested/appropriated during that fiscal year. The ambitiousness of the target error bar of 20% is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001		3.3, 9.9, 2.2	
2002		2.8, 9.9, 2.7	
2003		3.0, 9.0, 2.6	
2004	2.4, 7.2, 2.1		
2005	2.9, 9.6, 2.8		

Measure: Weighted average number (within 30%) of millions of heavy-ion collision events recorded by the PHENIX and STAR detectors, respectively, at the Relativistic Heavy Ion Collider. (Targets are set in part by the funding requested/appropriated during that fiscal year. The ambitiousness of the target error bar of 30% is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		170, 8.2	

PART Performance Measurements

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science

Measure: Weighted average number (within 30%) of millions of heavy-ion collision events recorded by the PHENIX and STAR detectors, respectively, at the Relativistic Heavy Ion Collider. (Targets are set in part by the funding requested/appropriated during that fiscal year. The ambitiousness of the target error bar of 30% is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003		5500, 38	
2004	900, 40		
2005	1800, 40		

Measure: Weighted average number (within 20%) of billions of events recorded at the Argonne Tandem Linac Accelerator System and Holifield Radioactive Ion Beam facilities, respectively. (Targets are set in part by the funding requested/appropriated during that fiscal year. The ambitiousness of the target error bar of 20% is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001		7.7, 3.4	
2002		2.5, 5.4	
2003		39, 2.1	
2004	25, 5.3		
2005	25, 5.3		

Measure: Average achieved operation time of the scientific user facilities as a percentage of the total scheduled annual operation time. (Scheduled annual operating time is roughly 21,145 hours in 2004 and 21,450 hours in 2005. The ambitiousness and appropriateness of the 80% target level is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2001	>80%	85%	

PART Performance Measurements

Program: Nuclear Physics
Agency: Department of Energy
Bureau: Office of Science

Measure: Average achieved operation time of the scientific user facilities as a percentage of the total scheduled annual operation time. (Scheduled annual operating time is roughly 21,145 hours in 2004 and 21,450 hours in 2005. The ambitiousness and appropriateness of the 80% target level is currently under review by OMB.)

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2002	>80%	89%	
2003	>80%	88%	
2004	>80%		
2005	>80%		

Measure: Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.

Additional Information: See www.sc.doe.gov/measures for more information.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2004	<10%		
2005	<10%		
2006	<10%		

Program Assessment Rating Tool (PART)

Program: Nuclear Power 2010
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	89%	88%	45%	

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The purpose of the program is to expand U.S. nuclear power generation as recommended in the National Energy Policy. The actions outlined in the FY 2005 Budget request implement the recommendations of the Nuclear Energy Research Advisory Committee (NERAC) in the Near-Term Deployment Roadmap.

Evidence: National Energy Policy, FY 2005 Budget request and "A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010." (DOE, Oct. 31, 2001), Nuclear Power 2010 Program Plan (June 2003)

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The National Energy Policy recommends expansion of nuclear energy as a major component of a national energy policy.

Evidence: "National Energy Policy," May 2001; "A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010." (DOE, Oct. 31, 2001), Nuclear Power 2010 Program Plan (June 2003)

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: The Program is based on the detailed "Roadmap" recommendations of the Near-Term Deployment Group, an independent industry, academia and laboratory group, and approved by NERAC. Program activities are coordinated with industry organizations such as NEI and EPRI and the the regulator -- NRC, to ensure there is no duplication. Implementation of program activities are cost-shared with specific industry organizations including power generation companies. Nuclear Energy Programs have discrete objectives. The near-term deployment of existing technologies falls under the Nuclear Power 2010 initiative. The deployment of next-generation technologies from 2015-2030 falls under Generation IV Nuclear Energy Systems Initiative.

Evidence: "A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010." (DOE, Oct. 31, 2001), Nuclear Power 2010 Program Plan (June 2003).

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: The NP2010 program is designed to address the regulatory and technical risks affecting near-term deployment of new nuclear power plants in the United States.. The program design is based on input from industry, academia, and national laboratories as documented in the near-term deployment roadmap. A major portion of the Program activities are cost-shared with nuclear industry participants (e.g. nuclear utilities, reactor vendors and architect engineers/constructors) to maintain overall program effectiveness and efficiency.

Evidence: "A Roadmap to Deploy new Nuclear Power Plants in the U.S. by 2010." (DOE, Oct. 31, 2001); FY 2005 Budget request; Nuclear Power 2010 Program Plan (June 2003). Three cost-shared cooperative agreements for Early Site Permit regulatory demonstration projects have been established with three nuclear power companies. An additional cost-shared cooperative agreement for a constructabiliy assessment of advanced reactor designs has been established with a joint team of 3 power companies. Lastly, the Department is in the process of establishing an additional industry cost-shared cooperative agreement with the Electric Power Research Institute (EPRI) for generic regulatory activities related to the combined Construction and Operating License (COL) regulatory demonstration. The NP 2010 industry cost-shared activities avoids duplication of effort and integrates industry input and cost-shared resources focused on achieving a common objective.

Program Assessment Rating Tool (PART)

Program: Nuclear Power 2010
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	89%	88%	45%	

1.5 **Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: YES Question Weight: 20%

Explanation: The program targets funding to only those activities which have direct support of power generation companies because only these companies would order and build new nuclear power plants.

Evidence: Cooperative agreements established with power generation companies: DE-FC07-02ID14411; DE-FC07-02ID14412; DE-FC07-02ID14414; DE-FC07-03ID14492; Solicitation for New Nuclear Plant Licensing Demonstration Projects

2.1 **Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program?** Answer: Yes Question Weight: 11%

Explanation: Program goals are established in budget and program documents and are consistent with the recommended activities and actions outlined in the Roadmap.

Evidence: "A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010." (DOE, Oct. 31, 2001); FY 2005 Budget request; NP2010 Program Plan (June 2003), FY 2004 Annual Performance Plan, FY 2003 Joule.

2.2 **Does the program have ambitious targets and timeframes for its long-term measures?** Answer: Yes Question Weight: 11%

Explanation: Program goals are established in budget and program documents consistent with the recommendations of Roadmap. Targets and timeframes are ambitious considering that no new nuclear power plant has been ordered in the past 30 years and Nuclear Regulatory Commission's new processes for licensing new plants have never been tested.

Evidence: "A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010." (DOE, Oct. 31, 2001); FY 2005 Budget request; NP2010 Program Plan (June 2003), FY 2004 Annual Performance Plan, FY 2003 Joule.

2.3 **Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals?** Answer: Yes Question Weight: 11%

Explanation: The program's established annual performance goals demonstrate a clear path to achieving long-term goals. Performance measures, timelines, definitions of success are provided.

Evidence: A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010. (DOE, Oct. 31, 2001); FY 2005 Budget request; NP2010 Program Plan (June 2003).

2.4 **Does the program have baselines and ambitious targets for its annual measures?** Answer: Yes Question Weight: 11%

Explanation: The program's established annual performance goals demonstrate a clear path to achieving long-term goals. Performance measures, timelines, definitions of success are provided. The annual targets are ambitious considering that the Early Site Permit applications will be the first-ever to be submitted to the NRC which is still in the process of developing review guidance.

Evidence: A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010. (DOE, Oct. 31, 2001); FY 2005 Budget request; NP2010 Program Plan (June 2003).

Program Assessment Rating Tool (PART)

Program: Nuclear Power 2010
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	89%	88%	45%	

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: Yes Question Weight: 11%

Explanation: Government and industry are actively supporting program planning and execution. Industry is committing to the program on an incremental basis consistent with the program schedule. For example, cost-shared Early Site Permit (ESP) cooperative agreements have been established with three utility partners who are well on their way to completing the first-ever ESP applications scheduled to be submitted to NRC in FY 2003; a constructability study has been initiated with three utility partners to independently evaluate construction schedules for candidate advanced reactor plant designs. Projects are monitored through monthly and quarterly performance reports, participation in project meetings, and periodic project reviews. The contracts and cooperative agreements can be terminated if the progress is not sufficient or accountability is not demonstrated.

Evidence: "A Roadmap to Deploy new Nuclear Power Plants in the U.S. by 2010." (DOE, Oct. 31, 2001: pp. 36-42). DOE Press Release # PR-02-032, "The Business Case for New Nuclear Power Plants" (DOE, July 2002), Cooperative agreements:DE-FC07-02ID14411; DE-FC07-02ID14412; DE-FC07-02ID14414; DE-FC07-03ID14492; Monthly and Quarterly performance reports .

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 11%

Explanation: The Department's independent advisory committee, Nuclear Energy Research Advisory Committee (NERAC), provides oversight of all NP 2010 program activities. NERAC subcommittees have held in-depth reviews of the NP 2010 program activities, however, NERAC was inactive throughout Fiscal Year 2003. To ensure the program is being executed effectively, an independent assessment being conducted by industry technical experts was initiated in August.

Evidence: The charter for NERAC authorized oversight of NP 2010 program activities. The oversight of the NP 2010 is documented in NERAC meeting minutes. Also, the Independent Program Review Assessment, described in the NP 2010 Program Review Plan, is underway and is scheduled for the assessment report to be completed by September 15, 2003.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 11%

Explanation: Departmental budgets to date have not done this.

Evidence: FY 2003 and FY 2004 Budgets.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: Yes Question Weight: 11%

Explanation: The Department plans to adopt a format for its FY 2005 Budget Request that will clearly link budget and performance data in the context of its overall strategic plan.

Evidence: Draft FY 2003 Strategic Plan; draft FY 2005 budget request format.

Program Assessment Rating Tool (PART)

Program: Nuclear Power 2010
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	89%	88%	45%	

- 2.RD1** **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NA Question Weight: 0%
- Explanation: This is the only program that seeks to achieve near-term deployment of new nuclear plants to reverse the trend over last 30 years. The program is working with industry in a cost-shared effort to demonstrate for the first time new licensing processes and development of advanced nuclear technologies which can compete in a deregulated market. There are no other programs with similar goals.
- Evidence: FY 2005 Budget request; Nuclear Power 2010 Program Plan (June 2003); "A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010" (October 2001).
-
- 2.RD2** **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: Yes Question Weight: 11%
- Explanation: A clear set of time-phased priorities has been established for the NP2010 program outlined in the Roadmap and carried forward into the Program Plan. The endorsement of the Roadmap by DOE's independent Nuclear Energy Research Advisory Committee and continuing oversight by NERAC will help maintain program focus and priorities.
- Evidence: A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010. (DOE, Oct. 31, 2001); NP2010 Program Plan (June 2003) ; NERAC meeting reports.
-
- 3.1** **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: Yes Question Weight: 12%
- Explanation: The Department monitors program cost, technical, and schedule performance on a monthly, quarterly, and annual basis and uses the information in determining future funding requirements and managing the program and improving performance.
- Evidence: FY 2003, FY 2004 Budgets and FY 2005 Budget request; Nuclear Power 2010 Program Plan (June 2003); Annual DOE Performance Plan and Performance Appraisal Form; Quarterly updates to the Annual Performance Plan, Reports from project performers.
-
- 3.2** **Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: Yes Question Weight: 12%
- Explanation: All program participants are held accountable for program cost, schedule, and performance results. Program performance goals are incorporated into the annual performance plans for the federal senior manager and federal program manager. Performance objectives for each activity are incorporated in the appropriate guidance memoranda, cooperative agreements and contracts. Projects are monitored through monthly and quarterly performance reports, participation in project meetings, and periodic project reviews. The contracts and cooperative agreements can be terminated if the progress is not sufficient or accountability is not demonstrated.
- Evidence: Annual DOE Performance Plan and Performance Appraisal Form; NE program guidance memos and associated Statements of Work; Cooperative Agreements and contracts. Monthly and Quarterly performance reports

Program Assessment Rating Tool (PART)

Program: Nuclear Power 2010
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	89%	88%	45%	

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: Yes Question Weight: 12%

Explanation: Funds are obligated in a timely manner and the program is executed in conformance with Congressional language and established program plan.

Evidence: NE program guidance memos and associated Statements of Work; NE's Monthly Obligation and Cost and Performance Tracking Report; Nuclear Power 2010 Program Plan (June 2003)

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: NO Question Weight: 12%

Explanation: The majority of program activities are competitively awarded and require industry cost share. Activities requiring unique national laboratory capabilities will not be competitively selected. However, incentives are included in participants contracts although not on a program-specific basis.

Evidence: Nuclear Power 2010 Program Plan (June 2003) ; "A Roadmap to Deploy new Nuclear Power Plants in the U.S. by 2010" (October 2001). Contracts and award fee determinations for program participants.

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: Yes Question Weight: 12%

Explanation: NP2010 is coordinated with other NE programs including the Generation IV and Advanced Fuel Cycle Initiative. NE has solicited extensive industry (including NEI, EPRI) and interagency Nuclear Regulatory Commission (NRC) collaboration.

Evidence: A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010. (DOE, Oct. 31, 2001); FY 2005 Budget request; NP2010 Program Plan (June 2003).

3.6 Does the program use strong financial management practices? Answer: Yes Question Weight: 12%

Explanation: Internal controls are used in the execution of the program. The Department monitors program cost, technical, and schedule performance on a monthly, quarterly, and annual basis and uses the information in determining future funding requirements and managing the program and improving performance.

Evidence: Annual Reporting for Federal Managers Financial Integrity Act, Monthly Fin Plans, Guidance Memos, terms and conditions incorporated in cooperative agreements and contracts.

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: Yes Question Weight: 12%

Explanation: No management deficiencies have been identified. DOE's independent Nuclear Energy Research Advisory Committee has provided close oversight of all NP2010 program activities. However, for Fiscal Year 2003 NERAC was not active. To ensure that the program does not have any management deficiencies, program managers enlisted a panel of industry experts to perform an Independent Program Assessment for FY 2003. The panel's purpose is to assess the Program's progress against established goals and industry developments.

Evidence: The charter for NERAC authorized oversight of NP 2010 program activities. The oversight of the NP 2010 is documented in NERAC meeting minutes. The Department monitors the program's cost, technical activities and schedule of performance on a monthly, quarterly, and annual basis and uses the information in determine future funding requirements, management of the program and to improve performance. In addition, an Independent Program Assessment (refer to the NP2010 Program Review Plan) was initiated in August with a completion date of September 15, 2003.

Program Assessment Rating Tool (PART)

Program: Nuclear Power 2010
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	89%	88%	45%	

- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: Yes Question Weight: 12%
- Explanation: Program plan and budget requests clearly indicate that competitive cost-shared procurements for industry activities will be used. Prioritization and resource allocations of program activities are documented in the Program Plan, which is revised annually, and are to be evaluated in planned annual assessments.
- Evidence:
- 4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: LARGE EXTENT Question Weight: 33%
- Explanation: Although program is in an early stage, measurable progress has been made. The program is on track in achieving its long-term performance goals. Annual performance measures and targets are being achieved to a large extent.
- Evidence: "A Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010 (DOE, Oct. 31, 2001); Early Site Permit (ESP) scoping studies for commercial and federal sites, cooperative agreements with power generation companies for ESP demonstration and for schedule and constructability assessment of candidate advanced plant designs; "The Business Case for New Nuclear Power Plants" (July 2002), Solicitation for New Nuclear Plant Licensing Demonstration Projects, Nuclear Power 2010 Program Plan (June 2003), Annual Performance and Accountability Reports.
- 4.2 Does the program (including program partners) achieve its annual performance goals?** Answer: LARGE EXTENT Question Weight: 33%
- Explanation: FY 2002 performance goals have been met and FY 2003 goals are expected to be met. For FY 2003, a goal regarding competitively awarding at least one cooperative agreement for technology development and regulatory demonstration activities has been postponed to FY 2004. Since the industry has not yet made a technology selection for the next nuclear plant, DOE management has made a decision to delay the solicitation and only support the development of those designs that utilities are willing to build. A solicitation has been finalized and will allow the award to be made in FY 2004.
- Evidence: Roadmap was issued. Cooperative agreements established with industry for ESP projects, Solicitation for New Nuclear Plant Licensing Demonstration project has been finalized. FY 2002 Annual Performance Plan; FY 2002 DOE Performance and Accountability Report; and FY 2003 Joule Performance Measures Tracking System .
- 4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?** Answer: NO Question Weight: 0%
- Explanation: Improvements in program efficiency have not yet been demonstrated.
- Evidence:

Program Assessment Rating Tool (PART)

Program: Nuclear Power 2010
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	89%	88%	45%	

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?

Answer: NA

Question Weight: 0%

Explanation: There are no comparable programs with the goal of stimulating the implementation of Gen III nuclear power generation. The program is coordinated with other nuclear energy R&D programs including the Generation IV Nuclear Energy Systems Initiative and Advanced Fuel Cycle Initiative to capitalize on existing synergies and to ensure no duplication of effort.

Evidence: Insufficient Information for comparison

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results?

Answer: NO

Question Weight: 33%

Explanation: None completed to date.

Evidence: NERAC maintained independent oversight and consistent evaluation of the program from the inception of the Roadmap to Deploy New Nuclear Power Plants in the U.S. by 2010 through the initial implementation of the Nuclear Power 2010 program through FY 2002. However, in FY 2003 NERAC was inactive, (Refer to the NERAC meeting minutes) To ensure the NP 2010 program is being executed effectively, an independent panel of technical experts was formed by the program office to evaluate and assess the program beginning in August 2003. This expert panel is charged to address the appropriateness, adequacy and completeness of current and planned activities for achieving the NP 2010 program goals and objectives. The final report and recommendations is scheduled to be completed by September 15, 2003. (Refer to the NP 2010 Program Review Plan)

PART Performance Measurements

Program: Nuclear Power 2010
Agency: Department of Energy
Bureau:

Measure: Achieve an industry decision by January 2005 to order and build at least one new advanced nuclear power plant that will begin commercial operation by 2012

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2006	*		
2008	Plant ordered		
2010	Construction start		
2014	Plant Operatnl		

Measure: Demonstrate for the first time the combined Construction and Operating License (COL) process. Targets: ** Solicit industry proposals *** Prepare COL application

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	**		
2005	***		

Measure: Following a competitive process, award at least one industry cost-shared cooperative agreement for technology development and regulatory demonstration activities.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	1	0.5	

PART Performance Measurements

Program: Nuclear Power 2010
Agency: Department of Energy
Bureau:

Measure: Support at least two Early Site Permit (ESP) applications for commercial reactor sites to the NRC. ****2003 Target and Actual: ESP applications submitted

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	ESPs awarded		
2006	****	****	

Measure: Complete at least two cooperative agreements with U.S. power generating companies to jointly proceed with at least two Nuclear Regulatory Commission (NRC) Early Site Permit applications for specific DOE and/or commercial sites.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	1	1	

Measure: Complete and issue the government/industry roadmap to build new nuclear power plants in the United States by 2010.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	1	1	

Program Assessment Rating Tool (PART)

Program: Oil Technology
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
60%	60%	88%	25%	

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The program's purpose is to enhance U.S. energy security by managing and funding oil exploration and production (E&P) research; ensuring that oil technology that produces public benefits is utilized to the advantage of US producers in the market; and supporting the development of information and policy options that benefit the American public. Program areas include Enhanced Oil Recovery/CO2 Injection, Domestic Resource Conservation, and Environmental Science.

Evidence: Exploration and Production and Environmental Product Plans October 2002; Oil and Gas Product Plan October 2002; Microhole Road Map Workshop Summary at www.npto.doe.gov/news/microholetech.html; budget documentation (e.g., FY 2004 Congressional Justification), National Energy Policy.

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The program promotes national energy security through enhanced oil recovery and increases the supply of energy by increasing domestic production.

Evidence: Budget documentation and program plans.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: NO

Question Weight: 20%

Explanation: The program funds projects comparable to those funded by private industry, and generally for the direct benefit of private industry.

Evidence: DOE's FY 2004 Research and Development (R&D) Investment Criteria submission for Oil E&P states "The independent operator's business model approach (including the largest independents) is to "buy technology from the service companies as needed." This illustrates that a market for these technologies exists, and that DOE research is often duplicative of, or competes with and potentially crowds out, private investment.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: There is no evidence that an alternative model would be more efficient or effective. The program uses a combination of technology development, risk assessment, regulatory streamlining tools, and regulatory impact analysis to address all aspects of high priority environmental issues. The program is currently investigating methods of repayment of R&D support funding as part of its refocusing effort. Additionally, the program has refocused towards longer-term efforts and away from downstream projects, especially in the Effective Environmental Protection program.

Evidence: Budget documents.

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?

Answer: NO

Question Weight: 20%

Explanation: DOE has not presented information regarding its R&D investments at a detailed level discussing variables such as years to commercialization, public benefits, technological risk, cost share or plotting economic, environmental and/or security benefits.

Evidence:

Program Assessment Rating Tool (PART)

Program: Oil Technology
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
60%	60%	88%	25%	

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 10%

Explanation: The long-term goal is to increase economically recoverable oil resource base by 2.3 billion barrels by FY 2025. (The baseline is the AEO 2003 Reference case.)

Evidence: See the "Measures" section of this PART.

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: The program has established ambitious targets and timeframes. Projects last three to five years, with new competition required if a decision is made to move to the next phase. New proposals are judged against other new proposals.

Evidence: See the "Measures" section of this PART.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: Achievement of annual measures (as well as long-term goals) is based on measurement using the TORIS/NEMS models. Detailed further analysis is necessary to ensure that the critical assumptions in these models are valid and transparent, and to document any resource base expansion attributable to DOE.

Evidence: See the "Measures" section of this PART.

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: Targets for annual measures are ambitious as required to achieve the long-term measures.

Evidence: See the "Measures" section of this PART.

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 10%

Explanation: Projects within the Oil Technologies portfolio are designed with annual and project life-cycle goals and milestones that are geared to meeting the annual and long-term program goals. Each cooperative agreement between DOE and participating partner has detailed milestones and key decision points. These milestones are reviewed annually between DOE management and the performing organization, as well as at all project funding decision points. If a partner is not meeting stated requirements, then the decision is made not to go into the next budget period of that cooperative agreement. A strong measure of a partner commitment to the program goals is their cost share that is 50 percent or greater for demonstration projects (i.e. Independent Program Field Demos) and 20 percent for Research and Development projects.

Evidence: Program solicitations; Joule Quarterly Milestones; PRoMIS database; PART measures.

Program Assessment Rating Tool (PART)

Program: Oil Technology
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
60%	60%	88%	25%	

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: NO Question Weight: 10%

Explanation: The Oil E&P Program received external/independent review as part of the "Energy Research at DOE: Was it Worth It?" National Research Council (NRC), July 2001. The NRC is beginning a review of Fossil Energy program benefits (including the Oil Program). However, on an ongoing basis, the program relies on industry review to evaluate effectiveness and performance. These efforts do not meet the requirements for independent review, and the program will explore including third-party review.

Evidence: National Academy of Sciences/Nation Research Council report: "Energy Research at DOE: Was it Worth It?" (2001)

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: The Department has not submitted budget documents linking performance goals to resource levels in a complete of transparent manner.

Evidence: Budget documents.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: Improvements in benefits modeling and efforts to connect long- and short-term goals through the JOULE performance tracking system are concrete steps that could help planning efforts. In FY 2003, the Oil Upstream Program was refocused to two technology areas (Exploration & Production and Domestic Resource Conservation), and the Gas and Oil Environmental Program eliminated its downstream activities and focused on two major research areas: water management and access to petroleum resources on Federal lands.

Evidence: Fossil Energy Top-to-Bottom review; Budget documentation; Integrated performance measures; Public Workshop Proceedings ; JOULE quarterly reports.

2.RD1 If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals? Answer: NO Question Weight: 10%

Explanation: The program did not submit information regarding its R&D investments that demonstrates how DOE prioritizes programs based on potential benefits.

Evidence:

2.RD2 Does the program use a prioritization process to guide budget requests and funding decisions? Answer: NO Question Weight: 10%

Explanation: Program did not submit R&D Investment Criteria information demonstrating how risk, years to commercialization, etc. are used in prioritizing. However, National Energy Modeling System (NEMS) is used to determine which projects should get priority based on R&D success and supply impact.

Evidence: Product plans; NEMS models.

Program Assessment Rating Tool (PART)

Program: Oil Technology
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
60%	60%	88%	25%	

3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance? Answer: YES Question Weight: 12%

Explanation: Program contracts and cooperative agreements clearly outline the major milestones and performance requirements that the participating partner must meet. These milestones are tracked and performance measured through quarterly and other technical reporting requirements. This information is available through the Project Management Information System (ProMIS) and the publicly available extraction from PROMIS, the Fossil Energy Research Database (FRED). Accomplishments and key milestones are reported weekly to the Laboratory Director. Significant accomplishments are transmitted to the Assistant Secretary of Fossil Energy (FE) and are reported in technical fact sheets (TechLines) available to the public on the DOE/FE web site. Joule is used as a performance management tool to track results on a quarterly basis.

Evidence: The JOULE submittal with results collected and posted by the project managers includes reports, contract activity, and technological developments; retroactive metrics analyses; and periodic peer reviews. (For example, in FY 2003 this included the new oil and gas modeling system, the microhole work, and interagency work in synthetic based muds, produced water, and Federal lands.

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 12%

Explanation: The National Energy Technology Laboratory (NETL) has identified a schedule of incentives holding key product personnel responsible for results under their control. It was one of only two organizations in the entire Federal government to win the Office of Personnel Management's (OPM) Pillar Award for outstanding efforts in linking performance to accountability.

Evidence: OPM's Pillar Award for linking performance to accountability.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: Funds are obligated based on an annual Program Implementation Plan approved by DOE management and consistent with appropriations. Essentially all funds are obligated in the budget year. Cooperative agreement spending is audited as required by procurement rules.

Evidence: Financial reports, Budget documents.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: NO Question Weight: 12%

Explanation: The Fossil Energy Top-to-Bottom Review identified organizational changes to reduce layers of management, reduce the manager-to-employee ratio and to more closely tie management to program goals. However the program has not demonstrated that dollar savings have accrued from this reorganization. The program provided no other evidence of administrative/program delivery efficiencies or that cost effectiveness measures are in place.

Evidence: Top to Bottom Review completed in the year 2002.

Program Assessment Rating Tool (PART)

Program: Oil Technology
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
60%	60%	88%	25%	

- 3.5 Does the program collaborate and coordinate effectively with related programs?** Answer: YES Question Weight: 12%
- Explanation: The program is fairly well coordinated with other programs with similar goals. For example, the program has entered into a Memorandum of Understanding with related programs at the Department of the Interior to address technical concerns related to oil and gas drilling on federal lands that have resulted in access limitations and/or delays.
- Evidence: Product plans; Federal Leadership Forum; memoranda of understanding with the Department of the Interior's Bureau of Land Management and the Mining and Minerals Service; IEA Cooperative Agreement on Enhanced Oil Recovery.
- 3.6 Does the program use strong financial management practices?** Answer: YES Question Weight: 12%
- Explanation: DOE received a clean audit in FY2001 and FY2002 with no known program deficiencies. Several computer based project management controls are in place to assist in financial management. Systems exist both on the financial side and the project management side. In addition, individual contract specialists keep detailed files of primary records.
- Evidence: DOE annual Performance and Accountability reports; contract files.
- 3.7 Has the program taken meaningful steps to address its management deficiencies?** Answer: YES Question Weight: 12%
- Explanation: The Top-to-Bottom review will be implemented throughout Fossil Energy. As a result, there has been increased use of R&D investment criteria and internal/external project review, and improved performance measures and implementation of performance tracking systems (JOULE/PRoMIS). These measures will continue to improve management performance.
- Evidence: Fossil Energy Top-to-Bottom Review (2002); Budget documents; JOULE results; President's R&D Investment Criteria.
- 3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: YES Question Weight: 12%
- Explanation: Approximately 90% of program projects are selected on a competitive basis.
- Evidence: Information on percentage of funds earmarked, and subject to competitive review.
- 4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: SMALL EXTENT Question Weight: 25%
- Explanation: Incremental oil production of about 2% of domestic oil consumption over the 22 years of the study period (2.3 billion barrels additional 1978-2000).
- Evidence: NRC/NAS Report: "Energy Research at DOE Was it Worth It?" (2001)

Program Assessment Rating Tool (PART)

Program: Oil Technology
Agency: Department of Energy
Bureau:
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Ineffective
60%	60%	88%	25%	

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: SMALL EXTENT Question Weight: 25%

Explanation: Changes to correct deficiencies include the establishment of the JOULE performance tracking system resulting in a 100% performance score FY 2003 year-to-date. Based on the AEO 2003 price track, the Oil program will develop technologies that will be used to increase domestic oil supplies in an environmentally friendly manner and to contribute to the Nation's energy security by adding 60 million barrels* in economically recoverable oil resources in FY 2005.

Evidence: Oil and Gas Environmental Program Metrics: 2000 Analysis and Results; JOULE database; Environmental reverse metrics; Computer model results; Scored Met Goal in the 2002 GPRA activities and have met all goals in FY2003 Joule system through the 3rd quarter; Report on Analysis of Field Applications Technology.

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: NO Question Weight: 25%

Explanation: The program has not demonstrated improved efficiencies or cost effectiveness in achieving program goals.

Evidence:

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: NA Question Weight: 0%

Explanation:

Evidence:

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: SMALL EXTENT Question Weight: 25%

Explanation: Incremental production attributed to program efforts estimated by NAS/NRC. However, NAS/NRC also stated that it is difficult to accurately attribute DOE contributions versus private industry contributions.

Evidence: NRC/NAS report: "Energy Research at DOE Was it Worth It?" (2001)

PART Performance Measurements

Program: Oil Technology
Agency: Department of Energy
Bureau:

Measure: Additional economically recoverable domestic oil (annual incremental additional billion barrels of oil)

Additional Information: This measure is the cumulative total economically recoverable oil resource added from existing and expected projects. Estimates assume level funding at the FY04 President's request through 2025. The baseline production is the AEO 2003 Reference case production forecast and price assumptions. Program benefit estimate is based upon the National Energy Modeling System (NEMS). The targets for this measure reflect the cumulative total output through 2025 from the NEMS model analysis. This analysis is to be repeated each year to obtain a comparative actual value reflective of the R&D success.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2010	.615		
2015	1.4		
2020	1.9		
2025	2.0		

Measure: Additional economically recoverable domestic oil (annual incremental additional million barrels of oil).

Additional Information: This measure is the annual economically recoverable oil resource added by the program. Since project results are not known in advance, the annual addition will be calculated based upon the technology project impacts completed during the previous year. Computer models will calculate these additions and, where possible, supplement them with actual data. The target numbers are based upon level funding starting with the President's FY04 budget and the AEO 2003 reference price track.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	52		
2005	23		
2006	29		
2007	34		
2008	45		

Program Assessment Rating Tool (PART)

Program: Readiness in Technical Base and Facilities (RTBF), Operations
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	100%	88%	56%	Effective

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The program's purpose is clear - operate and maintain NNSA programmatic facilities in a safe, secure, and reliable condition so that they are operationally ready to execute nuclear weapons stockpile stewardship tasks on-time as identified by the Directed Stockpile Work and Campaign programs. This purpose includes facility operating cost (e.g. utilities, equipment, facility personnel, training, and salaries), facility and equipment maintenance costs (staff, tools, and replacement parts), and environment, safety, and health costs.

Evidence: DOE NNSA Fiscal Year 2001 Stockpile Stewardship Plan Executive Overview June 12, 2000. NNSA FY 2004-08 Future-Years Nuclear Security Program (FYNSP), February 2003. FY2004 NNSA Congressional Budget Submission.

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The program provides for the ongoing operation of unique national facilities, capabilities, and critical skill sets in support of the statutory mission of the NNSA Office of Defense Programs (DP) to maintain and enhance the safety, reliability, and performance of the United States nuclear weapons stockpile to meet national security requirements. The ongoing operation of these facilities is essential for the success of the NNSA Stockpile Stewardship Program mission. Without these mission-essential facilities and capabilities, all aspects of the Stockpile Stewardship Program would fail, including nuclear weapons design, engineering, and evaluation. Quote from Stockpile Stewardship Plan Executive Overview, DOE, NNSA, FY2001: "No weapons work or other activities can take place unless the infrastructure is in place and ready for business providing an appropriately equipped workplace with modern safety and security measures."

Evidence: DOE NNSA Fiscal Year 2001 Stockpile Stewardship Plan Executive Overview June 12, 2000. NNSA FY 2004-08 FYNSP, February 2003.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: This program is not redundant or duplicative of any other Federal, state, local, or private effort. This is the only program that provides the base level of resources, including facility support personnel and money for facility operations and maintenance, for use in supporting the Nation's nuclear weapons stockpile. The breadth of these activities requires a federally-managed effort. Chronic under-funding of scheduled maintenance planned for the 1990s resulted in an excess backlog of deferred maintenance. This condition led Congress to approve a new, limited duration appropriation in FY2002, the Facility and Infrastructure Recapitalization Program (FIRP). The FIRP is a separate, distinct, but complementary program whose goals are to reduce this deferred maintenance levels and dispose of excess facilities, thus decreasing future maintenance costs.

Evidence: DOE NNSA Fiscal Year 2001 Stockpile Stewardship Plan Executive Overview June 12, 2000. NNSA FY 2004-08 FYNSP, February 2003 (FY04-08). FY2003 NNSA Budget and Reporting Structure, Readiness in Technical Base and Facilities, Operations of Facilities. FY 2003 Readiness in Technical Base and Facilities (RTBF) Execution Guidance, August 2002. FY 2003 Readiness in Technical Base and Facilities (RTBF) Implementation Plans (8 sites).

Program Assessment Rating Tool (PART)

Program: Readiness in Technical Base and Facilities (RTBF), Operations
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	100%	88%	56%	Effective

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency? Answer: YES Question Weight: 20%

Explanation: NNSA has made great strides to improve its infrastructure management, and the Ten Year Comprehensive Site Plan is an excellent management tool. However, it is not clear that the approach has filtered down to the field and the funds are targeted to address needs across all of NNSA.

Evidence: NNSA FY 2004-08 FYNSP, February 2003. NNSA Infrastructure Plan for the NNSA Nuclear Complex, April 2003. Defense Programs Facilities and Infrastructure Assessment Phase I Report, 2000.

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly? Answer: YES Question Weight: 20%

Explanation: The program uses a Work Authorization process and separate and specific Budget and Reporting codes to ensure the effective and direct targeting of funds to facilities for specific work for the express purposes defined in program execution guidance. Site-level implementation plans are sufficiently detailed as to demonstrate the effective targeting of program funding to its intended beneficiaries for its intended purposes. Program funding to the sites is in these Budget and Reporting "bins" that are separate and identifiable from everything else.

Evidence: NNSA FY 2004-08 FYNSP, February 2003. FY 2003 Congressional Budget Appropriation. FY 2003 NNSA Budget and Reporting Structure, Readiness in Technical Base and Facilities, Operations of Facilities. FY 2003 Readiness in Technical Base and Facilities (RTBF) Execution Guidance, August 2002. FY 2003 Site Readiness in Technical Base and Facilities (RTBF) Implementation Plans (8 sites). FY 2003 Work Authorization Statements examples.

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 11%

Explanation: The program has four long-term measures to meaningfully determine progress. These are: 1) annually, provide mission essential program facilities availability 90% or more of scheduled days; 2) achieve better than the national average for the number of reportable accidents/200,000 hours of work using National Bureau of Labor Standards data; 3) beginning in FY 2005, complete 100% of the scheduled annual maintenance activities for mission-essential facilities such that deferred maintenance backlog is stabilized and doesn't increase; and, 4) achieve by FY 2009, a rating of "good" or better in the Facilities Information Management System for all enduring mission-essential facilities.

Evidence: Future-Years Nuclear Security Program NNSA February 2003 (FY04-08). NNSA Strategic Plan (February 2002). FY 2003 Readiness in Technical Base and Facilities (RTBF) Implementation Plans (8 sites). FY 2004 Readiness in Technical Base and Facilities (RTBF) Execution Guidance (May 2003).

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 11%

Explanation: The long-term measures targets and timeframes are extremely ambitious. After years of under-funding facilities during the 1990's, it will be a significant challenge to maintain and improve facility conditions while maintaining the current facility availability, safety, and costs profiles to just inflationary increases.

Evidence: NNSA Strategic Plan, February 2002. NNSA FY 2004-08 FYNSP, February 2003. FY 2004 NNSA Congressional Budget Submission. NNSA Infrastructure Plan for the NNSA Nuclear Complex, April 2003. U.S. Department of Energy Performance and Accountability Report, Fiscal Year 2002.

Program Assessment Rating Tool (PART)

Program: Readiness in Technical Base and Facilities (RTBF), Operations
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	100%	88%	56%	Effective

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 11%

Explanation: The program has four annual measures to meaningfully determine progress. For FY 2005, these are: 1) annually, provide mission essential program facilities availability 90% or more of scheduled days; 2) reportable accidents are below the national average of 6.7 per 200,000 work-hours (National Bureau of Labor Standards data); 3) 100% of FY2005 maintenance activities are completed as scheduled thus stabilizing the deferred maintenance backlog; and, 4) 65% of enduring mission-essential facilities are rated "good" or better in the Facilities Information Management System.

Evidence: NNSA FY 2004-08 FYNSP, February 2003. FY 2004 NNSA Congressional Budget Submission. NNSA Infrastructure Plan for the NNSA Nuclear Complex, April 2003. U.S. Department of Energy Performance and Accountability Report, Fiscal Year 2002.

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 11%

Explanation: Operations of Facilities requires baselines for annual measures as explained in the annual implementation guidance. Currently, there are baselines for two of the four annual measure (facility availability and safety). NNSA is developing baselines for the remaining measures.

Evidence: NNSA FY 2004-08 FYNSP, February 2003. FY 2004 NNSA Congressional Budget Submission. NNSA Infrastructure Plan for the NNSA Nuclear Complex, April 2003. U.S. Department of Energy Performance and Accountability Report, Fiscal Year 2002.

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 11%

Explanation: Partners at the headquarters level clearly commit to achieving the long-term goals. Strong emphasis from NNSA management has also resulted in a commitment from the Maintenance and Operations contractors to the NNSA-wide goals, as demonstrated by quarterly briefings from the M&O contractors to the headquarters managers.

Evidence: NNSA FY 2004-08 FYNSP, February 2003. FY 2003 Readiness in Technical Base and Facilities (RTBF) Implementation Plans (8 sites). FY 2004 Readiness in Technical Base and Facilities (RTBF) Execution Guidance, May 2003. NNSA FY 2003 Ten-Year Comprehensive Site Plans (8 sites). RTBF Readiness in Technical Base and Facilities Quarterly Reports and/or Program Reviews (8 sites).

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 11%

Explanation: Several actions were taken by NNSA to enhance management visibility into the program. In FY 2000, the program budget was restructured to clearly identify the base level of annual funding for operation of unique national facilities and capabilities needed

Evidence: FY 2003 Report to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile, April 11, 2003 (Foster Panel). NNSA Model for Improving Management and Performance February 2003. DOE Activities Relating to the DFNSB 2002 Annual Report to Congress, February 2003. DOE Office of Independent Oversight and Performance Assurance Reports. Defense Programs Facilities and Infrastructure Assessment Phase I Report, 2000. ISSM and ORR reports.

Program Assessment Rating Tool (PART)

Program: Readiness in Technical Base and Facilities (RTBF), Operations
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	100%	88%	56%	Effective

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: YES Question Weight: 11%

Explanation: NNSA budget requests are explicitly tied to anticipated annual and long-term performance goals via the comprehensive Planning, Programming, Budgeting and Evaluation (PPBE) process. Long-term performance goals established/validated during the Planning Phase are linked in a performance cascade to annual targets and detailed technical milestones. During the Programming Phase, budget and resources trade-offs and decisions are evaluated based on the impact to annual and long-term performance measures. These NNSA performance-planning-budgeting decisions are documented in the Program Decision Memorandum (PDM) and used to develop the budget requests during the Budgeting Phase. Program and financial performance for each measure is corporately monitored and assessed during the Execution and Evaluation Phase. The resource needs for NNSA programs are presented in a complete and transparent manner. The budget requests for NNSA programs are "fully loaded" -- that is, the direct and indirect costs of program execution by program performers are reflected in the budget. Only about 4 percent of NNSA's personnel are Federal employees providing direction, oversight and administration of the technical efforts. These resources are also specifically and separately identified in the NNSA budget request, as required by the Congress. Collectively, these actions are intended to ensure that enduring mission-essential facilities will be properly maintained in the future.

Evidence: NNSA FY 2005 Planning, Programming, Budgeting, and Evaluation System Guidance. NNSA FY 2004 Congressional Budget Submission. FY 2004 NNSA Program Decision Memorandum, July 2002. NNSA FY 2004-08 FYNSP, February 2003.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 11%

Explanation: The program has taken several meaningful steps to improve strategic planning. Following the FY2000 budget restructuring to separately identify program facility operations and maintenance costs, site implementation plans were created to tie program facility and infrastructure budgets with the planning and execution of facility level milestones. With the creation of the Future-Years Nuclear Security Program, the program identified linkages to the NNSA Strategic Plan and developed five-year budget estimates and performance goals for all sites. With the evolution of NNSA's implementation of the Planning, Programming, Budgeting, and Evaluation system, the program developed a tiered structure of the critical few milestones needed to achieve national program objectives. In addition, during periodic program reviews, Headquarters program managers regularly solicit feedback from Site Office staff and site contractors to identify and address strategic planning issues.

Evidence: DOE NNSA Fiscal Year 2001 Stockpile Stewardship Plan Executive Overview June 12, 2000. Future-Years Nuclear Security Program NNSA February 2003 (FY04-08). Planning, Programming, Budgeting, and Evaluation System FY2005 Guidance.

Program Assessment Rating Tool (PART)

Program: Readiness in Technical Base and Facilities (RTBF), Operations
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	100%	88%	56%	Effective

2.CA1 **Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity?** Answer: YES Question Weight: 11%

Explanation: The program conducts alternative analyses for activities. Recently, NNSA studied alternatives for improving accountability by modifying current management and operating contracts for its sites. The program prepares implementation plans for Defense Nuclear Facility Safety Board (DNFSB) Recommendations that weighs schedule, cost, and risk while establishing site-specific performance goals. Progress towards reaching performance goals for recommendations is assessed by the DNFSB and reported to Congress. Additionally, the program conducts conceptual planning activities and documents alternative analysis, alternative design analysis, and value engineering for each proposed project prior to receiving capital funds. Each alternative's cost, schedule, scope, and risk are documented in the Conceptual Design Report. Acquisition alternatives and trade-offs are documented in each project's Acquisition Strategy Plan. Each document is reviewed by construction organizations independent of the program, both internal and external to NNSA.

Evidence: NNSA Model for Improving Management and Performance, February 2003. DOE Activities Relating to the DFNSB 2002 Annual Report to Congress, February 2003. DOE Order and Manual 413.3, "Program and Project Management for the Acquisition of Capital Assets." Conceptual Design Report example. Acquisition Strategy Plan example.

3.1 **Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: YES Question Weight: 12%

Explanation: The program collects quarterly data from site contractors to manage and improve program performance. Contractors and NNSA negotiate appropriate milestones for facility availability, safety, staffing, and cost. RTBF Program Execution Guidance requires periodic written reports and onsite reviews of its contractors with the objective of making appropriate, timely adjustments to improve program performance. These reviews gain detailed assessments of program performance/issues and validate the information contained in the quarterly reports. Program performance is informally monitored through periodic interactions with site contractors on daily program execution issues. The Work Authorization process is utilized on a monthly basis to adjust site funding to assure adequate resources for continued safe, secure, reliable and compliant program facility operations.

Evidence: NNSA FY 2003 Ten-Year Comprehensive Site Plans (8 sites). FY 2003 Readiness in Technical Base and Facilities (RTBF) Execution Guidance, August 2002. FY 2003 Readiness in Technical Base and Facilities (RTBF) Implementation Plans (8 sites). RTBF Readiness in Technical Base and Facilities Quarterly Reports and/or Program Reviews (8 sites). Integrated Facility and Infrastructure Cross-Cut. Defense Nuclear Facilities Safety Board Corrective Action Tracking System (CATS) monthly meetings. Quarterly Reports based upon RTBF oversight and DOE Policy 450.5, Line Management of Environment, Safety, and Health (ES&H).

3.2 **Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: NO Question Weight: 12%

Explanation: Although site-specific contracts with DOE/NNSA include performance measurements for the program activities, leverage over the contractor remains a question. Bottom line: evidence does not support a "YES".

Evidence: Performance contracts and evaluation plans (8 sites). Performance plans for federal managers.

Program Assessment Rating Tool (PART)

Program: Readiness in Technical Base and Facilities (RTBF), Operations
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	100%	88%	56%	Effective

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: Work Authorizations define the purpose for which funding is intended. A formal change control process is used to revise Work Authorizations. The budget is reported and analyzed monthly by Headquarters RTBF management and their financial resource analysts. Funds and costs are tracked and reported at the RTBF element level (e.g. Operations of Facilities) using Defense Program's (DP's) official Budget and Reporting classification codes and the DOE Financial Information System.

Evidence: Performance contracts and evaluation plans (8 sites). Performance plans for federal managers.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 12%

Explanation: The program follows Departmental procedures and processes to measure cost reductions. These requirements are contained in site performance contracts and performance evaluation plans. NNSA also uses award and incentive fees to foster cost reduction at all sites. Semi-annual site program reviews the effectiveness of these procedures and the management of the program.

Evidence: Performance contracts and evaluation plans (8 sites). Department of Energy Acquisition Regulation (DEAR) 970.5204-87, Cost Reduction, April 1999.

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: The program works closely with managers of Campaigns, Directed Stockpile Work (DSW), and the Facilities and Infrastructure Recapitalization Program to ensure the base capabilities of program facilities and infrastructure remain viable to support current and future mission workloads. A matrix of program facilities supporting specific Campaign and DSW activities is provided in each site implementation plan. During development of draft and final Ten-Year Comprehensive Site Plans, program managers provide review and comments on program related information proposed by site contractors. In addition, the program has conducted several combined on-site program reviews and three Maintenance Summits in conjunction with FIRP to ensure a corporate approach in addressing NNSA deferred maintenance goals as well as participating in annual corporate planning meetings.

Evidence: FY 2003 Readiness in Technical Base and Facilities (RTBF) Implementation Plans (8 sites). NNSA FY2003 Ten-Year Comprehensive Site Plans (8 sites). FY2002 Program Review Guidance for RTBF and FIRP. Agendas from the May 2003 Maintenance Summit and the FY2005 Corporate Planning Meeting.

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 12%

Explanation: NNSA is covered by DOE's financial management policies, procedures and practices that meet all statutory requirements. The accounting services for NNSA are provided by DOE, and these are free of material internal control weaknesses. The DOE's financial statements have been given a clean audit opinion in 6 of the last 7 years. Day-to-day NNSA operations are supported through the NNSA PPBE processes that require the integration of financial and performance management information systems at each phase. The DOE is well underway on a new initiative (I-MANAGE) in support of the President's Management Agenda to fully integrate all financial, performance, and administrative data for the DOE in a single system within the next 5 years that will include all NNSA information.

Evidence: NNSA FY 2005 Planning, Programming, Budgeting, and Evaluation System Guidance. FY 2003 Readiness in Technical Base and Facilities (RTBF) Execution Guidance, August 2002. NNSA Re-Engineering Planning.

Program Assessment Rating Tool (PART)

Program: Readiness in Technical Base and Facilities (RTBF), Operations
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	100%	88%	56%	Effective

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 12%

Explanation: Several actions were taken by NNSA to enhance management visibility into the program. In FY 2000, the program budget was restructured to clearly identify the base level of annual funding for operation of unique national facilities and capabilities needed to perform stockpile stewardship mission objectives. The new structure provides a stable planning base which facilitates evaluation of program goals. In FY 2002, NNSA Headquarters created high-level program milestones to provide consistent, measurable goals related to facility and infrastructure capabilities across all sites. Additionally, NNSA created the Planning, Programming, Budgeting, and Evaluation (PPBE) process to enhance management visibility in programs. NNSA is reorganizing its federal workforce to improve performance and results. NNSA is streamlining operations, maintenance, and oversight while clarifying roles and responsibilities with a goal of achieving a new, more responsive organization that will improve federal management of our nuclear weapons complex. Collectively, these actions are intended to ensure that enduring mission-essential facilities will be properly maintained in the future.

Evidence: NNSA PPBE Guidance Documents. FY 2003 Readiness in Technical Base and Facilities (RTBF) Execution Guidance, August 2002. NNSA Re-Engineering planning documents.

3.CA1 Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals? Answer: YES Question Weight: 12%

Explanation: Program costs are well understood and supported by realistic schedules. Work Authorizations summarize the program's specific deliverables while site implementation plans define more specific performance metrics on a sub-element site basis. The site implementation plans contain the cost, schedule, and performance goals for the program. Additionally, the five-year budget and planning process defines the budgets and develops the baseline program.

Evidence: NNSA FY 2004-08 FYNSP, February 2003. FY 2003 RTBF Implementation Plans (8 sites). FY 2004 Readiness in Technical Base and Facilities (RTBF) Implementation Plan. FY 2004 Readiness in Technical Base and Facilities (RTBF) Execution Guidance, May 2003.

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: LARGE EXTENT Question Weight: 16%

Explanation: NNSA has only recently identified long-term performance goals and there are no results to support an assertion of adequate progress.

Evidence:

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: SMALL EXTENT Question Weight: 16%

Explanation: For established measures, NNSA achieved its goals to a large extent. For FY 2001 and FY 2002, the aggregate BLS-reported accident rate average for all eight sites was significantly better than the national average of 6.7 (2.6 and 2.2, respectively). Facility availability data was not complete for all eight sites; however, no programmatic milestones were missed as a result of this program. Given no milestones were missed, NNSA has extrapolated annual performance measures for facilities availability of 94.6% for FY 2001 and 95.1% for FY 2002.

Evidence: RTBF Readiness in Technical Base and Facilities Quarterly Reports and/or Program Reviews (8 sites). DOE Occupational Injury and Property Damage Summary, Calendar Years 2001 and 2002. Quarterly Reports based upon RTBF oversight and DOE Policy 450.5, Line Management of ES&H.

Program Assessment Rating Tool (PART)

Program: Readiness in Technical Base and Facilities (RTBF), Operations
Agency: Department of Energy
Bureau: National Nuclear Security Administration
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	100%	88%	56%	Effective

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?

Answer: SMALL
EXTENT

Question Weight: 16%

Explanation: NNSA has a cost management objective to accomplish required work, which is increasing in scope, with an essentially flat budget. Since salary and benefit costs continue to rise to reflect economic changes and retention of critical skill sets, facility and infrastructure efficiencies are being found by the sites as demonstrated by the measure to keep mission-essential facilities available 90% or more of planned days. Additionally, site contracts contain incentives to encourage identification and implementation of efficiencies which are reinvested back into the program.

Evidence: RTBF Readiness in Technical Base and Facilities Quarterly Reports and/or Program Reviews (8 sites). Performance contracts and evaluation plans (8 sites).

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?

Answer: LARGE
EXTENT

Question Weight: 16%

Explanation: Facility availability rates and site-wide safety record are significantly better than national industry standards, indicating favorable performance.

Evidence: RTBF Readiness in Technical Base and Facilities Quarterly Reports and/or Program Reviews (8 sites). DOE Occupational Injury and Property Damage Summary, Calendar Years 2001 and 2002.

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results?

Answer: SMALL
EXTENT

Question Weight: 16%

Explanation: Independent program evaluations indicate improvement in facilities and infrastructure, but so far they are not of a scope to establish the program as "effective". In addition, some reports have identified problems in the DoE NNSA infrastructure improvement process.

Evidence: FY 2003 Report to Congress of the Panel to Assess the Reliability, Safety, and Security of the United States Nuclear Stockpile, April 11, 2003 (Foster Panel) vs. DoE IG report.

4.CA1 Were program goals achieved within budgeted costs and established schedules?

Answer: YES

Question Weight: 16%

Explanation: For FY 2002, the program completed the year within its budget while meeting all program goals. In the current year, the program is reviewing actual costs against program planned costs and, to date, program goals are being achieved within budgeted costs and established schedules.

Evidence: RTBF Readiness in Technical Base and Facilities Quarterly Reports and/or Program Reviews (8 sites). Site Maintenance and Operation Contracts and Performance Assessments. Defense Programs Monthly Financial Reports.

PART Performance Measurements

Program: Readiness in Technical Base and Facilities (RTBF), Operations

Agency: Department of Energy

Bureau: National Nuclear Security Administration

Measure: Percentage of time that mission-essential facilities are available.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	> 90%	94.6%	
2002	> 90%	95.1%	
2003	> 90%	96.5%	
2004	> 90%		
2005	> 90%		

Measure: Reportable accidents per 200,000 workhours (National Bureau of Labor (NBL) standard is 6.7 accidents per 200,000 workhours)

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2001	< 6.7	2.6	
2002	< 6.7	2.2	
2003	< 6.7	2.1	
2004	< 6.7		
2005	< 6.7		

Measure: Percentage of scheduled annual maintenance activities for mission-essential facilities that are completed.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003	> 90%	102.7%	

PART Performance Measurements

Program: Readiness in Technical Base and Facilities (RTBF), Operations

Agency: Department of Energy

Bureau: National Nuclear Security Administration

Measure: Percentage of scheduled annual maintenance activities for mission-essential facilities that are completed.

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2004	> 90%		
2006	100%		
2007	100%		
2008	100%		

Measure: Percentage of mission-essential facilities rated as good or better in the Facilities Information Mangement System (FIMS).

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2005	>50%		
2006	>65%		
2007	>80%		
2008	>90%		
2009	100%		

OMB Program Assessment Rating Tool (PART)

Service Acquisition Program

Name of Program: Safeguards and Security

Section I: Program Purpose & Design (Yes, No, N/A)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Is the program purpose clear?</i>	Yes	The purpose is to protect the nuclear weapons, nuclear material, people, information, and infrastructure that is under the management of the National Nuclear Security Administration.	Report to Congress on the Organization and Operations of the NNSA (Feb 02); NNSA Strategic Plan (Feb 02);	10%	0.1
2	<i>Does the program address a specific interest, problem or need?</i>	Yes	The program ensures security is provided to protect the sensitive material and information handled by the NNSA in support of the nuclear mission.	Report to Congress on the Organization and Operations of the NNSA (Feb 02); NNSA Strategic Plan (Feb 02); DOE Safeguards and Security Orders (series 470); Site Safeguards and Security Plans (SSSP), Independent Reviews (I.e. Science and Security in the Service of the Nation (Sept 2000))	20%	0.2
3	<i>Is the program designed to have a significant impact in addressing the interest, problem or need?</i>	Yes	The NNSA Security program, based on government-wide requirements, is site specific and tailorable to varying threat conditions. It is designed to have a significant impact -- anything less could be catastrophic.	Public Law 106-65, dated 10/5/99, Section 3232 and NNSA budget submission. Congress's General Accounting Office review 02-358 (Mar 02), Site Safeguards and Security Plans, DOE Orders (Series 470 series)	20%	0.2
4	<i>Is the program designed to make a unique contribution in addressing the interest, problem or need (i.e., not needlessly redundant of any other Federal, state, local or private efforts)?</i>	Yes	The program is federally mandated to address the unique requirements of protecting nuclear weapons materials and information.	Atomic Energy Act, Report to Congress on the Organization and Operations of the NNSA (Feb 02); NNSA Strategic Plan (Feb 02); DOE Safeguards and Security Orders (series 470)	30%	0.3

5	<i>Is the program optimally designed to address the interest, problem or need?</i>	No	The optimal design of the program is still evolving. The current approach is predicated on a threat analysis developed prior to the terrorist attacks on September 11, 2001. Changes to that approach might enable the program office to achieve the desired results in a more cost effective manner.	Although the program has documentation to support requirements, it remains to be seen whether those documents support the need for additional funding. Rather, they are general in nature and do not provide a clear picture of the marginal utility of additional dollars.	20%	0.0
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Total Section Score	100%	80%
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Section II: Strategic Planning (Yes, No, N/A)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Does the program have a limited number of specific, ambitious long-term performance goals that focus on outcomes and meaningfully reflect the purpose of the program?</i>	No	Long-term performance goals offered by the program office do not appear to include specific quantifiable outcomes. Rather, they re-state the mission and purpose of the program.	Stated performance goals: 1) Provide a cost-effective security program that meets the requirements in the Atomic Energy Act, Code of Federal Regulationsregulations (10CFR710) and the DOE Orders (470 series). 2) Demonstrate protection against the DOE issued Design Basis Threat and prevent the loss of critically sensitive nuclear weapons program information. 3) Develop and use the technology from a safeguards and security Research and Development program.	20%	0.0

2	<i>Does the program have a limited number of annual performance goals that demonstrate progress toward achieving the long-term goals?</i>	No	Annual performance goals offered by the program office do not appear to include specific quantifiable outcomes that would eventually lead to long term success.		20%	0.0
3	<i>Do all partners (grantees, sub-grantees, contractors, etc.) support program planning efforts by committing to the annual and/or long-term goals of the program?</i>	Yes	Partners in this program consist of contractors that operate the government laboratories and production facilities. The contractors support the overall mission by creating Site Safeguards and Security Plans (SSSP), which they base on Vulnerability Assessments provided by the government, which are then submitted to the federal oversight office for approval.	Each of the eight NNSA sites have a classified Site Safeguards and Security Plans that is developed by the Contractor to be meet the overall security goals, reviewed and formally agreed to by federal personnel and then is reviewed annually. Program planning and budget submissions reflect the effort needed to meet the requirements placed on the contractor. Contractor budget submissions are reviewed and approved by federal officials.	10%	0.1
4	<i>Does the program collaborate and coordinate effectively with related programs that share similar goals and objectives?</i>	Yes	The program participates in the DOE safeguards and security working groups, Department of Defense working groups and select security conferences. The program is part of the interagency Nuclear Security Steering Group in which it shares knowledge and lessons learned gained from reviews and analysis. Furthermore, the program participates in comparability reviews with the Nuclear Regulatory Commission and the Department of Defense and encourages sharing knowledge among NNSA sites within security limits.	NNSA Strategic Plan, February 2002, Goal 4. Numerous meetings with Nuclear Regulatory Commission (NRC). Participation in End-to-end review (2001-2001). Participation in on-going DOE working groups. Conducted NNSA/DOE security directors conferences	15%	0.2

5	<i>Are independent and quality evaluations of sufficient scope conducted on a regular basis or as needed to fill gaps in performance information to support program improvements and evaluate effectiveness?</i>	Yes	The program office requires annual site self-inspections, and formal federal on-site reviews are required annually. The DOE Office of Independent Oversight and Performance Assurance Program provides a bi-annual independent evaluation. Finally, numerous independent inspections and reviews have been conducted.	Annual self-assessments and federal on-site reviews are conducted at major sites. DOE Office of Independent Oversight and Performance Inspection Reports on a bi-annual basis. Congress's General accounting Office review of March 2002. Independent analysis include: "Science and Security in the 21st Century" (June 2002)	10%	0.1
6	<i>Is the program budget aligned with the program goals in such a way that the impact of funding, policy, and legislative changes on performance is readily known?</i>	No	The alignment of the budget with the goals is unclear. The impact of a marginal dollar is not apparent.	Requests for additional funding are not accompanied by conclusive supporting documentation.	10%	0.0
7	<i>Has the program taken meaningful steps to address its strategic planning deficiencies?</i>	Yes	The program was created in response to Congressional interest over past management of safeguards and security. The NNSA organization has clarified the roles and responsibilities to reinforce managers' accountability and reduce direction from entities outside line management. The direct-funded safeguards and security budget is a major change that facilitates strategic planning for safeguards and security. Overall strategic plans have been developed for the NNSA and the Facilities and Operations. These plans are reviewed and modified as needed. Independent reviews have been conducted to look at safeguards and security strategy and operations. These reviews are used to modify future strategic plans.	Report to Congress on the Organization and Operations of the NNSA (Feb 02); NNSA Strategic Plan (Feb 02), Science and Security in the 21st Century, Hagengruber report on security architecture, NNSA planning and budget submission process, results of annual surveys, Independent reviews of security issues	15%	0.2

Total Section Score	100%	50%
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Section III: Program Management (Yes, No, N/A)

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
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1	<i>Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?</i>	Yes	The program conducts and oversees annual safeguards and security inspections at each site, supplemented by reviews on select areas during the year based on current issues. The link between the results and program management is improving.		14%	0.1
2	<i>Are Federal managers and program partners (grantees, subgrantees, contractors, etc.) held accountable for cost, schedule and performance results?</i>	Yes	Federal personnel at each site, including security specialists, security managers and the federal site manager, are assigned responsibility for security oversight. Headquarters personnel also have an oversight role, but the program implementation is the responsibility of the on-site contractor. In theory, contractors are held accountable through federal contract awards process as well as assigned responsibilities through the Site Safeguards and Security Plans process, but it is not clear if the contract awards process is used as leverage to improve performance.		14%	0.1
3	<i>Are all funds (Federal and partners') obligated in a timely manner and spent for the intended purpose?</i>	Yes	Formal government process monitors expenditure of funds based on budgetary allocations as approved through Congressional funding	NNSA Work Authorization system documents distribution of funds. Financial Information System monitors expenditures.	14%	0.1
4	<i>Does the program have incentives and procedures (e.g., competitive sourcing/cost comparisons, IT improvements) to measure and achieve efficiencies and cost effectiveness in program execution?</i>	Yes	NNSA competes the overall laboratory operations contract which includes the Safeguards and Security program.	Safeguards and Security is a subset of the overall contractor award fee. NNSA should make every effort to separate the Safeguards and Security work from the rest of the contract to maximize leverage.	14%	0.1

5	<i>Does the agency estimate and budget for the full annual costs of operating the program (including all administrative costs and allocated overhead) so that program performance changes are identified with changes in funding levels?</i>	No	The NNSA programs are consistent with DOE practice in estimating and budgeting for the full cost of executing direct programs within the program budgets. However, consistent with Congressional requirements, DOE budgets separately for its Federal administrative oversight and allocable costs in a Program Direction account.	DOE Accountability Report for FY 2001	14%	0.0
6	<i>Does the program use strong financial management practices?</i>	Yes	NNSA adheres to financial management practices through the implementation of its Planning, Programming, Budgeting and Evaluation system. This goal of the system is to formalize resource management, link program guidance with fiscal guidance, apply uniform and consistent budget practices across NNSA, and incorporate financial analysis into programmatic decisions. Finally, NNSA is re-engineering its Headquarters and field structures to improve accountability at the lowest levels. Part of this re-engineering will involve the financial management processes of the field elements, and the interface of those field processes with DOE headquarters.	Evidence: NNSA Future-Years Nuclear Security Program, March 20, 2002.	14%	0.1

7	Has the program taken meaningful steps to address its management deficiencies?	Yes	The program has established organizations and revised roles and responsibilities to clarify authority and decision making responsibilities. Management deficiencies identified by on-site reviews, DOE Office of Independent Oversight and Performance Assurance inspections, DOE Inspector General inspections and independent reviews are resolved through corrective action plans. NNSA is in the process of re-engineering the overall management structure which will include safeguards and security and place management decisions closer the actual operations.	NNSA legislation established the Chief of Defense Nuclear Security with responsibility for safeguards and security. The NNSA has clarified the roles and responsibilities for management. Specific corrective action plans are created for issues raised during independent reviews. Independent reviews such as Science and Security in the 21st Century are tracked as DOE-wide issues and resolutions briefed at senior levels. NNSA re-engineering will address issues of placing federal management responsibility close to operations.	14%	0.1
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Total Section Score	100%	86%
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Section IV: Program Results (Yes, Large Extent, Small Extent, No)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	Has the program demonstrated adequate progress in achieving its long-term outcome goal(s)?	Small Extent	The program has progressed in its efforts to meet security requirements. However, its ability to meet its long-term goals is questionable given the nature of the goals.	Recent, continued requests for additional funding and media-reported deficiencies call to question the degree to which the program is meeting its primary goal.	25%	0.1

Long-Term Goal I:	Provide a cost-effective security program that meets the requirements in the Atomic Energy Act, Code of Federal Regulations (10CFR710) and the DOE Orders (470 series).
Target:	Continue to ensure operations meet DOE requirements in a cost effective manner
Actual Progress achieved toward goal:	All sites have approved site specific security plans, procedures and operations that have been evaluated against the DOE requirements. All sites are making progress toward satisfactory level of protection at their sites in the changing threat environment. Federal reviews have confirmed the progress toward satisfactory level of performance.
Long-Term Goal II:	Demonstrate protection against the DOE issued Design Basis Threat and prevent the loss of critically sensitive nuclear weapons program
Target:	Ensure that the NNSA sites conduct performance exercises that demonstrate protection against the Design Basis Threat
Actual Progress achieved toward goal:	All sites have been evaluated and demonstrated protection against the current Design Basis Threat.
Long-Term Goal III:	Develop and use the technology from a safeguards and security Research and Development program.
Target:	Establish a research and development program that focuses on both short and long term solutions to specific NNSA safeguards and security needs. Use technology improvements at NNSA sites to provide cost-effective solutions to security issues

Actual Progress achieved toward goal:	Limited effort begun in FY02. Additional funding being applied in FY03. Initial effort to develop a base for security evaluation is progressing. Specific effort on a small number of projects (communications, Aircraft detection, Aircraft deterrence) is progressing.
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2	<i>Does the program (including program partners) achieve its annual performance goals?</i>	Small Extent	NNSA sites are evaluated annually by the cognizant federal officials and identified security deficiencies are corrected based on funding. Independent Assessment is conducted of NNSA sites. NNSA sites are rated Satisfactory or are progressing to that level of protection. However, the solid goals and their link to long-term performance remain vague.	Site reviews, Independent Assessment reviews, Congress's General Accounting Office report of March 2002, annual budget reviews	25%	0.1
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Key Goal I:	Ensure day-to-day operations at NNSA facilities meet DOE security requirements in a cost-effective manner to support the NNSA mission
Performance Target:	Satisfactory protection of facility in all safeguards and security areas based on contractor and federal reviews of performance. All identified deficiencies are resolved in a rapid manner with plan of action for all major issues
Actual Performance:	Completed reviews of facilities operations show sites have reached or are progressing toward satisfactory performance. All specifically identified issues had corrective action plans and resolution in a rapid manner based on available funding.
Key Goal II:	Protect NNSA personnel, facilities, nuclear weapons and other material from terrorist and other threats.
Performance Target:	Implement appropriate graded protection philosophy/strategy at all sites including hiring additional pro force personnel, upgrade cyber security implementation directives to reflect changes in threat
Actual Performance:	Developed and implemented anti-and counter terrorism procedures in compliance with requirements & in support of national security goals.
Key Goal III:	Identify technology solutions to upgrade safeguards and security protection and provide cost savings through research and development program
Performance Target:	Identify commercial off the shelf as well as research and development of technology applications to provide cost-effective protection
Actual Performance:	Task Force on Technology Solutions Interim Report issued in 02, specific Research and Development projects underway

Footnote: Performance targets should reference the performance baseline and years, e.g. achieve a 5% increase over base of X in 2000.

3	<i>Does the program demonstrate improved efficiencies and cost effectiveness in achieving program goals each year?</i>	No	No evidence of improved efficiencies and cost effectiveness.	25%	0.0
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4	<i>Does the performance of this program compare favorably to other programs with similar purpose and goals?</i>	N/A				
5	<i>Do independent and quality evaluations of this program indicate that the program is effective and achieving results?</i>	Yes	The DOE Office of Independent Oversight and Performance Assurance inspection reporting is an independent authority used to assess and improve safeguards and security protection. Recent General Accounting Office reports indicate significant progress toward goals.	DOE Office of Independent Oversight and Performance Assurance inspection Reports, Congress's General Accounting Office report of March 2002	25%	0.3

Total Section Score					100%	42%
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Program Assessment Rating Tool (PART)

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

1.1 Is the program purpose clear?

Answer: Yes

Question Weight: 20%

Explanation: The program's mission is to develop efficient, reliable, and affordable solar technologies that can transform domestic solar resources into a substantial source of usable energy.

Evidence: EERE FY 2005 OMB Budget Submission. Program first authorized in 1975 by P.L. 94-163, "Energy Policy and Conservation Act" (EPCA). Reauthorized in 1976 (P.L. 94-385), 1978 (P.L. 95-619), and 1992 (P.L. 102-1018).

1.2 Does the program address a specific and existing problem, interest or need?

Answer: Yes

Question Weight: 20%

Explanation: The program aims to expand the use of solar energy, which can increase domestic energy supplies and avoid emissions of pollutants and greenhouse gases associated with conventional methods of power production. These potential benefits support the Administration's National Energy Policy, as well as the Administration's climate change goals.

Evidence: The program focuses R&D on activities that it considers too technologically risky for the private sector to undertake alone. Risk levels vary on a project-by project basis.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: Yes

Question Weight: 20%

Explanation: The Solar Energy Program collaborates with industry, academic and State solar research programs, as well as other programs in EERE. From this collaboration, program managers direct research that complements, but does not duplicate, other ongoing efforts. For example, meetings are held yearly with the Energy Materials Coordinating Committee (EMaCC) to review Federal R&D programs conducting similar research within the government. Meetings are also held with State representatives and other organizations, such as the Electric Power Research Institute. Occasionally, other Federal programs, such as the Department of Commerce Advanced Technology Program, fund solar energy projects. However, these efforts are comparatively small and not part of a coordinated research effort.

Evidence: The program considers lack of industry capital to be a market barrier to private sector investment in solar energy technology R&D.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: The program focuses on reducing costs of solar power through technology development in order to achieve the outcomes of increased domestic energy supply and reduced emissions of pollutants and greenhouse gases.

Evidence: The program found no studies that indicate a production tax credit, regulatory driver, or other policy mechanism would be a more cost effective approach.

Program Assessment Rating Tool (PART)

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly? Answer: NO Question Weight: 20%

Explanation: The program focuses resources on technologies that are not yet commercially competitive. In support of the Administration's R&D Investment Criteria initiative, the program was asked to prepare "bubble charts" that plot key program variables (e.g., expected public benefits, funding levels, years to commercialization). Bubble charts can serve as an informational tool to help determine, along with other considerations, whether the program appropriately targets its R&D funding. While the program has made progress estimating public benefits, the Department has not yet developed a methodology to estimate benefits consistently within and across programs. Therefore, the program could not prepare meaningful bubble charts.

Evidence: Although unable to prepare bubble charts, the program did estimate years to commercialization for its major R&D activities as follows: photovoltaics (17 years); solar thermal technologies (7 years). The program's estimates have not been peer reviewed. In general, the program appears to target its resources wisely, but a lack of ability to provide appropriate evidence mandates a "no" response. EERE continues to work internally and with other DOE program offices to improve consistency and accuracy in estimating benefits.

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: Yes Question Weight: 10%

Explanation: The program's key long-term measures track cost-of-energy and reasonably represent the most important program activities.

Evidence: FY 2004 Budget. Solar Energy Technology Program. DRAFT Multi-Year Technical Plan (2003).

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 10%

Explanation: The program's long-term measures are ambitious and designed to maintain aggressive progress. For example, the cost-of-energy goal for photovoltaics is 6 cents/kWh by 2020, a significant reduction from the corresponding cost in 2000 of 25 cents/kWh. This is based on new research concepts, e.g., nanostructures and multi-junction cells, that are high risk but could potentially lead to cost breakthroughs. To maintain focus on long-term targets, intermediate goals in periodic solicitations are used to direct and redirect activities within the PV subprogram as well as to redirect the PV subprogram itself. Such decision points provide regular on and off ramp opportunities.

Evidence: Solar Energy Technology Program DRAFT Multi-Year Technical Plan (2003). The US Photovoltaic Industry Roadmap (2001). Photovoltaics, Energy for the New Millennium: The National Photovoltaics Program Plan 2000-2004 (2000).

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: The program's annual performance measures tie directly to the long-term cost-of-energy goals. For photovoltaics, the key annual measure is cost of production of photovoltaic modules. For solar water heating, cost-of-energy is tracked directly. The photovoltaic subprogram should develop additional annual measures that capture its fundamental research activities.

Evidence: FY 2004 Budget. Solar Energy Technology Program DRAFT Multi-Year Technical Plan (2003).

Program Assessment Rating Tool (PART)

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

- 2.4 Does the program have baselines and ambitious targets for its annual measures?** Answer: YES Question Weight: 10%
- Explanation: The annual performance measures have baselines and are specific and quantified. They are also ambitious but realistic. They are based on estimates from lab engineers and researchers of what can be accomplished in a short period of time, one year, with the available resources.
- Evidence: FY 2004 Budget.
- 2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program?** Answer: Yes Question Weight: 10%
- Explanation: The program selects only projects from partners who show commitment and that will contribute to the program goals of decreasing the cost and increasing the performance of systems being developed. Projects are subject to semi-annual or annual reviews, and project performers must submit monthly or quarterly status reports. The majority of performance measures are quantifiable and trends can be linked to objective baselines for the technical performance of the technologies being developed and demonstrated. Program goals are identified when R&D efforts are solicited. Responses from interested parties are evaluated based on the demonstration of their ability to achieve progress toward these goals as presented in work statements submitted for competitive evaluation. Such information is developed as targets and milestones in the final contracting documents.
- Evidence: Sample program R&D solicitations.
- 2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need?** Answer: YES Question Weight: 10%
- Explanation: Each major subprogram is subject to external peer reviews every two years. [The most recent peer review of the concentrating solar power was not independent (one panel member was a member of a solar industry advocacy organization), but that activity was terminated in the FY 2004 Budget.] In addition to peer reviews the program undergoes a thorough internal program review every 18 months. The most recent review was March 2003. The program should consider expanding the scope of peer reviews to include overall program effectiveness and relevance.
- Evidence: National Academy of Sciences (NAS), "Renewable Power Pathways: A Review of The U.S. Department of Energy's Renewable Energy Programs" (2000). 2001 Peer Review of the DOE Photovoltaic Program, September 14, 2001. Concentrating Solar Power Peer Review: Final Report (2001). 2001 Peer Review of the U.S. Department of Energy's Solar Buildings Technology Research Program, December 2001.
- 2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget?** Answer: NO Question Weight: 10%
- Explanation: The budget identifies the resources needed to achieve the program's cost-of-energy performance goals. However, budget documents do not clearly indicate the full costs of achieving the program goals. Salaries, benefits, and other administrative expenses to support the program are included in a separate budgetary line item ("Program Direction"). EERE does not report the allocation of Program Direction funding to the various programs it supports.
- Evidence: FY 2004 Budget.

Program Assessment Rating Tool (PART)

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

2.8 **Has the program taken meaningful steps to correct its strategic planning deficiencies?** Answer: Yes Question Weight: 10%

Explanation: There are no recent reports criticizing the program's strategic planning efforts. The program has consulted with industry and other stakeholders on priority needs and has formulated a multiyear research plan. The program also prepares R&D roadmaps in consultation with industry. One recent PV subprogram responses to PV community needs are the development of the High Performance R&D activity in FY 2000 in response to industry's need for higher efficiency concepts to reduce system costs on a per energy basis. Another example is the development, initiated in 2002, of a concerted effort to address system reliability with particular emphasis on thin-film modules and their special aspects that both promise inexpensive manufacturing processes but also require new approaches to ensure durability.

Evidence: Solar Energy Technology Program DRAFT Multi-Year Technical Plan (2003). The US Photovoltaic Industry Roadmap (2001). Photovoltaics, Energy for the New Millennium: The National Photovoltaics Program Plan 2000-2004 (2000).

2.RD1 **If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals?** Answer: NO Question Weight: 10%

Explanation: Each year, the program estimates the public benefits of its activities in support of the Government Performance and Results Act (GPRA) and the Administration's R&D Investment Criteria initiative. However, the program has not yet developed a consistent and reliable methodology for comparing potential benefits within and across programs with similar goals.

Evidence: FY 2004 Congressional Budget Justification materials.

2.RD2 **Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%

Explanation: The Solar Energy Program works closely with industry, academic, and State solar research programs to identify R&D needs and prepare "roadmaps" that delineate the highest priority activities that provide the most value. In addition, the program's multi-year program plan defines the major activities that will be carried out over a five-year period. Each activity is assigned a relative impact on system cost, risk of achieving success, and cost. These factors are considered in developing priorities and assigning budgets. In addition, the assessments described in 2.RD1, for example, technological risk, and other factors, such as market potential, are used in establishing the zero-based budget for the Solar Energy Program that identifies priorities at the activities level.

Evidence: Solar Energy Technology Program DRAFT Multi-Year Technical Plan (2003). The US Photovoltaic Industry Roadmap (2001). Photovoltaics, Energy for the New Millennium: The National Photovoltaics Program Plan 2000-2004 (2000). Concentrating Solar Power: An Industry Vision for the New Millennium (2001); Parabolic-Trough Technology Roadmap: A Pathway for Sustained Commercial Development and Deployment of Parabolic-Trough Technology (1999). Concentrating Solar Power Dish Roadmap (2000). Draft: Central Receiver Technology Roadmap: A Pathway for Sustained Commercial Development and Deployment of Central Receiver Technology (2001).

Program Assessment Rating Tool (PART)

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately Effective
80%	80%	100%	59%	

3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance? Answer: Yes Question Weight: 12%

Explanation: The EERE Strategic Management System -- which establishes at the beginning of each fiscal year an 18-month schedule for key planning, budget formulation, budget execution, and analysis / evaluation functions -- requires that each EERE program establish and track long-term and near-term program performance goals and measures. Program results as evaluated through the goals and measures are used annually and throughout the year to assess partners performance, adjust funding, and re-align R&D portfolios.

Evidence: SMS Implementation Letter for FY 2002 - 2005 (October 2001). Monthly, quarterly and annual reports from key program partners and contractors. Performance information on one measure (cost of production of PV modules) is recorded in Joule, the Department's performance management system. However, in general, milestones in the Joule system are not fully reflective of program progress. Thus, the Department's Joule system provides little value-added. The new I-MANAGE system, currently under development, will better integrate budget and performance.

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: Yes Question Weight: 12%

Explanation: The Annual Performance Appraisals of all EERE Program Managers include criteria directly related to cost, schedule, and performance results. EERE reviews these criteria monthly in the EERE Monthly Management Reviews. Most EERE contracts include award fee and other performance criteria to hold those partners accountable.

Evidence: Performance Plan and Performance Appraisal Form for Performance Management System Employees; EERE Award Fee and Performance Based contracts.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: Yes Question Weight: 12%

Explanation: Each year, the program develops an Annual Operating Plan, which is reviewed internally to ensure that new funding is planned to be obligated consistent with the appropriated purpose. EERE also develops a Spend Plan for all of its programs. The program uses data from Departmental procurement and financial systems -- and similar data from National Laboratory partners -- to assure that actual expenditures occur for intended purposes and on a schedule consistent with the Spend Plan. The program has had year-end amounts ranging from 12 to 35 percent of appropriated funds from FY 2000 to FY 2002. The program reports that the high uncosted level of 35 percent in FY 2002 was due to the anticipation of delayed appropriations for FY 2003. (The program operated did not receive appropriations till halfway through the fiscal year in 2003.) Unobligated balances brought forward to FY 2004 were \$337,000, less than one percent of the program's FY 2003 appropriation of approximately \$83 million.

Evidence: FY 2003 Annual Operating Plan. Solar Energy Program FY 2003 Financial Status Report (June 2003). FY 2003 Apportionment. FY 2003 Spend Plan.

Program Assessment Rating Tool (PART)

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution?

Answer: Yes

Question Weight: 12%

Explanation: EERE's reorganization in 2002 clarified lines of responsibility and eliminated organizational "stovepipes" by consolidating planning, budgeting, and analysis into a single business administration office. The reorganization reduced management layers, although staff levels remained the same. EERE developed a new IT report to improve program managers access to EERE cost, obligation, and procurement data. EERE plans to consolidate several legacy IT systems into a single program management system that is intended to track all required information on a project by project basis (cost share, type of contract according to A-11 definitions, etc.). EERE is also developing a measure to reduce uncosted balances, which means obligated funds will be put to use more quickly. The program also reports that it has established its own database that track the following information for each project: objectives, background, approach, recipient, location, milestones, status, funding level, and program priority. The database will reportedly be compatible with Departmental databases under development. These recent actions should achieve efficiencies and improve cost effectiveness, although it will be difficult in some cases to demonstrate definitively.

Evidence: EERE Reorganization "All Hands" presentation: http://www.eere.energy.gov/office_eere/pdfs/eere_reorg.pdf. EERE IT Business Case Number 019-20-01-12-01-1011-00-304-101. Solar Energy Program FY 2003 Financial Status Report (June 2003). Solar Energy Technologies Program database.

3.5 Does the program collaborate and coordinate effectively with related programs?

Answer: YES

Question Weight: 12%

Explanation: The program collaborates with related EERE programs, specifically Buildings Technologies, the Federal Energy Management Program, and the Distributed Energy Resources Program. Photovoltaics (PV) research is coordinated with the DOE Office of Science. Interagency coordination between DOE and other Federal agencies (Air Force, Army, NASA, and Navy) is accomplished through the government-sponsored Interagency Advanced Power Group (IAPG). The program supports Department of Interior (DOI) solar efforts in national parks, provides Federal Emergency Management Agency with mobile solar systems that generate power immediately after disasters, helps the Army analyze the benefits of solar water heaters and PV on military housing, collaborates with the Department of Housing and Urban Development educating appraisers about solar technology, and works with the Western Governors Association analyzing the costs and benefits of CSP for relevant States.

Evidence: U.S. Department of Interior Press Release, evaluating renewable energy resources on public lands, February 21, 2003. IAPG website (<http://www.grc.nasa.gov/WWW/IAPG/>).

3.6 Does the program use strong financial management practices?

Answer: Yes

Question Weight: 12%

Explanation: Each year, EERE develops and maintains a Spend Plan and a Measures spreadsheet that links the Spend Plan to annual and long-term goals and measures for each EERE program. The program reviews quarterly costing reports and weekly project status reports. There is no evidence of erroneous payments or statutory violations.

Evidence: FY 2003 Spend Plan and Measures spreadsheet. Sample quarterly costing report.

Program Assessment Rating Tool (PART)

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

3.7 **Has the program taken meaningful steps to address its management deficiencies?** Answer: YES Question Weight: 12%

Explanation: The National Association of Public Administrators (NAPA) found dozens of management deficiencies in the program's bureau (the Office of Energy Efficiency and Renewable Energy, or EERE) in a review published in 2000. EERE provided evidence that it addressed some of management deficiencies identified by NAPA, and has prepared a Management Action Plan that will address many of the remaining findings. While a few NAPA recommendations have not been addressed (e.g., that EERE conduct periodic audits to assure that cost-sharing partners actually provide funding they agree to), in general, EERE has taken meaningful steps to address most deficiencies.

Evidence: A Review of the Management in the Office of Energy Efficiency and Renewable Energy (NAPA, 2000). Letter Report from Assistant Secretary Garman to Chairman of the House Subcommittee on Interior and Related Agencies on implementation of NAPA recommendations (July 11, 2001). EERE Management Action Plan (August 2003).

3.RD1 **For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?** Answer: YES Question Weight: 12%

Explanation: The program completed a spreadsheet summarizing the conduct of its R&D in accordance with OMB Circular A-11 definitions. More than 80 percent of program funding goes to national labs, about half of which is subcontracted out, almost entirely competitively. Of the remaining (non-national lab) funding, about half is earmarked, and the balance is largely awarded competitively. The strong reliance on competitive awards ensures program quality. Program efficiency can be improved by reducing funding for subcontracts run by the national labs, and instead having the program run the competitive solicitations directly.

Evidence: FY 2003 Spend Plan. Table showing funding allocations as per OMB Circular A-11 definitions for "Conduct of Research and Development."

4.1 **Has the program demonstrated adequate progress in achieving its long-term performance goals?** Answer: Large Extent Question Weight: 25%

Explanation: Progress on long-term goal photovoltaics goal appears to be on track. Some targets for reducing the cost of solar water heating in non-freezing climates have been missed in the past, in part due to appropriations below the request level, and in part due to technological difficulties with polymer materials. In a 2000 report, the NAS noted that the photovoltaics subprogram has demonstrated effective progress.

Evidence: National Academy of Sciences, "Renewable Power Pathways: A Review of The U.S. Department of Energy's Renewable Energy Programs" (2000).

4.2 **Does the program (including program partners) achieve its annual performance goals?** Answer: Large Extent Question Weight: 25%

Explanation: The program achieved its key annual performance target for producer costs of photovoltaic modules. Appropriations below request level contributed to missed targets in solar hot water heating. (Achievement of targets is in part impacted by budget level.) Advances in polymer materials for solar water heaters also proceeded more slowly than expected. Future targets have been adjusted accordingly.

Evidence:

Program Assessment Rating Tool (PART)

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	100%	59%	Effective

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: No Question Weight: 25%

Explanation: The program identified several activities that would seem to promote efficiency and cost-effectiveness, such as developing electronic collection, storage, management and reporting systems that eliminate historic but unneeded reporting, and integrate performance, planning, fiscal and management data. In 2003, the program also reorganized its three, formerly "stovepiped" activities (photovoltaic, concentrating solar power, solar buildings) into a new, unified "systems-driven approach." The new approach is intended to help prioritize activities in the portfolio by relying on analyses of present and potential markets, technology trade-off studies, and R&D reviews. While the approach is commendable, the program could not provide evidence that these activities have improved efficiency and cost effectiveness.

Evidence: Results of the Systems-Driven Approach to Solar Workshop (December 17-18, 2002). DRAFT Summary Report of the DOE Workshop for a Systems-Driven Approach to Inverter Research and Development (July 2003).

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: N/A Question Weight: 0%

Explanation: The program works closely with industry and State programs to advance the state of the art in solar energy technologies. There are no studies comparing this program to similar programs.

Evidence:

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: Yes Question Weight: 25%

Explanation: In its analysis of the photovoltaics subprogram (the largest component of the program's portfolio), the National Academy of Sciences noted: "Effective progress in developing low-power, off-grid applications has kept many firms in business and is partly responsible for today's billion dollar industry." NAS gave a poor review of the Concentrating Solar Power Subprogram: "CSP's portfolio is mostly politically driven; and no hard measures have been established for measuring progress or allocating funding." Accordingly, the CSP subprogram was phased out in the FY 2003 and FY2004 Budgets while detailed reviews of the potential for CSP were conducted. The reviews are currently under consideration. NAS did not review the solar buildings subprogram.

Evidence: National Academy of Sciences, "Renewable Power Pathways: A Review of The U.S. Department of Energy's Renewable Energy Programs" (2000).

PART Performance Measurements

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Cost of power from large-scale concentrating solar power (CSP) plants, in cents per kilowatt-hour (¢/kWh)

Additional Information: Targets for producer cost of PV modules tie directly to the long-term targets for reducing cost of photovoltaic power. Producer cost data are collected from industry partners.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	\$2.25/W	\$2.25/W	
2003	\$2.10/W	\$2.10/W	
2004	\$1.95/W		
2005	\$1.85/W		
2006	\$1.75/W		
2010	\$1.50/W		

Measure: Years of durability of polymer materials for solar water heaters, measured by "accelerated" testing

Additional Information: Reducing the cost of solar water heating can result in increased deployment, providing benefits such as reduced emissions from power generation, increased energy supply diversity, reduced energy imports, and increased electricity reliability by reducing the system load on the grid. (Published targets in 1998 and 2000 based on request level; appropriations below request contributed to missed targets.)

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
1998	6	8	
2000	7	8	
2003	8		
2004	7		
2005	5		
2006	4		

PART Performance Measurements

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Cost of power from photovoltaics, in cents per kilowatt-hour (¢/kWh). (The cost of energy from a photovoltaic system is dependent on application and system requirements, financing terms, and possibly other non-technology related factors, which is why targets are given as ranges)

Additional Information: Reducing the cost of solar water heating can result in increased deployment, providing benefits such as reduced emissions from power generation, increased energy supply diversity, reduced energy imports, and increased electricity reliability by reducing the system load on the grid.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003	10	10	
2006	10		
2009	5		

Measure: Cost of power from large-scale concentrating solar power (CSP) plants, in cents per kilowatt-hour (¢/kWh).

Additional Information: The cost targets apply to solar tower technology, one of the three different CSP technologies.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003		14	
2004	12		
2005	11		
2006	11		
2010	9		

Measure: Years of durability of polymer materials for solar water heaters, measured by "accelerated" testing.

Additional Information: Polymer materials for solar water heaters need to be durable for at least 20 years, in addition to meeting other technical and cost specifications.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	7 years	7 years	
2003	13 years	13 years	
2004	17 years		

PART Performance Measurements

Program: Solar Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Years of durability of polymer materials for solar water heaters, measured by "accelerated" testing.

Additional Information: Polymer materials for solar water heaters need to be durable for at least 20 years, in addition to meeting other technical and cost specifications.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2005	20 years		

Measure: Cost of power from photovoltaics, in cents per kilowatt-hour (¢/kWh). (The cost of energy from a photovoltaic system is dependent on application and system requirements, financing terms, and possibly other non-technology related factors, which is why targets are given as ranges.)

Additional Information: The ranges tie to the annual targets for producer cost of PV modules. Reducing the cost of PV modules can result in increased deployment, providing benefits such as reduced emissions from power generation, increased energy supply diversity, reduced energy imports, and increased electricity reliability by reducing the system load on the grid.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2000	10-15	20-25	
2003	19-24	19-24	
2004	18-23		
2005	17-22		
2006	16-21		
2010	12-18		
2020	6		

OMB Program Assessment Rating Tool (PART)

Direct Federal Programs

Name of Program: Southeastern Power Administration

Section I: Program Purpose & Design (Yes, No, N/A)

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1 <i>Is the program purpose clear?</i>	Yes	Southeastern's mission is to market Federal hydroelectric power at the lowest possible cost, as widely as possible, giving preference to public bodies and covering all costs of producing and transmitting power including the repayment of principle and interest.	Section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s)	20%	0.2
2 <i>Does the program address a specific interest, problem or need?</i>	Yes	Southeastern is responsible for disposing of surplus power generated from Federal dams built for multiple purposes including navigation, flood control, fish and wildlife, recreation, and power. Power is marketed in 11 southeastern states --Georgia, South Carolina, North Carolina, Virginia, West Virginia, Tennessee, Kentucky, southern Illinois, Mississippi, Alabama, and Florida.	Southeastern markets and delivers about 5 billion kilowatt-hours of energy and over 3 million kilowatts of capacity to 306 preference customers in 11 southeastern states. Southeastern's hydropower, combined with power from other suppliers, provides for the power needs to millions of consumers in the Southeast.	20%	0.2
3 <i>Is the program designed to have a significant impact in addressing the interest, problem or need?</i>	Yes	Southeastern provides peaking power delivered from 23 hydroelectric projects in four regional systems operated by the U.S. Army Corps of Engineers. The power is delivered through wheeling arrangements made with neighboring utilities.	Southeastern's hydropower is an integral part of the regional power grid and has a significant impact on power supplies in the Southeast.	20%	0.2

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4 <i>Is the program designed to make a unique contribution in addressing the interest, problem or need (i.e., not needlessly redundant of any other Federal, state, local or private efforts)?</i>	No	The generation and transmission of power is a well developed technology , largely provided by municipal and independently-owned utilities across the country. This federal function could be performed under contract or through non-federal ownership of generation capacity. Southeastern's program contributes to the regional energy supply, is marketed largely to rural entities and generally operates at times of peak load, to offset higher-cost alternative power. Reliability is enhanced due to instant operation of hydroelectric plants during peak load times.	Hundreds of utilities across the country provide power to consumers.	20%	0.0
5 <i>Is the program optimally designed to address the interest, problem or need?</i>	No	Southeastern benefits from subsidized loans that place part of the cost of hydrosystem construction on the Treasury. In addition, application of preference in the sale of power creates inefficiencies and restricts market activity. Market pricing of power and use of auctions would improve opportunities for more efficient operations. Southeastern also conducts a purchase power and wheeling (buying power and transmitting it over leased transmission lines) program that, to some degree, duplicates available private sector services. Southeastern believes this program enhances the value of its power though it does not capture that value in its customer rates.	Various GAO reports discuss the cost of the SEPA to the government. See GAO/RECD 97-48,GAO/AIMD97-110 and GAO/AIMD 00-114.	20%	0.0
Total Section Score				100%	60%

Section II: Strategic Planning (Yes,No, N/A)					
Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1 <i>Does the program have a limited number of specific, ambitious long-term performance goals that focus on outcomes and meaningfully reflect the purpose of the program?</i>	No	<p>Southeastern's statements of goals, in sections II and IV, do not focus on outcomes and are of insufficient quality to rate a yes. Southeastern has only extended its short-term goals to the long-term. Southeastern's justification is noted below.</p> <p>In accordance with FERC regulations, Southeastern's long-term goals and performance is reviewed annually and compared to its mission. Southeastern also works closely with the Corps of Engineers on developing a 10-Year Maintenance Plan for the hydroelectric projects. The plan is based on input from numerous sources. Southeastern stays abreast of the changing utility industry by participating in the Tri-state Water Compacts, the regional Transmission Organizations, and FERC's Open Access Transmission Orders. This participation, compliance, and communication helps Southeastern meet long-term goals and requirements.</p>	Southeastern Power Administration Strategic Plan, DOE Energy Resources Strategic Objective ER-9. FY 2004 Congressional Budget Request, various FERC orders	14%	0.0
2 <i>Does the program have a limited number of annual performance goals that demonstrate progress toward achieving the long-term goals?</i>	No	Southeastern is committed to maintaining reliability by meeting or exceeding the North American Electric Reliability Council's (NAERC) compliance ratings, and establishing and meeting annual planned cost payment targets for each Federal Power System.	FY 2004 Congressional Budget Request, DOE Energy Resources Strategic Objective ER-9-2, Southeastern Power Administration Strategic Plan. Southeastern did not meet its FY 2002 debt repayment target.	14%	0.0
3 <i>Do all partners (grantees, sub-grantees, contractors, etc.) support program planning efforts by committing to the annual and/or long-term goals of the program?</i>	Yes	Southeastern works closely with the U. S. Army Corps of Engineers and customers to ensure as much reliable power as possible is generated at the hydroelectric projects and delivered to customers and to work toward the repayment of Federal investment with interest. Southeastern also coordinates with other Federal and State agencies and stakeholders to address the competing uses of water issues.	U. S. Army Corps of Engineers, Preference Customers, Hydropower Conferences, Quarterly Customer Meetings, Meetings with competing water users	14%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4 <i>Does the program collaborate and coordinate effectively with related programs that share similar goals and objectives?</i>	Yes	Southeastern works closely with the other Power Marketing Administrations, the Corps of Engineers, the National Electric Reliability Council, Southeastern Electric Reliability Council, Virginia Carolinas Electric Reliability Council, the Southeastern Federal Power Customers, Southeastern Federal Power Alliance, and Team Cumberland regarding initiatives and other pertinent issues that impact SEPA's customer organizations and goals to market power and ensure reliability of the power grid.	PMA Washington Liaison Office, the Southwestern Power Administration, the Western Area Power Administration, NERC, and other regional reliability councils, the Corps of Engineers, Southeastern Federal Power Customers, Inc., Southeastern Federal Power Alliance, Team Cumberland.	14%	0.1
5 <i>Are independent and quality evaluations of sufficient scope conducted on a regular basis or as needed to fill gaps in performance information to support program improvements and evaluate effectiveness?</i>	Yes	Southeastern's financial statements, along with the power portion of the U. S. Army Corps of Engineers' are independently reviewed annually by a contract auditing firm. Southeastern's rate actions are independently reviewed and approved by FERC. Southeastern also participates with the other PMAs in a cyber security peer review to ensure computer systems comply with the Government Information Security Reform Act. In addition, Southeastern receives periodic management reviews from the General Services Administration, the Department of Energy, and the General Accounting Office.	Independent audit of the Southeastern Federal Power Program for FY 2002 and FY 2001, dated January 15, 2002, Information Security Reform Act/Peer Review of Cyber Security, Department of Energy, General Services Administration, General Accounting Office, Control Area Reviews, NERC, SERC, Office of Personnel Management, Summary Management Review, FERC filings, Inspector General Reviews	14%	0.1
6 <i>Is the program budget aligned with the program goals in such a way that the impact of funding, policy, and legislative changes on performance is readily known?</i>	Yes	Southeastern's budget supports Southeastern's long and short-term performance goals and is based on Southeastern's best estimate of its program needs. Funding changes could substantially alter Southeastern's ability to meet its performance goals and objectives.	FY 2004 Budget Request	14%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
7 <i>Has the program taken meaningful steps to address its strategic planning deficiencies?</i>	Yes	Southeastern annually prepares a Strategic Plan under the guidelines of the Government Performance and Results Act. Also, power rates are reviewed and re-evaluated on an annual basis in order to meet repayment goals. Unforeseen deficiencies are identified from reviews of prior year operations and corrected by Southeastern in order to meet performance goals and objectives. Southeastern publishes Strategic Plan updates that show its performance goals and lists all other agency goals and objectives.	FY 2002 Strategic Plan	14%	0.1

Total Section Score				100%	71%
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Section III: Program Management (Yes,No, N/A)

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1 <i>Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?</i>	Yes	Southeastern collects data on water conditions, market conditions, generation, load unit maintenance, power schedules, power outages, budget execution, financial management, and other project management tools used to direct Southeastern's activities.	Various reporting and data collection studies, including NERC and SERC	14%	0.1
2 <i>Are Federal managers and program partners (grantees, subgrantees, contractors, etc.) held accountable for cost, schedule and performance results?</i>	Yes	Individual Employee Performance Agreements are completed annually, reviewed semi-annually by management, and signed by Southeastern's Administrator. Southeastern has formed teams to achieve goals and to accomplish its mission. These teams establish goals that are reviewed and evaluated by senior management. In addition, Southeastern's Administrator signs his own Individual Performance Agreement with the Secretary of Energy. Southeastern's Strategic Plan is evaluated annually and signed by the Core Team and the Administrator.	Individual Performance Agreements, Team Performance Evaluations, Strategic Plan	14%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
3 <i>Are all funds (Federal and partners') obligated in a timely manner and spent for the intended purpose?</i>	Yes	Southeastern's funds are obligated in a timely manner. Unobligated and uncosted balances are minimal, and fund controls are in place to ensure all funds are spent for their intended purposes. Fund control procedures are independently reviewed on an annual basis.	Independent audit of the Southeastern Federal Power Program for FY 2002 and FY 2001, dated January 15, 2002	14%	0.1
4 <i>Does the program have incentives and procedures (e.g., competitive sourcing/cost comparisons, IT improvements) to measure and achieve efficiencies and cost effectiveness in program execution?</i>	Yes	Southeastern uses cost comparisons and competitive bidding procedures following the Federal Procurement Regulations for all program purchases and improvements. Southeastern carefully reviews and prioritizes all purchases in order to successfully accomplish the agency's goals and objectives.	Federal Procurement Regulations, Budget formulation reports	14%	0.1
5 <i>Does the agency estimate and budget for the full annual costs of operating the program (including all administrative costs and allocated overhead) so that program performance changes are identified with changes in funding levels?</i>	No	Southeastern's budget includes most annual costs required for operating its program but assumes some debt subsidies. Southeastern's funding for staffing and overhead-related costs are included in Program Direction. Purchase Power and Wheeling costs are funded through the use of revenues and alternative funding mechanisms. Repayment studies are reconciled to financial statements annually in order to ensure all administrative costs are included.	Budget formulation reports, Rate Studies See also GAO/AIMD Reports 96-145 and 97-110	14%	0.0
6 <i>Does the program use strong financial management practices?</i>	Yes	Southeastern's financial statements are independently reviewed on an annual basis. No material internal control weaknesses were reported by the auditing firm in FY 2001. Southeastern uses audit reports and its own internal reviews to make improvements to financial operations.	Audit of the Southeastern Federal Power Program financial statements for FY 2001 and FY 2000, dated January 15, 2002	14%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
7 <i>Has the program taken meaningful steps to address its management deficiencies?</i>	Yes	Southeastern recruits and maintains highly qualified employees. Business systems are continuously reviewed, improved, and upgraded to ensure all goals and objectives are met. For example, Oracle Financials are used to maintain Southeastern's accounting system. All business systems are reviewed at Southeastern to ensure sound business practices are followed.	DOE Order 3335.1C, Oracle Financials, various other business systems	14%	0.1

Total Section Score	100%	86%
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Section IV: Program Results (Yes, Large Extent, Small Extent, No)

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1 <i>Has the program demonstrated adequate progress in achieving its long-term outcome goal(s)?</i>	No	Southeastern has been unable to describe long term goals. The goals identified below, that Southeastern has proposed, are not long term goals, but rather are extensions of short term goals. Southeastern needs to continue its effort to define long-term output oriented goals.		20%	0.0

<p>Long-Term Goal I: Maintain reliability in the evolving electric utility industry Target: Meet or exceed North American Reliability Council standards to measure the ability of control areas to match generation to load Actual Progress achieved toward goal: Received Control Compliance Rating of "Pass" for each month of FY 2001 using the North American Reliability Council Performance Standard (ER2-5)</p>
<p>Long-Term Goal II: Promote employee awareness and commitment to working safely by providing the necessary training and equipment to assure a safe working environment Target: Achieve a safety performance of 3.3 recordable accident frequency rate for recordable injuries per 200,000 hours worked Actual Progress achieved toward goal: Southeastern has no recordable injuries in FY 2001</p>
<p>Long-Term Goal III: Achieve required repayment on Federal investment Target: Unpaid Federal Investment is to be less than the Allowable Unpaid Federal Investment Actual Progress achieved toward goal: There were no required repayments for FY 2001</p>

2 <i>Does the program (including program partners) achieve its annual performance goals?</i>	Large Extent	Southeastern's annual performance objectives are met through its mission to market Federal hydroelectric power at the lowest possible cost. Southeastern also meets its repayment requirements in a timely manner.	Of the \$1.6 billion power investment, Southeastern has repaid \$632 million. Audit of the Southeastern Federal Power Program financial statements for FY 2001 and FY 2000, dated January 15, 2002.	20%	0.1
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	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
			Key Goal I: Maintain reliability in the evolving electric utility industry Performance Target: Meet or exceed North American Reliability Council standards to measure the ability of control areas to match generation to load Actual Performance: Received Control Compliance Rating of "Pass" for each month of FY 2001 using the North American Reliability Council Performance Standard			
			Key Goal II: Promote employee awareness and commitment to working safely by providing the necessary training and equipment to assure a safe working environment Performance Target: Achieve a safety performance of 3.3 recordable accident frequency rate for recordable injuries per 200,000 hours worked Actual Performance: Southeastern has no recordable injuries in FY 2001			
			Key Goal III: Achieve required repayment on Federal investment Performance Target: Unpaid Federal Investment is to be less than the Allowable Unpaid Federal Investment Actual Performance: There were no required repayments for FY 2001			
3	<i>Does the program demonstrate improved efficiencies and cost effectiveness in achieving program goals each year?</i>	Yes	In order to meet goals, Southeastern must continue to improve its standards in the ever-changing utility environment. The Southeastern Power Administration continues to meet its goals to market hydroelectric power by adjusting to severe drought conditions, adverse market conditions, and/or unit outages. Preference customer contract requirements and obligations are continually met. Southeastern continues to meet or exceed NERC standards for power reliability requirements, and continues to be below the industry average for safety performance standards.	Annual Performance Standards, NERC Standards, Customer Contract Reviews	20%	0.2
4	<i>Does the performance of this program compare favorably to other programs with similar purpose and goals?</i>	Yes	Southeastern is comparable to the other PMAs in its ability to meet long and short-term power marketing obligations to market and deliver reliable hydroelectric power at the lowest cost possible, even in adverse water conditions. In addition, Southeastern and the Corps compare its hydroelectric facilities to privately-owned facilities throughout the Nation, focusing on operations, maintenance, and reliability issues.	Annual Performance Plan for PMAs, Rate Payment Schedules, Customer Contracts, Southeastern/Corps Benchmarking Program	20%	0.2

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
5 <i>Do independent and quality evaluations of this program indicate that the program is effective and achieving results?</i>	Yes	Southeastern's activities are reviewed annually by an independent audit firm with no adverse findings reported. The annual audited financial statements and operating performance information is made available to all interested parties. Southeastern's rate-setting activities are open to public participation, and are reviewed and approved by FERC. FERC approves private and public sector rates and would not approve either unless it judged the programs effective and efficient. Recent annual repayment performance has been impacted by drought and abnormal market conditions; however, the long-term repayment progress complies with that which is required by law.	Audited Financial Statements, Repayment Studies and Reports, Federal Register Announcements, Annual Performance Plan, FERC	20%	0.2
Total Section Score				100%	73%

OMB Program Assessment Rating Tool (PART)
Capital Assets and Service Acquisition Programs

Name of Program: Southwestern Power Administration

Section I: Program Purpose & Design (Yes,No, N/A)

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1 <i>Is the program purpose clear?</i>	Yes	The Southwestern Power Administration's (Southwestern) mission is to cover all costs of producing, transmitting, marketing and reliably delivering cost-based Federal hydroelectric power, giving preference to public entities, encouraging its most widespread use and repaying the Federal investment (principal plus interest) consistent with sound business practices. Southwestern meets most of its mission requirements. This is accomplished by striving to maximize the use of assets while recommending to the U.S. Corps of Engineers (Corps) how to balance power needs with the diverse interests of other interstate water resource users, and implementing public policy.	Authorizing legislation; Section 5, Flood Control Act of December 22, 1944; 58 Stat. 887, 890; 16 U.S.C.A. 825; Other legislation; Continuing Fund established under Title I, 58 Stat. 890, H.R.3896, P. L. 350 (Amended in 1989); Department of Energy Organization Act of 1977; P.L. 95-91, Section 302; Southwestern's Mission Statement; Southwestern's Strategic Plan; Southwestern's Annual Budgets; Congressionally Authorized Project Purposes; National Environmental Policy Act (NEPA); and Southwestern's Marketing Plan.	20%	0.2

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
2 <i>Does the program address a specific interest, problem or need?</i>	Yes	Southwestern is responsible for marketing power from 24 Federal dams built for multiple purposes including hydroelectric generation, navigation, flood control, fish and wildlife, recreation, and water supply. Southwestern also recovers most of the cost of the Federal investment associated with the hydropower purpose. Power is marketed at cost based wholesale rates to municipal utilities and rural electric cooperatives in a six state area. Factors considered prior to Congress authorizing project construction includes the estimated economic benefit hydropower would bring to the region.	To accomplish the widespread use principle in Section 5 of the Flood Control Act of 1944, Southwestern markets power at wholesale rates to 78 municipal utilities, 22 rural electric cooperatives and three government installations located in six states; AR, KS, LA, MO, OK, and TX; and transmits power through 1,380 miles of transmission line. Southwestern reviews annually and, as necessary, develops and assesses rates for power and other services which repay all annual operating costs and much of the Federal investment. Rate reviews by Department of Energy and Federal Energy Regulatory Commission are intended to ensure that Southwestern meets its acknowledged requirements. Each year, Southwestern publishes an annual report, which documents customers served, power and energy sold, and the Federal investment repaid. The Federal hydroelectric generation marketed by Southwestern produces an average annual benefit to the region in excess of \$400 million, based on the average annual energy of the System and FERC's replacement value.	20%	0.2

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
3 <i>Is the program designed to have a significant impact in addressing the interest, problem or need?</i>	Yes	Southwestern's marketing plan is designed to provide all available power to customers and spread the benefits of Federal power as widely as possible within a six state region. As a matter of DOE policy, consistent with FERC requirements, Southwestern offers excess capacity in its transmission system to other users in a non-discriminatory manner, and supports regional transmission service reliability. More recently, Southwestern has participated in the development of FERC initiated Regional Open Access Transmission Services with the use of its Federal transmission system. Southwestern's marketing plan recognizes the relatively small amount of water storage of its hydroelectric system in a manner which maximizes and assures the reliable repayment of the Federal investment and provides significant economic benefits to the region while accommodating the diverse interests of other interstate water users.	Southwestern repays annual operating costs and much of the Federal investment associated with the hydropower purpose. This is evidenced in Southwestern's annual report, financial statements, and annual repayment studies. Southwestern's customers consider this power critical to their communities' economic health. Southwestern routinely meets with those having an interest in other project purposes to determine the impact of power operations on those purposes and vice versa. Southwestern is a member of the White River Dissolved Oxygen Committee; is a signatory to the Corps Management Plan, dealing with Least Tern (an endangered bird) issues; and has an Memorandum of Understanding with the Corps, which recognizes the multi-purpose nature of the projects and Southwestern's resulting responsibilities. Southwestern is currently a member of the regional reliability council and is participating in an Open Access Transmission Tariff. Other evidence includes Congressionally authorized project purposes as stated in project authorizing legislation; and Southwestern's Marketing Pl.	20%	0.2

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4 <i>Is the program designed to make a unique contribution in addressing the interest, problem or need (i.e., not needlessly redundant of any other Federal, state, local or private efforts)?</i>	No	The generation and transmission of power is a well developed technology, largely provided by municipal and independently-owned utilities across the country. This function could be performed under contract or through non-federal ownership of transmission lines and generation capacity on the dams. Southwestern is the only entity marketing and delivering Federal hydropower in the six state area of Oklahoma, Arkansas, Missouri, Kansas, Texas and Louisiana. Southwestern's transmission system is an integral part of the interconnected transmission network that is vital to the delivery of power in this region.	DOEOA (1977); Section 5 Flood Control Act of 1944; FERC Orders 888 & 889; National Energy Policy Act (1992); Current membership in a regional reliability council; Participating in the development of a regional transmission organization; Southwestern Open Access; and Transmission Tariff. Hundreds of utilities across the country provide power to consumers and do identical work.	20%	0.0
5 <i>Is the program optimally designed to address the interest, problem or need?</i>	No	Southwestern benefits from subsidized loans that place part of the cost of hydrosystem construction on the Treasury. In addition, the application of preference in the sale of power creates administrative inefficiencies and restricts market activity. Market pricing of power and unrestricted sales would improve opportunities for more efficient operations. Southwestern also conducts a purchase power and wheeling program (buying power and transmitting it over leased lines) that, to some degree, duplicates available private sector services. Southwestern believes this program enhances the value of its power, though it does not capture that value in its customer rates. Southwestern's marketing plan assures the reliable repayment of annual operating costs and much of the Federal investment, and provides significant economic benefits to the region while accommodating the diverse interests of other water users. As an interconnected transmission system partner in the region, Southwestern also maintains its transmission system in compliance with the regional reliability council and NERC requirements.	Using Congressionally authorized appropriations and authorities, Southwestern has and continues to meet its marketing plan and reliability obligations to the region's interconnected power and transmission system even though budgets have been reduced in recent years. In addition, Southwestern in partnership with its power customers and the U. S. Army Corps of Engineers (Corps), developed and implemented a customer funding mechanism whereby a significant portion of Corps non-routine maintenance items are funded by Southwestern's customers. Southwestern continues to look for such mechanisms to optimize its program and reduce the burden on the U.S. Treasury. Southwestern's subsidies are discussed in various reports including GAO Report GAO/AIMD-97-110 and GAO/AIMD-00-114.	20%	0.0
Total Section Score				100%	60%

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
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Section II: Strategic Planning (Yes, No, N/A)

1	<i>Does the program have a limited number of specific, ambitious long-term performance goals that focus on outcomes and meaningfully reflect the purpose of the program?</i>	No	<p>Southwestern has been unable to state long term goals that focus on outcomes and they do not qualify for a yes rating. The goals identified by Southwestern below do not qualify for that purpose. Southwestern's arguments for achieving a yes are provided below.</p> <p>1. Market and deliver all available hydroelectric power from Corps dams while balancing power needs with the diverse interests of water resource users and providing regional economic benefits to the region.</p> <p>2: Operate and maintain a Federal power system to assure reliability of the system while meeting utility safety standards and encouraging competition through open access to facilities.</p> <p>3: Maximize the use of Federal assets to repay the investment (principal plus interest) as well as operation and maintenance costs of the Southwestern Federal power system while supporting the President's Management Agenda.</p> <p>Southwestern reviews its long-term goals annually and makes operational adjustments to its Strategic Plan as needed to assure that all available power is marketed and reliably delivered, and repayment of annual operating costs and the Federal investment is achieved.</p>	Southwestern's Strategic Plan; DOE Strategic Objective ER9-1; Annual Report; Annual Budget Submission; and Mission Statement.	12%	0.0
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Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
2 <i>Does the program have a limited number of annual performance goals that demonstrate progress toward achieving the long-term goals?</i>	No	Southwestern's annual performance goals are: maintain reliability in the evolving electric utility industry; meet repayment of the Federal power investment; and promote employee awareness and commitment to working safely by providing the necessary training and equipment to assure a safe working environment. The achievement of annual performance goals contribute to long-term goals to market and deliver all available hydropower, operate and maintain the power system, and repay the Federal investment.	FY 2004 Congressional Budget Request; DOE Energy Resources Strategic Objective ER9-1, ER9-2, ER9-3, ER9-4, ER9-5; Annual Performance Plan/Report; Southwestern's Strategic Plan; Annual Report; Annual Budget Submission; and Performance and Accountability Report.	11%	0.0
3 <i>Do all partners (grantees, sub-grantees, contractors, etc.) support program planning efforts by committing to the annual and/or long-term goals of the program?</i>	Yes	Southwestern recommends to the Corps how to balance power needs with the diverse interests of other interstate water users. Southwestern also works closely with its customers and interested parties to ensure repayment of annual operating costs and the Federal investment with interest. Southwestern works with the Corps, State Agencies, and other affected interests to address competing uses of interstate water resources and transmission capacity.	Joint planning and operations meetings with the Corps; Corps/Southwestern Hydropower Council meetings; Corps/Southwestern/Customer Hydro power Conference meetings; Southwestern Power Resources Association (Customer Organization); Monthly operations conference calls with Corps; Quarterly Operations meetings; and Meetings with Competing Users.	11%	0.1
4 <i>Does the program collaborate and coordinate effectively with related programs that share similar goals and objectives?</i>	Yes	Southwestern works closely with the other Power Marketing Administrations (PMAs) and the Corps on issues that affect these Agencies. Southwestern is actively involved with the NERC and other reliability organizations to ensure the reliability of and the nondiscriminatory access to transmission in Southwestern's marketing area.	Memorandum of Understanding with the Corps; PMA Issue Meetings; PMA Peer Reviews; Department of Energy; NERC; and Southwestern Power Resources Association.	11%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
5 <i>Are independent and quality evaluations of sufficient scope conducted on a regular basis or as needed to fill gaps in performance information to support program improvements and evaluate effectiveness?</i>	Yes	Southwestern's internal and external reviews provide performance information to evaluate program effectiveness. Southwestern power repayment studies and customer, DOE and FERC reviews of power rates have provided information that Southwestern consistently controls costs and is meeting the requirements of the law to pay annual operating costs and most of the Federal investment. Cyber and facility security peer reviews and audits have provided recommendations resulting in additional security for the Southwestern's facilities and improved protection for the power system and automated business systems. NERC and the Regional Reliability Council Operational Audits and Control Area Reviews have resulted in improvements to the regional electrical grid of which Southwestern is a participant. Some evaluations have provided no recommendations for improvement as was the case when the DOE IG reviewed Southwestern's fiber optic program and found that Southwestern was doing a good job. Unqualified opinions from independent auditors since 1979 attest to the reliability of our financial system.	DOE IG Review; Information Technology Reviews and Audits; Summary Management Review; Customer Formal Comment Periods on Rate Filings; DOE and FERC Rate Filings; Office of Personnel Management Audits; General Accounting Office Audits; Reliability Council Audits; Control Area Reviews; Procurement Management and Assistance Review; NERC/Regional Reliability Council Operational Audits and Control Area Reviews; DOE IG's Survey of Transmission Line Maintenance; and Independent audit of Southwestern's financial statements.	11%	0.1
6 <i>Is the program budget aligned with the program goals in such a way that the impact of funding, policy, and legislative changes on performance is readily known?</i>	Yes	Southwestern's requested budget supports Southwestern's short-term and long-term performance goals. The request is based on Southwestern's best assessment of program needs and is aligned with long-term performance goals. Therefore, any funding, policy, and legislative changes affect Southwestern's ability to meet performance goals.	Annual Budget Request; and Southwestern's Strategic Plan.	11%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
7 <i>Has the program taken meaningful steps to address its strategic planning deficiencies?</i>	Yes	Southwestern relies on several annual reviews to monitor and adjust the Strategic Plan's performance goals. A Summary Management Review, Budget Decision Templates, and the Annual Financial Audit Report are prepared and reviewed by managers annually. Aligned with the Strategic Plan, Southwestern also defines Annual Improvement Measurement (AIM) Goals accomplishments for measuring performance across the Agency. Progress toward goals is updated quarterly and available on Southwestern's Intranet for all employees to monitor and track the progress toward their achievement. Utilizing the information in these reviews, Southwestern identifies and corrects any noted weaknesses in the strategic planning process.	Summary Management Reviews; Budget Decision Templates; Achievement Improvement Measurement (AIM) Goals; and Annual Financial Audit Report.	11%	0.1
8 <i>Are acquisition program plans adjusted in response to performance data and changing conditions? (Addresses capital assets only)</i>	Yes	Southwestern's funding for its program consists primarily of replacements to its existing system. Priorities are placed on those situations that pose the highest risk to safety and reliability. Southwestern's Maintenance and Engineering Offices prepare 1 year, and 10 year program plans. The Offices review these plans annually to determine if any adjustments should be made due to industry changes, reliability, emergency situations (earthquakes, tornado, etc.), or safety issues. Due to Southwestern's aging infrastructure, program plans are adjusted frequently due to these changing conditions. Recommendations are then forwarded to Southwestern's Senior Management Team for review and approval. Facility/Project Data Sheets and Budget Decision Templates are prepared for all projects and activities over \$100,000.	One and Ten Year Construction Plans; Facility/Project Data Sheets; Budget Decision Templates; and Acquisition Planning (Quarterly Meetings).	11%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
9 <i>Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule and performance goals? (Addresses capital assets only)</i>	Yes	Southwestern's 10 year Construction Plan is updated at least annually to determine if priorities have changed. The Budget Decision Templates are updated annually. Southwestern's Senior Management Team reviews these Templates for cost estimates, schedules, justifications, alternatives and benefits before determining if a particular activity/project should be initiated or continued. This process is used by Southwestern in preparing its annual budget request analyzes trade-offs among cost, schedules, and performance.	Annual Budget Request; 10 Year Construction Plan; Facility/Project Data Sheets; and Budget Decision Templates.	11%	0.1
Total Section Score				100%	77%

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
Section III: Program Management (Yes, No, N/A)					
1 <i>Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?</i>	Yes	Southwestern collects data on a daily, monthly, quarterly and yearly basis. This data is used for operating and managing Southwestern's program. Quarterly progress on specific Agency goals is published internally on a periodic basis. Quarterly progress on issues and goals of specific interest to Southwestern's customers is reviewed by Southwestern and its customers in joint meetings. Southwestern periodically surveys customers on services provided and solicits feedback on performance. Southwestern periodically meets with other competing users of the multipurpose reservoir projects from which Southwestern markets power to ascertain impacts on such competing uses and on power production. Southwestern's regional security coordinator periodically reviews operations to ascertain compliance with NERC and local security coordinator requirements. Southwestern annually looks at repayment progress through annual repayment studies, public hearings, and continually evaluates the costs associated with its activities.	Various daily and monthly reports as follows are used in managing the agency: Financial Reports; Water Conditions; Generation; Loads; Unit Maintenance; Power Schedules; Transmission Line Maintenance; Audited annual financial statements; Customer Surveys; Quarterly written and oral presentations to the Southwestern Power Resources Association (customer group); Annual Report; Public Hearings; Annual Repayment Studies; and Southwestern meets NERC requirements and complies with operational reviews of the Regional Reliability Council.	10%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
2 <i>Are Federal managers and program partners (grantees, subgrantees, contractors, etc.) held accountable for cost, schedule and performance results?</i>	Yes	Performance standards for Federal managers include specific Agency activities for which they are held responsible and accountable. The Agency Strategic Plan contains objectives which are the responsibility of Agency managers to implement. The Agency also has an annual performance and award system tied to the objectives of the Strategic Plan. Each manager and employee annually reviews and recommends, and commits to the achievement of the goals. The Strategic Plan is reviewed annually and adjusted as needed to address deficiencies. Southwestern's customer group reviews Southwestern's operations and activities as well as rates. The regional reliability council reviews Southwestern's operational performance. Southwestern's customers also review work performed by Southwestern under its non-Federal reimbursable program. All projects/activities whose estimated cost is \$100,000 or more require a budget decision template justifying the project/activity.	Employee Annual Performance Appraisals; Achievement Improvement Measurement (AIM) Award Program; Various operational reviews of Southwestern's system by the Regional Reliability Council such as Southwestern's area control error, under frequency and other NERC compliance requirements; Annual summation of the duration of Southwestern's transmission line outages; Contract audits; Facility/Project Data Sheets; Public forums for customer review of system rate changes; Customer Review of System Operations/Activities; and Budget Decision Templates.	10%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
3 <i>Are all funds (Federal and partners') obligated in a timely manner and spent for the intended purpose?</i>	Yes	Southwestern uses generally accepted accounting practices in managing its obligations. Obligations are entered into a financial management accounting system by organization, fund type, and object code. Appropriate approvals are obtained in the system before the actual obligations are made to assure accountability and that the funds are used for the intended purpose. The enacted budget is used as the guiding document in the obligation of funds with the exception of emergency purchases. The financial management system provides program managers up to date reports on the obligations and expenditures that occur. Southwestern does periodic reviews on the obligation and expenditure activity to assure that obligations occur in a timely manner. A formal Mid-Year Review is conducted to assure that all requirements are being funded on schedule. In addition, managers prepare project estimates. These estimates are compared with the obligations and expenditures to enable the manager to keep the project on schedule.	Oracle Reports; Enacted Budget; Budget Status of Funds Report; Project Cost Estimates; Purchase Order Reports; Mid-Year Budget Review; FERC Uniform System of Accounts; Annual Financial Statement Audits including Internal Controls; and Budget Execution Report (SF133) to OMB/DOE.	10%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4 <i>Does the program have incentives and procedures (e.g., competitive sourcing/cost comparisons, IT improvements) to measure and achieve efficiencies and cost effectiveness in program execution?</i>	Yes	Southwestern uses cost comparisons and competitive sourcing as required under Federal Acquisition Regulations to satisfy the principle of "lowest possible rates to consumers consistent with sound business principles" as set forth in Section 5 of the Flood Control Act of 1944. In addition, Southwestern's rates are reviewed by its customers in a public forum for overall cost effectiveness. Southwestern utilizes an Agency performance award system called AIM (Achievement Improvement Measurement) in which the objectives of the Strategic Plan are summarized in annual performance targets. Each employee's individual performance is reviewed semi-annually. All projects with an estimated cost of \$100,000 or more must be justified in a project template in order to receive funding from the Agency. Additionally, the Agency maintains a rolling 10 Year Construction Plan and detailed individual program plans for major projects such as the one prepared for Southwestern's fiber optic system.	AIM Award Program; Federal Acquisition Regulations; Budget Decision Templates (for Procurement over \$100,000); Purchase Orders/Contracts; Southwestern's Performance Award System tied to Objectives set forth in the Agency's Strategic Plan; 10 Year Construction Plan; and Detailed Program Plans for Major Projects.	10%	0.1
5 <i>Does the agency estimate and budget for the full annual costs of operating the program (including all administrative costs and allocated overhead) so that program performance changes are identified with changes in funding levels?</i>	No	Southwestern budgets for most annual costs of operating the program including allocated overhead and administrative costs but assumes some debt subsidies. Overhead is allocated by direct labor hours and all direct labor hours are budgeted. Southwestern, by law, recovers costs of the program in accordance with RA 6120.2 and the Flood Control Act of 1944. Funding level changes are evaluated and program performance impacts are identified in budget proposals. Effects on reliability and repayment are analyzed.	Proposed Budget; Enacted Budget; Budget Status of Funds Report; RA 6120.2; and Flood Control Act of 1944, Section 5. See also GAO/AIMD Reports 96-145 and 97-110	10%	0.0

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
6 <i>Does the program use strong financial management practices?</i>	Yes	Southwestern's books and records have been audited on an annual basis by an independent audit firm since 1979. The fact that Southwestern has always received an Unqualified Opinion attests to the fact that Southwestern maintains strong financial management practices. During the FY 2001 and FY 2000 audits there were no material findings or recommendations. Southwestern complies with accounting regulations prescribed by the U.S. Treasury, the FERC, the DOE and the CFO Act of 1990 to ensure strong financial practices. Southwestern's financial management employees are trained in accordance with the DOE Financial Management Development Program. Southwestern endeavors to use the latest financial accounting tools and management practices such as use of the Oracle Financial System.	Southwestern's audited financial statements for FY 2001 and FY 2000; DOE Financial Management; Development Training; Oracle; and FERC Uniform System of Accounts.	10%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
7 <i>Has the program taken meaningful steps to address its management deficiencies?</i>	Yes	Southwestern continuously improves its business systems and follows sound business practices by leveraging its capabilities to achieve functional efficiencies and process improvements. For example, an in-house computer-based maintenance planning system consisting of two major functions is used. One part of the system Maintenance Management Information System (MMIS) is used for electrical substation equipment and microwave station maintenance scheduling and planning while the other part Overhead Transmission Maintenance System (OTMS) is used for all transmission line and right-of-way maintenance scheduling and planning. This system establishes a comprehensive maintenance database for reliability-centered maintenance programs and principles. Oracle Financials is used to ensure that Southwestern's complex business is totally and accurately accounted for. Southwestern uses project management principles and practices. Southwestern has developed a multi-year effort to recruit and maintain highly qualified employees.	Process documentation is continuously updated; MMIS and OTMS is updated by using a complex testing and verification process to assure accuracy and user-friendliness; Facility/Project Data Sheets; Budget Decision Templates; and Organization 2000 Plus.	10%	0.1
8 <i>Does the program define the required quality, capability, and performance objectives of deliverables? (Addresses capital assets only)</i>	Yes	Southwestern's offices prepare statements of work for the installation and procurement of equipment. These statements are used to prepare Invitations for Bid (IFB) or Requests for Proposal (RFP).	Statements of Work; IFB/RFP; Procurement Package; and Performance Clauses.	7%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
9 <i>Has the program established appropriate, credible, cost and schedule goals? (Addresses capital assets only)</i>	Yes	Southwestern's 10 year Construction Plan is reviewed at least annually to determine if priorities have changed. The Facility/Project Data Sheets and Budget Decision Templates are updated annually reflecting any necessary changes. The Budget Decision Templates provide Southwestern's Senior Management Team with the necessary information for decision making, including cost estimates, schedules, justifications, alternatives, and benefits to determine appropriate program adjustments.	10 Year Construction Plan; Facility/Project Data Sheets; Budget Decision Templates; and Power Repayment Studies.	7%	0.1
10 <i>Has the program conducted a recent, credible, cost-benefit analysis that shows a net benefit? (Addresses capital assets only)</i>	Yes	The Facility/Project Data Sheets and Budget Decision Templates are updated annually reflecting any necessary changes. The Budget Decision Templates provide Southwestern's Senior Management Team with the necessary information for decision making, including cost estimates, schedules, justifications, alternatives, and benefits to determine appropriate program adjustments. Southwestern's 10 year Construction Plan is reviewed at least annually to determine if priorities have changed.	Budget Decision Templates; Power Repayment Studies; 10 Year Construction Plan; and Facility/Project Data Sheets.	8%	0.1
11 <i>Does the program have a comprehensive strategy for risk management that appropriately shares risk between the government and contractor? (Addresses capital assets only)</i>	Yes	Each construction project is evaluated for risk at the beginning of the procurement process. When the requirements are defined, the procurement and program offices make a determination as to the type of contract to be awarded. To minimize the risk to the government all contracts include detailed statements of work and surveillance plans. These procurement tools promote sound risk management.	Statements of Work; IFB/RFP; Procurement Package; Surveillance Plan; and Performance Clauses.	8%	0.1
Total Section Score				100%	90%

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
Section IV: Program Results (Yes, Large Extent, Small Extent, No)					
1 <i>Has the program demonstrated adequate progress in achieving its long-term outcome goal(s)?</i>	No	The table below does not provide long-term goals. Southwestern needs to continue its efforts to define long-term output oriented goals. The statements below are Southwestern's proposed long term goals.	Annual Performance Plan; Accountability Report; Power Repayment Studies; Annual Financial Audit Report; NERC Standards; Bureau of Labor Statistics; Occupational Safety and Health Act (OSHA) Reports; Southwestern's Marketing Plan; Southwestern's Strategic Plan; and Annual Budget Submission.	20%	0.0
<p>Long-Term Goal I: Market and Deliver all available hydroelectric power from Corps dams while balancing power needs with the diverse interests of water resources users.</p> <p>Targets: 1: Market 100 percent of firm capacity and associated energy to public bodies and cooperatives. 2: Exceed \$400 million in regional economic benefits under average water conditions. 3: Save 9.2 million barrels of oil, 2.7 million tons of coal, or 56 billion cubic feet of gas under average water conditions through hydro power generation.</p> <p>Actual Progress achieved 1: Marketed 100 percent of firm capacity to 78 municipal utilities, 22 rural electric cooperatives, and three Government Agencies. toward goal in FY 2001: 2: Produced 4,667,750,000 Kilowatt-hours and 2,295,400 Kilowatts equating to over \$413 million in National Economic Benefits. 3: Saved an estimated 2.2 million tons of coal, 7.7 million barrels of oil, or 47 billion cubic feet of gas through hydropower generation. Environmental savings were lower than the target due to drought conditions in the region.</p> <p>Long-Term Goal II: Operate and maintain a Federal power system to assure reliability of the system while meeting utility safety standards and encouraging competition through open access to facilities.</p> <p>Targets: 1: Achieve a System Average Interruption Duration Index (SAIDI) of not more than 150 minutes. 2: Achieve a power system control area compliance rating of "Pass" using the North American Electric Reliability Council (NERC) performance standard. 3: Maintain a safety record of lost time accident frequency rate lower than the industry average.</p> <p>Actual Progress achieved 1: Achieved a SAIDI for total preventable outages of approximately 77% below the allowable outages. toward goal in FY 2001: 2: Achieved a power system control area rating of "Pass" using the NERC performance standard. 3: Achieved a safety performance of 3.1 recordable accident frequency rate.</p> <p>Long-Term Goal III: Maximize the use of Federal assets to repay the investment (principal and interest) as well as operation and maintenance costs of the Southwestern Federal power system while supporting the President's Management Agenda.</p> <p>Targets: 1: Achieve an average debt service coverage ratio of 1.0 based on average water conditions.</p>					

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
		2: Increase by two percentage points the ratio of cumulative principal payments to Federal investment based on average water conditions.			
		3: Attain a "Green" rating on at least 90% of the President's Management Agenda initiatives.			
Actual Progress achieved toward goal in FY 2001:	1:	Achieved a debt service coverage ratio of 0.891 due to lower than average water conditions.			
	2:	Achieved less than two percentage points related to the cumulative principle payments to Federal investment due to lower than average water conditions. FY 2000 repaid 42.6%; FY 2001 repaid 43.9%.			
	3:	The President's Management Agenda was initiated in FY 2002. Results are not yet available for FY 2002. However, Southwestern has assessed its performance and has already attained totally, or to a large extent, 90% of the functional areas.			

2	<i>Does the program (including program partners) achieve its annual performance goals?</i>	Large Extent	See table below.	Annual Performance Plan; Accountability Report; Power Repayment Studies; Annual Financial Audit Report; NERC Standards; Bureau of Labor Statistics; OSHA Reports; Southwestern's Marketing Plan; Southwestern's Strategic Plan; and Annual Budget Submission.	20%	0.1
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Key Goal I: Maintain reliability in the evolving electric utility industry.

Performance Targets: 1: Attain average NERC compliance ratings of 100 or higher for Control Performance Standard (CPS) 1, and 90 or above for Control Performance Standard 2.

2: Achieve a SAIDI of not more than 150 minutes of total preventable outages per year.

FY 2001 Actual Performance: 1: Actual - CPS 1 - 192; CPS 2 - 100.

2: Achieved total preventable outages of approximately 77% below the allowable outages.

Key Goal II: Promote employees' awareness and commitment to working safely by providing the necessary training and equipment to assure a safe working environment.

Performance Target: Achieve a safety performance of not greater than a 3.3 recordable accident frequency rate for recordable injuries per 200,000 hours worked or the Bureau of Labor Statistics' industry rate, whichever is lower.

FY 2001 Actual Performance: Achieved a safety performance of a 3.1 recordable accident frequency rate for recordable injuries per 200,000 hours worked.

Key Goal III: Meet repayment on the Federal power investment.

Performance Targets: 1: Meet planned annual repayment of principal on Federal power investment.

2: Meet all required payments of the Federal power system within the repayment period.

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
FY 2001 Actual Performance: 1: Planned \$22,822,000; Repaid \$19,892,418. Annual planned repayment was not met due to below average water conditions. Long-term repayment is still on target.					
2: Required repayment due in FY 2001 on the Federal power investment was paid in full.					
3 <i>Does the program demonstrate improved efficiencies and cost effectiveness in achieving program goals each year?</i>	Yes	Southwestern meets its safety and reliability goals every year under average water conditions. Repayment of the Federal investment (principal plus interest) is achieved. Due to cost control efforts, Southwestern's annual power repayment studies have identified the need for only minor payment increases. The only uncontrollable external variable that impacts repayment is water conditions. Southwestern's budget has remained at the same level over the last three years without any financial relief for new initiatives or cost of living adjustments. Southwestern has reduced its staff and cut costs in non-direct program areas to achieve program goals. Efficiencies and cost savings are evident in that Southwestern has been able to meet its program goals.	Annual Performance and Accountability Report; Annual Performance Plan; Annual Budget Requests; and Annual Power Repayment Studies.	20%	0.2
4 <i>Does the performance of this program compare favorably to other programs with similar purpose and goals?</i>	Yes	Southwestern has successfully marketed all Federal power in its region. Southwestern has not missed a required payment on a Federal power investment within the required repayment period and is on target to meet its overall repayment requirement. Southwestern has been and continues to be one of the top NERC performers, consistently exceeding the "Pass" rating. Southwestern's long-term safety performance is better than industry average.	Bureau of Labor Statistics; NERC Reports; Annual Report; and Annual Power Repayment Studies.	10%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
5 <i>Do independent and quality evaluations of this program indicate that the program is effective and achieving results?</i>	Yes	Southwestern has operational and financial reviews on an ongoing basis, which provide evidence that our program is accomplishing its mission.	NERC Quarterly Compliance Ratings; The DOE IG's survey of Transmission Line Maintenance; DOE's Physical Security Audit in August 2001; Southwestern's Independent Financial and IT Audit; DOE Cyber Security Audit; PMA Peer Review of IT Controls at our Power Dispatch Center; DOE Personnel and Procurement Reviews; NERC Compliance Surveys and Audits; Annual Power Repayment Studies; Rates Public Forums; FERC Rate Reviews; DOE Reviews; Safety and Environmental Audits; Customer Surveys; DOE Fiber Optic Study; and OPM Review.	20%	0.2
6 <i>Were program goals achieved within budgeted costs and established schedules? (Addresses capital assets only)</i>	Large Extent	The majority of projects are completed on time and within budget. For those projects which include rights-of way or real property acquisition and/or site work, both project scope and schedule may be adversely impacted by site conditions or negotiations with land owners. Weather conditions and outages on adjacent facilities owned by the Government or other utilities may occasionally delay project completion.	Construction Program Budget Execution Report; Facility/Project Data Sheets; and Financial Management System Data.	10%	0.1
Total Section Score				100%	70%

Program Assessment Rating Tool (PART)

Program: Strategic Petroleum Reserve (SPR)
Agency: Department of Energy
Bureau:
Type(s): Direct Federal

Section Scores				Overall Rating
1	2	3	4	Effective
100%	88%	100%	87%	

- 1.1 Is the program purpose clear?** Answer: YES Question Weight: 20%
- Explanation: The purpose of the program is to acquire and maintain a petroleum stockpile for emergency distribution to "diminish the vulnerability of the United States to the effects of a severe energy supply interruption, and provide limited protection from the short-term consequences of interruptions in supplies of petroleum products."
- Evidence: Energy Policy and Conservation Act (P.L. 94-163, as amended), Part B, Section 151); National Energy Policy.
- 1.2 Does the program address a specific and existing problem, interest or need?** Answer: YES Question Weight: 20%
- Explanation: U.S. (and trading partner) reliance on oil and U.S. net oil import levels (forecast to increase) combined with location of significant global oil reserves in regions of the world subject to political unrest, have made the US vulnerable to supply disruptions. The Strategic Petroleum Reserve (SPR) provides protection from supply disruptions.
- Evidence: When the 1991 SPR drawdown was announced in conjunction with Operation Desert Storm, the price of oil immediately dropped \$8/bbl.
- 1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?** Answer: YES Question Weight: 20%
- Explanation: The industry generally relies on just-in-time inventories to maintain their minimum operating level. Industry has no incentive to incur costs for holding adequate additional supplies in the chance that a supply disruption might occur, since potential public benefits would not solely accrue to the industry.
- Evidence: The 1999 National Petroleum Council Refining Study.
- 1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?** Answer: YES Question Weight: 20%
- Explanation: The program seeks to minimize acquisition costs and impacts on supply levels and market forces and encourage competition, consistent with meeting program goals (e.g., in the event of a drawdown, SPR oil is distributed by competitive sale). Also, the Department of Energy (DOE) has committed to conducting a study to determine the optimal amount of oil to maintain in the SPR. Some analyses suggest that the program might be more cost effective if allowed to acquire oil when prices are low rather than through the current royalty-in-kind program (although current policy considers deferral of RIK acquisitions under certain circumstances).
- Evidence: Standard Sales Provisions (www.fe.doe.gov/spr); Energy Deputy Secretary McSlarrow's March 5, 2003 testimony before the House Committee on Energy and Commerce, Subcommittee on Energy and Air Quality; Senate Committee on Governmental Affairs; S Prt. 108-18: U.S. Strategic Petroleum Reserve: Recent Policy has Increased Costs to Consumers but not Overall U.S. Energy Security (March 5, 2003).

Program Assessment Rating Tool (PART)

Program: Strategic Petroleum Reserve (SPR)
Agency: Department of Energy
Bureau:
Type(s): Direct Federal

Section Scores				Overall Rating
1	2	3	4	Effective
100%	88%	100%	87%	

1.5 **Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: YES Question Weight: 20%

Explanation: In a drawdown, competitive sales would place the oil with U. S. consumers (the statute prevents the oil from being exported). All potential drawdown decisions are discussed with international organizations established to coordinate response in the event of severe supply disruptions. The system has been tested by one emergency sale and one competitive exchange.

Evidence: SPR Plan

2.1 **Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program?** Answer: YES Question Weight: 12%

Explanation: Readiness to drawdown when directed by the President is the program's long-term goal. The associated outcome is energy and economic security against supply disruptions.

Evidence: See "Measures" section in this PART. The program uses a strategic management system to set its course (SPR Strategic Plan), establish expectations (SPR Annual Performance Plan), and review organizational performance (Program Reviews). The SPR Strategic Plan outlines seven core values and nine supporting success factors at which the program must excel to ensure success of the long-term readiness goal.

2.2 **Does the program have ambitious targets and timeframes for its long-term measures?** Answer: YES Question Weight: 12%

Explanation: The targets are to achieve the maximum designed draw down rate given the SPR inventory level of 700 MB.

Evidence: See Measures section of this PART.

2.3 **Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals?** Answer: YES Question Weight: 12%

Explanation: The SPR is maintained in a high state of readiness. Annual assurance is measured by how quickly the program can respond to a Presidential direction to draw down; how much of the oil inventory in SPR storage is available; and the cost efficiency of operations.

Evidence: See Measures section of this PART.

2.4 **Does the program have baselines and ambitious targets for its annual measures?** Answer: YES Question Weight: 12%

Explanation: All targets are baselined and consider various strategies to improve performance and effectiveness. Fill-to-capacity efforts are influencing the increased drawdown rate and the vapor mitigation program was implemented to ensure the maximum availability of oil while meeting all safety and environmental standards.

Evidence: See Measures section of this PART.

Program Assessment Rating Tool (PART)

Program: Strategic Petroleum Reserve (SPR)
Agency: Department of Energy
Bureau:
Type(s): Direct Federal

Section Scores				Overall Rating
1	2	3	4	Effective
100%	88%	100%	87%	

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 12%

Explanation: Operational measures are established annually to support higher-level programmatic measures. Currently, there are 76 operational measures for the Management & Operating (M&O) contractor and 49 measures for the Management & Technical Support Services (M&TSS) Contractor. Performance against targets is used to monitor and track ongoing achievement and is considered when determining contractor performance fee. This approach has been successful in ensuring that all levels of the Government and contractor organizations are aware of SPR goals and objectives and that their achievement is incorporated into daily operations.

Evidence: Work Authorization Directives for the M&O contractor and Performance Evaluation Plan for the M&TSS contractor. The measures are maintained in the program's automated performance tracking tool (PB-Views).

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 12%

Explanation: Although product is not regularly delivered to customers, there are periodic requests for public input, and two test sales have been conducted. When the SPR has been drawn down under presidential direction (1991, 2000), the SPR met performance expectations. The last independent evaluation was conducted as part of an application for a 2001 Energy Performance Excellence Award. A site examination team performed the assessment using Malcom Baldrige criteria.

Evidence: Measurement of customer satisfaction has been made using post-surveys of participants in SPR drawdown tests, responses to questionnaires used for refiners/traders customer visits, participant surveys at industry trade conferences, and Employee Climate Surveys. In 2001, the SPR applied for the Energy Performance Excellence Award and received input from the field examiners as part of their assessment of the program.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 12%

Explanation: DOE has not provided Budget documents that link performance goals to budget levels.

Evidence: Budget documents (e.g., FY 2004 Budget Congressional Justification).

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 12%

Explanation: Program reviews, project reviews, staff meetings and Strategic Plan working sessions are used to discuss, review, and revise objectives, plans, and measures. These meetings are designed to keep planning and performance measurement current, to communicate performance status throughout the organization (so all parts of the organization will act in concert), and to encourage widespread input into improving performance. A Strategic Plan Working Group updates the SPR Strategic Plan annually in a six-month participative process. This group takes the lead in review and assessment of the SPR Strategic Plan to validate its currency, relevance, and completeness in light of: program mission, vision, federal mandates, & major public policy issues.

Evidence:

Program Assessment Rating Tool (PART)

Program: Strategic Petroleum Reserve (SPR)
Agency: Department of Energy
Bureau:
Type(s): Direct Federal

Section Scores				Overall Rating
1	2	3	4	Effective
100%	88%	100%	87%	

3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance? Answer: YES Question Weight: 14%

Explanation: SPR has a hierarchy of performance information. The Department collects & tracks the "critical few" measures. The SPR Program Office monitors the limited, specific, short- and long-term measures. The SPR Project Management Office manages the detailed, operational measures that are implemented by the contractors. Organizational and action plans are reviewed and analyzed at quarterly Program Reviews. Monthly Project Assessments and Project Reviews are conducted to analyze performance against all milestones and contracts. Data from the PBViews system is used during these sessions to ensure all operational areas are covered. These reviews provide an opportunity to discuss performance and provide direction to contractors. These same measures are reviewed daily during the site managers site status meetings.

Evidence: PBViews System and Joule system.

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 14%

Explanation: The program considers performance against targets when determining contractor performance fee. The current M&O contract contains changes to the fee structure that increased the amount of fee incentive for cost control from 5% to 25%.

Evidence: The program's automated performance tracking tool (PB Views) reflects the individual responsible for each of the 76 operational performance measures.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 14%

Explanation: After receipt of the annual appropriation, a time-phased Annual Operating Plan is developed that outlines obligation requirements on a monthly basis. To ensure a seamless transition from budget formulation to execution, the Annual Operating Plan is developed using the functional cost detail from the budget formulation process. Variance analysis is performed on a monthly basis to ensure all funding is spent for its intended purpose.

Evidence: FY 2004 Budget; Annual Operating Plan.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 14%

Explanation: Program efficiencies and cost effectiveness are assessed by operating cost per barrel of oil capacity. Incentives (25% of the total award fee) are built into the contract's award fee structure to encourage efficiencies that improve performance. An example is the Service Enterprise Resource Planning project, which is a 4-year reengineering of material management, acquisition, property management, maintenance, cost management, and many other administrative processes utilizing enterprise resource planning software. The M&O contractor streamlined processes using modern information technology and extensive benchmarking in the commercial sector.

Evidence: PB Views system and Joule system.

Program Assessment Rating Tool (PART)

Program: Strategic Petroleum Reserve (SPR)
Agency: Department of Energy
Bureau:
Type(s): Direct Federal

Section Scores				Overall Rating
1	2	3	4	Effective
100%	88%	100%	87%	

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 14%

Explanation: SPR participates in International Energy Agency activities including the presentation and exchange of management, technical and operational information on the U.S. government experience with emergency oil stocks so as to lead by example in encouraging member states to fulfill and maintain their stockholding responsibilities, including the effective use of stocks in crises.

Evidence: SPR has made presentations and participated in the Asian Pacific Economic Cooperation (APEC) Energy Working Group conference in Taiwan (April 2002), the Beijing Oil Forum in China (October 2001) and the APEC Energy Security Workshop in Korea (March 2001).

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 14%

Explanation: Budget formulation/execution sessions are routinely conducted to assess progress in development of budgets and in executing approved budgets that provide the financial resources to accomplish goals. There is an annual validation of the assumptions used to develop budget estimates and how these assumptions are reflected in cost and schedule baselines. During budget execution, variance analyses are performed on a monthly basis to monitor and track expenditures. Finally, the program prepares audited financial statements as part of the Department's Accountability Report.

Evidence: DOE annual Performance and Accountability report

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 14%

Explanation: SPR's leaders use a structured program management system to set the SPR's course (Strategic Plan and subsidiary plans), establish expectations (annual Performance Plan), and review organizational performance (Program Reviews). Drawdown Readiness Exercises are conducted to test all levels of program involvement and ensure that any management deficiencies are addressed.

Evidence: Quarterly Program Reviews with the Project Management Office; Project Management Office monthly Project Reviews with the management and operations contractor and other key suppliers. SPR Strategic Plan; Annual Performance Plan; Program Reviews.

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: YES Question Weight: 20%

Explanation: The SPR is maintained in a high state of readiness and continues to make strides in assuring full mission capability. Drawdown and distribution can begin within 15 days of notification. Readiness is assured through periodic assessments, training, tests, and exercises. Various program initiatives have addressed how quickly the program can respond to Presidential direction to draw down; availability of oil; and the cost efficiency of operations.

Evidence:

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: YES Question Weight: 20%

Explanation: The program has met or exceeded all programmatic measures in each year since establishing the SPR Annual Performance Plan in 1998.

Evidence: Annual Performance Report.

Program Assessment Rating Tool (PART)

Program: Strategic Petroleum Reserve (SPR)
Agency: Department of Energy
Bureau:
Type(s): Direct Federal

Section Scores				Overall Rating
1	2	3	4	Effective
100%	88%	100%	87%	

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?

Answer: LARGE
EXTENT

Question Weight: 20%

Explanation: Cost per barrel of storage capacity. The 1994 budget request for the SPR reflected requirements over \$200 million. The current request for facilities and management has leveled to \$ 172 million reflecting implementation of cost saving efficiencies (I.e., Life Extension Program, Enterprise Resource Planning System, etc). M&O contract contains a Cost Savings Plan to achieve further savings in the next six years.

Evidence: M&O Contract.

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?

Answer: YES

Question Weight: 20%

Explanation: SPR compares well with industry in areas such as environmental protection, safety, and employee satisfaction. Storage costs are roughly 10 percent of private industry and 4 percent of Japan. Germany also stores strategic reserves in salt caverns, and their annual operating costs are believed to be on the same order of magnitude as the SPR's.

Evidence: DOE Analysis

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results?

Answer: LARGE
EXTENT

Question Weight: 20%

Explanation: Last independent evaluation was for the 2001 Energy Performance Excellence Award. A site examination team used the Malcolm Baldrige Criteria to evaluate the program's Leadership, Strategic Planning, Customer Focus, Information and Analysis, Human Resource Focus, Process Management and Business Results. Overall score was 647 out of a possible 1,000 demonstrating efficient and effective performance. When the SPR was used in conjunction with military operations during the Persian Gulf War, it operated as expected and the price of oil fell (although it is difficult to attribute price effect solely to SPR use.)

Evidence: 2001 Energy Performance Excellence Award application and evaluation (Executive Summary).

PART Performance Measurements

Program: Strategic Petroleum Reserve (SPR)

Agency: Department of Energy

Bureau:

Measure: Capability to draw down the Reserve (million barrels/day).

Additional Information: The maximum achievable rate is 4.4 MB for 90 days.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2002	4.1	4.2	
2003	4.3		
2004	4.4		
2010	4.4		
2015	4.4		

Measure: Percentage of monthly "maintenance and accessibility goals" achieved.

Additional Information: Equipment inspections (pumps, motors, etc.)

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002	95%	98%	
2003	95%		
2004	95%		
2005	95%		
2006	95%		

Measure: Barrels of Oil Degassed (million barrels).

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	23		

PART Performance Measurements

Program: Strategic Petroleum Reserve (SPR)

Agency: Department of Energy

Bureau:

Measure: Barrels of Oil Degassed (million barrels).

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2005	30		
2006	14		
2007	27		
2008	30		

Measure: Operating Cost per bbl of oil capacity (\$ per barrel).

Additional Information:

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
2002	0.2058	0.1981	
2003	0.213		
2004	0.207		
2005	0.207		
2007	0.199		

Program Assessment Rating Tool (PART)

Program: Weatherization Assistance
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Block/Formula Grant

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	88%	78%	75%	Effective

- 1.1 Is the program purpose clear?** Answer: YES Question Weight: 20%
Explanation: The statutory purpose of the program is to increase energy efficiency, reduce total residential expenditures, and improve the health and safety of qualified low-income persons.
Evidence: 42 U.S.C. 6851-6872. Program was last reauthorized in 1998 for 5 years in Public Law No. 105-388. Program is up for reauthorization in 2003. Funding has been appropriated every year since inception in 1976.
- 1.2 Does the program address a specific and existing problem, interest or need?** Answer: YES Question Weight: 20%
Explanation: Low-income families do not have resources for capital investments in energy efficiency that will return savings over a long time period (20 years or more). Low-income persons spend 4x more on energy (proportion of income) than others.
Evidence: Weatherization Works: Final Report of the National Weatherization Evaluation 1994 (ORNL/CON-395).
- 1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?** Answer: YES Question Weight: 20%
Explanation: The program is not completely distinct from LIHEAP, which allows 15 percent of funds to be used for energy conservation measures. However, the weatherization program is the only one to solely address energy retrofits for low-income families. States are unable to support such a program alone, although many provide significant cost sharing.
Evidence: Most State offices transfer LIHEAP funds to their weatherization offices, and use DOE Weatherization regulations to implement the program.
- 1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?** Answer: YES Question Weight: 20%
Explanation: The Weatherization Assistance Program infrastructure has been in place for more than 25 years and has generally served those within the network well. Program has made improvements over the years as appropriate, and the Department's Inspector General (IG) has recently suggested other modest improvements.
Evidence: DOE IG audit found the program was properly administered, but recommended improvements in reporting administrative costs and reporting performance data on the number of homes weatherized. DOE IG Audit Report Number OAS-L-03-15.
- 1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: YES Question Weight: 20%
Explanation: The program prioritizes elderly, families with children, persons with disabilities, high residential energy users, and households with high energy burden. State and local agencies may choose among these groups.
Evidence: State and local agencies can select the most appropriate eligibility priority to target those most in need. It also permits them to target the priorities of their leveraging partners to maximize available resources.

Program Assessment Rating Tool (PART)

Program: Weatherization Assistance
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Block/Formula Grant

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	88%	78%	75%	Effective

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 12%

Explanation: The program established long term objective of weatherizing 1.2 million low-income family homes by 2011. The program also added long-term efficiency goals, including maintaining a positive benefit-cost ratio and maintaining relatively constant energy savings per household. While 10 percent of program funds are set aside for training and technical assistance, these activities are considered a program support function, and are therefore not captured in a separate performance measure.

Evidence: FY 2004 Budget. The goal assumes outyear funding according to constant maximum cost per home weatherized.

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 12%

Explanation: The program sets targets for and tracks the number of homes weatherized annually, which directly measures progress toward the long term goal.

Evidence: FY 2004 Budget. The goal assumes outyear funding according to constant maximum cost per home weatherized.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 12%

Explanation: The program's main annual performance measure is the number of homes weatherized. The program has also adopted a new annual measure, the average cost per home weatherized, to compare to statutory limits.

Evidence: FY 2004 Budget.

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 12%

Explanation: The program has baseline performance data and has set reasonable targets for the number of homes weatherized.

Evidence: FY 2004 Budget.

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 12%

Explanation: The program has specific application and reporting requirements for State and local agencies to report on a quarterly basis on the expenditure of funds and performance in terms of number of homes weatherized. The program does not publish this information, but uses it internally for management of the program.

Evidence: Quarterly Financial Status Reports on Production and Expenditure of Weatherization Funds.

Program Assessment Rating Tool (PART)

Program: Weatherization Assistance
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Block/Formula Grant

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	88%	78%	75%	Effective

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 12%

Explanation: The program does not conduct annual evaluations on a national basis because of the high cost of such evaluation and the limited amount of change that occurs in program activities from year to year. The program has contracted with Oak Ridge National Laboratory (ORNL) to devise evaluation methodologies and report periodically on program results based on state grantee-level performance evaluation. ORNL has also conducted selective evaluation activities designed to inform program management of performance characteristics in areas in which the program performance has been below average (hot climate zones) or in areas in which there has been growing strategic program interest but little evaluation data. The latter includes base load electric measures as well as nonenergy benefits. To assure independence, the program should consider using an alternative contractor in future assessments, or at least having future ORNL reports assessed by a third party. (Peer reviewers of ORNL weatherization reports are generally employees of ORNL or DOE.)

Evidence: State-level Evaluation of WAP 1990-1996: A Meta Evaluation of 17 States Evaluations - 1997 (ORNL/CON-435); Metaevaluation of National Weatherization Assistance program Based on State Studies, 1996-1998 (ORNL/CON-467); Metaevaluation of National Weatherization Assistance Program Based on State Studies, 1993-2002 (ORNL/CO-488); Nonenergy Benefits from the Weatherization Assistance Program: A Summary of Findings from the Recent Literature, 2002 (ORNL/CON-484)

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 12%

Explanation: Budget requests reflect the program's needs to achieve the performance target for the number of homes weatherized. However, budget documents do not clearly indicate the full costs of achieving the program goals. Salaries, benefits, and other administrative expenses to support the program are included in a separate budgetary line item ("Policy and Management"). EERE does not report the allocation of Policy and Management funding to the various programs it supports. In addition, a 2003 Inspector General report found that "certain organizations inappropriately charged expenses such as administrative staff, office rent, and administrative supplies as direct program costs and thus understated total administrative costs."

Evidence: FY 2003 Congressional Budget Justification identifies program funding allocated for training and technical assistance (10 percent, including 1.5 percent for DOE and 8.5 percent for States), but not the amount of Policy and Management funding used to implement the program. DOE IG Audit Report Number OAS-L-03-15.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 12%

Explanation: The program has taken steps to address deficiencies. For example, the current strategic plan (Weatherization PLUS, 1999) does not adequately address weatherization improvements in hot-climate areas. The program has undertaken a Hot-climate Initiative designed to improve program performance in those States where targeting cooling measures may provide greater energy savings. The Hot-climate Initiative will be worked into an updated strategic plan.

Evidence: Senior Headquarters and Regional Office program staff have met to discuss updates to the strategic plan to address new issues, such as targeting cooling measures. In the fall of 2003, program staff will meet with weatherization network stakeholders to update and revise, as necessary, the program strategic plan.

Program Assessment Rating Tool (PART)

Program: Weatherization Assistance
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Block/Formula Grant

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	88%	78%	75%	Effective

3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance? Answer: YES Question Weight: 11%

Explanation: The program collects data quarterly on the production and expenditures of DOE funds. Regional Offices review these reports and monitor production performance and fiscal performance as well as through site visits to State and local offices. DOE and the States use the information on these reports to implement remedies and to direct future training and technical planning activities to correct any deficiencies noted.

Evidence: Quarterly Reports on Production and Expenditure of Weatherization Funds.

3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results? Answer: YES Question Weight: 11%

Explanation: DOE regulations do not permit setting production quotas on the States. Each State's Annual Plan indicates the level of production the State will attain, which must generally be consistent with levels of production in previous years, considering funding levels and policy changes as appropriate.

Evidence: Application and Reporting Requirements for the DOE Weatherization Assistance Program.

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 11%

Explanation: DOE grants to States are made "on time," meaning before State program years commence (April 1 for 33 States, July 1 for 17 States). Quarterly reports on expenditures generally indicate that State awards to local agencies are made within a reasonable time. Unobligated balances brought forward from FY 2003 were \$97,000, less than one percent of the FY 2003 appropriation of approximately \$224 million.

Evidence: Quarterly Reports on Production and Expenditure of Weatherization Funds.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 11%

Explanation: The program has three efficiency measures which can be used to assess programmatic efficiency and cost effectiveness.

Evidence: See Measures Tab.

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 11%

Explanation: DOE staff communicate regularly with staff of related programs in HHS (Low-Income Home Energy Assistance Program) and HUD (Lead Paint Removal Program). At the State and local levels, there are many instances of shared resources and joint projects.

Evidence: LIHEAP regulations. HUD's Energy Action Plan (May, 2002). Joint Research Project on Lead with HUD designed to evaluate the impact of lead in homes weatherized under the program (2003).

Program Assessment Rating Tool (PART)

Program: Weatherization Assistance
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Block/Formula Grant

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	88%	78%	75%	Effective

3.6 Does the program use strong financial management practices?

Answer: NO

Question Weight: 11%

Explanation: DOE Regional Offices and the Golden Field Office have financial management systems in place and Headquarters staff use a customized IT system (WinSAGA) to provide oversight and management of financial expenditures by the States. However, a recent Inspector General report found that some organizations inappropriately charged administrative expenses as direct program costs, a practice which DOE's systems apparently were unable to identify.

Evidence: DOE IG Audit Report Number OAS-L-03-15.

3.7 Has the program taken meaningful steps to address its management deficiencies?

Answer: NO

Question Weight: 11%

Explanation: The National Association of Public Administrators (NAPA) found dozens of management deficiencies in the program's bureau (the Office of Energy Efficiency and Renewable Energy, or EERE) in a review published in 2000. EERE provided evidence that it addressed some of management deficiencies identified by NAPA, and has prepared a Management Action Plan that will address many of the remaining findings. While a few NAPA recommendations have not been addressed, in general, EERE has taken meaningful steps to address most deficiencies. However, the Department's Inspector General (IG) found that some organizations receiving weatherization funds inappropriately charged administrative-type expenses as program operating costs, and that some States combined the results of weatherization efforts completed with HHS Low Income Home Energy Assistance Program (LIHEAP) funds with those completed with Departmental funds, which could distort reported program results. It is too early to evaluate the impact of the program's corrective actions to the IG report.

Evidence: DOE IG Audit Report Number OAS-L-03-15. A Review of Management in the Office of Energy Efficiency and Renewable Energy (NAPA, 2000). EERE Letter Report in Response to NAPA Review (July 11, 2001), EERE Management Action Plan (August 2003). DOE IG Audit Report Number OAS-L-03-15.

3.BF1 Does the program have oversight practices that provide sufficient knowledge of grantee activities?

Answer: YES

Question Weight: 11%

Explanation: DOE has specific program oversight requirements that the DOE Regional Office monitor State compliance and that the State, in turn, monitor the local agency compliance with program regulations.

Evidence: Weatherization Program Notice 01-6: Updated Weatherization Assistance Program Monitoring Policy (January, 2001), Sample monitoring report

3.BF2 Does the program collect grantee performance data on an annual basis and make it available to the public in a transparent and meaningful manner?

Answer: YES

Question Weight: 11%

Explanation: The program summarizes annual performance data on State-by-State basis and publishes it on the internet. While the key measure (number of homes weatherized) is reported for each State, the program should consider (1) reporting on efficiency measures on a State-by-State basis as well, and (2) drafting the summaries using more objective language.

Evidence: www.eere.energy.gov/weatherization/state_activities.html

Program Assessment Rating Tool (PART)

Program: Weatherization Assistance
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Block/Formula Grant

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	88%	78%	75%	Effective

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: YES Question Weight: 25%

Explanation: The program is on target to meet the long-term goal for number of homes weatherized by 2011.

Evidence: FY 2002 Performance and Accountability Report.

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: LARGE EXTENT Question Weight: 25%

Explanation: In recent years, the program has met its annual performance targets for number of homes weatherized. For example, in 2001, the performance estimate was 75,350 and the actual units completed by the States was 77,697. However, a 2003 Inspector General report notes that some States combined the results of weatherization efforts funded by the HHS Low Income Home Energy Assistance Program (LIHEAP) with those completed with Departmental funds, which may distort upwardly the programs reported results.

Evidence: FY 2001 Performance and Accountability Report. DOE IG Audit Report Number OAS-L-03-15.

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: SMALL EXTENT Question Weight: 25%

Explanation: Benefit-cost ratio rose from 1.06 in 1989 to 1.79 in 1996, and then declined to 1.51 and 1.30 in 1999 and 2002, respectively. These estimates depend largely on EIA estimated long-term energy prices. Given the 90 percent confidence range of actual energy savings per household (which followed a similar pattern), the benefit-cost ratios are statistically similar (except for 1989, which is lower). However, there are two factors that contribute to a lower rating on this question than would otherwise be expected. (1) The benefit-cost ratio calculations do not include administrative expenses appropriated under "Policy and Management" portion of the appropriation. It is also not clear whether the Training and Technical Assistance portion of program funds (10 percent) are included the calculation. (2) The Department's 2003 Inspector General report notes that some States combined the results of weatherization efforts funded by the HHS Low Income Home Energy Assistance Program (LIHEAP) with those completed with Departmental funds, which may distort upwardly the programs reported benefit-cost ratio.

Evidence: State-level Evaluation of WAP 1990-1996: A Meta Evaluation of 17 States Evaluations - 1997 (ORNL/CON-435); Metaevaluation of National Weatherization Assistance program Based on State Studies, 1996-1998 (ORNL/CON-467); Metaevaluation of National Weatherization Assistance Program Based on State Studies, 1993-2002 (ORNL/CO-488); DOE IG Audit Report Number OAS-L-03-15. Internal program memo on the benefit-cost ratios for the Weatherization Assistance Program (Joel Eisenberg, April 8, 2003).

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: NA Question Weight: 0%

Explanation: State, non-profit, and private sector funding is used to augment Federal funding provided for weatherization services. There does not appear to be a weatherization program operating independent of Federal support to which the Weatherization program can be compared.

Evidence:

Program Assessment Rating Tool (PART)

Program: Weatherization Assistance
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Block/Formula Grant

Section Scores				Overall Rating
1	2	3	4	Moderately
100%	88%	78%	75%	Effective

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: YES Question Weight: 25%

Explanation: Despite concerns noted in reponse to Question 4.3, Oak Ridge National Lab (ORNL) reports on program performance generally indicate that the program is effective. The Vermont State Auditor generally gave a positive assessment of the Weatherization program based on that State's perspective and performance. A 2002 ORNL report attempting to quantify additional non-energy benefits suggests that the societal benefit-cost ratio of the program is 2.7 (but such studies can be controversial).

Evidence: State-level Evaluation of WAP 1990-1996: A Meta Evaluation of 17 States Evaluations - 1997 (ORNL/CON-435); Metaevaluation of National Weatherization Assistance program Based on State Studies, 1996-1998 (ORNL/CON-467); Metaevaluation of National Weatherization Assistance Program Based on State Studies, 1993-2002 (ORNL/CO-488); Vermont State Auditor's Review of the Weatherization Assistance Program (19998); Nonenergy Benefits from the Weatherization Assistance Program: A Summary of Findings from the Recent Literature, 2002 (ORNL/CON-484)

PART Performance Measurements

Program: Weatherization Assistance
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Cumulative number of low-income family homes weatherized starting in 2002, in thousands.

Additional Information: Weatherizing homes saves money for low-income families and energy for the nation

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2002	105.0	104.5 (prelim.)	
2003	221.5		
2004	340.9		
2005	459.8		
2011	1,200.0		

Measure: Number of low-income family homes weatherized annually.

Additional Information: Annual targets are adjusted based on appropriations and policy changes, such as the decision to fund the lead-safe weatherization protocol in 2003, which increased the cost per home.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2000	67,340	74,316	
2001	75,350	77,697	
2002	105,000	104,500 (prelim.)	
2003	93,750		
2004	94,450		
2005	118,900		

PART Performance Measurements

Program: Weatherization Assistance
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Average cost per home weatherized

Additional Information: The maximum average cost per home weatherized is determined by statute formula and is shown in the Target column. Actual average costs should not exceed these values.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual (Efficiency Measure)
1999	2,032	1,413	
2000	2,085	1,589	
2001	2,500	1,524	
2002	2,568	1,608	
2003	2,614		

Measure: Program benefit-cost ratio excluding non-energy benefits. (This ratio represents the discounted value (3.2 percent discount rate) of energy saved divided by total program costs.)

Additional Information: The ratio depends in part on EIA-estimated long term energy prices and average energy savings per household of 29.1 MBtu. Estimates of the B/C ratio tested for the 90 percent confidence range of MBtu savings and various price scenarios range from 1.19 to greater than 2 but in no event are less than 1.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term (Efficiency Measure)
1989		1.06	
1996		1.79	
1999		1.51	
2002		1.3	
2005	1.19 - 2.0		

Measure: Average household natural gas savings after weatherization (90 percent confidence interval in parentheses) in thousands of British thermal units (MBTU)

Additional Information: Point results for the the 1996, 1999, and 2002 Metaevaluations all fall within the 90 percent confidence range of the most recent Metaevaluation of weatherization program results.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term (Efficiency Measure)
1989		17.3 (15.1-19.5)	
		365	Program ID: 10000128

PART Performance Measurements

Program: Weatherization Assistance

Agency: Department of Energy

Bureau: Energy Efficiency and Renewable Energy

Measure: Average household natural gas savings after weatherization (90 percent confidence interval in parentheses) in thousands of British thermal units (MBTU)

Additional Information: Point results for the the 1996, 1999, and 2002 Metaevaluations all fall within the 90 percent confidence range of the most recent Metaevaluation of weatherization program results.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term (Efficiency Measure)
1996		31.2 (22.0-38.6)	
1999		26.1 (19.4-32.8)	
2002		29.1 (25.6-31.6)	
2005	29.1 (25.6-31.6)		

OMB Program Assessment Rating Tool (PART)
Capital Assets and Service Acquisition Programs

Name of Program: Western Area Power Administration

Section I: Program Purpose & Design (Yes, No, N/A)

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
1	<i>Is the program purpose clear?</i>	Yes	Western's mission is to cover all costs of producing, transmitting marketing and delivering reliable, cost-based hydroelectric power and related services generated at Federal dams within a 15-state marketing area (MN, IA, NE, KS, CO, UT, WY, ND, SD, MT, TX, NM, AZ, NV, CA,). Western is to transmit and dispose of power and energy in such manner as to encourage its most widespread use, at the lowest possible rates to consumers consistent with sound business principles. To achieve repayment of Federal power investment, Western establishes cost-based rates to recover costs of providing power service, including principal and interest owed the U. S. Treasury, Various laws require preference be given to cooperatives, municipalities and other public corporations or agencies seeking to purchase Federal power.	Public Law 57-161, "The Reclamation Act of 1902" Public Law 66-389, "Sundry Civil Appropriations Act" (1922) "Interior Department Appropriation Act of 1928" (44 stat. 957) Public Law 76-260, "The Reclamation Project Act of 1939" Public Law 78-534, "Flood Control Act of 1944" Public Law 80-790, "Emergency Fund Act of 1948" Public Law 95-91, "Department of Energy Organization Act" (1977); Public Law 102-486, "Energy Policy Act of 1992" GAO AIMD-00-114, "Power Marketing Administrations: Their Ratesetting Practices Compared with Those of Nonfederal Utilities" GAO AIMD-97-110, "Federal Electricity Activities: The Federal Government's Net Cost and Potential for Future Losses"	20%	0.2
2	<i>Does the program address a specific interest, problem or need?</i>	Yes	Western is responsible for marketing and transmitting power generated at Federal dams in portions of the western half of the United States. This power is generated at dams built for multiple purposes, including navigation, irrigation, flood control, power, fish and wildlife, recreation and municipal and industrial water supply. This responsibility, previously managed by the Bureau of Reclamation and transferred to Western in 1977 under Section 302 of the Department of Energy Organization Act, still exists today.	Western markets and delivers about 45 billion kilowatt-hours of Federal hydropower annually to over 600 customers. Combined with power from other suppliers these customers provide retail electric service to millions of consumers. Western's service area covers 1.3 million square miles in 15 western states.	20%	0.2

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
3	<i>Is the program designed to have a significant impact in addressing the interest, problem or need?</i>	Yes	Western's program is designed to market power and operate, maintain, upgrade and rehabilitate its extensive, integrated and complex high-voltage power transmission system. This nearly 17,000-circuit-mile system provides reliable power to customers and is an integral part of the Western United States electrical grid. Western enhances its impact pursuant to the Energy Policy Act of 1992 by requiring customers to establish and report integrated resource plans in support of demand-side management and renewable energy programs.	The majority of Western's resources are focused on marketing power and maintaining reliability of its transmission system. As one of the largest provider of bulk electricity in the western United States (about 40 percent of regional hydroelectric generation) and the operator of one of the largest transmission system in the Nation, Western is considered a key presence in the wholesale power market. With that presence comes a responsibility to provide leadership in the electric utility industry, primarily as an advocate for power system reliability and security.	20%	0.2
4	<i>Is the program designed to make a unique contribution in addressing the interest, problem or need (i.e., not needlessly redundant of any other Federal, state, local or private efforts)?</i>	No	The generation and transmission of power is a well developed technology, largely provided by municipalities and independently-owned utilities across the country. The function could be performed under contract or through non-federal ownership of transmissionlines and generation capacity at the dams. However, the Power Marketing Administrations were established to market and deliver Federally generated power. No other entities have this authority. Based on Federal Energy Regulatory Commission (FERC) rules that apply to transmitting utilities, Western opens its available transmission to all wholesale power generators and marketers.	Private entities across the country own and operate many hydropower facilities. These facilities are licensed by FERC and provide substantial amounts of dependable hydropower to customers. Western voluntarily participates in regional transmission organization formation efforts consistent with FERC's rules for standard transmission practices. Western is a member of the Mid-Continent Area Power Pool, as well as Western Electricity Coordinating Council and their Reliability Management System. Western plays a key role in assuring reliability of the interconnected transmission system.	20%	0.0

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
5	<i>Is the program optimally designed to address the interest, problem or need?</i>	No	Western benefits from subsidized loans that place part of the cost of hydropower construction on the Treasury. In addition, the application of preference in the sale of power creates administrative inefficiencies and restricts market activity. Market pricing of power and unrestricted sales would improve opportunities for more efficient operations. Western also conducts a purchase power and wheeling program that, to some degree, duplicates available private sector services. Western believes this program enhances the value of its power though it does not capture that value in its rates. Western's rates are set to recover much of the costs associated with the marketing and transmission of electric power. However, the budgeting of resources does not always allow Western to operate in an efficient manner. Western is often forced to delay replacements or upgrades, thereby requiring more staff to maintain our aging infrastructure.	Various reports: GAO/AIMD -97-110, The Government's Net Cost and Potential for Future Losses and GAO/AIMD- 00-114, Power Marketing Administrations - their Rate setting Practices Compared with those of Non-Federal Utilities.	20%	0.0
Total Section Score					100%	60%

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
Section II: Strategic Planning (Yes,No, N/A)						
1	<i>Does the program have a limited number of specific, ambitious long-term performance goals that focus on outcomes and meaningfully reflect the purpose of the program?</i>	No	Western has extended its short term goals to the long term. Long term goals should be output oriented, i.e., to the service provided or the impact of the service that clientele want on their lives. Western's stated long-term goals are: Maintain system reliability and transmission availability in the evolving electric utility industry; Promote employee awareness and commitment to working safely by providing the necessary training and equipment to assure a safe working environment; Achieve the required repayment on the Federal investment.	Western's Strategic Plan, Sept. 1999 Annual Performance Plan for FY 2002 Annual Performance Report for FY 2001 FY2004 Congressional Budget Request, DOE Energy Resources Strategic Objective ER9-1, "Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency at or below our safety performance standard". Prior to updating Western's Annual Performance Plan, Western's Senior Management Team reviews the results outlined in the latest Annual Performance Report to determine if the objectives of the Strategic Plan are being met.	11%	0.0
2	<i>Does the program have a limited number of annual performance goals that demonstrate progress toward achieving the long-term goals?</i>	No	Western's annual performance goals are: Maintain reliability and transmission availability in the evolving electric utility industry Promote employee awareness and commitment to working safely by providing the necessary training and equipment to assure a safe working environment Establish and meet planned annual repayment for each Federal power system	Western's Strategic Plan, Sept. 1999 Annual Performance Plan for FY 2002 Annual Performance Report for FY 2001 FY2004 Congressional Budget Request DOE Energy Resources Strategic Objective ER9-1, FY 2004	11%	0.0
3	<i>Do all partners (grantees, sub-grantees, contractors, etc.) support program planning efforts by committing to the annual and/or long-term goals of the program?</i>	Yes	Western works closely with the U. S. Bureau of Reclamation and U. S. Corps of Engineers hydropower programs to ensure that their operations impacting Western's mission do not conflict with its program. In addition, Western's customers are involved in the rate setting process and prioritization of work plans to assure that costs are kept to a minimum.	U. S. Bureau of Reclamation U. S. Corps of Engineers Over 600 Power Customers, including DOE labs and military bases	11%	0.1

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4	<i>Does the program collaborate and coordinate effectively with related programs that share similar goals and objectives?</i>	Yes	The Power Marketing Administrations work closely together on initiatives that impact their agencies, and between DOE and their Washington offices coordinating these efforts. In addition, Western works closely with the generators to ensure that their operations impacting Western's mission do not conflict. Western is actively involved with the North American Electric Reliability Council, Federal Energy Regulatory Commission, Western Electricity Coordinating Council, and other organizations to ensure the reliability of and the nondiscriminatory access to transmission in the western interconnection.	PMA Washington Liaison Office Southwestern Power Administration Southeastern Power Administration Bonneville Power Administration U. S. Bureau of Reclamation U. S. Corps of Engineers	11%	0.1
5	<i>Are independent and quality evaluations of sufficient scope conducted on a regular basis or as needed to fill gaps in performance information to support program improvements and evaluate effectiveness?</i>	Yes	Western financial statements, along with the power portion of the Bureau of Reclamation's and Corps of Engineers', are independently reviewed annually by a contract audit firm. These audits are done for each power system. Also, rate proposals are independently reviewed and approved by FERC. In-house Audit and Compliance staff continually review Western's processes and controls, including compliance with the Federal Managers Financial Integrity Act. In collaboration with DOE, the Bonneville Power Administration and Western conducted peer reviews of each other's mission critical computer systems to comply with the Government Information Security Reform Act. Western's control areas are reviewed every three years by the Western Electricity Coordinating Council and Mid-Continent Area Power Pool. Western continues to meet or exceed the NERC standards to measure the ability of control areas to match generation to load.	Independent audit of Western's financial statements Bonneville/Western Peer Review Inspector General Reports General Accounting Office Reports WECC Proprietary Reports Internal review audits by in-house Audit & Compliance Office NERC Annual Control Area Compliance Standards Mid-Continent Area Power Pool	11%	0.1

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
6	<i>Is the program budget aligned with the program goals in such a way that the impact of funding, policy, and legislative changes on performance is readily known?</i>	Yes	Western's budget request supports Western's short- and long-term performance goals. It is based on Western's best estimate of its program needs. Therefore, any funding, policy, and legislative changes would impact Western's ability to meet its performance goals. Western conducts an annual review of rates based on actual expenditures and budget requests.	Western's budget structure is composed of four critical activities: program direction (PD) which is a distinct requirement of the appropriations committee, operation and maintenance (O&M), construction and rehabilitation (C&R) and purchase power and wheeling (PP&W). Funding for PD, O&M, and C&R directly impact Western's reliability and safety performance. Funding for PP&W is critical to the continuity of Western's contractual sales agreements with customers.	11%	0.1
7	<i>Has the program taken meaningful steps to address its strategic planning deficiencies?</i>	Yes	Western annually prepares a performance plan that is developed under the guidelines of the Government Performance and Results Act. It outlines key strategies and results needed for Western to achieve its goals. Following execution, an annual performance report is prepared which compares the planned to the actual and evaluates performance against targets. Western internally publishes monthly updates showing the status of our key performance goals against the target set in the plan. An annual power repayment study is run to ensure revenues are sufficient to recover costs within required timeframes. Western's Maintenance, Design, and Construction Council (MDCC) prepares and annually reviews 5- and 10-year plans for upgrades and replacements of our infrastructure.	FY 2001 Annual Performance Report FY 2002 Annual Performance Plan Power Repayment Studies 5- and 10-year Construction Plans Prior to updating Western's Annual Performance Plan, Western's Senior Management Team reviews the results outlined in the latest Annual Performance Report to determine if the objectives of the Strategic Plan are being met. If Western does not achieve its annual performance goals, then its long-term goals will suffer.	11%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
8 (Cap 1.) <i>Are acquisition program plans adjusted in response to performance data and changing conditions?</i>	Yes	Western's construction and rehabilitation program consists primarily of replacements and upgrades to its existing system. Priorities are placed on those situations that pose the highest risk to safety and system reliability. Western's Maintenance, Design, and Construction Council prepares 1-, 5-, and 10-year plans. An evaluation is made each year to determine if deviations from the plan are based on reliability and/or industry orders. Due to Western's aging infrastructure, program plans are adjusted frequently due to these changing conditions. Facility/Project Data Sheets are prepared. Detailed program plans are prepared for major upgrades to multiple systems (such as wood pole replacement, communication upgrades). Western's Project Management program evaluates all major projects and applies a performance rating to each.	5- and 10-year Construction Plans MDCC Annual Review Plan Facility/Project Data Sheets Project Evaluation Reports	11%	0.1
9 (Cap 2.) <i>Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule and performance goals?</i>	Yes	Western's 5- and 10-year construction plans are updated yearly to determine if priorities have changed. Facility/Project Data Sheets are updated annually. These Sheets provide cost estimates, schedules, justifications, alternatives, benefits, etc.	5- and 10-year Construction Plans MDCC Annual Review Plan Facility/Project Data Sheets	11%	0.1
Total Section Score				100%	78%

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
Section III: Program Management (Yes,No, N/A)						
1	<i>Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?</i>	Yes	Western collects data on a daily, monthly, quarterly, or yearly basis. This data is used for operating and managing Western's program. Examples of this data are: budget execution and other financial reports from Western's business system, water conditions, market conditions, generation, loads, unit maintenance, power schedules, power outages and other data. Annual power repayment studies are run to ensure revenues are sufficient to recover costs within required timeframes. Quarterly progress is published internally to notify employees of progress in meeting our goals. Western's Maximo system is used as the maintenance management data repository and the maintenance work management system. Work Orders are used to provide work management, cost tracking, equipment history and performance reporting. It integrates maintenance activities directly with finance and warehouse functions, is used as a tool to plan and schedule work activities, access all equipment history, cost, material usage, and labor data and provide associated reports to allow management to make meaningful business decisions.	Western constantly monitors its data and other resources to control costs and maintain reliability. Western monitors its costs carefully to ensure that low-cost rates will continue. The rate targets for all projects are monitored to assure cost-recovery requirements as well as meet repayment requirements. Western evaluates its reliability goal to make sure it meets or exceeds national and regional operating criteria. Western continuously updates and implements Western's safety action plan to effectively integrate safety throughout the organization.	9%	0.1

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
2	<i>Are Federal managers and program partners (grantees, subgrantees, contractors, etc.) held accountable for cost, schedule and performance results?</i>	Yes	Each of Western's Senior Managers has an annual performance contract with the Administrator. Each of these managers are held accountable for the performance standards spelled out in these agreements. These standards are reviewed annually and modified as necessary. In turn, these Senior Managers have Individual Performance Standards for each of their managers who are also held accountable for meeting their annual performance. In addition, Western's strategic goals are used to ensure accountability. For example, Western maintains data by region and power system to place responsibility on specific managers. In addition, Western's Project Management program evaluates all capitalized projects over \$500,000 and applies a performance rating to each. Also in FY 2003, Western is initiating performance-based contracts that provide for minimum performance levels and incentives for strong performance.	Individual Performance Agreements Annual Performance Report Quarterly Progress Reports Project Evaluation Reports	9%	0.1
3	<i>Are all funds (Federal and partners') obligated in a timely manner and spent for the intended purpose?</i>	Yes	Western manages its obligations by region and power system. Western performs periodic reviews of obligations and outlays. Western aligns the purchase of equipment with the design schedule, if appropriate, to assure timely receipt of the equipment. Automated and manual controls of funds are in place to ensure all funds are spent for their intended purpose. Sometimes equipment replacement planned during budget formulation may have to be delayed due to discovery of a failing piece of critical equipment during budget execution. Western's Maintenance, Design, and Construction Council prepares 1-, 5-, and 10-year plans. An annual review report is evaluated each year to determine if deviations from the plan are based on reliability and/or industry orders.	MDCC Annual Review Plan Periodic obligations and outlay reviews Annual Financial Audits Budget execution (SF133) to DOE/OMB Status of Appropriations Report to Congress	9%	0.1

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4	<i>Does the program have incentives and procedures (e.g., competitive sourcing/cost comparisons, IT improvements) to measure and achieve efficiencies and cost effectiveness in program execution?</i>	Yes	A primary incentive for efficiencies and cost effectiveness is Western's goal to maintain low rates. One of Western's bonus goal incentives relates to cost savings. Western uses cost comparisons and competitive sourcing whenever applicable. Recent procurement of support services has focused on performance-based contracts. Cost estimates are prepared during project planning and then monitored during execution. Facility/Project Data Sheets are prepared prior to budget formulation. Detailed program plans are prepared for major upgrades to multiple systems (such as wood pole replacement, communication upgrades).	Customer evaluation of costs Procurement files Project Evaluation Report Facility/Project Data Sheets Bonus Goal Incentives	9%	0.1
5	<i>Does the agency estimate and budget for the full annual costs of operating the program (including all administrative costs and allocated overhead) so that program performance changes are identified with changes in funding levels?</i>	No	Western's budget request and associated execution includes most of its annual costs for operating its program but assumes some debt subsidies. Separate rates are developed for the estimated administrative costs and the direct overhead costs for all four of Western's Regions plus the Corporate Services Office. These rates are then applied against the total estimated direct labor. During execution, rates are reviewed monthly to determine if all overhead is being recovered through direct charging. Rates are adjusted as necessary so that the overhead is completely accounted for at year-end.	Annual Budgets Budget formulation and execution reports. Monthly clearing reports Annual repayment studies See also GAO/AIMD Reports 96-145 and 97-110	9%	0.0

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
6	<i>Does the program use strong financial management practices?</i>	Yes	Western's financial statements for all of its power systems are independently audited on an annual basis. In the past two years, Western has addressed several weaknesses with its automated accounting system and also has implemented a series of internal controls to increase both the accuracy and reliability of its financial information. While the auditors identified one reportable condition for Western in FY01, Western has taken steps to ameliorate this condition in FY02, and expects its auditors to find no reportable conditions upon the completion of their audit in early FY03. Based on these efforts, Western has had a clean audit for FY 1999 and FY 2000, and expects to have one in both FY 2001 and FY 2002.	Western's audited financial statements for FY 2001 and FY 2000. DOE Internal Control Review In FY02, Western corrected a major cash-matching program deficiency with its automated accounting system. Also, new reconciliations and procedures were adopted to timely analyze the accounts and permit immediate corrective action. Increased management oversight was applied to the accounting function to ensure proper procedures were practiced. Desktop procedures were established and documented to ensure continuity of controls.	9%	0.1
7	<i>Has the program taken meaningful steps to address its management deficiencies?</i>	Yes	Western has entered a multiyear effort to recruit and maintain highly qualified employees. Western continuously improves its business systems and follows sound business practices by leveraging the capabilities of business systems to achieve functional efficiencies and process improvements. For instance, Western uses Maximo for maintenance planning, inventory control, and to establish a comprehensive maintenance database for reliability-centered maintenance principles. Oracle Financials are used to ensure that Western's complex business is accurately accounted for. Western rigorously uses project management principles and practices. Western sets annual targets to ensure desired result.	Human Capital Management Plan. Process documentation is continuously updated for both Oracle Financials and Maximo by using a complex testing and verification process to assure accuracy and user-friendliness. A comprehensive documentation of performance (cost/time/results) has begun to assure project management principles are followed.	9%	0.1
8 (Cap 1.)	<i>Does the program define the required quality, capability, and performance objectives of deliverables?</i>	Yes	Western's design staff prepares a statement of work (Specifications of technical requirements) for the installation and procurement of equipment. This statement of work is used to prepare an Information for Bid (IFB) and a Request for Bid (RFB).	Statement of Work IRB/RFB Procurement Package	9%	0.1

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
9 (Cap 2.) <i>Has the program established appropriate, credible, cost and schedule goals?</i>	Yes	Prior to approval by management, cost estimates and life-cycle cost benefits are prepared to justify a project. Western's 5- and 10-year construction plans are updated yearly to determine if priorities have changed. Approved projects are evaluated and updated annually. These evaluations provide revised cost estimates, schedules, justifications, alternatives, benefits, etc.	Proposals for projects 5- and 10-year Construction Plans MDCC Annual Review Plan	9%	0.1
10 (Cap 3.) <i>Has the program conducted a recent, credible, cost-benefit analysis that shows a net benefit?</i>	Yes	Prior to approval by management, cost estimates and life-cycle cost benefits are prepared to justify a project. Western's 5- and 10-year construction plans are updated yearly to determine if priorities have changed. Approved projects are evaluated and updated annually. These evaluations provide revised cost estimates, schedules, justifications, alternatives, benefits, etc.	Proposals for projects 5- and 10-year Construction Plans MDCC Annual Review Plan	9%	0.1
11 (Cap 4.) <i>Does the program have a comprehensive strategy for risk management that appropriately shares risk between the government and contractor?</i>	Yes	Western follows the standard procurement rules in the purchase of capital assets. The Design Specifications clearly outline the requirements; the procurement is usually based on a fixed price, and the contract is written so that the deliverable is clearly defined.	Procurement Packages Design Specifications	9%	0.1
Total Section Score				100%	91%

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
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Section IV: Program Results (Yes, Large Extent, Small Extent, No)

1	<i>Has the program demonstrated adequate progress in achieving its long-term outcome goal(s)?</i>	No	<p>These are not long term goals. Western needs to continue its effort to define output oriented long-term goals.</p> <p>Currently, Western's stated long-term goals are: Maintain system reliability and transmission availability in the evolving electric utility industry Promote employee awareness and commitment to working safely by providing the necessary training and equipment to assure a safe working environment Achieve required repayment on Federal investment</p>	<p>Annual Performance Plan Power Repayment Studies North American Electric Reliability Council Standards Bureau of Labor Statistics</p> <p>Prior to updating Western's Annual Performance Plan, Western's Senior Management Team reviews the results outlined in the latest Annual Performance Report to determine if the objectives of the Strategic Plan are being met.</p>	17%	0.0
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Long-Term Goal I: Target:	Maintain system reliability and transmission availability in the evolving electric utility industry Meet or exceed North American Electric Reliability Council standards to measure the ability of control areas to match generation to load.
Actual Progress achieved toward goal:	Western continues to exceed reliability standards (Control Performance Standards [CPS]) and industry averages. In FY 2001: CPS1: Standard--100; North America Industry wide average of load-generation control areas--168.57; Western--186.93 CPS2: Standard--90; North American Industry wide average of load-generation control areas--95.65; Western--98.48
Long-Term Goal II: Target:	Promote employee awareness and commitment to working safely by providing the necessary training and equipment to assure a safe working environment FY 2001: Meet or exceed average accident frequency reported by Bureau of Labor Statistics.
Actual Progress achieved toward goal:	Western accident frequency rates during the past few years are as follows: 1997: Industry 5.7; Western 1.9 1998: Industry 5.1; Western 1.7 1999: Industry 4.9; Western 2.4 2000: Industry 4.8; Western 1.9

	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
	Long-Term Goal III: Target: Actual Progress achieved toward goal:	Achieve required repayment on Federal investment Unpaid Federal Investment is to be less than the Allowable Unpaid Federal Investment The Allowable Unpaid Federal Investment was 29.5 percent higher than the Unpaid Federal Investment at the end of FY 2001.				
2	<i>Does the program (including program partners) achieve its annual performance goals?</i>	arge Exter	Western's annual performance goals are: Maintain system reliability and transmission availability in the evolving electric utility industry Promote employee awareness and commitment to working safely by providing the necessary training and equipment to assure a safe working environment Establish and meet planned annual repayment for each Federal power system	Annual Performance Plan Power Repayment Studies North American Electric Reliability Council Standards Bureau of Labor Statistics Prior to updating Western's Annual Performance Plan, Western's Senior Management Team reviews the results outlined in the latest Annual Performance Report to determine if the objectives of the Strategic Plan are being met.	17%	0.1
	Key Goal I: Performance Target: Actual Performance:	Maintain system reliability and transmission availability in the evolving electric utility industry Meet or exceed North American Electric Reliability Council standards to measure the ability of control areas to match generation to load. Western continues to exceed reliability standards and industry averages. In FY 2001: CPS1: Standard--100; North America Industry wide average of load-generation control areas--168.57; Western--186.93 CPS2: Standard--90; North American Industry wide average of load-generation control areas--95.65; Western--98.48				
	Key Goal II: Performance Target: Actual Performance:	Promote employee awareness and commitment to working safely by providing the necessary training and equipment to assure a safe working environment FY 2001: Meet or exceed average accident frequency reported by Bureau of Labor Statistics. Western accident frequency rates during the past few years are as follows: 1997: Industry 5.7; Western 1.9 1998: Industry 5.1; Western 1.7 1999: Industry 4.9; Western 2.4 2000: Industry 4.8; Western 1.9				

Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
Key Goal III: Performance Target:		Establish and meet planned annual repayment for each Federal power system Western's power repayment studies established the FY 2001 target as \$137 million.			
Actual Performance:		Actual principal repayment for FY 2001 was \$16 million. Although Western did not achieve its targeted repayment for FY 2001, we continue to repay the Treasury in accordance with legislative requirements. The Allowable Federal Investment was 29.5 percent higher than the Unpaid Federal Investment at the end of FY 2001. Below-average hydro generation due to a drought in the West, combined with high purchase power market prices, were the primary reasons for Western's failure to make the planned repayments.			

3	<i>Does the program demonstrate improved efficiencies and cost effectiveness in achieving program goals each year?</i>	Yes	Western's management continually evaluates its targets and measures to ensure its mission is met; the senior managers keep "raising the bar", making it more challenging to meet targets. Although Western's self-imposed targets are not always met, Western continues to be below the industry average for recordable injuries, lost or restricted workdays, and motor vehicle accidents; and Western exceeds North American Electric Reliability Council's statistical measure for frequency error and large net unscheduled power flows. Western continues to meet its principal repayment to the Treasury. However, annual repayment is affected by hydrological conditions, i.e., wet, dry, or average, which may result in periodic project deficits on its interest and annual expense payment.	Bureau of Labor Statistics North American Electric Reliability Council Standards Annual Performance Plan Prior to updating Western's Annual Performance Plan, Western's Senior Management Team reviews the results outlined in the latest Annual Performance Report to determine if the objectives of the Strategic Plan are being met.	17%	0.2
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	Questions	Ans.	Explanation	Evidence/Data	Weighting	Weighted Score
4	<i>Does the performance of this program compare favorably to other programs with similar purpose and goals?</i>	Yes	<p>Western is comparable to the other PMA's in its ability to market and deliver reliable, cost-based hydroelectric power and related services.</p> <p>In addition, Western exceeds reliability standards and industry averages: CPS1: Standard--100; North American Electric Industry-wide average of load-generation control areas--168.57; Western--186.93 CPS2: Standard--90; North American Electric Industry-wide average of load-generation control areas--95.65; Western--98.48 Western accident frequency rates during the past few years are as follows: 1997: Industry 5.7; Western 1.9 1998: Industry 5.1; Western 1.7 1999: Industry 4.9; Western 2.4 2000: Industry 4.8; Western 1.9</p>	<p>Bureau of Labor Statistics North American Electric Reliability Council Standards Annual Performance Plan</p>	17%	0.2
5	<i>Do independent and quality evaluations of this program indicate that the program is effective and achieving results?</i>	Yes	<p>Western's activities are reviewed annually by an independent audit firm. Western prepares an Annual Performance Plan and follows with an Annual Performance Report which documents results of performance targets. In addition, Western is actively involved with North American Electric Reliability Council, Federal Energy Regulatory Commission, National Energy Policy, Western Electricity Coordinating Council, and other organizations to ensure the reliability of and the non-discriminatory access to transmission in the western interconnection.</p> <p>An annual power repayment study is run to ensure revenues are sufficient to recover costs within required timeframes.</p>	<p>Audited Financial Statements Annual Performance Plan Annual Performance Report Reliability Councils Power Repayment Studies</p>	17%	0.2
6 (Cap 1.)	<i>Were program goals achieved within budgeted costs and established schedules?</i>	Yes	<p>Western follows the standard procurement rules in the purchase of capital assets. The Design Specifications clearly outline the requirements; the procurement is usually based on a fixed price, and the contract is written so that the deliverable is clearly defined.</p>	<p>Procurement Packages Design Specifications</p>	17%	0.2
Total Section Score					100%	78%

Program Assessment Rating Tool (PART)

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	67%	Effective

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The wind energy program conducts research and development to enhance the level of technology development and deployment of wind energy systems. The wind energy program leads the Nation's efforts to improve wind energy technology through public/private partnerships that enhance domestic economic benefit from wind power development, and to coordinate with stakeholders on activities that address barriers to the use of wind energy.

Evidence: FY 2004 Budget; Program first authorized in 1975 by P.L. 94-163, "Energy Policy and Conservation Act" (EPCA). At least six subsequent public laws relevant to program authorization or purpose.

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The program aims to expand the use of wind energy, which can increase domestic energy supplies and avoid emissions of pollutants and greenhouse gases associated with conventional methods of power production. These potential benefits support the Administration's National Energy Policy, as well as the Administration's climate change goals. The wind energy program specifically targets activities that address the barriers - energy cost, energy market rules and infrastructure, and energy sector acceptance - to wind power competing without disadvantage to serve the Nation's energy needs.

Evidence: The program focuses R&D on activities that it considers too technologically risky for the private sector to undertake alone. Risk levels vary on a project-by project basis.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: The program coordinates with States and industry to develop R&D roadmaps for guiding research, and has jointly funded several projects that respond to Federal program national objectives as well as State-level interests. No other Federal programs support R&D on wind power.

Evidence: The program considers the following factors as market barriers to sufficient private sector investment in wind R&D: market uncertainty from electric restructuring; inability of small businesses to afford full costs of R&D; externalities (i.e. environmental, energy security, and price stability) whose benefits are not captured in the marketplace.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: A federal wind energy production tax credit (PTC) is in place until the end of 2003 that is currently highly influential in the rate of U.S. wind power development. While extension of the tax credit may obviate the need for further research in high wind speed areas, the tax credit will not affect commercial viability of low wind speed and distributed generation wind energy technologies, which the program currently focuses on and which are not yet cost competitive.

Evidence: There is no evidence that a production tax credit is a more cost effective approach to advancing development and deployment of wind technologies.

Program Assessment Rating Tool (PART)

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	67%	Effective

1.5 **Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?** Answer: NO Question Weight: 20%

Explanation: The wind program primarily provides funding to leverage R&D dollars through public/private partnerships with U.S. based wind companies and key energy sector partners, both public (e.g., States, federal power administrations) and private. In support of the Administration's R&D Investment Criteria initiative, the program was asked to prepare "bubble charts" that plot key program variables (e.g., expected public benefits, funding levels, years to commercialization). Bubble charts can serve as an informational tool to help determine, along with other considerations, whether the program appropriately targets its R&D funding. While the program has made progress estimating public benefits, the Department has not yet developed a methodology to estimate benefits consistently within and across programs. Therefore, the program could not prepare meaningful bubble charts.

Evidence: While unable to prepare bubble charts, the program did estimate years to commercialization for each of the major R&D activities within the program: low wind speed turbines - 9 years (2012); distributed wind turbines - 4 years (2007); systems integration components - 7 years (2010). The program's estimates have not been peer reviewed. In general, the program appears to target its resources wisely, but a lack of ability to provide appropriate evidence mandates a "no" response. EERE continues to work internally and with other DOE program offices to improve consistency and accuracy in estimating benefits.

2.1 **Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program?** Answer: YES Question Weight: 10%

Explanation: The program has defined four long-term goals that directly support reducing the cost of wind energy, which can increase deployment and thus ties to the Department's outcome objectives of increased domestic energy production and reduced emissions of pollutants and greenhouse gases (from conventional power production).

Evidence: FY 2004 Budget. Wind Energy Program DRAFT Multi-Year Technical Plan (2003).

2.2 **Does the program have ambitious targets and timeframes for its long-term measures?** Answer: YES Question Weight: 10%

Explanation: The program strategy for achieving its long-term targets centers on a series of phased public-private partnerships for concept studies, component, and system development, each structured with periodic review against analytically-based criteria to verify performance needed for contribution to the overall portfolio. Periodic review points include completion of preliminary design, final design, testing of major components such as blades and drivetrains, test readiness reviews, and prototype test result reviews. These review points provide input for adjusting resource allocations within the portfolio, as well as serving as potential off-ramps for each partnership activity. Supporting research activities are also subjected to periodic critical assessment and prioritization based on criteria developed via the low wind speed technology development pathways analysis. All of the program's current goals and associated program elements inherently define termination points for all of the program's activities by virtue of specific performance targets to be achieved by definite dates.

Evidence: Wind Energy Program DRAFT Multi-Year Technical Plan (2003). FY 2003 Program Execution Plan.

Program Assessment Rating Tool (PART)

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	67%	Effective

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 10%

Explanation: The program has identified annual cost of energy targets that tie directly to its long-term cost of energy targets. While the key annual measures for the program have been defined, other measures concerning systems integration R&D and outreach activities are still under development.

Evidence: FY 2002 Annual Operating Plan. FY03 Wind and Hydropower Technologies Program Execution Plan (PEP).

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: YES Question Weight: 10%

Explanation: Targets for cost of energy - the key measure - seem reasonably ambitious. Measures and targets for systems integration R&D and outreach activities are under development.

Evidence: Wind Energy Program DRAFT Multi-Year Technical Plan (2003).

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 10%

Explanation: All program funding participants recipients commit to goals stipulated in the Program Execution Plan (PEP), which defines plans for all funded program activities, including the program's Laboratories, addressed by their Annual Operating Plans (AOPs). The program performance goals are reflected in all contractor and sub-contractor requirements. The National Renewable Energy Laboratory (NREL) and the Sandia National Laboratory (Sandia) are rated annually according to performance in attaining program milestones, as well as other requirements under the operating contracts. Projects are subject to semi-annual or annual reviews and status reports to assess progress toward meeting these long-term goals.

Evidence: FY03 Wind and Hydropower Technologies Program Execution Plan (PEP), Solicitation RFP's and financial assistance agreements (explicitly or via statements of work tailored to support program strategies to achieve goals).

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 10%

Explanation: The program uses a formal peer and industry stakeholder review process to benefit from the guidance of industry and the research community, and to provide an outside view of the program. Both the technical assessment and peer review provide inputs that the Program Management Team considers in making decisions about strategic program directions and funding priorities. The wind program also has an on-going Technical Assessment activity -- to monitor the current status of wind technology and progress in achieving program cost goals, to evaluate that status within the context of the needs of the marketplace, and to identify technological pathways that will lead to wind's successful competition in the marketplace.

Evidence: US DOE Wind Energy Program FY2002 Peer Review and Stakeholder Report, December 2002. US DOE Wind Energy Program FY 2001 Peer Review. (Full description of the peer/stakeholder review and technology assessment/pathways analysis process is provided in the Wind Energy Multi-year Technical Plan and Annual Program Execution Plan.)

Program Assessment Rating Tool (PART)

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately Effective
80%	80%	88%	67%	

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 10%

Explanation: All program activities described in the program's budget (except systems integration and outreach activities, such as "Windpowering America") can be linked with an acceptable annual target and, in turn, a longer-term program goal. However, budget documents do not clearly indicate the full costs of achieving the program goals. Salaries, benefits, and other administrative expenses to support the program are included in a separate budgetary line item ("Program Direction"). EERE does not report the allocation of Program Direction funding to the various programs it supports.

Evidence: FY 2004 Budget.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 10%

Explanation: The program has established a Multi-Year Technical Plan. The program conducts three meetings per year to assure peer and industry involvement and feedback. The March meeting is devoted to strategic planning, and it is timed directly in advance of initial planning and development for the upcoming budget year. This meeting is followed by the May/June meeting, when the sub-program holds its formal peer review. During the summer, peer review efforts are incorporated into the portfolio evaluation effort. In the Fall, the sub-program reconvenes the peer review team to reach an understanding about program priorities and direction.

Evidence: US DOE Wind Energy Program FY2002 Peer Review and Stakeholder Report, December 2002. Wind Energy Program DRAFT Multi-Year Technical Plan (2003).

2.RD1 If applicable, does the program assess and compare the potential benefits of efforts within the program to other efforts that have similar goals? Answer: NO Question Weight: 10%

Explanation: Each year, the program estimates the public benefits of its activities in support of the Government Performance and Results Act (GPRA) and the Administration's R&D Investment Criteria initiative. However, the program has not yet developed a consistent and reliable methodology for comparing potential benefits within and across programs with similar goals.

Evidence: FY 2004 Congressional Budget Justification materials.

Program Assessment Rating Tool (PART)

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	67%	Effective

- 2.RD2 Does the program use a prioritization process to guide budget requests and funding decisions?** Answer: YES Question Weight: 10%
- Explanation:** The wind program uses a technical assessment process, in conjunction with formal and routine expert, peer, and stakeholder review and input, that ensures that research activities can be demonstrated to have a direct link to achieving the highest priority objectives and goals of the Wind Program. The program participated in an EERE-wide zero-based budget exercise in which priorities at the activity level were clearly laid out.
- Evidence:** The technical assessment process consists of three steps: Step 1 focuses on identifying areas of possible cost reduction or performance enhancements to the baseline configuration. These areas are then further assessed to quantify their potential contribution to improving the technology's cost-effectiveness. Step 2 focuses on identifying research activities that would be necessary to achieve the technology improvement opportunities identified in Step 1. Activities with the highest potential contribution are given the highest funding and management priority, intangibles relative to benefits are factored into prioritization and include several of the R&D criteria, e.g risks, barriers, and years to commercialization. Step 3 focuses on using the prioritized list from Step 2 to formulate the program's research plan over the planning horizon. Wind Energy Program Multi-Year Technical Plan, Wind Program 2002 Peer Review and Stakeholder Report (December 2002). EERE Priority Ranking Tool, Zero Based Budget Exercise.
- 3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: YES Question Weight: 12%
- Explanation:** The EERE Strategic Management System -- which establishes at the beginning of each fiscal year an 18-month schedule for key planning, budget formulation, budget execution, and analysis / evaluation functions -- requires that each EERE program establish and track long-term and near-term program performance goals and measures. Program results as evaluated through the goals and measures are used annually and throughout the year to assess partners performance, adjust funding, and re-align R&D portfolios. At the program level, recent examples of management action include early closeout of two Next Generation Turbine public-private partnerships. In one case, the partner had achieved sufficient progress toward the project cost of energy goal prior to the final prototype development stage. In the second case, the partner could not provide sufficient evidence of cost reduction progress to warrant continuing, particularly in light of technical setbacks.
- Evidence:** SMS Implementation Letter for FY 2002 - 2005 (October 2001). Joule correspondence documenting management action on the early closeout of Next Generation Turbine projects. In general, milestones in the Department's Joule system are not necessarily meaningful or fully reflective of program progress. Thus, the Department's Joule system provides little value-added. The new I-MANAGE system, currently under development, will better integrate budget and performance.
- 3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: YES Question Weight: 12%
- Explanation:** The Annual Performance Appraisals of all EERE Program Managers include criteria directly related to cost, schedule, and performance results. EERE reviews these criteria monthly in the EERE Monthly Management Reviews. Most EERE contracts include award fee and other performance criteria to hold those partners accountable.
- Evidence:** Performance Plan and Performance Appraisal Form for Performance Management System Employees. EERE Award Fee and Performance Based contracts.

Program Assessment Rating Tool (PART)

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	67%	Effective

3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose? Answer: YES Question Weight: 12%

Explanation: Each year, the program develops an Annual Operating Plan, which is reviewed internally to ensure that new funding is planned to be obligated consistent with the appropriated purpose. EERE also develops a Spend Plan for all of its programs. The program uses data from Departmental procurement and financial systems -- and similar data from National Laboratory partners -- to assure that actual expenditures occur for intended purposes and on a schedule consistent with the Spend Plan. Unobligated balances brought forward to FY 2004 were \$48,000, less than one percent of the program's FY 2003 appropriation of approximately \$41 million.

Evidence: FY 2003 Annual Operating Plan. Wind Technology Program FY 2003 Financial Status Report (June 2003). FY 2004 Apportionment. FY 2003 Spend Plan.

3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution? Answer: YES Question Weight: 12%

Explanation: EERE's reorganization in 2002 clarified lines of responsibility and eliminated organizational "stovepipes" by consolidating planning, budgeting, and analysis into a single business administration office. The reorganization reduced management layers, although staff levels remained the same. EERE developed a new IT report to improve program managers access to EERE cost, obligation, and procurement data. EERE plans to consolidate several legacy IT systems into a single program management system that is intended to track all required information on a project by project basis (cost share, type of contract according to A-11 definitions, etc.). EERE is also developing a measure to reduce uncosted balances, which means obligated funds will be put to use more quickly. These recent actions should achieve efficiencies and improve cost effectiveness, although it will be difficult in some cases to demonstrate definitively.

Evidence: EERE Reorganization "All Hands" presentation: http://www.eere.energy.gov/office_eere/pdfs/eere_reorg.pdf. EERE IT Business Case Number 019-20-01-12-01-1011-00-304-101. Wind Technology Program FY 2003 Financial Status Report (June 2003).

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: The program interacts with other DOE programs, including the energy storage, hydrogen, distributed energy, power systems, electric transmission and distribution, industrial technologies programs, and the Federal Energy Management Program. Outside the Department, the program works with the Department of Interior on increased use of renewables on Federal lands, the National Science Foundation to develop and test wind turbines for the Antarctic, Department of Defense for use of wind to supply electricity for DOD facilities, and the Department of Agriculture on implementation of the renewable energy elements of the Farm Bill.

Evidence: FY2003 Program Execution Plan. Assessing the Potential for Renewable Energy on Federal Lands, DOE/GO-102003-1704. White House Report In Response to the National Energy Policy Recommendations to Increase Renewable Energy Use on Federal Lands, Department of Energy/Department of Interior (August 2002). USDA: Program is directly supporting Farm Bill Renewable Energy Program implementation, Ag Research Center collaboration. NSF: testing of 100 kW cold weather wind turbine at NWTC and in Alaska for future Antarctic research station use. DOE Hydrogen program coordination: jointly funded FY 2003 analytic task at NREL. BPA/WAPA hydro/wind coordination meetings, joint projects. EPA/DOE/EIA Wind Energy Modeling Meetings, October 2, 2002, February 12, 2003 and June 13, 2003. See: http://www.epa.gov/cleanenergy/renew_series.htm

Program Assessment Rating Tool (PART)

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	67%	Effective

3.6 Does the program use strong financial management practices?

Answer: YES

Question Weight: 12%

Explanation: Each year, EERE develops and maintains a Spend Plan and a Measures spreadsheet that links the Spend Plan to annual and long-term goals and measures for each EERE program. The program reviews quarterly costing reports and weekly project status reports. There is no evidence of erroneous payments or statutory violations.

Evidence: FY 2003 Spend Plan and Measures spreadsheet. Sample quarterly costing report and weekly project status report.

3.7 Has the program taken meaningful steps to address its management deficiencies?

Answer: YES

Question Weight: 12%

Explanation: The National Association of Public Administrators (NAPA) found dozens of management deficiencies in the program's bureau (the Office of Energy Efficiency and Renewable Energy, or EERE) in a review published in 2000. EERE provided evidence that it addressed some of management deficiencies identified by NAPA, and has prepared a Management Action Plan that will address many of the remaining findings. While a few NAPA recommendations have not been addressed (e.g., that EERE conduct periodic audits to assure that cost-sharing partners actually provide funding they agree to), in general, EERE has taken meaningful steps to address most deficiencies.

Evidence: A Review of the Management in the Office of Energy Efficiency and Renewable Energy (NAPA, 2000). Letter Report from Assistant Secretary Garman to Chairman of the House Subcommittee on Interior and Related Agencies on implementation of NAPA recommendations (July 11, 2001). EERE Management Action Plan (August 2003)

3.RD1 For R&D programs other than competitive grants programs, does the program allocate funds and use management processes that maintain program quality?

Answer: NO

Question Weight: 12%

Explanation: The program reports that most of its funding is competitively awarded. In addition, the program views the formal peer and industry stakeholder review annual process (three meetings/year) as a key investment in assuring quality of the program in terms of strategic direction and goals, and effectiveness of activities planned and completed each year to reach these goals. Despite these practices, the program could not document the conduct of its R&D activities in accordance with OMB Circular A-11 definitions (e.g., merit-reviewed with limited competitive selection, Congressionally directed, etc.). Program could also not demonstrate that research stage (basic, applied, development, demonstration) correlated with statutory and Administration guidelines for cost sharing.

Evidence:

Program Assessment Rating Tool (PART)

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	67%	Effective

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: YES Question Weight: 25%

Explanation: The program is on track to meet each of long-term cost-of-energy (COE) goals. When the program meets its FY 2004 COE target for high wind speed areas, that activity will be completely "graduated" to the private sector. This year, the wind program has instituted a new process to report annually on progress made from the 2003 baseline toward program technology performance goals. It includes a new peer-reviewed annual assessment of COE for its low wind speed and distributed wind speed activities that will serve as an indicator of performance achievement toward the longer-term goals. Determining the COE impact of improvements in individual components and subsystems will be based on comparisons against a baseline design with a well established cost of energy. Forecasts of COE impact will be based on progress of existing subcontracts and development efforts at the time of the assessment, thereby allowing a clear picture of the impact of improvement against the overall goals and objectives.

Evidence: FY 2004 Budget. Wind Program DRAFT Multi Year Technical Plan (2003). Class 6 2003 Baseline COE, Class 4 2003 Baseline COE, Princeton Energy Resources International (July 2003).

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: LARGE EXTENT Question Weight: 25%

Explanation: The program's annual measure and long-term measures (cost-of-energy) are one and the same. The program reports that it achieved its annual targets towards its long term goals. The program's measures related to systems integration and outreach activities are under development.

Evidence: FY 2004 Budget. Wind Program DRAFT Multi Year Technical Plan (2003). Class 6 2003 Baseline COE, Class 4 2003 Baseline COE, Princeton Energy Resources International (July 2003).

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: NO Question Weight: 25%

Explanation: The program identified several activities that would seem to promote efficiency and cost-effectiveness, including: integrated planning and identification of most cost effective investments/roles in R&D consortia; shifting work previously done by labs that the private sector; and developing electronic collection, storage, management and reporting systems that eliminate historic but unneeded reporting, and integrate performance, planning, fiscal and management data. The program could not provide evidence that these activities have improved efficiency and cost effectiveness.

Evidence:

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: NA Question Weight: 0%

Explanation: The program is unique in its support for the development of advanced wind technology and its efforts to reduce barriers to technology application.

Evidence:

Program Assessment Rating Tool (PART)

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy
Type(s): Research and Development

Section Scores				Overall Rating
1	2	3	4	Moderately
80%	80%	88%	67%	Effective

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: YES Question Weight: 25%

Explanation: The National Academy of Sciences concluded "The Wind Energy Program, combined with temporary substantial federal and state renewable energy subsidies, have been responsible for the U.S. lead in technology development." The program's annual peer reviews have been largely positive, although several areas need to be addressed, such as better communication among national lab staff conducting their own experiments.

Evidence: National Academy of Sciences: "Renewable Power Pathways: A Review of The U.S. Department of Energy's Renewable Energy Programs" (2000). US DOE Wind Energy Program FY 2002 Peer Review and Stakeholder Report (December 2002). US DOE Wind Energy Program FY 2001 Peer Review.

PART Performance Measurements

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Cost of wind power in Class 4 wind speed areas (i.e., 13 mph annual average wind speed at 33 feet above ground), in cents per kilowatt-hour (*¢/kWh*).

Additional Information: Reducing cost of wind power diminishes a major barrier to domestic use of wind energy resources, which will contribute to the Department's goal of increased domestic energy supplies. When cost of energy assessments are not available from actual prototype turbine systems developed through the program's partnerships, annual cost of energy improvements will be based on expert assessment of R&D and partners progress to provide needed input for turbine system cost modeling. The 2001 baseline is based on conversion of pre-existing Class 6 wind speed turbine data.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2001		6.0	
2002	5.5	5.5	
2003	5.0	5.0	
2004	4.6		
2005	4.3		
2012	3.0		

Measure: Cost of wind power for residential-sized (3 to 10 kilowatt) distributed energy applications in Class 3 wind speed areas (i.e., 12 mph annual average wind speed at 33 feet above ground), in cents per kilowatt-hour (*¢/kWh*).

Additional Information: Reducing cost of wind power can help increase domestic use of wind energy resources, which will contribute to the Department's goal of increased domestic energy supplies. When cost of energy assessments are not available from actual prototype turbine systems developed through the program's partnerships, annual cost of energy improvements will be based on expert assessment of R&D and partners progress to provide needed input for turbine system cost modeling.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2002	22	22	
2003	20		
2004	19		
2005	18		
2006	16		
2010	15		

PART Performance Measurements

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Number of States that have at least 20 megawatts (MW) wind power capacity installed

Additional Information: This measure tracks success of program outreach activities. Since each State is a unique regulatory, policy, and economic entity, reaching 20 MW installed capacity is a critical introductory threshold whereby initial barriers to development are overcome, and further wind development on a greater scale can proceed and thus contribute to the DOE goal of increased domestic energy supply.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		13	
2003	19		
2004	25		
2005	32		

Measure: Number of States that have at least 100 megawatts (MW) of wind power capacity installed

Additional Information: This measure tracks success of program outreach activities. As wind capacity in a state approaches the 100 MW scale, the scale of investment enters a new regime in the financial community, and utilities must account for the effects of variable generation. Reaching 100 MW installed capacity threshold shows that wind is being accepted as a true large-scale generating option by the State's utilities, regulators, and investors, and thus can further contribute to the DOE goal of increased domestic energy supply.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2002		8	
2003	10		
2004	12		
2005	16		
2006	19		

Measure: Cost of wind power for commercial-sized (100 kilowatt) distributed energy applications in Class 3 wind speed areas (i.e., 12 mph annual average wind speed at 33 feet above ground), in cents per kilowatt-hour (¢/kWh).

Additional Information: Reducing cost of wind power can help increase domestic use of wind energy resources, which will contribute to the Department's goal of increased domestic energy supplies. When cost of energy assessments are not available from actual prototype turbine systems developed through the program's partnerships, annual cost of energy improvements will be based on expert assessment of R&D and partners progress to provide needed input for turbine system cost modeling. Targets represent low end of cost range.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2002	17	17	
		393	

PART Performance Measurements

Program: Wind Energy
Agency: Department of Energy
Bureau: Energy Efficiency and Renewable Energy

Measure: Cost of wind power for commercial-sized (100 kilowatt) distributed energy applications in Class 3 wind speed areas (i.e., 12 mph annual average wind speed at 33 feet above ground), in cents per kilowatt-hour (*c/kWh*).

Additional Information: Reducing cost of wind power can help increase domestic use of wind energy resources, which will contribute to the Department's goal of increased domestic energy supplies. When cost of energy assessments are not available from actual prototype turbine systems developed through the program's partnerships, annual cost of energy improvements will be based on expert assessment of R&D and partners progress to provide needed input for turbine system cost modeling. Targets represent low end of cost range.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2003	14		
2004	13		
2006	11		
2005	12		
2010	10		

Measure: Cost of wind power in Class 6 wind speed areas (i.e., 15 mph annual average wind speed at 33 feet above ground), in cents per kilowatt-hour (*c/kWh*).

Additional Information: Reducing cost of wind power can help increase domestic use of wind energy resources, which will contribute to the Department's goal of increased domestic energy supplies. When cost of energy assessments are not available from actual prototype turbine systems developed through the program's partnerships, annual cost of energy improvements will be based on expert assessment of R&D and partners progress to provide needed input for turbine system cost modeling. This activity will be completely "graduated" to the private sector once the 2004 target is achieved.

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2000	2.5	4	
2002	4	4	
2003	3.3	3.3	
2004	3		

Program Assessment Rating Tool (PART)

Program: Yucca Mountain Project
Agency: Department of Energy
Bureau: Office of Civilian Radioactive Waste Management
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	67%	75%	17%	

1.1 Is the program purpose clear?

Answer: YES

Question Weight: 20%

Explanation: The purpose of the Civilian Radioactive Waste Management (OCRWM) Program is to implement the Federal policy for the siting, licensing, construction, operation, and decommissioning of repositories for the disposal of spent nuclear fuel and high-level radioactive waste, including the transportation of such wastes to the repositories.

Evidence: The purpose of the program is articulated in Section 111(b)(1)-(4) of the Nuclear Waste Policy Act of 1982 (NWPA). This purpose is reflected in OCRWM's mission statement, which is presented in OCRWM's Program Manual, Final - Phase 3 (DOE/RW-0555), April 2003.

1.2 Does the program address a specific and existing problem, interest or need?

Answer: YES

Question Weight: 20%

Explanation: The Congress determined that radioactive waste requires safe and environmentally acceptable methods of disposal, that the accumulation of such waste has created a national problem, and that Federal efforts to devise a permanent solution had not been adequate. The Secretary of Energy's letter transmitting his site recommendation report to the President, and the President's transmittal of that recommendation to the Congress, articulated the importance of the Yucca Mountain repository to national security, US non-proliferation objectives, energy security, homeland security, and environmental protection.

Evidence: Section 111(a)(1)-(7) of the NWPA articulates the interests, problem, and needs addressed by the Civilian Radioactive Waste Management Program. Secretary Abraham's February 14, 2002, letter to President Bush, forwarding the Yucca Mountain Site Recommendation. President's letter to the Speaker of the House of Representatives and the President of the Senate, February 15, 2002.

1.3 Is the program designed so that it is not redundant or duplicative of any other Federal, state, local or private effort?

Answer: YES

Question Weight: 20%

Explanation: The Civilian Radioactive Waste Management Program is a single-purpose Federal program. There are no other Federal, state, or local programs to address the problem identified in Question 1.2. Private efforts to develop waste disposal capacity have been sporadic and of limited scope.

Evidence: Section 302(d) of the NWPA defines the authorized activities of the Program. Section 304(b) of the NWPA assigns to the Director, OCRWM, the responsibility for carrying out the functions of the Secretary of Energy under the NWPA.

1.4 Is the program design free of major flaws that would limit the program's effectiveness or efficiency?

Answer: YES

Question Weight: 20%

Explanation: This is a direct Federal program financed by user fees.

Evidence: Alternative Means of Financing and Managing the Civilian Radioactive Waste Management Program, (DOE/RW-0546), August 2001. Draft OCRWM Capital Asset Management Plan, June 19, 2002.

Program Assessment Rating Tool (PART)

Program: Yucca Mountain Project
Agency: Department of Energy
Bureau: Office of Civilian Radioactive Waste Management
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	67%	75%	17%	

1.5 Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly? Answer: YES Question Weight: 20%

Explanation: Program expenditures are effectively and specifically targeted, in that they are statutorily limited to the activities authorized in Section 302(d) of the NWPA. Diversion of Program resources for purposes not specifically authorized by the NWPA would be a violation of the statute. Expenditure of Program funds for their intended purposes is independently audited each year by a certified public accounting firm. The Program has received unqualified ("clean") auditors opinions since inception.

Evidence: Section 302(d), NWPA. Independent auditors opinions on OCRWM's financial statements since 1985.

2.1 Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program? Answer: YES Question Weight: 11%

Explanation: The Yucca Mountain repository is licensed, constructed, and operating; the national and Nevada waste transportation system is in place; receipt and emplacement of spent nuclear fuel and high-level radioactive waste at the repository are proceeding at the planned annual rate by 2014.

Evidence: DOE FY 2004 OMB budget request. DOE FY 2004 Congressional Budget Annual Performance Plan (DOE/ME-0024, February 2003). Draft CAMP, July 15, 2003.

2.2 Does the program have ambitious targets and timeframes for its long-term measures? Answer: YES Question Weight: 11%

Explanation: The Program's targets and timeframes for its long-term performance goals are ambitious. Since the specific steps and processes the Program must undertake to achieve waste receipt and emplacement at the repository are prescribed by statute, these activities provide the foundation for the Yucca Mountain Project's schedule. The major milestones on that schedule are the performance measures that are used to monitor progress against long-term goals. Once initial waste receipt and emplacement are achieved, progress will be measured in terms of the amounts of waste received and emplaced annually.

Evidence: Report to Congress on Reassessment of the Civilian Radioactive Waste Management Program, November 1989 (DOE/RW-0247). Office of Civilian Radioactive Waste Management Strategic Plan, May 2003 (DOE/RW-0558). CAMP. Gary Jones, "Nuclear Waste: Uncertainties about the Yucca Mountain Repository Project," GAO-02-765T, May 23, 2002.

2.3 Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals? Answer: YES Question Weight: 11%

Explanation: The Program is working to refine these.

Evidence: DOE FY 2004 Congressional Budget Annual Performance Plan (DOE/ME-0024, February 2003). Draft CAMP.

2.4 Does the program have baselines and ambitious targets for its annual measures? Answer: NO Question Weight: 11%

Explanation: Detailed performance baselines and specific targets will flow from final definition of annual measures.

Evidence: Yucca Mountain Performance Measurement Baseline. DOE Joule tracking system. DOE Performance and Accountability Reports. OCRWM Annual Report to Congress.

Program Assessment Rating Tool (PART)

Program: Yucca Mountain Project
Agency: Department of Energy
Bureau: Office of Civilian Radioactive Waste Management
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	67%	75%	17%	

2.5 Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program? Answer: YES Question Weight: 11%

Explanation: The Program's management and Operating (M&O) contractor is committed by the Statement of Work in its contract to integrate the efforts of all Program participants toward accomplishment of the Program's goals.

Evidence: OCRWM Performance Evaluation Management Plan for FY 2003. Management and Technical Support (MTS) contract. M& Statement of Work.

2.6 Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need? Answer: YES Question Weight: 11%

Explanation: Nuclear Regulatory Commission-approved quality assurance program serves to identify and track corrections to technical deficiencies. The NWTRB conducts ongoing reviews of the Project's technical work. Recommendations contained in NWTRB reports require a formal Departmental response. The GAO and DOE IG conduct frequent topical audits and reviews of Program activities. External reviews and cost estimates are performed by the Department through an independent contractor prior to critical decisions. An Independent Cost Estimate (ICE) of the 2001 TSLCC report was conducted by Burns & Roe. In 2003, Burns & Roe conducted an external Independent review (EIR) of the Yucca Mountain CD-1 documentation and an ICE of the Program baseline. Peer reviews of technical work are conducted on an as-needed basis. The Program Director reviews the progress and schedule and cost performance of the Yucca Mountain Project approximately quarterly. An annual internal FMFIA review ensures that management controls are working effectively and that program functions are being performed economically and efficiently.

Evidence: Quality assurance audit reports. FY 2002 Quality Assurance Management Assessment Report, January 22, 2003. Integrated Safety Management System Reports. Nuclear Waste Technical Review Board Reports. External Independent Review Reports. Peer Review Reports. GAO and DOE IG reports relating to OCRWM. Evidence of PSIR's is available on request. OCRWM Annual Assurance Memorandum to the Secretary of Energy for FY 2002.

2.7 Are Budget requests explicitly tied to accomplishment of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget? Answer: NO Question Weight: 11%

Explanation: The relationship between the Program's Work Breakdown Structure (WBS) and goals and the Department's budget requests to date is unclear. The Department is working to integrate the two in its FY 2005 budget request.

Evidence: Program budget request for FY 2004. The YMP resource-loaded schedule, which contains over eleven-thousand activities between October 2002 and December 2010, is available on request.

2.8 Has the program taken meaningful steps to correct its strategic planning deficiencies? Answer: YES Question Weight: 11%

Explanation: The Program has made several changes in senior management and is undertaking numerous management improvement efforts to address its management deficiencies.

Evidence: OCRWM Strategic Plan, 2003-2013. Monthly Operating Reports.

Program Assessment Rating Tool (PART)

Program: Yucca Mountain Project
Agency: Department of Energy
Bureau: Office of Civilian Radioactive Waste Management
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	67%	75%	17%	

- 2.CA1 Has the agency/program conducted a recent, meaningful, credible analysis of alternatives that includes trade-offs between cost, schedule, risk, and performance goals and used the results to guide the resulting activity?** Answer: NO Question Weight: 11%
- Explanation: A completed analysis will be included in the CAMP.
 Evidence: Draft CAMP.
- 3.1 Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?** Answer: YES Question Weight: 12%
- Explanation: The Program regularly collects performance data that senior management use to manage and improve the program. Completion of the CAMP and validation of the EVMS will enhance public confidence in these data.
 Evidence: Performance information is suspect without EVMS validation.
- 3.2 Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?** Answer: YES Question Weight: 12%
- Explanation: Federal and contractor management and procedural changes have been made to improve cost, schedule, and performance results.
 Evidence: Yucca Mountain Project Responsibility Assignment Matrix (RAM). OCRWM Annual Work Plans for FY 2003. OCRWM policy on performance standards for Federal managers. M&O PEMP for FY 2003. MTS contract. Monthly Operating Reports.
- 3.3 Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose?** Answer: YES Question Weight: 12%
- Explanation: The Program obligates funds in a timely manner, as they are made available. In FY 2002, the Department's CFO retained 15% of the Program's appropriation, and OCRWM had to justify the need for the 15% hold-back before the CFO released the final funds. The total unobligated funds represented less than 2.5% of the total Program budget in FY 2002. The Program is audited annually by an independent public accounting firm and has secured an unqualified audit opinion every year.
 Evidence: DOE Financial Information System, year-end reconciliation for FY 2002. FY 2002 audit report of OCRWM
- 3.4 Does the program have procedures (e.g. competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution?** Answer: NO Question Weight: 12%
- Explanation: Acquisition strategy incomplete. EVMS uncertified. No other efficiency measures available.
 Evidence: Draft CAMP.

Program Assessment Rating Tool (PART)

Program: Yucca Mountain Project
Agency: Department of Energy
Bureau: Office of Civilian Radioactive Waste Management
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	67%	75%	17%	

3.5 Does the program collaborate and coordinate effectively with related programs? Answer: YES Question Weight: 12%

Explanation: Program is making significant improvements in this area. It has recruited a new Quality Assurance (QA) manager to improve coordination with NRC in resolving QA issues, as well as new managers to improve coordination with NRC on other aspects of its license application, including accelerated resolution of NRC's key technical issues. Failure to fully evaluate a low-temperature repository option reduced Nuclear Waste Technical Review Board confidence in technical basis for DOE's repository performance estimates.

Evidence: GAO, "Nuclear Waste: Preliminary Observations on the Quality Assurance Program at the Yucca Mountain Repository, GAO-03-826T, May 28, 2003. NWTRB 2002 Annual Report.

3.6 Does the program use strong financial management practices? Answer: YES Question Weight: 12%

Explanation: The annual independent audit of the Program has resulted in an "unqualified" opinion and has not revealed any material internal control weaknesses. Similarly, the Program's annual internal controls reviews conducted under the Federal Managers Financial Integrity Act have not disclosed any internal control weaknesses. However, these audits provide little information on the financial management practices of the M&O contractor upon whom the program is heavily dependent.

Evidence: Audit report for FY 2002 by KPMG, LLP, dated 09/30/02. OCRWM Director's Annual Assurance Memorandum to the Secretary of Energy for FY 2002.

3.7 Has the program taken meaningful steps to address its management deficiencies? Answer: YES Question Weight: 12%

Explanation: The Program has taken a number of steps, including (1) realigned the organization, bringing in senior management and nuclear licensing expertise, (2) implemented a Management Improvement Initiative, (3) implemented a "Safety Conscious Work Environment," and (4) developed a Program Manual that identifies federal and contractor roles and responsibilities. The Project also has established a risk management plan and procedures to identify and handle risks and uses a database system to track risks and remediation and trends identified through management reviews. Program lacks an acquisition strategy for the repository, however, which is key to successful achievement of its long-term goals.

Evidence: New OCRWM organization chart (OCRWM web site at www.ocrwm.doe.gov). Management Improvement Initiative (PLN-CRW-AD-000007). OCRWM Program Manual, Final -- Phase 3, (DOE/RW-0555, April 2003). Training manual for "Safety Conscious Work Environment." OCRWM Annual Assurance Memorandum to the Secretary of Energy for FY 2002. Yucca Mountain Risk Management Plan and Procedure - December 2002.

3.CA1 Is the program managed by maintaining clearly defined deliverables, capability/performance characteristics, and appropriate, credible cost and schedule goals? Answer: NO Question Weight: 12%

Explanation: The Program is working to complete these tasks in its final CAMP.

Evidence: Draft CAMP.

Program Assessment Rating Tool (PART)

Program: Yucca Mountain Project
Agency: Department of Energy
Bureau: Office of Civilian Radioactive Waste Management
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	67%	75%	17%	

4.1 Has the program demonstrated adequate progress in achieving its long-term performance goals? Answer: SMALL EXTENT Question Weight: 16%

Explanation: The Program has experienced severe funding shortfalls, totaling \$712 million in the aggregate, between FY 1995 and FY 2003. This has forced the Program to adjust its priorities year after year, and to defer planned work to future fiscal years. In spite of this funding shortfall, the Program achieved a key programmatic objective by submitting a Yucca Mountain site recommendation report in 2002, and is currently on track to submit a license application for a repository construction authorization to the Nuclear Regulatory Commission in 2004. The Yucca Mountain Project has met all its FY 2001 and FY 2002 annual performance targets, completed one of its FY 2003 performance targets, and is on track for completion of the remainder in the 4th quarter, FY 2003

Evidence: FY 1995-FY 2003 OCRWM budget requests vs. FY 1995-FY 2003 Energy and Water Development Appropriations Bills. The Secretary of Energy's site recommendation report can be found on the DOE web site at www.energy.gov. House Joint Resolution 87, signed by President Bush on July 23, 2002, designates Yucca Mountain as the repository site. FY 2001 and FY 2002 performance is documented in the Department of Energy's Performance and Accountability Report for the respective fiscal years (DOE/ME-0011, February 21, 2002; and DOE/ME-0014, January 31, 2003), as well as in OCRWM's Annual Report to the Congress for those fiscal years (DOE/RW-0556, October 2002; and draft DOE/RW-xxxx, March 7, 2003). Status of FY 2003 performance targets is contained in the Department's JOULE commitments tracking system (<http://www.joule.doe.gov/go.html>). GAO-02-765T.

4.2 Does the program (including program partners) achieve its annual performance goals? Answer: SMALL EXTENT Question Weight: 16%

Explanation: The Yucca Mountain Project has met all its annual performance measures for FY 2001 and FY 2002, completed one of its FY 2003 performance targets, and is on track to complete the remainder of its FY 2003 performance targets during the 4th quarter; however, baselines have shifted frequently with funding shortfalls.

Evidence: Draft CAMP; prior year budgets and appropriations.

4.3 Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year? Answer: NO Question Weight: 16%

Explanation: The program's EVMS, which would provide a basis for such demonstrations, is not yet certified. M&O did not accept most Burns and Roe recommendations for efficiency and cost-effectiveness improvements.

Evidence: Bechtel SAIC, Total System Life cycle Cost for Site Recommendation Letter Report, TDR-CRW-AD-000001 REV 00, February 2002.

4.4 Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals? Answer: NO Question Weight: 16%

Explanation: Program has been slow to complete its acquisition strategy and adopt competitive contracting methods. It has done only limited bench-marking to identify best practices in similar government and private sector projects.

Evidence: CAMP.

Program Assessment Rating Tool (PART)

Program: Yucca Mountain Project
Agency: Department of Energy
Bureau: Office of Civilian Radioactive Waste Management
Type(s): Capital Assets and Service Acquisitio

Section Scores				Overall Rating
1	2	3	4	Adequate
100%	67%	75%	17%	

4.5 Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results? Answer: NO Question Weight: 16%

Explanation: Evaluations by independent reviewers like NWTRB, Burns and Roe, and GAO have been critical of program strategy and management.

Evidence: Robin Nazarro, "Nuclear Waste: Preliminary Observations on the Quality Assurance Program at the Yucca Mountain Repository," GAO-03-826T May 28, 2003; Gary Jones, "Nuclear Waste: Uncertainties About the Yucca Mountain Repository Project," GAO-02-765T May 23, 2002; NWTRB, Report to the Secretary of Energy and the Congress, April 2003; Burns and Roe reports.

4.CA1 Were program goals achieved within budgeted costs and established schedules? Answer: SMALL EXTENT Question Weight: 16%

Explanation: The Program has experienced severe funding shortfalls, totaling \$712 million in the aggregate, between FY 1995 and FY 2003. This has forced the Program to adjust its priorities year after year, and to defer planned work to future fiscal years. In spite of this funding shortfall, the Program achieved a key programmatic objective by submitting a Yucca Mountain site recommendation report in 2002, and is currently on track to submit a license application for a repository construction authorization to the Nuclear Regulatory Commission in 2004.

Evidence: FY 1995-FY 2003 OCRWM budget requests vs. FY 1995-FY 2003 Energy and Water Development Appropriations Bills. The Secretary of Energy's site recommendation report can be found on the DOE web site at www.energy.gov. House Joint Resolution 87, signed by President Bush on July 23, 2002, designates Yucca Mountain as the repository site. FY 2001 and FY 2002 performance is documented in the Department of Energy's Performance and Accountability Report for the respective fiscal years (DOE/ME-0011, February 21, 2002; and DOE/ME-0014, January 31, 2003), as well as in OCRWM's Annual Report to the Congress for those fiscal years (DOE/RW-0556, October 2002; and draft DOE/RW-xxxx, March 7, 2003). Status of FY 2003 performance targets is contained in the Department's JOULE commitments tracking system (<http://www.joule.doe.gov/go.html>).

PART Performance Measurements

Program: Yucca Mountain Project
Agency: Department of Energy
Bureau: Office of Civilian Radioactive Waste Management

Measure: Begin acceptance of spent nuclear fuel & high-level radioactive waste at the repository in 2010.

Additional Information: Yucca Mountain Project long-term goal #1 (supports OCRWM Program Goal)

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Long-term
2004	License Applicatn		
2008	Constrxn Authorized		
2010	Waste Accept		

Measure: (1) Complete and submit to NRC a license application for repository construction authorization

Additional Information: For FY 2005

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2005	1		

Measure: Complete detailed work plan, cost estimate and schedule, and performance measurement baseline

Additional Information: For FY 2005

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2005	1		

Measure: Complete cost, schedule ad performance baseline; complete CAMP; certify EVMS.

Additional Information: Yucca Mountain Project long-term goal #2 (supports OCRWM Program Goal)

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	Baseline complete		
2004	CAMP complete		
2004	EVMS certified		

PART Performance Measurements

Program: Yucca Mountain Project
Agency: Department of Energy
Bureau: Office of Civilian Radioactive Waste Management

Measure: Variance from cost, schedule and performance baselines

Additional Information: For FY 2003

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	<=10%		
2005	<=10%		

Measure: Complete repository conceptual design and request Acquisition Executive approval to start preliminary design, which will be used in the license application.

Additional Information: For FY 2003

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2003	1		

Measure: (1) Complete, review and approve the safety analyses for Department-owned spent nuclear fuel and high-level radioactive waste, Naval spent nuclear fuel, and plutonium waste forms for license application,

Additional Information: For FY 2004

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	1		

Measure: Address all major NRC key technical issues to support license application

Additional Information: For FY 2004

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	1		

PART Performance Measurements

Program: Yucca Mountain Project
Agency: Department of Energy
Bureau: Office of Civilian Radioactive Waste Management

Measure: (3) Prepare, review and approve required elements of the preliminary design for the waste package, surface facilities, and subsurface facilities in support of the license application

Additional Information: For FY 2004

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	1		

Measure: (4) Complete the Licensing Support Network and certification consistent with the requirements of 10 CFR Part 2, Subpart J, at least 6 months prior to submitting the LA

Additional Information: For FY 2004

<u>Year</u>	<u>Target</u>	<u>Actual</u>	Measure Term: Annual
2004	1		