

Supplemental Financial and Management Information

Program expenses are summarized by DOE business lines which represent the four major elements of the Department's mission. The business lines are comprised of 52 responsibility segments, representing major elements of DOE's mission. The full cost of the responsibility segments includes: (1) current year accrued costs associated with funds directly appropriated to each responsibility segment, (2) indirect costs for program management, program direction, field management, Departmental administration, and security investigations which have been allocated to the applicable responsibility segments, (3) current year expenses associated with the expiration or use of capital assets such as depreciation, consumption of inventories, writeoffs, and adjustments, and (4) current year adjustments to Departmental unfunded liabilities such as management and operating contractor pension and other post retirement benefits, capital leases, and imputed Office of Personnel Management retirement, health, and life insurance costs for Federal employees.

Program performance measures and results for the FY 1997 Performance Agreement between the President and the Secretary of Energy are also included for each business line. These performance measures represent the Department's commitments in key priority areas to achieve a more effective and efficient government.

Program Expenses by Business Lines

FY 1997 ENERGY RESOURCES PROGRAM EXPENSES				
(in millions)				
	Direct Funded Expenses	Program Direction and Overhead	Allocated Nonfund Expenses	Total Program Expenses
Energy Efficiency and Renewable Energy Programs				
Utility Technology	\$287	\$22	\$8	\$317
Building Technology	132	7	3	142
Federal Energy Management Program	22	2	1	25
Industrial Technology	128	14	6	148
Transportation Technology	210	14	18	242
<i>Total Energy Efficiency and Renewable Energy Programs</i>	<u>\$779</u>	<u>\$59</u>	<u>\$36</u>	<u>\$874</u>
Fossil Energy Programs				
Coal Research and Development	\$132	\$25	\$8	\$165
Petroleum Research and Development	74	11	2	87
Gas Research and Development	122	23	2	147
Clean Coal Technology	108	6	1	115
Strategic Petroleum Reserve	151	2	63	216
Other Fossil Energy Activities	25	5	1	31
<i>Total Fossil Energy Programs</i>	<u>\$612</u>	<u>\$72</u>	<u>\$77</u>	<u>\$761</u>
Nuclear Energy Programs				
Light Water Reactors	\$36	\$3	\$1	\$40
Other Nuclear Energy Activities	1	—	1	2
<i>Total Nuclear Energy Programs</i>	<u>\$37</u>	<u>\$3</u>	<u>\$2</u>	<u>\$42</u>
Total Energy Resources Program Expenses	\$1,428	\$134	\$115	\$1,677

ENERGY RESOURCES ACTIVITIES - encourage energy efficiency; advance alternative and renewable energy technologies; increase energy choices for all consumers; assure adequate supplies of clean, conventional energy; and reduce U.S. vulnerability to external energy supply disruptions.

Energy Efficiency and Renewable Energy

Utility Technology - research and development programs that contribute to strengthening the Nation's energy security, providing a cleaner environment, enhancing global sales of U.S. energy products, and increasing industrial competitiveness and Federal technology transfer. Activities range from basic cost-shared research in universities and national laboratories to applied research, development, and field validations in full partnership with private sector manufacturers.

Building Technology - research and development to improve the energy efficiency of appliances, building equipment, and the building envelope complemented by programs designed to move advanced technologies into the marketplace and produce near-term energy savings with associated economic and environmental benefits.

Federal Energy Management Program - Reduction in the cost of government by advancing energy efficiency and water conservation, and the use of solar and other renewable energy as a means to reduce energy costs. Major emphasis is placed on using private sector investments to retrofit Federal facilities using energy savings performance contracting, thus stretching Federal leveraging to the maximum.

Industrial Technology - cost shared research in critical technology areas identified by industry, with focus on high-risk but promising technologies that decrease industry's use of raw materials and depletable energy and reduce their generation of wastes and pollutants.

Transportation Technology - development and commercialization of transportation technologies which can radically alter current projections of U.S. and world demand for energy, particularly oil, and reduce the associated environmental impacts such as greenhouse gas emissions.

Fossil Energy

Coal Research and Development - research and development of coal technologies to meet future national energy and environmental demands and to position the U.S. coal industry to respond to growing export market opportunities while maintaining our national energy security.

Petroleum Research and Development - research and development of increased domestic oil production technology, enhanced processing and utilization technologies, and reservoir life extension.

Gas Research and Development - research and development of natural gas exploration, production, processing, and storage technologies.

Clean Coal Technology - joint Federal and private industry development of promising advances in coal-based technologies and demonstration of commercial marketplace potential.

Strategic Petroleum Reserve - operation and maintenance of the U.S.'s emergency stored oil supply at five sites in Texas and Louisiana.

Other Fossil Energy Activities - crosscutting program activities, including environment, safety, and health, cooperative research, materials research, and related essential fuels programs.

Nuclear Energy

Light Water Reactors - develop technologies to help maintain nuclear power as a viable option for our Nation's future electric production needs.

FY 1997 NATIONAL SECURITY PROGRAM EXPENSES				
(in millions)				
	Direct Funded Expenses	Program Direction and Overhead	Allocated Nonfund Expenses	Total Program Expenses
Defense Programs				
Stockpile Stewardship	\$1,324	\$163	\$680	\$2,167
Stockpile Management	1,510	209	391	2,110
<i>Total Defense Programs</i>	<u>\$2,834</u>	<u>\$372</u>	<u>\$1,071</u>	<u>\$4,277</u>
Nuclear Energy Programs				
Uranium Programs - Transparency	\$16		\$1	\$17
Uranium Programs - Downblend HEU at Portsmouth	19	1	1	21
International Nuclear Safety	71	10	4	85
Nuclear Security	2			2
Naval Reactors	632	18	77	727
<i>Total Nuclear Energy Programs</i>	<u>\$740</u>	<u>\$29</u>	<u>\$83</u>	<u>\$852</u>
Nonproliferation and National Security Programs				
Verification and Control Technology	\$397	\$61	\$29	\$487
Nuclear Safeguards and Security	47	37	3	87
Emergency Management/Preparedness	18	7	2	27
<i>Total Nuclear Energy Programs</i>	<u>\$462</u>	<u>\$105</u>	<u>\$34</u>	<u>\$601</u>
Worker and Community Transition	\$82	\$6	3	\$91
Fissile Materials Disposition	\$83	\$7	\$4	\$94
<i>Total National Security Program Expenses</i>	<u>\$4,201</u>	<u>\$519</u>	<u>\$1,195</u>	<u>\$5,915</u>

NATIONAL SECURITY ACTIVITIES - effectively support and maintain a safe and reliable enduring nuclear weapons stockpile without underground nuclear testing; safely dismantle and dispose of excess weapons; and provide technical leadership for national and global nonproliferation activities.

Defense Programs

Stockpile Stewardship - research, development, and engineering support necessary to maintain a safe and reliable U.S. nuclear weapons stockpile, which requires sustaining core competencies, nuclear weapons laboratories, production plants, and the Nevada Test Site.

Stockpile Management - physical maintenance of the U.S. nuclear weapons stockpile, including: continual surveillance and retirement and disposal of weapons; pursuing a dual-track new tritium source; maintaining a worldwide nuclear/radiological accident response capability; and providing safeguards/security oversight for special nuclear materials.

Nonproliferation and National Security

Verification and Control Technology - conduct Comprehensive Test Ban research and development, including arms control treaty verification, intelligence collecting and processing; supporting Presidential arms control and nonproliferation initiatives; and provide intelligence support in assessing nuclear threats.

Nuclear Safeguards and Security - provide direction and training for protection of nuclear weapons, nuclear materials, classified information, and facilities, including related technology development, and directing classification and declassification activities.

Emergency Management/Preparedness - control and direction to ensure comprehensive and integrated planning, preparedness, and response capability for emergencies involving DOE operations or facilities.

Nuclear Energy

International Nuclear Safety - enhance the safety of Soviet-designed nuclear power plants and help host countries upgrade their nuclear safety cultures and supporting infrastructures.

Nuclear Security - reduce the proliferation threats posed by plutonium and highly enriched uranium (HEU) materials available in Russia and other states of the Former Soviet Union.

Naval Reactors - design, development, testing, and production of safe, long-lived, militarily-effective nuclear power plants for U.S. Navy ships and submarines, including over 120 operating reactors in nine different operational classes.

Uranium Programs - Downblend HEU at Portsmouth - downblend HEU hexafluoride to low enriched uranium (LEU) hexafluoride for use in filling the United States Enrichment Corporation (USEC) commercial orders for enrichment services and safeguarding of all HEU material at the Portsmouth site.

Uranium Programs - Transparency - cooperation and coordination with other Departmental Offices and Government Agencies in the implementation of U.S. Non-Proliferation Policy by increasing confidence that Russian LEU sold to the USEC is derived from HEU removed from dismantled Russian nuclear weapons.

Fissile Materials Disposition - provide safe, secure, environmentally sound, and inspectable long-term storage of weapons-usable fissile materials; disposal of surplus HEU and plutonium; and technical support for U.S. initiatives to reduce foreign surplus of weapons-usable plutonium.

Worker and Community Transition - mitigate adverse impact on workers and communities resulting from restructuring, including local economic assistance for job-base conversion.

FY 1997 ENVIRONMENTAL QUALITY PROGRAM EXPENSES				
(in millions)				
	Direct Funded Expenses	Program Direction and Overhead	Allocated Nonfund Expenses	Total Program Expenses
Environmental Restoration and Waste Management Programs				
Environmental Restoration	\$1,668	\$149	\$121	\$1,938
Waste Management	1,681	160	182	2,023
Nuclear Materials and Facilities Stabilization	1,208	70	173	1,451
Environmental Sciences	49	7	4	60
Uranium Enrichment Decontamination and Decommissioning	208	20	11	239
Other Environmental Management Activities	17	1		18
<i>Total Environmental Restoration and Waste Management</i>	<u>\$4,831</u>	<u>\$407</u>	<u>\$491</u>	<u>\$5,729</u>
Environmental, Safety and Health Programs				
Facility Safety	\$68	\$31	\$5	\$104
Health Studies	47	20	2	69
<i>Total Environment, Safety and Health Programs</i>	<u>\$115</u>	<u>\$51</u>	<u>\$7</u>	<u>\$173</u>
Civilian Radioactive Waste Management	\$336		\$5	\$341
Nuclear Energy Programs				
Nuclear Technology Research and Development	\$19	\$2	\$5	\$26
Termination Costs	102	10	13	125
Uranium Programs	46	2	12	60
	<u>\$167</u>	<u>\$14</u>	<u>\$30</u>	<u>\$211</u>
Legacy Waste Cleanup Adjustment				(\$5,254)
Total Environmental Quality Program Expenses	\$5,449	\$472	\$533	\$1,200

ENVIRONMENTAL QUALITY ACTIVITIES - understand and reduce environmental, safety, and health risks and threats and develop the technologies and institutions required for solving domestic and global environmental problems.

Environmental Management

Environmental Restoration - in accordance with Federal and State laws and other legal agreements, protects human health and the environment from risks posed by inactive, surplus DOE facilities and contaminated areas; conducts remediation activities, including both cleaning-up or containment of contamination including soil, ground water, and surface water; and performs decommissioning of contaminated facilities including reactors and chemical processing buildings.

Waste Management - provides for the safe treatment, storage, and disposal of waste from operations. The different categories of waste managed by this program include high-level, transuranic, mixed transuranic, low-level, mixed low-level, uranium mill tailings, hazardous, sanitary, and special case waste.

Nuclear Materials and Facilities Stabilization - provides for: stabilizing, consolidating, and storing special nuclear materials, including plutonium and highly enriched uranium prior to final disposition; deactivating surplus facilities to a safe and low maintenance condition while awaiting final decommissioning; and managing spent nuclear fuel, including treatment and storage. Integral to these functions is continuous surveillance and maintenance, which is required for safety and security.

Environmental Sciences Program - provides strategic basic research to strengthen the Office of Environmental Management's basic science and engineering activities through a competitive process offered to the DOE national laboratories, academic, and industrial organizations. The program will lead to long-term reduced cleanup costs and risks to workers and the public.

Environmental Privatization Initiative - provides for privatization of the Tank Waste Remediation System at the Department's Hanford site and allows the Department to reimburse contractors in the event the Government incurs liabilities for termination of privatization contracts.

Uranium Enrichment Decontamination and Decommissioning - consists of remedial action and other related environmental clean-up activities at sites leased and operated by the United States Enrichment Corporation, including DOE facilities at these sites, and, additionally, provides for partial reimbursement of remediation costs attributable to other uranium and thorium purchased by the Federal government.

Other Environmental Management Activities - provides for the acceleration and completion of selected projects, which will result in a significant long-term cost savings through mortgage and risk reduction as well as packaging certification and transportation safety activities.

Environment, Safety, and Health

Facility Safety - provides Department wide technical support and independent oversight in areas of nuclear safety, occupational health and safety, environmental compliance, and safeguards and security including the National Environmental Policy Act, safety assistance, and environmental compliance implementation assistance.

Health Studies - provides technical assistance for health studies including the Radiation Effects Research Foundation.

Nuclear Energy

Nuclear Technology Research and Development - development of electrometallurgical technology for the treatment of DOE spent nuclear fuel.

Termination Costs - cost-effectively shut down terminated Federal programs and conduct the activities necessary to place unneeded Federal nuclear research facilities into an industrially and radiologically safe shutdown condition.

Uranium Programs - All Other - manage the Department's excess uranium and depleted uranium hexafluoride inventories, pre-existing contractual liabilities, and maintain nonleased facilities in a safe and environmentally sound condition.

Civilian Radioactive Waste Management - development and management of a permanent Federal depository for spent nuclear fuel from civilian reactors and high-level radioactive waste from atomic energy defense activities in a manner that assures public and worker safety and protects the environment.

Legacy Waste Cleanup Adjustment - operating expenditures related to legacy waste cleanup activities which represent a reduction of DOE's environmental liabilities. These costs are excluded from current year program expenses since the expense was accrued in prior years when DOE recorded the environmental liabilities.

FY 1997 SCIENCE AND TECHNOLOGY PROGRAM EXPENSES				
(in millions)				
	Direct Funded Expenses	Program Direction and Overhead	Allocated Nonfund Expenses	Total Program Expenses
Energy Research Programs				
Biological and Environmental Research	\$322	\$23	\$22	\$367
Fusion Energy Sciences	222	9	17	248
Basic Energy Sciences	565	38	65	668
High Energy Physics	485	28	83	596
Nuclear Physics	210	13	34	257
Computational and Technology Research	140	5	12	157
Superconducting Super Collider	(15)	(1)	2	(14)
Small Business Innovative Research/Technology Transfer	80	7	6	93
University and Science Education	12	1		13
Technical Information Management Program	11		2	13
Other Energy Research Activities	4		0	4
<i>Total Energy Research Programs</i>	<u>\$2,036</u>	<u>\$123</u>	<u>\$243</u>	<u>\$2,402</u>
Nuclear Energy Programs				
University Nuclear Science and Reactor Support	\$3	\$1		\$4
Advanced Radioisotope Power System	33	3	2	38
Isotope Production and Distribution	21		3	24
<i>Total Nuclear Energy Programs</i>	<u>\$57</u>	<u>\$4</u>	<u>\$5</u>	<u>\$66</u>
Technology Development	\$298	\$42	\$15	\$355
Legacy Waste Cleanup Adjustment				(\$298)
Total Science and Technology Program Expenses	\$2,391	\$169	\$263	\$2,525

SCIENCE AND TECHNOLOGY ACTIVITIES - provide science and tools needed to develop energy technology options, to understand the health and environmental implications of energy activities, and to understand the fundamental nature of energy and matter; provide large scale facilities required in natural sciences to ensure U.S. leadership in the search for knowledge; and apply research and development competencies to help ensure the availability of scientific talent.

Energy Research

Biological and Environmental Research - fundamental science in the pursuit of understanding the consequences to health and the environment of energy production, development, and use, including DOE's support of the national Human Genome and Global Climate Change programs, and providing unique national user facilities for the scientific community.

Fusion Energy Sciences - research and development needed for an economically and environmentally attractive fusion energy source, namely advancing plasma science, developing fusion science, technology, and plasma confinement innovations, and pursuing fusion energy science and technology as a partner in the international effort.

Basic Energy Sciences - fundamental research on materials sciences, chemical sciences, geosciences, biosciences, and engineering sciences that underpins the DOE missions in energy and the environment, that advances energy related basic science on a broad front, and that provides unique national user facilities for the scientific community.

High Energy Physics - research to understand the nature of matter and energy at the most fundamental level, as well as the basic forces which govern all processes in nature, that requires accelerators and detectors utilizing state-of-the-art technologies in many areas, including fast electronics, high speed computing, superconducting magnets, and high power radio-frequency devices.

Nuclear Physics - research to understand the structure and properties of atomic nuclei and the fundamental forces between the constituents that form the nucleus. Nuclear processes determine essential physical characteristics of our universe and the composition of the matter that forms it.

Computational and Technology Research - research that extends from fundamental investigations to technology development, which includes high performance computing and communications, information infrastructure, advanced energy concepts, and technology transfer research.

Superconducting Super Collider - expenditures are for the orderly termination of this activity.

Small Business Innovative Research/Small Business Technology Transfer - DOE-supported research and development of energy related technology that will significantly benefit U.S. businesses, including a pilot technology transfer program initiative.

University and Science Education - provides assistance in science education (precollege through postdoctoral), including reactor fuel assistance, scientific instrumentation, and technology transfer.

Technical Information Management Program - activities to direct, coordinate, and implement the management and dissemination of scientific and technical information resulting from DOE research and development and environmental programs. The program also provides worldwide energy information to the DOE, U.S., industry, academia, and the public through scientific and technical information exchange agreements.

Other Energy Research Activities - energy research analyses of DOE programs and initiatives, operation and maintenance of multiprogram laboratories, and space research and development closeout costs.

Nuclear Energy

Advanced Radioisotope Power System - development, demonstration, testing, and delivery of radioisotope power systems.

University Nuclear Science and Reactor Support - maintain the capability in the U.S. to conduct research, address pressing environmental challenges, and preserve the nuclear energy option.

Isotope Production and Distribution - serve the national need for a reliable supply of isotope products and services for medicine, industry, and research by developing new or improved isotope products and services that enable medical diagnoses and therapy, and other applications that are in the national interest.

Technology Development - research and development of new more effective and less expensive technological remedies to the environmental and safety problems of the Environmental Management Program. The new technologies are necessary to reduce risks to humans and the environment, reduce cleanup cost, and resolve significant related problems for which no solutions currently exist.

Legacy Waste Cleanup Adjustment - operating expenditures related to legacy waste cleanup activities which represent a reduction of DOE's environmental liabilities. These costs are excluded from current year program expenses since the expense was accrued in prior years when DOE recorded the environmental liabilities.

Performance Measures by Business Lines

Energy Resources

ER-01 TRANSFERRING PROVEN ENERGY EFFICIENCY MEASURES

Assessment: Successful

Description: Apply energy efficiency measures and renewable technologies to buildings and operations to reduce government energy consumption and the resulting pollution by 30 percent by 2005. Save low-income residents over \$10 million and the government \$1 billion in annual energy costs by reducing energy consumption by one quad and pollution by 15 million metric ton carbon dioxide equivalent (MMTCE) per year by the turn of the century. (EE)

Success will be measured by:

- *Establishing regional umbrella energy engineering contracts any Federal agency can use to simplify procurement, accelerate private sector investment, and increase energy savings and renewable energy use at Federal facilities.*

FY 1997 Results: Statement of work complete, decision to award one nationwide contract made, evaluation criteria under review.

- *Awarding a contract which establishes a financing and delivery mechanism for renewable energy and energy efficiency projects to all Federal facilities in eight western states and pacific territories.*

FY 1997 Results: On May 21, 1997, Secretary Peña announced the award of five energy savings performance contracts to energy service companies. Orders up to \$750 million may be placed under these contracts for energy efficient improvements and renewable technologies in Federal facilities in eight western states and pacific territories. The energy service companies pay for and install the energy saving equipment in Federal buildings, at no up-front cost to the government. In turn, the companies receive a share of the savings that are realized when the energy costs are reduced. Any agency can use these contracts and streamline the process to execute a project. When fully implemented, this program will attract more than \$5 billion in private sector funding to help Federal facilities reduce their energy consumption and related costs, save taxpayers' money, and reduce pollution.

- *Weatherizing 60,000+ low-income homes, bringing the total number of homes weatherized since 1977 to over 4.4 million.*

FY 1997 Results: At least 61,120 homes were weatherized in FY 1997.

ER-02 DESIGNING AND DELIVERING THE VEHICLES OF THE FUTURE

Assessment: Successful

Description: Lead the government's research and development effort for building an 80 mile-per-gallon family car, a major goal of the government-industry Partnership for a New Generation Vehicle (PNGV). Complete a production prototype by the year 2004. Deliver technologies that will improve fuel economy of diesel engines while reducing emissions. Develop, demonstrate, and use domestic fuels that are low-cost and clean. (EE)

Success will be measured by:

- *Using advanced transportation technologies developed with industry partners to build and test a 50 mpg mid-size concept car incorporating hybrid propulsion technology.*

FY 1997 Results: General Motors, Ford and Chrysler have all built at least two generations of test vehicle mules and are planning a final mule which is intended to prove out the hybrid propulsion powertrain concepts. Both parallel and series designs have shown to achieve high efficiency gains. Different packaging and baseline weights will cause fuel efficiency results to vary (36 to 50 mpg) for each Original Equipment Manufacturer (OEM). However, systems analysis shows that all powertrains, when integrated into a ground up vehicle system design result in achieving overall PNGV goals. Batteries fall significantly short of energy, power and weight goals, although the outlook for Lithium is promising and is being pursued. Emissions predictions to achieve EPA Tier 2 (EPA's light duty vehicle emission limits that take effect in 2003 for CO, NOx, particulate matter, non-methane hydrocarbons, and non-methane organic gases) or lower look promising, but little experimental data is available.

- *Establishing a DOE/U.S. diesel industry team to develop clean technologies for pickup trucks and sport utility vehicles.*

FY 1997 Results: Highly competitive engine development contracts have been initiated with the 3 major U.S. heavy duty diesel engine manufacturers. This is supported by co-operative R&D in fundamental combustion/emissions analysis at the Sandia National Laboratory.

- *Establishing a partnership with industry participants in the Administration's Biomass Energy Initiative for a commercial-scale demonstration facility producing ethanol for motor fuel from agricultural crop waste.*

FY 1997 Results: BC International (BCI) signed a collaborative agreement with DOE in November 1997. BCI is proceeding with final engineering and is in the process of obtaining financing for modifying the former molasses-to-ethanol plant (purchased by BCI in 1996) into a biomass ethanol production plant. Also, DOE entered into two additional partnerships with Masada Resources Inc. and Arkenol Inc. to commercially demonstrate their respective ethanol production technologies.

- *Expanding the Clean Cities program from 50 to 55 cities.*

FY 1997 Results: 57 communities across the country have been designated participants in the Department's Clean Cities program. These communities have established goals and action plan for increasing the use of alternative fuels and vehicles to achieve cleaner air, energy diversity, and create jobs.

ER-03 DEVELOPING RENEWABLE DOMESTIC ENERGY

Assessment: Successful

Description: Advance renewable energy development through cost-shared industry, laboratory, and DOE Research, Development and Deployment partnerships, and improve the global competitiveness of U.S. renewable energy industry. Build the U.S. renewable industry to \$1 billion in sales of domestically produced technologies resulting from our R&D efforts by the year 2000, and preventing pollution by increasing renewables based capacity to more than 20 gigawatts (GW) by the year 2010. (EE)

Success will be measured by:

- *Increasing U.S. renewable industry sales to more than \$600 million (\$500 million in exports).*

FY 1997 Results: U.S. renewable industry annual sales surpassed \$700 million (more than \$500 million in exports).

- *Developing a government, industry, and customer RoadMap to accelerate the use of renewable energy in new and existing buildings.*

FY 1997 Results: On June 26, 1997, the President announced the Million Solar Roofs Initiative, to work with businesses and communities to use the sun's energy to reduce our reliance on fossil fuels by installing solar panels

on 1 million more roofs around our nation by 2010. It is anticipated that the Million Solar Roofs Initiative will increase momentum in the U.S. for more widespread use of solar power. Domestically, increased commercial demand will lower the cost of solar technologies, making them more accessible. Additionally, the American solar power industry will be in a stronger position to compete against foreign companies for market share in the expanding international renewable energy market. On June 27, 1997, Secretary Peña, outlined the Department's activities to carry out this initiative. Secretary Peña's remarks were summarized in a press release issued the same day. The Department is developing a detailed Program Management Plan, and is developing an initial partner list of communities, cities, home builders, utilities and non-profit organizations. An Internet home page has been established for the initiative: <http://www.eren.doe.gov/millionroofs/>

- *Attracting \$80 to \$100 million of private sector investment to cost share our R&D in renewable technologies.*

FY 1997 Results: In FY 1997, \$80 million of private sector investment was obtained through cost sharing of R&D projects. In some cases, this represents industry willingness to share as much as 50 percent or more of the cost of an R&D project and indicates concurrence with the Department's R&D thrusts in renewable energy technologies and the expectation that this research will lead to viable commercial products.

ER-04 BOOSTING THE NATION'S PRODUCTION OF NATURAL GAS AND OIL

Assessment: Successful

Description: Improve the capability of the nation's petroleum industry to produce additional supplies of secure, domestic natural gas and oil, increasing U.S. oil production one million barrels per day, and increasing gas production by 3.7 trillion cubic feet (Tcf) per year by 2010. (FE)

Success will be measured by:

- *Demonstrating and transferring to industry three seismic imaging advanced computational technologies developed by the National Labs; these technologies can increase recovery from 60 percent of Gulf of Mexico resources.*

FY 1997 Results: All three technologies have met their objectives: the field test of the digital converter and fiber optic telemetry system fabricated by Amoco and OYO Geospace Exploration for use in a single well seismic imaging demonstrated excellent equipment performance and signal acquisition. Additional system enhancements include conversion of the Conoco source to work on the Gas Research Institute fiber optic wireline. Recently

acquired vertical seismic profile (VSP) field data has been used to evaluate a suite of algorithms to cancel rig noise from pumps, generators, etc. that obscure the formation data. The computational portion of the code for subsalt seismic imaging is completed and validated and the message passing part of the code has been optimized.

- *Demonstrating four new technologies in fluvial-dominated deltaic reservoirs to expand the applicability and improve the performance of waterflooding, to add ultimately 60 million barrels of reserves.*

FY 1997 Results: Four technologies have been successfully demonstrated in the field, resulting in increased oil reserves and production: Utilization of indigenous microbes in the Black Warrior Basin, Alabama, has documented production increases in treated areas of the reservoir and declining production in untreated control areas, and incremental oil continues to be produced; CO₂ injection in a watered out Gulf of Mexico reservoir in Port Neches Field, TX has recovered an additional 14 percent of the original oil in place; two technologies demonstrated in Savonburg Field, KS waterflooding and permeability modification by polymer injection have resulted in chemical costs being lowered 34 percent per day, from an average of \$38 per day to \$25 per day, and estimated ultimate production increased by 360,000 barrels of oil.

- *Assessing the feasibility of improved safety and environmental management planning (SEMP) for small independent operators, for offshore oil and gas facilities, towards overall program objective to help reduce cumulative industry compliance costs by \$16 billion by 2010 in collaboration with Department of Interior.*

FY 1997 Results: A feasibility study by Taylor Energy Company has shown that developing a SEMP plan is cost effective, reducing both the number of incidents and the cost of insurance. The company has developed a model plan that can be used by small to medium sized operators as a blueprint for developing their own safety and environmental management programs.

- *Demonstrating and transferring five new drilling, completion, and stimulation technologies that contribute, by 2010, to the reduction of drilling costs by 13 percent, completion costs by 20-30 percent and operating costs by almost 20 percent.*

FY 1997 Results: 1) Completed fracture measurement technology validation, evaluation, and field testing at M-sites. Results data and evaluation were presented at technology workshops to various members of the oil and gas industry representing 43 U.S. companies. 2)

Completed field testing and evaluation of 6-3/4" pump for use in 7-7/8" hole. Use of this new high pressure down hole pump will reduce drilling costs by increasing the rate of penetration by one and one half times for wells drilled in deep formations with hard rock that would normally require long drilling times. The results of testing were presented at the 1997 annual meeting of the Society of Petroleum Engineers. 3) Completed field testing, will now focus on additional demonstration activities. 4) Completed 5 low exposure field tests to examine the performance of specific components of the system, and to examine the drilling environment. 5) Completed 15 demonstrations to date, and will continue demonstrations in various reservoir types and transfer results to industry.

- *Completing two regulatory reform initiatives with the State of California that will provide scientific data for regulatory streamlining.*

FY 1997 Results: 1) A field technique that employs an inexpensive measuring device (about \$20) to accurately measure emissions from heavy oil storage tanks has been fully tested; 2) the California Air Resources Board, who collaborated in this effort, is utilizing this data to promulgate regulations to comply with the 1990 Amendments to the Clean Air Act; and 3) a report detailing the results of DOE's study on both the chemical and potential hazards analysis on using tank bottoms, an ingredient in road mix, has been completed.

ER-05 PROVIDING A NEW OPTION TO SUPPLEMENT THE NATION'S LIQUID FUELS

Assessment: Successful

Description: Provide the Nation by 2005 with an alternative source of liquid fuels, estimated to cost \$25 per barrel or less, that can be produced from coal, petroleum, dedicated energy crops and solid wastes. (FE)

Success will be measured by:

- *Completing a series of laboratory and bench-scale tests of improved process concepts to: (1) produce premium liquid fuels by co-processing coal with used oil, waste plastics, tires, and other solid wastes of interest to stakeholders and customers, and (2) indicate the competitiveness of these concepts with other waste disposal options.*

FY 1997 Results: Successfully produced liquid fuels in bench scale tests by coprocessing coal with refinery heavy residual oil and waste materials. Economics are favorable.

ER-06 REDUCING U.S. VULNERABILITY TO ENERGY SUPPLY DISRUPTIONS

Assessment: Successful

Description: Ensure by the year 2000 the readiness of the Strategic Petroleum Reserve (SPR) to drawdown its inventory of crude oil at a sustainable rate of 4.2 million barrels (MMB)/day within 15 days of direction from the President. (FE)

Success will be measured by:

- *Degasifying an additional 61 MMB of inventory to increase drawdown capability from 3.4 to 3.7 MMB/day and inventory availability of 524 MMB.*

FY 1997 Results: Degasified an additional 81 million barrels of oil inventory with higher-than-normal gas content, using surface degassing equipment, thereby raising the total amount of degassed oil to 158 million barrels. Increased the drawdown capability from 3.4 million barrels to 3.7 million barrels per day and raised inventory availability for a potential drawdown to 555 million barrels.

- *Initiating an additional 25 percent of the infrastructure life extension program, thereby bringing program implementation to approximately 71 percent.*

FY 1997 Results: Initiated an additional 25 percent of the infrastructure life extension program, thereby bringing program implementation to approximately 76 percent of the \$320 million dollar program. During FY 1997, the total estimated cost of the life extension program was adjusted from \$351 million to \$320 million due to the consolidation of multiple projects, value engineering efforts, and a ramping-down of contingency consistent with the advanced stage of execution.

- *Completing transfer or sale of all readily removable oil from the Weeks Island storage site to a more geologically stable site ensuring the availability of this oil.*

FY 1997 Results: In preparation for the future decommissioning of the Weeks Island, Louisiana, storage site due to geologic instabilities, the Department completed, during FY 1997, the transfer of all readily removable oil from the Weeks Island storage site. In addition to the oil relocated to other SPR sites, eighteen million barrels of this site's inventory were sold in FY 1996 to finance the site's decommissioning and general budget deficit reduction. With the completion of this reported removal of oil from the Weeks Island site, the planned objective of this success measure, ensuring the continued availability of this oil for drawdown, has been achieved.

ER-07 DEVELOPING THE CLEAN, HIGH EFFICIENCY POWER PLANT OF THE 21ST CENTURY

Assessment: Successful

Description: Provide the nation's electric power industry from 2000 to 2010 with a new generation of natural gas, Biomass and coal power technologies that progressively reduce carbon dioxide (CO₂) emissions by 30 to 50 percent, lower sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emissions to as little as 1/10th of the levels mandated by current Federal standards, and produce electricity at costs 10 to 20 percent below today's conventional plants. (FE)

Success will be measured by:

- *Continuing accomplishments in the Clean Coal Technology Demonstration Program, including: - Completing operations at two coal processing facilities (Rosebud, Custom Coals) for clean fuel products that can be used to reduce a utility or industrial power plant's sulfur emissions by 80-90 percent. - Commencing operations at a third commercial-scale coal gasification combined cycle facility (Sierra Pacific).*

FY 1997 Results: The Clean Coal Technology Demonstration Program continues to achieve overall success in attaining the FY 1997 commitment. The demonstration of Rosebud SynCoal Partnership's advanced coal conversion process for upgrading low-rank subbituminous and lignite coals continued reliable operation. Over a million tons of high-quality, low sulfur SynCoal® product have been produced at the demonstration facility. The Department of Energy approved a 13 month no-cost time extension continuing the project to December 1998 that will allow the goals of the operating phase to be achieved. Custom Coals International demonstration facility operations were halted in February 1997 due to problems associated with refuse impoundment. In the fourth quarter of FY 1997, Custom Coals International and Tanoma Coal Sales, Inc. reached agreement on terms for Tanoma to purchase the demonstration facility and continue the project. Tanoma submitted to DOE a draft proposal for review concerning the completion of the project. DOE approved a no-cost time extension continuing the project to December 1997. Sierra Pacific became operational in the fourth quarter of FY 1997.

- *Verifying design goals of fuel cell systems by completing the scheduled test runs of the first two complete natural gas molten carbonate fuel cell power plants that will lead to a 60 percent-efficient market-ready fuel cell system by the year 2000, and initiating testing of the first integrated solid oxide fuel cell plant for electric power generation.*

FY 1997 Results: The Fuel Cell Program estimates that both molten carbonate and solid oxide technologies will be market-ready in 2002 (rather than 2000). This extended estimate has occurred because Federal funding over the last few years has been less than needed for developer requirements. Molten Carbonate Fuel Cells scheduled test runs completed successfully. The Solid Oxide Fuel Cells program completed a 100 kW integrated system assembly.

- *Verifying components in Phase III testing for Advanced Turbine Systems, prior to Phase IV pre-commercial demonstration at utility scale to verify efficiency of at least 60 percent with less than 9 parts per million (ppm) NOx.*

FY 1997 Results: Gas turbine steam cooled components in compressor were verified. Gas turbine steam cooled parts were validated.

- *Completing Combustion 2000 accomplishments to develop a Low Emission Boiler System (LEBS) with 42 percent efficiency; SO₂ and NO_x emissions less than 1/6 the New Source Performance Standard (NSPS); and Indirect Fired Cycle (IFC) with 47 percent efficiency and pollutant emissions less than 1/10 NSPS. - Completing LEBS Phase III engineering design of site-specific proof-of-concept facility, and initiating Phase IV detailed design.*

FY 1997 Results: Completed LEBS Phase III engineering design of site-specific proof-of-concept facility, and selected DB Riley as the sole contractor (out of an original three contractors) to continue into Phase IV detailed design.

ER-08 CERTIFYING THE NEXT GENERATION OF NUCLEAR POWER PLANTS

Assessment: Successful

Description: Make certified standardized Advanced Light Water Reactors (ALWR) available to ensure that nuclear power is an option to contribute to the new electrical capacity projected to be required by 2010. (NE)

Success will be measured by:

- *Submitting the final revised AP-600 Standard Safety Analysis Report to the Nuclear Regulatory Commission (NRC) by September 1997, leading to receipt of the NRC Safety Evaluation Report by December 1997 and NRC design certification in 1998.*

FY 1997 Results: The Standard Safety Analysis Report was submitted to NRC in September. Receipt of the NRC Safety Evaluation Report is anticipated by May 1998 leading to NRC final design approval by September 1998.

- *Completing 90 percent of the DOE AP-600 First-of-a-Kind Engineering program activities by September 1997.*

FY 1997 Results: The program completed about 90 percent of the work, including the substantial completion of systems designs, structural design and arrangements, instrumentation and controls design, and component specifications. The final construction plan and schedule and capital cost estimate will be completed within 3-4 months.

- *Establishing a senior advisory group by March 1997 to develop recommendations to the Department on long-term nuclear research and development strategy.*

FY 1997 Results: The committee reviewed the proposed research and development elements and has submitted reports with comments and recommendations based on their review.

ER-09 IMPLEMENTING INTERNATIONAL CLIMATE CHANGE INITIATIVES

Assessment: Successful

Description: Monitor and mitigate greenhouse gas emissions and achieve U.S. goals under the U.N. Framework Convention on Climate Change. (PO)

Success will be measured by:

- *Assuring that any greenhouse gas reduction commitments under consideration for adoption under the Climate Convention in FY 1997 are based on sound analysis, a realistic appraisal of United States energy needs, and up-to-date information on global energy and emissions trends.*

FY 1997 Results: DOE participated in the development of U.S. positions for the international climate change negotiations responding to the Berlin mandate of 1995. These were concluded in December 1997. DOE was part of the U.S. delegation at the international climate change negotiations. The program protocol that resulted from these negotiations contained marked based provisions championed by DOE that were based on sound analysis, realistic appraisal of U.S. energy needs, and up-to-date information on global energy and emissions trends.

- *Participating in both the interagency assessment of the U.S. Initiative on Joint Implementation (USIJI) and in completing evaluations of the third and fourth round of proposals submitted to the USIJI by developing country partners, through our role on the evaluation panel.*

FY 1997 Results: 28 USIJI projects in 12 countries have been accepted; 11 projects are fully financed, 12 projects are partially financed, finance is pending on the remaining five; 16 projects have begun some activity; the remaining 12 projects are in preliminary development; \$157,586,000 has been committed to the 28 projects; total estimated project costs are \$517,000,000, for all 28 projects. If all projects are fully implemented, they would mitigate 185,000,000 metric tons (mt) of CO₂.

- *Cooperating with IEA energy ministers from developing countries and countries with economies in transition (CWEIT) so that the U.S. position on Climate Change is understood.*

FY 1997 Results: The focus of discussion during the year was the concept of emissions trading. The U.S. hosted a conference in September 1997 on emissions trading which was attended by 8 Eastern European countries and Russia. Subsequent to the conference Russia has indicated its interest in entering into emissions trading agreements. At the Kyoto Conference, Russia was instrumental in advancing emissions trading.

- *Assisting developing countries in developing a CWEIT in forming their climate change positions by continuing the ongoing program, Support for National Action Plans (SNAP), in 17 countries and begin SNAP program in an additional four to six countries.*

FY 1997 Results: 18 SNAP countries are funded and work is under way; these countries include: Bangladesh, Bolivia, Bulgaria, China, Micronesia, Hungary, Indonesia, Kazakstan, Mexico, Philippines, Tanzania, Thailand, Ukraine, Uruguay, and Venezuela. The Czech Republic Country Study is complete and is at the Country Studies Office. There are 35 unfunded SNAP proposals. The absence of resources reduced the number of SNAP country grants and seriously threatens our SNAP technical assistance and training. The strength of the U.S. Countries Studies Program (CSP) (which distinguishes the U.S. program from UNEP and UNDP) has been technical assistance.

ER-10 IMPLEMENTING THE U.S. CLIMATE CHANGE ACTION PLAN

Assessment: Successful

Description: Support the President's Climate Change Action Plan to reduce carbon emissions by over 15 million metric tons and produce more than \$5 billion in consumer energy benefits by the year 2000. (EE)

Success will be measured by:

- *Causing a reduction of 3 million metric tons of carbon emissions in FY 1997 through actions including: -*

Launching a campaign in 6 major cities with national retail chains representing over \$2 billion in appliance sales to designate, label, and promote high-efficiency refrigerators, air conditioners, and dishwashers. - Adding 40 new Rebuild America partnerships and completing 15 action plans. - Adding 80 new Climate Wise industrial partners. - Awarding \$6 million for 16 new NICE³ grants to industry and government cost-shared projects. - Initiating 5 Motor Challenge Excellence Partnerships with large corporations in major energy consuming manufacturing industries. - Maintaining our 600+ existing Climate Change partnership agreements supporting integration of energy efficiency and renewable energy technologies into our partner's Carbon abatement programs.

FY 1997 Results: Launched the Energy Star appliances program in 1,100 stores nationwide with Circuit City, Montgomery Ward, and many local and regional chains. Ten major utilities with a total of 16.5 million customers have signed partnership agreements to promote the Energy Star Program. In FY 1997, the Rebuild America program added 60 new partnerships and completed 19 new action plans. Over 200 Climate Wise partners were signed in the 20-39 Standard Industry Classification (SIC) codes in FY 1997. Awarded \$4.6 million for 13 new NICE³ grants to industry and government cost-shared projects (the original target to award \$6 million for 16 new grants was based on the requested budget and not the budget Congress appropriated). Three Motor Challenge Excellence Partners were signed in FY 1997: 3M, Dupont and Johnson & Johnson. Although, the number of partners goal was not reached, the potential savings from these 3 partners exceeds expectations from the 5 partners originally anticipated. All of the Climate Challenge partnership agreements that have come up for mid-term review in FY 1997, are maintaining their original commitment.

ER-11 MAXIMIZING THE VALUE OF FEDERAL OIL FIELDS

Assessment: Successful

Description: Manage, operate, maintain, and produce the Naval Petroleum and Oil Shale Reserves (NPOSR) to achieve the greatest value and benefits to the Government with consideration of the interests of the joint owners. Carry out divestment actions pursuant to Public Law 104-106, National Defense Authorization Act for FY 1996. (FE)

Success will be measured by:

- *Completing for Elk Hills - Independent analysis of remaining hydrocarbon reserves. - Five independent evaluations of total value. - Determination of equity interest between owners. - Solicitation of offers from prospective buyers.*

FY 1997 Results: Five independent valuations were initiated in March 1997 and briefings were presented to bidders in June 1997. Solicitation for sale was issued in May 1997, and bids were due by October 1, 1997. (The highest bid of \$3.65 billion was accepted from Occidental Petroleum in October 1997.)

- *Submitting recommendations to Congress for disposition of Naval Petroleum and Oil Shale Reserves assets other than Elk Hills.*

FY 1997 Results: Recommendations on the management and disposition of the Naval Petroleum and Oil Shale Reserves were submitted by DOE to the Congress in March 1997.

- *Operating the Reserves in FY 1997, prior to the sale of Elk Hills, so as to achieve: - Production of 43 million barrels of oil and equivalent gas. - Net revenues to the Treasury of approximately \$250 million.*

FY 1997 Results: Elk Hills production for FY 1997 was 43.1 million barrels of oil and equivalent gas. Net revenues to the Treasury was \$361.0 million. The increase over the success measure was due to higher than anticipated prices.

National Security

NS-01 REDUCING THE WEAPONS STOCKPILE

Assessment: Successful

Description: Safely dismantle warheads that have been removed from the U.S. nuclear weapons stockpile in order to reduce nuclear danger and enhance international accord. (DP)

□ Success will be measured by:

- *Dismantling 556 weapons in FY 1997 without adversely impacting the environment, public safety and health.*

FY 1997 Results: As of September 30, 1997, 498 weapons had been dismantled against a revised goal of 556. The W-69 dismantlement program was successfully started on July 21, 1997, but was suspended on September 24, 1997, after completing 42 weapons due to a safety concern over the detonator removal process. The remaining shortfall is from enduring weapon programs that were scheduled for disassembly in support of stockpile management activities.

NS-02 REPLACING UNDERGROUND TESTING WITH SCIENCE

Assessment: Successful

Description: Ensure confidence in the enduring stockpile without underground nuclear testing through a science-based stewardship and management program. (DP)

□ Success will be measured by:

- *Updating the annual Stockpile Stewardship and Management Program Plan.*

FY 1997 Results: The final version of the first annual update to the Stockpile Stewardship and Management Plan is complete and was formally released on October 30, 1997.

- *Installing a one teraflop platform by the end of FY 1997 to begin next-generation weapon simulations.*

FY 1997 Results: The first teraflop platform was installed in June 1997.

- *Meeting the National Ignition Facility construction milestones:*
 - *Site selection by December 1996.*
 - *Initiation of site preparation and long lead procurements by March 1997.*
 - *Remain on schedule to complete project in the 3rd quarter of 2003 with total project costs of \$1.2 billion.*

FY 1997 Results: The Lawrence Livermore National Laboratory was selected as the site for the National Ignition Facility (NIF) in December 1996. Site preparation and long-lead procurements were both initiated in March 1997. The NIF is expected to be completed in the third quarter of 2003 with a total project costs of \$1.2 billion.

- *Conducting key stewardship experiments on the Los Alamos Neutron Science Center (LANSCE) to:*
 - *Demonstrate the feasibility of high-energy proton radiography in submillisecond imaging,*
 - *Measure crystallographic texture of stockpile plutonium samples at various stages of aging.*
 - *Improve the nuclear cross section database of plutonium in support of enhanced archival analysis.*

FY 1997 Results: In August 1997, dynamic proton radiography experiments with a newly-developed multiple-snapshot capability provided an extensive set of data on the performance of stockpile high explosives. These data are providing direct validation for modeling used in the B-61-11 certification process. Experimenters used the High Intensity Power Diffractometer at LANSCE to measure texture (i.e. the distribution of crystal grain orientations) in ^{239}Pu samples taken from a stockpile unit that had been dismantled as part of the stockpile surveillance program. Texture was shown to reveal aspects of processing history that are not available through other means of surveillance. Gamma rays from the residual ^{238}Pu nuclei have been identified and analyzed over the range of incident neutron energies relevant to nuclear weapons test data. These data will be used to improve device performance modeling in the next-generation weapons design computer codes being developed in the DOE's Accelerated Strategic Computing Initiative.

- *Meeting Dual Axis Radiographic Hydrodynamic Test (DARHT) facility construction milestones: - Selecting technology and determining scope of second axis by June 1997. - Completing 3/4 of the hydrotest firing site by September 1997.*

FY 1997 Results: The technology selection for the second axis was made on September 22, 1997. Because the cost of the selected technology for the second axis will significantly exceed the planning estimate for the project, the Los Alamos National Laboratory (LANL) reviewed and revised the baseline change proposal (BCP) and cost estimate. Approximately 75 percent of the hydrotest firing site work was completed by September 30, 1997.

- *Conducting two subcritical experiments at the Nevada Test Site.*

FY 1997 Results: The first subcritical experiment, Rebound, was successfully conducted on July 2, 1997 and the second subcritical experiment, Holog, on September 18, 1997.

NS-03 DEVELOPING A REPLACEMENT SOURCE OF TRITIUM

Assessment: Successful

Description: Develop a replacement source of tritium for the enduring stockpile by 2005. (DP)

Success will be measured by:

- *Issuing a draft request for proposal for supplying tritium through the purchase or lease of commercial reactors or irradiation services by March 1997.*

FY 1997 Results: The draft request for proposal was released on January 28, 1997.

- *Making Departmental decision on the accelerator super conducting design options by March 1997.*

FY 1997 Results: On March 14, 1997, after receipt and evaluation of an independent JASONs study, the Department gave the go-ahead for the design team to incorporate superconducting in its final Conceptual Design Report.

- *Approving the accelerator plant project baseline by September 1997 to be ready to start engineering design in October 1997.*

FY 1997 Results: The final Conceptual Design Report was issued in April 1997, independent verification and validation of the cost estimate was completed in June 1997, and Critical Decision #2, Approval of Baseline, was received on September 19, 1997.

- *Approving the commercial reactor's tritium extraction facility project baseline by September 1997 to be ready to start engineering design in October 1997.*

FY 1997 Results: The final Conceptual Design Report was issued in June 1997, independent verification and validation of the cost estimate was completed in July 1997, and Critical Decision #2, Approval of Baseline, occurred October 1997.

NS-04 DOWNSIZING THE NUCLEAR WEAPONS COMPLEX

Assessment: Successful

Description: Provide an appropriate sized, affordable, and environmentally sound production complex. (DP)

Success will be measured by:

- *Releasing the Stockpile Stewardship and Management Final Programmatic Environmental Impact Statement (PEIS) by December 1996.*

FY 1997 Results: The Final PEIS for Stockpile Stewardship and Management was released in November 1996.

- *Completing the Record of Decision on the PEIS by December 1996.*

FY 1997 Results: The Record of Decision on the PEIS was made in December 1996.

- *Completing Conceptual Design Reports (CDRs), by the end of FY 1997, for each nuclear weapons production facility that will be downsized.*

FY 1997 Results: CDRs for the Savannah River Tritium Facility, the Kansas City Plant, the Y-12 Site and the Pantex Plant were completed during FY 1997.

NS-05 MAINTAINING THE ENDURING STOCKPILE

Assessment: Successful

Description: Ensure the safety and reliability of our nuclear weapons. (DP)

Success will be measured by:

- *Certifying annually that the stockpile is safe and reliable.*

FY 1997 Results: The 1997 Annual Certification Technical Reports were successfully completed by the laboratories and approved by DOE, meeting all milestones. The Annual Stockpile Certification package was approved by the Nuclear Weapons Council in late October and signed by the Secretaries of Defense and Energy and forwarded to the President in November.

- *Meeting all DoD annual weapons alteration, modification, and surveillance schedules.*

FY 1997 Results: Six weapon alterations and two weapon modifications were underway in Fiscal Year 1997. We are ahead of schedule for the B61 Mod 11 conversion; and on schedule for Alt 317 (W76 neutron generator), Alt 335 (B61 Trajectory Sensing Signal Generator), Alt 336 (B61

CF3087 cable), Alt 339 (B61 Multiple Code Coded Switch Encryption Translator), and Alt 342 (W87 Life Extension Program), ALT 750 (B83 radar), and the B83 Mod 1 conversion. There are three major activities under the core surveillance program: flight tests, nuclear component laboratory tests, and nonnuclear systems laboratory tests. Based on our surveillance plans developed at the beginning of this fiscal year, as of September 30, 1997, we were on schedule for flight tests under DOE control, and slightly behind on nuclear components laboratory tests and nonnuclear systems laboratory tests due to Pantex operational issues associated with radiography and mass properties testing. DOE has developed a plan to recover from these operational impacts and, we do not anticipate a major problem with being able to provide the DoD a weapons reliability assessment.

- *Maintaining the Nevada Test Site at a 2-3 year readiness to resume testing.*

FY 1997 Results: DOE is maintaining the capabilities needed to safely conduct an underground nuclear test within two to three years after an order to do so by the President. The capabilities that are being maintained and certified include: (1) those aspects of the physical infrastructure of the Nevada Test Site (roads, utilities, communications, etc.) needed for nuclear testing; (2) the operational facilities (such as diagnostic, rack and assembly facilities) and; (3) the technical personnel at both Nevada and the National Laboratories needed to field a safe and technically useful underground nuclear test.

- *Completing initial risk assessments for each enduring stockpile weapon type, by the end of FY 1997.*

FY 1997 Results: The initial risk assessments, for each type of enduring stockpile weapon, were completed in March 26, 1997. As of September 30, 1997, the initial risk assessments were being consolidated into one risk management matrix, from which a prioritized list of issues will be developed for research and development, enhanced surveillance, and advanced manufacturing activities.

- *Completing the W87 Life Extension Program design assessment phase by June 1997.*

FY 1997 Results: Design assessment activities (testing, evaluation, peer review, and design release) for the first design of the W87 Life Extension Program were completed in February 1997. The assessment identified the need to modify the design. The revised design will undergo additional assessment/validation. The follow-on assessment activities are scheduled and it is anticipated that the follow-on design assessment will be complete by the third quarter FY 1998.

- *Developing enhanced surveillance techniques.*

FY 1997 Results: The milestones and deliverables as documented in the FY 1997 program plan for enhanced surveillance are on schedule. The program continues to produce new surveillance tools (age-focused diagnostics and age-aware models) in support of stockpile life extension and weapons refurbishments.

- *Resuming Y-12 special nuclear material operations necessary to support DoD requirements.*

FY 1997 Results: All operations necessary to support DoD requirements this fiscal year are complete. Y-12 stockpile maintenance capabilities of shipping/receiving, assembly/disassembly, and depleted uranium operations are operational and, in April 1997, DOE authorized Y-12 to resume the disassembly and evaluation of canned subassemblies. Casting operations, rolling, forming, and machining capabilities, and enriched uranium recovery capabilities are scheduled to be on line in the 2nd quarter of FY 1998.

NS-06 MANAGING SURPLUS WEAPONS-USABLE FISSILE MATERIALS

Assessment: Successful

Description: Resolve technical, institutional, cost and international issues necessary to proceed with the verifiable storage and disposition of U.S. weapons-usable fissile materials and support U.S. efforts to attain reciprocal actions for disposition of surplus Russian plutonium. (MD)

Success will be measured by:

- *Announcing a path forward for the storage and disposition of United States weapons-usable fissile materials in January 1997.*

FY 1997 Results: The Record of Decision (ROD) for the Storage and Disposition of weapons-Usable Fissile Materials was issued on January 14, 1997. This ROD calls for the United States to pursue a hybrid strategy (immobilization & MOX/Reactors) to irreversibly dispose of the Nation's surplus plutonium and to reduce the number of sites where surplus nuclear materials are stored.

- *Initiating mixed oxide (MOX) fuel experiments by March 1997.*

FY 1997 Results: MOX fuel-clad experiments were initiated in March 1997; phases I and II of the MOX fuel-clad experiments were completed by September 1997. These experiments tested the interaction of gallium and gallium oxide with prototypic fuel rod cladding materials.

- *Beginning to ship surplus weapons pits from Rocky Flats to Pantex by April 1997.*

FY 1997 Results: The first shipment of surplus weapons pits from the Rocky Flats Environmental Technology Site (RFETS) was received at the Pantex Plant on March 22, 1997. The goal of phasing out the storage of all weapons-usable plutonium at RFETS is based on the cleanup agreement among DOE, EPA and the State of Colorado and the proximity of the site to the Denver metropolitan area. Shipments will continue through FY 1998.

- *Initiating at least five small-scale tests and demonstrations of surplus weapons plutonium disposition technologies jointly with Russia by May 1997.*

FY 1997 Results: Five small-scale tests and demonstrations of surplus weapons plutonium disposition technologies were initiated jointly with Russia by May 1997. These tests and demonstrations support developing technologies for burning mixed oxide fuel in reactors and immobilizing plutonium in high-level waste. A subsequent series of small-scale tests and demonstrations was initiated in September 1997.

- *Initiating by June 1997, site-specific analyses necessary to enable selection in FY 1998, of site(s) for surplus plutonium disposition.*

FY 1997 Results: Site specific analyses commenced in May 1997 following the release of a draft Notice of Intent (NOI) to prepare Environmental Impact Statement (EIS) to select the site(s) where surplus weapons plutonium disposition activities will take place. Public scoping meetings were conducted in June at the four sites (Hanford, Idaho National Engineering and Environmental Laboratory, Pantex and Savannah River) that are under consideration.

- *Making available to the United States Enrichment Corporation (USEC) for down blending and subsequent sale, the first installment of the 50 metric tons of surplus highly enriched uranium by September 1997.*

FY 1997 Results: That portion of the Memorandum of Agreement (MOA) dealing with the transfer of the highly enriched uranium (HEU) to USEC has been satisfactorily negotiated. However, execution of the MOA is being delayed to enable further negotiations regarding non-HEU aspects of the agreement. Despite the schedule delay, all key objectives associated with the transfer of 50 metric tons of surplus HEU to USEC over a five year period beginning in FY 1998 are expected to be met.

- *Select the immobilization formulation (glass or ceramic) for the "can-in-canister" approach by September 1997.*

FY 1997 Results: In September 1997, the Department directed that future efforts be focused on the use of the ceramic form in the preferred can-in-canister approach for immobilizing surplus weapons plutonium. This decision followed a comprehensive technical review of both ceramic and glass formulations, as well as a recommendation from Lawrence Livermore National Laboratory, which served as the lead laboratory for the immobilization effort.

- *Completing a Nonproliferation and Arms Control assessment of plutonium disposition options by January 1997. (NN)*

FY 1997 Results: The Nonproliferation and Arms Control Assessment of Weapons-Usable Fissile Material Storage and Excess Plutonium Disposition Alternatives report was completed in January 1997. This assessment, together with environmental, technical, schedule, and cost analyses formed the basis for the January 14, 1997, Record of Decision on the disposition of U.S. surplus weapons plutonium.

NS-07 ASSISTING RUSSIA, THE NEWLY INDEPENDENT STATES (NIS) AND BALTICS IN IMPROVING THE SECURITY OF NUCLEAR MATERIALS

Assessment: Successful

Description: Work with Russia, the NIS and the Baltics to protect weapons-usable material from theft or diversion by improving the material protection, control and accounting (MPC&A) systems at facilities, as well as cooperating on improving national systems of MPC&A. (NN)

Success will be measured by:

- *Making progress of MPC&A upgrades at each of the 44 facilities in Russia, the NIS, and the Baltics which use or store weapons-usable nuclear material.*

FY 1997 Results: Site security upgrades are now underway at 31 sites in Russia and 13 additional sites in the NIS and Baltics which use or store weapons-usable HEU and/or plutonium. Seven (7) additional projects dealing with national level security enhancements such as federal nuclear material accounting system and security inspection program, along with national training centers and educational programs are on schedule. This milestone which is aimed at rapidly securing weapons-usable materials where it is located is on schedule to be achieved by the end of 2002.

- *Completing MPC&A upgrades at more than four locations in Russia and all but three locations in the NIS.*

FY 1997 Results: Commissioning ceremonies took place at Kiev Institute of Nuclear Research (Ukraine), Institute of Atomic Energy - Kurchatov (Kazakhstan) & Ulba (Kazakhstan). 5 Russian sites during the end of CY 1997; and 1 Ukrainian site and 1 Kazakh site will be completed by May 1998.

- *Expanding cooperation with the Russian Federal Nuclear Radiation and Safety Authority (GAN), including start-up of a pilot federal MC&A information system.*

FY 1997 Results: Significant joint progress has been made with GAN on regulatory and training projects. The start-up of a pilot Federal MPC&A information system began in September 1997.

- *Adding facilities not currently participating in the MPC&A program where we suspect weapons-usable nuclear materials may be in use or stored.*

FY 1997 Results: Secretary Peña and Minister Mikhailov signed a Joint Statement in July 1997 to add an additional facility at Lytkarino. The Krylov Ship Building Research Institute in St. Petersburg, Russia was added to the Cooperative Program in April 1997.

- *Completing the initial phase of vulnerability assessment and preliminary designs of the MPC&A upgrades for the Northern Fleet storage site near Severomorsk by May 1997.*

FY 1997 Results: This work was completed in June 1997.

- *Completing major physical protection upgrades for first fresh fuels storage site in the Northern Fleet by September 1997.*

FY 1997 Results: This work at Russia Navy Site 49 was completed in October 1997.

- *Accelerating MPC&A enhancements for transportation of nuclear material between Minatom facilities in Russia.*

FY 1997 Results: Joint cooperation continued with ELERON (Special Scientific and Production State Establishment, the Russian transportation regulatory body) to continue rapid upgrades on rail cars, the primary mode of transportation for nuclear material.

NS-08 LIMITING WEAPONS-USABLE FISSILE MATERIALS WORLDWIDE

Assessment: Successful

Description: Promote alternatives to the civilian use of plutonium (Pu). Minimize the civilian use of HEU. Reduce stockpiles of HEU and Pu, and work to encourage similar reductions worldwide. Initiate regional fissile material control activities. Assist in the conversion of Russian Pu production reactors to not manufacture weapons-grade Pu. Begin negotiation of an international convention to end the production of fissile material for weapons purposes. (NN)

Comments: The Department has made significant progress to limit weapons-usable fissile materials this year. Most notably, we are nearing completion of the extraordinary effort to freeze the North Korean nuclear program through the canning of the 8,000 fuel rods.

Success will be measured by:

- *Accepting five shipments of U.S. enriched materials.*

FY 1997 Results: Three shipments have been received in FY 1997: one in December 1996, one in April 1997, and one in August 1997. The remaining shipments were delayed into early FY 1998 due to the unavailability of transportation casks.

- *Fabricating miniature test plates of low enriched uranium (LEU) fuel for research reactors by September 1997.*

FY 1997 Results: Fuel plate fabrication is complete.

- *Concluding the contract for the second year of work on cooperative Reduced Enrichment Research Test Reactors (RERTR) efforts with Russian labs by September 1997.*

FY 1997 Results: Useful meetings were held in April to assess the first year of work and discuss the scope of the second year contract. The Russian labs agreed to host the U.S. delegation in Moscow for later meetings to conclude the contract. However, the Russian invitation for the July meeting was granted without adequate lead time and the U.S. team was unable to obtain Russian visas in time, forcing the meetings to be postponed. The Russian delegation was unable to meet during August. This task is on track for completion in early 1998.

- *Conducting irradiation tests of LEU targets for molybdenum-99 production in Indonesia by June 1997.*

FY 1997 Results: Irradiation tests are complete.

- *Completing the canning of the 8,000 spent fuel rods (3,500 as of October 1996) in the Democratic People's Republic of Korea (DPRK) and preparing canned fuel for the application of safeguards by the International Atomic Energy Agency (IAEA).*

FY 1997 Results: 7,750 spent fuel rods (97 percent) canned as of October 30, 1997 (3,550 since October 1, 1996). Under the U.S.- North Korea Agreed Framework, all spent fuel from the 5MW research reactor at Nyongbyon is to be placed in long term storage under IAEA safeguards until transferred out of North Korea. DOE has successfully secured all spent fuel rods under IAEA safeguard seal, and is now cleaning spent fuel debris from the bottom of the basin while preparing for long term storage of the fuel. Completion of this project will enhance the security of the spent fuel, support IAEA safeguards activities, preserve the fuel from corrosion, and simplify its eventual transport from North Korea.

- *Signing contracts and implementing agreements with relevant Russian agencies by September 1997 for the second phase of project to convert the cores of Russian plutonium production reactors to a non-weapons plutonium production mode. (The second phase involves Russian performance of core design and safety analysis tasks that will lead to Russian regulatory approval). (NE)*

FY 1997 Results: All contracts have been signed, including the prime Pacific Northwest National Laboratory-Kurchatov contract and associated subcontracts. The implementing agreement was negotiated (with the final discussion completed in early-August) and was signed at the September meeting of the Gore-Chernomyrdin Commission.

NS-09 ESTABLISHING TRANSPARENT AND IRREVERSIBLE NUCLEAR REDUCTIONS WORLDWIDE

Assessment: Successful

Description: Conduct discussions with the Russian Federation on monitoring inventories of excess fissile material removed from dismantled nuclear weapons. Revise and expand the existing HEU transparency annexes associated with the U.S. purchase of the 500 metric tons of HEU from dismantled former Soviet nuclear warheads. Implement and conduct inspections at Russian facilities subject to the expanded HEU transparency measures. Assess the impact of a future warhead dismantlement verification regime on the U.S. nuclear weapons complex as part of a potential START III arms control treaty. (NN)

□ Success will be measured by:

- *Conducting technology demonstrations at the Oak Ridge National Laboratory to support the U.S. - Russian HEU Purchase Agreement transparency negotiations by October 1996.*

FY 1997 Results: A highly successful technology demonstration was conducted at the Oak Ridge National Laboratory in October 1996 to familiarize Russian technical experts with U.S. enrichment and flow measurement technology that would be installed at Russian facilities associated with the U.S.-Russian Highly Enriched Uranium Purchase Agreement.

- *Conducting a Russian familiarization visit to the Oak Ridge Y-12 Plant, including demonstration of unclassified radiation measurements on actual HEU warhead components, in sealed storage containers removed from dismantled U.S. nuclear warheads by November 1996, and conducting a reciprocal U.S. visit to a Russian facility to take unclassified measurements on Russian warhead components by December 1996.*

FY 1997 Results: A highly successful Russian familiarization visit took place at the Oak Ridge Y-12 Plant in November 1996, and a reciprocal U.S. familiarization visit to Seversk (Tomsk-7) took place in December 1996. During these visits, both U.S. and Russian technical experts successfully demonstrated, for the first time, unclassified radiation measurements on actual U.S. and Russian HEU weapons components, in sealed storage containers, removed from dismantled nuclear weapons.

- *Conducting joint U.S. and Russian measurements on unclassified plutonium sources in sealed storage containers to evaluate the merits of proposed techniques to monitor U.S. and Russian plutonium inventories removed from dismantled nuclear warheads by November 1996.*

FY 1997 Results: A highly successful Russian visit took place at the Lawrence Livermore National Laboratory in November 1996. During this visit, U.S. and Russian technical experts successfully performed joint radiation measurements on unclassified plutonium sources in sealed containers that allowed the merits of various radiation measurement techniques to monitor U.S. and Russian inventories of plutonium removed from dismantled nuclear weapons to be evaluated.

- *Negotiating and signing by December 1996, the revised HEU Purchase Agreement transparency annexes that incorporate significantly expanded transparency measures at Russian facilities.*

FY 1997 Results: At the Fifth Session of the Transparency Review Committee (TRC) in Moscow in December 1996, DOE successfully negotiated and signed seven revised technical implementing annexes associated with the U.S.-Russian Highly Enriched Uranium Purchase Agreement. These signed annexes resulted in successful inspections being conducted at Russian facilities processing highly enriched uranium subject to the HEU Purchase Agreement.

- *Publishing by July 1997 a technical study evaluating various transparency and verification options that could be implemented at DOE facilities as part of a START III treaty.*

FY 1997 Results: The groundbreaking DOE technical report entitled "Transparency and Verification Options: An Initial Analysis of Approaches for Monitoring Warhead Dismantlement" was issued on May 19, 1997. In response to overwhelming demand from the U.S. interagency policy community, DOE printed and distributed over 200 copies of the technical report. In addition, the Arms Control Disarmament Agency Director personally congratulated Secretary Peña for the far-sighted DOE technical report.

- *Implementing the revised HEU transparency annexes, including maintaining a permanent monitoring office at Novouralsk, Russia and conducting inspections at the Siberian Chemical Enterprise at Seversk, the Ural Electrochemical Integrated Enterprise in Novouralsk and the Electrochemical Plant in Krasnoyarsk. (NE)*

FY 1997 Results: Permanent presence monitors performed daily monitoring activities at the Ural Electrochemical Integrated Plant (UEIP) in Novouralsk, Russia, as planned. In addition, UEIP facility staff received recognition from President Yeltsin in August, for cooperation in the HEU Transparency and blending effort. Planned monitoring visits to Seversk (five trips) and Krasnoyarsk (four trips) were completed as scheduled and all goals were met or exceeded. Observation of material received at UEIP and Krasnoyarsk that was tagged and sealed by earlier U.S. monitors at Seversk provided valuable links in establishing a level of confidence that transparency goals are being achieved. U.S. monitors also conducted familiarization visits to two new facilities proposed for inclusion in new transparency annexes that will be negotiated at the next TRC meeting in November 1997.

- *Obtaining the low-enriched equivalent of 18 metric tons of HEU. (NE)*

FY 1997 Results: In CY 1997, the United States Enrichment Corporation (USEC) was responsible for purchasing the low enriched uranium (LEU) derived from 18 metric tons of Russian HEU and the Department was

responsible for obtaining from USEC the natural uranium component of the low enriched uranium. Based on the calendar year delivery schedule, the Russians should have delivered 360 metric tons of LEU derived from 13.4 metric tons of HEU as of September 30, 1997. However, only 198 metric tons of LEU derived from 7.5 metric tons of HEU were delivered. The Russians are several months behind in deliveries. However, shipments from the various Russian production plants have recently restarted and deliveries are in transit to USEC. Due to limitations in the number of product cylinders and overpacks, it is projected that some deliveries scheduled for 1997 will be delayed until January 1998. However, the Department has completed its fiscal year responsibilities associated with the transfer and sale of the natural uranium component from previous years' LEU shipments by signing agreements with USEC and Russia's representative and depositing \$40.1 million in the U.S. Treasury.

- *Preparing U.S. facilities to receive Russian HEU transparency monitors. (NE)*

FY 1997 Results: In April 1997, the Russian representatives of the Ministry for Atomic Energy (Minatom) visited the two U.S. fuel fabricators that ultimately receive the LEU material subject to the transparency measures. The HEU Transparency Program provided logistical and technical support to this visit. In May 1997, the representatives were joined by three permanent presence monitors in Portsmouth, Ohio, to open the Russian permanent presence office at the gaseous diffusion facility. The permanent presence office is a stand alone trailer with two large office areas, restroom, computer and telephone provided by the U.S. Transparency program. The Russian monitors remained for nearly three weeks, performing all monitoring activities cited in the transparency annex. Unlike the full time U.S. permanent presence, the Russian monitors have elected not to be present at Portsmouth on a full time basis, which is their option and allowable in the Annex.

NS-10 STRENGTHENING THE NUCLEAR NONPROLIFERATION REGIME

Assessment: Successful

Description: Promote adherence to the Nuclear Non-Proliferation Treaty (NPT). Increase the effectiveness and efficiency of the International Atomic Energy Agency (IAEA). Conclude successful negotiation of a Comprehensive Nuclear Test Ban Treaty (CTBT). Facilitate IAEA inspections of excess fissile materials. Promote regional nonproliferation measures. (NN)

Success will be measured by:

- *Establishing guidelines and U.S. requirements for global monitoring and on-site inspection capabilities*

at the CTBT international organization in Vienna as Chair or Co-Chair of U.S. Task Forces on-site inspection and data authentication.

FY 1997 Results: The DOE provided two of our Laboratory based experts as U.S. points of contact to the Vienna based CTBT Preparatory Commission in the areas of on-site inspection and the International Data Center. In addition, one of our Laboratory based individuals was selected for a permanent position in the On-Site Inspection Directorate of the Provisional Technical Secretariat, the international organization at the Vienna International Center that is responsible for preparing for eventual entry into force of the Treaty and establishment of the permanent CTBT Organization.

- *Providing equipment, technologies and expertise to the IAEA and UNSCOM to perform monitoring and intrusive inspections in North Korea and Iraq sufficient to verify compliance with their NPT obligations.*

FY 1997 Results: The DOE, in support of the IAEA, conducted a classified technical research study at the IAEA's request during the second half of FY 1997. This study combined the efforts of numerous scientists at four of the DOE National Laboratories. The results of this study were well received by the IAEA. The nature and application of this study is classified and cannot be disclosed in this document. IRAQ: The DOE, in support of the IAEA Action Team and the UNSCOM, provided eleven technical experts during FY 1997, to assist the Action Team in conducting intrusive inspections in Iraq. 33 DOE man-weeks were expended in support of these inspections. During the course of these inspections, water sampling equipment, ground penetrating radar, and electromagnetic sensors were deployed. DOE continued to provide a full-time nuclear expert to UNSCOM to serve as a nuclear advisor to the Executive Chairman of UNSCOM and as nuclear liaison between UNSCOM and the Action Team. Additionally, DOE provided one dedicated person at DOE Headquarters to initiate and coordinate all DOE support to both agencies. This person also represented DOE's interests at the Special Commission Support Office at the US State Department twice weekly to insure proper response to IAEA and UNSCOM requests for technical support.

- *Implementing eleven agreements for safeguards cooperation between DOE and foreign governments organizations (Argentina, Australia, Brazil, Chile, EURATOM, France, Japan(2), South Korea, IAEA, and Brazilian-Argentine Agency for Nuclear Material Control and Accounting).*

FY 1997 Results: Active agreements with each of the listed foreign governments or organizations are in force. Currently there are 37 technical tasks being conducted under these agreements. Nine tasks were completed and closed in the past six months. In Japan, several nuclear safeguards techniques developed under the joint cooperation agreements have recently become accepted routine procedures for IAEA safeguards. An agreement was signed in May 1997 to extend the joint cooperation between DOE and the Japan Atomic Energy Research Institute for ten years.

- *Placing 13 metric tons of U.S. highly enriched uranium hexafluoride, 7 metric tons of uranium oxide, and 6 metric tons of uranium metal (all part of the 200 metric tons of U.S. weapons-grade material declared excess by the President) under IAEA safeguards, with placement to be completed by the end of FY 1999.*

FY 1997 Results: The U.S. and the IAEA have agreed to carry out a joint verification experiment at the Portsmouth Gaseous Diffusion Plant, where the downblending of 13 metric tons of U.S. excess highly enriched uranium began in 1995. The Portsmouth facility was made eligible for IAEA safeguards in April 1996. During a September 22-25, 1997, technical exchange at Portsmouth, the U.S. and the IAEA reached agreement as to the necessary measures for verifying the downblending of U.S. HEU while minimizing impacts on facility operations. The verification activity is aimed at enabling the IAEA to make a credible statement concerning verification of the downblending operations and to gain experience in implementing a new verification plan.

- *Blending a total of 7 of the above 13 metric tons of U.S. highly enriched uranium hexafluoride down to commercial enrichment levels by September 1997. (NE)*

FY 1997 Results: As of September 30, 1997, approximately 8 metric tons have been blended to low enriched uranium.

- *Negotiating a new Agreement for Cooperation with Switzerland pursuant to Section 131 of the Atomic Energy Act that will enable the U.S. and Switzerland to engage in peaceful nuclear cooperation.*

FY 1997 Results: The Agreement negotiations were concluded earlier this year and the Agreement was signed.

- *Concluding an Administrative Arrangement pursuant to the US-EURATOM Agreement for Cooperation to identify implementing procedures for the Agreement by January 1997.*

FY 1997 Results: The Administrative Arrangement was completed in January.

- *Completing annual physical inventory verifications of U.S. fissile material under IAEA safeguards at Rocky Flats in October 1996 and at Hanford and Oak Ridge in September 1997 to ensure that there has been no diversion of materials under IAEA safeguards.*

FY 1997 Results: The IAEA completed its annual physical inventory of U.S. fissile material under safeguards at Rocky Flats in October 1996 and at Hanford and Oak Ridge in September 1997. To support IAEA inspection activities, NN has sponsored technical work to authenticate Hanford and Rocky Flats domestic safeguards systems for IAEA use; the completion of these tasks will enable the IAEA to use selected facility-owned systems to facilitate inspections and reduce impacts on the facility.

- *Providing advanced safeguards equipment and expertise under IAEA "93+2" program to the IAEA. In conjunction with the IAEA and the member states, installing remote monitoring equipment in Argentina and Finland by October 1997 by the U.S. (DOE).*

FY 1997 Results: DOE, Argentina, and IAEA have developed joint specifications for the remote monitoring equipment and testing to be conducted in Argentina. Finland and DOE have completed design for integrating a Finnish built remote monitoring environmental sampling system with the DOE developed system to integrate all measurements.

NS-11 CONTROLLING NUCLEAR EXPORTS

Assessment: Successful

Description: Assist the international community in effectively controlling exports and establishing responsible supplier policies. Implement U.S. statutory licensing requirements for nuclear or nuclear-related export controls. Encourage adherence to the Nuclear Suppliers Guidelines. Strengthen multilateral supplier initiatives. Foster transparency through automated information sharing and analysis. Advance nonproliferation objectives through technology security initiatives. Enhance export controls in the Former Soviet Union states. (NN)

□ Success will be measured by:

- *Adopting and fully implementing the Nuclear Suppliers Group Information Sharing System by April 1997 Nuclear Suppliers Group Plenary Meetings in Ottawa, Canada.*

FY 1997 Results: The DOE developed system was officially adopted and is currently undergoing consideration by the Group for its first major upgrade.

- *Promoting the adherence of NPT-Parties to the Nuclear Suppliers Group Guidelines, including Latvia.*

FY 1997 Results: Latvia became a member of the group in October 1997. Focus of the Group will be on other NPT Parties such as Kazakhstan. Some members are expecting that China may soon adhere to the Group's principles, but this is still some time away in a conservative estimation.

- *Obtaining agreement by the NPT Exporters Committee by May 1997, to initiate a technical review of conversion technologies for uranium hexafluoride, seeking formal adoption of a revised list of clarified controls by May 1998.*

FY 1997 Results: DOE has been required by the Chairman of the Group to continue its technical review. DOE has held bilateral technical consultations with representatives from eight technology holders and will hold a formal technology holders meeting in the new year with an aim to bringing a formal proposal to the Group in May 1998.

- *Training approximately 450 customs inspectors in strategic material identification and illicit trafficking prevention, in order to improve export control systems in the Newly Independent States (NIS), Eastern Europe, and with the U.N. Special Mission for Iraq.*

FY 1997 Results: DOE has participated in several joint trips with the U.S. Customs Service under Project Amber where several hundred customs inspectors and export control officials have received technical training on nuclear nonproliferation issues. DOE continues to provide technical assistance to these joint trips as requested and will participate, as requested, in other similar initiatives under DOD/Customs auspices.

- *Through the six established laboratory to laboratory initiatives, conducting 2 industry outreach seminars in Russia and Ukraine to strengthen controls of nuclear and nuclear-related dual use commodities.*

FY 1997 Results: DOE has increased the number of export control lab-to-lab programs from six to nine. DOE has also conducted with MINATOM, industry outreach seminars in Russia. More seminars are planned for this year.

- *Conducting 2 workshops in Kazakstan and Ukraine focusing on multilateral export control.*

FY 1997 Results: DOE held a very successful workshop with Ukrainian officials on multilateral export controls. A

workshop with Kazakhstan officials was held during November 1997 in Washington.

NS-12 ENHANCING THE SAFETY OF SOVIET-DESIGNED REACTORS

Assessment: Successful

Description: Improve the safety of Soviet-designed nuclear power plants in Russia, Ukraine, and Central and Eastern Europe to correct safety problems endemic to Soviet-designed reactors. (NE)

□ Success will be measured by:

- *Transferring technology for development of emergency operating instructions to Russia, the Ukraine, and Central and Eastern Europe by May 1997, which will ensure that instructions are appropriate for the specific plant and likely to be used effectively by operators.*

FY 1997 Results: Technology for development of emergency operating instructions was transferred to Russia, Ukraine and Central and Eastern Europe by December 1996 ahead of schedule. Continued support has been provided, as requested, to facilitate their use of this technology.

- *Delivering Safety Panel Display Systems to the Kursk nuclear power plant in Russia by February 1997, which will allow operators to collect and view plant status data rapidly.*

FY 1997 Results: The February goal was achieved in July. Although manufacturing of the Kursk Safety Parameter Display System (SPDS) and shipping preparations were completed in February, as planned, the Kursk plant delayed their spring outage until June 1997. Since the SPDS could not be installed until the spring outage, actual delivery was postponed; the unit was delivered and installed as soon as the plant conditions could support. The unit passed final site acceptance test in July 1997 and is operational.

- *Completing shipment of full-scope simulators to the Khmelnytsky nuclear plant in Ukraine by September 1997, which will provide hands-on training for operators and increase their ability to recognize and deal with potentially unsafe situations.*

FY 1997 Results: This milestone was met several months ahead of schedule. The simulator is on-site, and has been assembled. It has undergone final acceptance testing and was turned over in December 1997.

- *Completing installation of the plant analyzer for the Kozloduy nuclear power plant in Bulgaria by March 1997, which will give operators the capability to*

simulate and develop preventive measures and responses to a full range of potential accidents.

FY 1997 Results: The plant analyzer is up and running at the Kozloduy nuclear power plant.

- *Completing preparation of six additional operator and maintenance training courses by August 1997, which will increase the skills of plant technicians in dealing with operational and maintenance tasks.*

FY 1997 Results: A total of 14 additional courses have been implemented during FY 1997 (through September) as follows: Balakovo: Water Chemistry (11/96); Instrumentation and Controls Operations (1/97); Radiation Protection Technician (2/97); Safety Inspector (4/97); Khmelnytsky: Control Room Reactor Operator Phase 2 (12/96); Refueling Operator (11/96); Chemical Operator (2/97); Control Room Reactor Operator Phase 3 (6/97); Smolensk: Mechanical Maintenance (9/97); Shift Supervisor (9/97); Kozloduy: Shift Supervisor (10/96); Reactor Repair Technician (10/96); Mechanical Maintenance (9/97); Chernobyl: Radiation Protection Technician (7/97).

- *Completing delivery of fire safety upgrades for the Smolensk nuclear plant in Russia and the Zaporizhzhya nuclear power plant in Ukraine by September 1997, which will lessen the probability of fires occurring at the plants.*

FY 1997 Results: Deliveries for the fire safety upgrades for the Ukrainian Nuclear Power Plants at Zaporizhzhya met the success measure. All U.S. provided equipment was delivered to the Zaporizhzhya plant several months in advance of the September 1997 target date. Over 80 percent of the equipment has been delivered for the Russian Nuclear Power Plant at Smolensk, including penetration sealant materials, fire doors (400 have been fabricated and delivered to the plant), spray nozzles, fire detectors, and personnel fire protection equipment. Material testing has been completed with successful certification of the floor coating material. Some items in the remaining 20 percent are not yet complete because Russian Certification Requirements and Standards evolved during the past year and a half, requiring extensive additional work. As a result, a new schedule for delivery of the fire detection and alarm system, the radio-communication systems and the floor coating material was established and the remainder of the work will be completed in FY 1998. The Department's performance is on track based on the revised plan.

- *Completing 50 percent of maintenance technology transfers by September 1997, which will increase the*

ability of plant operators to maintain their plants in good condition.

FY 1997 Results: Fifty percent of the maintenance technologies have been transferred.

NS-13 ASSISTING IN THE SHUTDOWN OF THE CHORNOBYL NUCLEAR POWER PLANT

Assessment: Successful

Description: Assist in the multi-national effort to shutdown the Chernobyl nuclear power plant in Ukraine by the year 2000 in order to reduce environmental and safety threats. (NE)

Success will be measured by:

- *Installing a Safety Parameter Display System for Unit 3 of the Chernobyl plant by September 1997, which will allow operators to collect plant status data rapidly and respond quickly to potential problem situations.*

FY 1997 Results: The Chernobyl Nuclear Power Plant Safety Parameter Display System Unit 3 installation has been delayed because of customs problems and lack of delivery of the installation package by the Russian design organization. As a result, a new schedule for installation during first outage in the spring of 1998 was established. The Department's performance is on track based on the revised plan.

- *Presenting recommendations to the G-7 Nuclear Safety Working Group by December 1996 on short- and long-term measures to stabilize the deteriorating sarcophagus around Chernobyl Unit 4.*

FY 1997 Results: The recommendations contained in the internationally prepared report "Chernobyl Unit 4: Short and Long Term Measures" were presented to the G-7 Nuclear Safety Working Group in October 1996. Consensus was reached on these short term measures by the G-7 participants. The report was issued in its final form in November 1996. In December 1996, the G-7 Nuclear Safety Working Group concurred on a plan to prepare a follow-on study referred to as the Shelter Implementation Plan to resolve some of the G-7 and Ukrainian concerns relative to the long term measures including the approach to fuel and fuel containing material issues. The Shelter Implementation Plan was issued in May 1997 and concurred with by the G-7 and government of Ukraine in May 1997.

- *Providing industrial safety and radiation protection equipment, including airborne radiation monitors and personal dosimeters, by August 1997 for personnel who work in and around the deteriorating Chernobyl sarcophagus.*

FY 1997 Results: All Dose Reduction and Industrial Safety Equipment scheduled to be provided to Shelter workers as of August 1997 has been purchased and has either been delivered to the Shelter, or is in Ukrainian customs processing. Actual deliveries to the Shelter have been slowed by changes in the Ukrainian government which invalidated the previously established customs agreements for this equipment. New agreements were established and shipments of the backlogged items are proceeding on an expedited basis. All basic industrial safety equipment such as gloves, first aid kits, respirators with communications capabilities, hard hats, earplugs and basic rescue devices are at the Shelter. Sufficient dosimeters and survey instruments have been delivered to the Shelter in person to support critical operations as the customs issues are worked.

- *Establishing a nuclear energy database at the International Chernobyl Center in Slavutych by June 1997, which will help in analyzing reactor safety, and in fuel and core management.*

FY 1997 Results: A nuclear energy database was established at the Chernobyl Center on July 15, 1997.

NS-14 MANAGING CONTRACTOR WORK FORCE RESTRUCTURING

Assessment: Successful

Description: Mitigate the impacts on workers and communities from contractor work force restructuring and assist community planning and asset disposition while humanely and cost-effectively managing the transition to a reduced work force that will better meet ongoing mission requirements. (WT)

Success will be measured by:

- *Holding to 2 percent or less the number of jobs vacated through incentivized separations that have to be filled by employees outside the DOE complex.*

FY 1997 Results: The sites experiencing work force restructuring track the number of vacated positions that have to be back-filled. Sites also track the number of displaced workers who are rehired. In FY 1997, there were no positions reported as back-filled. However, there were a small number of displaced workers rehired for other positions.

- *Keeping involuntary separations to a range of 25-50 percent of all separations while assuring maintenance of essential work force skills mix and productivity.*

FY 1997 Results: 45 percent of prime contractor separations for FY 1997 were involuntary separations based on detailed reports from DOE field offices.

- *Ensuring reemployment of at least 60 percent of separated workers seeking new jobs.*

FY 1997 Results: The Office annually conducts surveys of previously separated workers. In order to assess results for the period of six months following separation, the most recent survey involved workers separated during FY 1996. That survey indicated that 66 percent of respondents seeking full-time employment are currently employed full-time. The Office is developing additional tracking mechanisms to further confirm these results.

- *Achieving annual recurring cost savings from separated workers that is at least three times the one time cost of separation.*

FY 1997 Results: Work force restructuring costs during FY 1997 totaled \$118,564,038 based on detailed accounting reports from DOE field offices. The average annual compensation cost of employing a full-time prime contractor employee is estimated at \$67,500. This figure multiplied by the 7,029 total positions reduced by the Department's prime contractors during FY 1997, results in an estimated annual savings of \$470,000,000, or approximately 4 times the one-time cost of these separations.

- *Establishing guidance for the fair treatment of contractor employees affected by organizational changes by April 1997.*

FY 1997 Results: Informal changes in guidance have been incorporated based on the recommendations of a process improvement team and Congressional direction provided in the FY 1998 Energy & Water Appropriations Act. Formal guidance revision is expected by Spring 1998.

Environmental Quality

EQ-01 ACCELERATING RISK REDUCTION AND LIFECYCLE COST REDUCTION OF NUCLEAR WEAPONS SITES CLEANUP

Assessment: Successful

Description: Initiate the implementation of the Environmental Management (EM) Ten-Year Vision to complete the cleanup of most of the Department's contaminated sites over the next 10 years and to put in place a responsible waste management, nuclear materials, and surplus facilities stewardship program for the long-term future. (EM)

□ Success will be measured by:

- *Releasing the discussion draft of the Environmental Management Program plan for cleanup for public review and comment by June 1997.*

FY 1997 Results: In June 1997, National and Site discussion drafts "Accelerating Cleanup: Focus on 2006" were sent to all House and Senate members, members of the press, field offices, Site Specific Advisory Board chairs, and stakeholders. Assistant Secretary Alm briefed House and Senate members and hosted a press conference to announce the release of the Discussion Draft. Comments received on the National Discussion Draft were used to formulate the recently issued guidance to be used by the sites in developing their Site Draft 2006 Plans.

- *Implementing the EM Integrated Planning, Accountability, and Budgeting System by September 1997.*

FY 1997 Results: The Integrated Planning, Accountability, and Budgeting System (IPABS) restructures and streamlines formerly independent pieces of EM program's current management structure into one cohesive system. Major portions of IPABS have already been implemented. This includes the projectization of all EM work and the establishment of performance-based metrics and management commitments. Project Baseline Summaries (PBSs), key components of IPABS, were used to formulate EM's FY 1999 budget which was submitted to the Office of Management and Budget in September 1997. Updated PBSs (based on the recently released 2006 Plan Guidance) will be submitted in the November/December time frame. These PBSs will enable EM to report FY 1997 actuals; establish FY 1998 management commitments; finalize FY 1999 formulation activities; initiate FY 2000 formulation activities; and prepare the Draft 2006 Plan.

- *Completing the cleanup of the Pinellas Plant, closing it, and turning it over to the Pinellas County by*

September, 1997. This is the first surplus weapons production site to be closed by the Department.

FY 1997 Results: The cleanup of the Plant is completed. On September 12, 1997, Deputy Secretary Moler attended a celebration of the closure of the Plant held near the Largo Site, Florida. At that time, she provided a symbolic key to the Plant to the new owner, the Pinellas Science Technology and Research (STAR) Center, and honored the efforts of Federal and contractor employees during the 40 years of Plant operations. Pinellas is the first major DOE defense site to be closed, and will serve as the model for future closures. The Plant was closed 2-3 years earlier than initially projected.

- *Accelerating the complete deactivation of the PUREX plant at the Hanford Site from the original schedule of FY 1998 to FY 1997 with an estimated cost reduction of \$43.4 million.*

FY 1997 Results: Deactivation of the Plutonium Uranium Extraction (PUREX) Plant was completed in May 1997, marking a historic achievement for both the Hanford site and the Department. A PUREX Deactivation Recognition Ceremony was held June 20, 1997, at the PUREX facility to acknowledge employee contributions and innovative approaches applied to the project. Honored guests at the ceremony included Assistant Secretary Al Alm, several state legislators, representatives from the U.S. Environmental Protection Agency, and various stakeholders. Transition of the Plant, which produced two-thirds of the U.S. plutonium inventory from 1956 to 1989, was completed months ahead of schedule, taking PUREX out of the weapons loop and reducing surveillance and maintenance costs. Estimated mortgage reduction is \$43.4 million. (\$202.1M original baseline estimate - \$158.7M mortgage reduction alternative estimate = \$43.4M mortgage reduction as reported by the Assistant Manager for Facility Transition to Budget on February 7, 1997.) During the deactivation process, new tools that improved, and will continue to improve nuclear deactivation activities across the DOE complex were developed.

- *Continuing the development of the privatization strategy to provide alternative methods for accelerating cleanup and reduce cost through competition, private sector financing and the application of proven private sector technology and experience by: - Issuing request for proposals for contact handled transuranic waste transportation at Carlsbad, New Mexico, by September 1997. - Issuing*

request for proposals for the Broad Spectrum Low Activity Mixed Waste Treatment at Oak Ridge Reservation by September 1997, and - Issuing request for proposals for the Waste Pit Remedial Action at Fernald, Ohio, by January 1997.

FY 1997 Results: On May 22, 1997, the Albuquerque Operations Office issued a draft Request for Proposal (RFP) for the Contact-Handled Transuranic Waste Transportation Services. The purpose of the draft RFP is to allow vendors and interested parties to submit suggestions and comments regarding the solicitation. The final RFP is expected to be issued by October 31, 1997 with a contract awarded in March 1998. -- The Broad Spectrum Low Level Mixed Waste Treatment at Oak Ridge has been withdrawn as a privatization candidate because it is unlikely to meet the EM criteria for privatization projects. The RFP for the Waste Pit Remedial Action at Fernald was issued January 31, 1997. Bids were received and the contract was awarded on October 20, 1997, to IT Corporation.

EQ-02 MAKING PROGRESS ON THE TREATMENT, STORAGE, AND DISPOSAL OF RADIOACTIVE WASTES

Assessment: Successful

Description: Safely store radioactive and hazardous wastes and reduce environmental risk by treating and disposing of transuranic, mixed low level, and low level wastes. (EM)

Success will be measured by:

- *Issuing the Final Waste Management Programmatic Environmental Impact Statement by June 1997.*

FY 1997 Results: The Final Waste Management Programmatic Environmental Impact Statement (WMPEIS) was published in May 1997. It evaluates the potential cost and environmental effects of alternatives nationwide for consolidating management of approximately two million cubic meters of waste. The final WMPEIS took six years to complete, and included extensive opportunities for public review and comment. It considers dozens of alternative configurations in terms of their costs, potential health and safety impacts on waste management, transportation and workers, and environmental and socioeconomic effects on some 50 million Americans who reside near DOE sites. This comprehensive study provides the foundation for a strategy that will ensure safe and efficient management of legacy wastes, as well as those from future operations.

- *Issuing the Final Waste Isolation Pilot Plant (WIPP) Supplemental Environmental Impact Statement by September 1997.*

FY 1997 Results: The Final Waste Isolation Pilot Plant (WIPP) Supplemental Environmental Impact Statement-Disposal Phase (SEIS-II) was signed by Deputy Secretary Moler on September 19, 1997. The SEIS-II was prepared by the Department to assess potential environmental impacts of six alternatives for disposal of the Department's transuranic waste. The proposed action to dispose of Defense transuranic waste at WIPP is the Department's preferred alternative. This supports the schedule for opening WIPP in May 1998.

- *Issuing Records of Decision on treatment, storage, and disposal of transuranic waste by September 1997.*

FY 1997 Results: Two transuranic waste (TRU) Records of Decision (RODs) will be issued: one based on the analysis in the Final Waste Isolation Pilot Plant (WIPP) Supplemental Environmental Impact Statement (SEIS-II), and the other based on the Final Waste Management Programmatic Environmental Impact Statement (WM-PEIS). The SEIS-II ROD will determine whether to use WIPP for disposal of TRU waste, and if so, what treatment level will be necessary. The WM-PEIS TRU ROD will determine the consolidation strategy for treatment and storage of TRU waste. The SEIS-II was approved in September 1997. The SEIS-II ROD is expected to be issued in January 1998.

- *Producing at least 270 canisters of vitrified high level waste for future repository disposal.*

FY 1997 Results: The DOE Office of Waste Management's High Level Waste (HLW) Program exceeded its commitment to produce 270 canisters of vitrified HLW. The Defense Waste Processing Facility at the Savannah River Site produced 169 HLW canisters and the West Valley Demonstration Project produced 122 HLW canisters for a total of 291 canisters poured in FY 1997.

- *Treating approximately 6,000 cubic meters of mixed low level waste and disposing of approximately 38,000 cubic meters of low level waste.*

FY 1997 Results: Analysis shows that planned actions to treat 6,000 cubic meters of mixed low level waste (MLLW) included 1,705 cubic meters of Pondcrete MLLW at the Rocky Flats site which was sent to Envirocare for commercial treatment and as subsequently disposed. To avoid the appearance of double counting and in compliance with performance measure guidance, this mixed waste volume was only reported in the disposal category. Including this and 4,656 cubic meters reported by the remaining DOE sites, a total of 6,361 cubic meters of MLLW were treated in FY 1997, which exceeded the goal to treat 6,000 cubic meters of MLLW by 6 percent. -- The

disposal of low level waste (LLW) was Successful. FY 1997 actuals for LLW reported by the sites totaled 43,089 cubic meters. The site breakdown was as follows: Albuquerque - 3,801; Chicago - 812; Idaho - 1,293; Nevada - 24,024; Oak Ridge - 253; Oakland - 829; Ohio - 137; Richland - 6,295; Savannah River - 5,645. The commitment to dispose 38,000 cubic meters of LLW was exceeded by 13 percent.

- *Awarding a contract for an advanced mixed waste treatment facility at the Idaho National Engineering Laboratory by December 1996.*

FY 1997 Results: The contract for the Advanced Mixed Waste Treatment Project (AMWTP) was awarded on December 20, 1996, to British Nuclear Fuel Limited (BNFL) Incorporated. The purpose of the project is to maximize the treatment of 65,000 cubic meters of transuranic and alpha low-level mixed waste currently in storage at the Idaho National Engineering and Environmental Laboratory, Radioactive Waste Management Complex, Transuranic Storage Area, while achieving a minimum volume reduction of 65 percent. As of the end of the third quarter, the contractor has submitted to DOE Idaho all required FY 1997 contract deliverables, including the Community Relations Plan (public participation plan), the contractor's AMWTP Project Management Plan, and a report to support the Siting Plan and Study.

EQ-03 REDUCING THE RISKS; CLEANING UP NUCLEAR WEAPONS SITES

Assessment: Successful

Description: Protect human health and the environment from risks posed by inactive and surplus DOE facilities and contaminated areas. (EM)

Success will be measured by:

- *Completing cleanup at 13 EM geographic sites. This will bring the cumulative number of completed geographic sites to 65 out of a total universe of 132 geographic sites to be remediated.*

FY 1997 Results: Ten EM sites completed. In addition, all remediation activities were completed at one additional site. This measure was approximately 80 percent achieved. Sites not completed were attributed to expanded work scopes (discovery of additional contamination, lost work days due to higher than normal rainfall, and necessary rework due to damage over winter shut down) and new contract award (subcontractor terminated due to poor performance).

- *Completing remedial actions at approximately 400 release sites. This will bring the cumulative number of*

completed release sites to approximately 3,600 out of a total universe of 8,826 release sites.

FY 1997 Results: Remedial actions were completed at approximately 485 release sites during FY 1997.

- *Completing approximately 70 facility decommissionings. This will bring the cumulative number of completed facility decommissionings to approximately 310 out of a total universe of 1,090 facilities.*

FY 1997 Results: Approximately 140 facilities were decommissioned during FY 1997.

- *Stabilizing approximately 100 Kg of plutonium across EM sites.*

FY 1997 Results: More than 100 Kg of plutonium across EM sites were stabilized. This represents satisfactory progress toward meeting the Department's commitments to the Defense Nuclear Facility Safety Board to stabilize all of DOE's plutonium by May 2002.

EQ-04 FINDING SOLUTIONS TO SPENT NUCLEAR FUEL STORAGE AND FUNDING ISSUES

Assessment: Successful

Description: Refocus the Civilian Radioactive Waste Management Program to provide meaningful deliverables that are consistent with reduced funding and revised policies. (RW)

Success will be measured by:

- *Completing the excavation of the Exploratory Studies Facility main 5-mile loop and selected scientific instrumentation alcoves to support studies for a viability assessment of the Yucca Mountain site in September 1998, and subsequent site suitability determination and licensing.*

FY 1997 Results: Excavation of the Exploratory Studies Facility main 5-mile loop was completed on April 25, 1997. The thermal test alcove was completed in January 1997. The North Ghost Dance Fault alcove was completed May 9 and testing was initiated May 23, 1997.

- *Submitting the Topical Safety Analysis Report to the Nuclear Regulatory Commission for a non-site specific Phase I interim storage facility design to assist in maintaining a readiness capability should interim storage be authorized by legislation.*

FY 1997 Results: The Topical Safety Analysis Report was submitted to the Nuclear Regulatory Commission (NRC) on May 1, 1997. The NRC performed its acceptance

review, and found the submittal to be complete enough to begin its detailed technical review.

- *Issuing a Revised Notice of Proposed Policy and Procedures under Section 180 of the Nuclear Waste Policy Act, which provides for technical and financial assistance to States and Indian Tribes for training public safety officials through whose jurisdictions spent nuclear fuel and high-level waste would be transported, in preparation for an orderly transportation activity.*

FY 1997 Results: A Revised Notice of Proposed Policy and Procedures under Section 180 of the Nuclear Waste Policy Act was issued on July 17, 1997.

- *Issuing a draft request for proposals to provide waste acceptance and transportation services and equipment for commercial spent nuclear fuel, to carry on collaboration with the nuclear utilities and other stakeholders to resolve issues, and develop the management and logistical capability in the private sector.*

FY 1997 Results: An initial draft request for proposals was issued in December 1996. Based on comments received, a revised draft was issued in November 1997.

EQ-05 SHUTTING DOWN AND CLEANING UP SURPLUS NON-WEAPONS NUCLEAR REACTOR SITES

Assessment: Successful

Description: Safely deactivate surplus nuclear facilities, including the Experimental Breeder Reactor-II (EBR-II) in Idaho, and prepare wastes for interim storage and ultimate disposition. (NE)

Success will be measured by:

- *Removing the remaining EBR-II fuel (53 assemblies, as of September 1996) from the reactor by December 1996.*

FY 1997 Results: All 53 assemblies removed on schedule.

- *Completing construction of the Sodium Processing Facility at Argonne National Laboratory-West by November 1996.*

FY 1997 Results: Completion of facility enables processing of sodium into the stable sodium carbonate form suitable for disposition.

- *Completing the conversion of 30,000 gallons of Fermi reactor sodium, which is currently in storage at Argonne National Laboratory-West, to sodium*

carbonate by September 1997. (The remaining 47,000 gallons of Fermi sodium is scheduled for conversion to sodium carbonate by the end of December 1997).

FY 1997 Results: Significant progress has been made in starting up the Sodium Processing Facility (SPF) during the fiscal year. Much of the process line has been successfully tested using unirradiated sodium, and approximately 80 barrels of Fermi sodium have been successfully melted and loaded into the process line. However, some technical problems that occurred during the startup phase of the SPF have delayed the schedule for the processing of Fermi sodium. Some problems have been corrected and those parts of the sodium conversion process has been successfully tested. Startup testing and correction of additional problems are continuing. Upon completion of testing, corrective actions, and evaluation of alternatives to avoid or minimize future schedule impacts, a revised processing schedule will be developed.

EQ-06 ENSURING ENVIRONMENTAL JUSTICE

Assessment: Successful

Description: Accelerate waste management, environmental cleanup, remediation, and pollution prevention activities in order to address high and adverse impacts of our facilities on the human health and environment of surrounding communities. (ED)

Success will be measured by:

- *Completing the construction of the groundwater remediation system for the F&H Area of the Savannah River Site by July 1997.(EM)*

FY 1997 Results: The remediation system is operational.

- *Completing 75 percent of the interim cap construction begun in FY 1996 for the Burial Ground Complex at the Savannah River Site. This project, when complete, will reduce the infiltration of rain and surface water into 76 acres of buried waste site by 70 percent. (EM)*

FY 1997 Results: Completed. This action reduces risk at one of the highest priority release sites.

- *Completing cleanup activities near the East Fork Poplar Creek community in Oak Ridge. (EM)*

FY 1997 Results: Phase I remediation was completed in 1996. Phase II remediation activities were completed in October 1997. Contaminated soils were removed from the floodplain area along the creek bank and disposed of in the Department of Energy's Y-12 Facility, Industrial Landfill V.

- *Accelerating remediation of environmental contamination and disposal of wastes at the Portsmouth Site, Oak Ridge Operations. (EM)*

FY 1997 Results: Construction of the cap on Peter Kiewit Landfill began in June 1997; 166,700 lbs of PCB waste oil were shipped to the TSCA incinerator (111 percent of the FY 1997 projected total); 107,300 lbs of non-regulated RCRA wastewater were treated and disposed of onsite (82.5 percent of the FY 1997 project goal); over 75,000 lbs of lead-acid batteries were surveyed and released as recyclable material; 135 boxes of sludge (23 shipments) are ready for shipment; 741 drums were repackaged into 73 B-25 boxes.

- *Continuing technical training and expanding access of information on subsistence related health risks to affected populations and professionals in medical, scientific and public health, by providing interactive Internet-based tools and newsletters.*

FY 1997 Results: The second of a tri-annual "Subsistence and Environmental Health Newsletter" was published and 1,800 copies disseminated to stakeholders. Also, the last 31 of 6 regional workshops with the National Academy of Sciences/Institute of Medicine were held to discuss environmental and health related impacts of Federal facilities on various communities and to seek mitigation options.

EQ-07 PREVENTING FUTURE POLLUTION

Assessment: Successful

Description: Reduce the generation of all waste streams in order to minimize the impact of the Department's operations on the environment, reduce operational cost, and improve the efficiency of its operations. (EM)

Success will be measured by:

- *Completing pollution prevention plans showing waste reduction goals for 30 reporting sites by September 1997.*

FY 1997 Results: DOE has completed its review of all Site Pollution Prevention Plans submitted in FY 1997. The Plans contain site-specific waste reduction goals to meet the Department-wide waste reduction goals issued by the Secretary in May 1996. The site-specific goals for the 30 major DOE sites indicate that the Department will achieve the Secretarial waste reduction goals by December 31, 1999.

- *Completing at least 100 pollution prevention projects that reduce/avoid the generation of radioactive and mixed wastes by 4000 cubic meters by September*

1997. (Data for reporting available at end of calendar year 1997).

FY 1997 Results: Based on quarterly reports from the field, DOE has completed 213 projects as of September 30, 1997, totaling 9,340 cubic meters of radioactive and mixed waste reduced.

- *Ensuring that 60 percent of DOE purchases of EPA-designated products contain recycled or recovered materials, except where excluded by Section 402(b) of Executive Order 12873. (Data for reporting available at end of calendar year 1997).*

FY 1997 Results: Initial analysis of the data submitted looks as if the compliance level will be in the 53-57 percent range. DOE established its goal at 60 percent. The shortfall was caused in part by a significant increase in the program's scope from 5 to 24 reportable EPA-designated items. DOE's affirmative procurement program is committed to the acquisition of environmentally preferable products and will work with reporting sites to improve DOE's performance in this area.

EQ-08 NEGOTIATING INTERNATIONAL SUSTAINABLE DEVELOPMENT AGREEMENTS

Assessment: Successful

Description: Further developing institutions required for solving global environmental problems. (PO)

Success will be measured by:

- *Having U.S. proposals adopted in the United Nations organizations on climate change, sustainable development, shipment and disposal of hazardous wastes, and long range transport of air pollution.*

FY 1997 Results: (A). CLIMATE CHANGE. In January 1997, the U.S. submitted its proposal for a legally binding agreement for the post-2000 period under the U.N. Framework Convention on Climate Change. The negotiation for this agreement was completed in December 1997, by the Third Conference to the Parties (COP-3) at its meeting in Kyoto, Japan. Major parts of the U.S. position were adopted. The United States has been successful at promoting its views, which many countries now share. DOE work figures prominently in the development of the U.S. position. (B). SUSTAINABLE DEVELOPMENT. PO staff participated on the U.S. Delegation (USDEL) for the Fifth session of the UN Commission on Sustainable Development (April 1997) and the U.N. General Assembly Special Session on Environment and Development ("Earth Summit 2") (June 1997). PO staff wrote position papers and interventions for negotiations on Energy, Transport and Climate Change, and revised the position papers and briefing notes as negotiations proceeded. PO staff acted as

advisor for senior U.S. Government (USG) officials during negotiations, and conducted negotiations independently when needed. (C). SHIPMENT AND DISPOSAL OF HAZARDOUS WASTE. Although not yet a party to the United Nations Environmental Program (UNEP) Basel Convention on the control of transboundary movements of hazardous wastes and their disposal, the U.S. (DOE interagency member) continues to influence the development of a Protocol on liability and compensation for damage resulting from waste movement and disposal. (D). LONG RANGE TRANSPORT OF AIR POLLUTION. As a result of the United Nations Economic Commission for Europe (UNECE) Convention on Long-Range Transboundary Air Pollution, the USG (DOE member) is influencing Protocol development for the control of persistent organic pollutants and heavy metals.

- *Having "joint action plans" in place with at least two countries to promote environmental security interests of the United States.*

FY 1997 Results: (A). THE BALTIC REGION. DOE is part of an interagency team in the final stages of negotiating a regional Joint Action Plan with the governments of Estonia, Latvia and Lithuania. A U.S. delegation, including DOE, visited the host capitals in September 1997. The Plan outlines activities to characterize and remediate former Soviet military installations, and to train current military personnel in environmentally supportable military management. DOE, Department of Defense (DOD) and Environmental Protection Agency (EPA), as well as host governments, will share responsibility for projects under the Plan. Specifically, DOE will utilize its unique technical expertise in the characterization and remediation of highly contaminated former military sites under the Plan. (B). ARCTIC MILITARY ENVIRONMENTAL COOPERATION (AMEC). A trilateral (U.S., Norway, Russia) initiative lead in the U.S. by the DOD and supported by DOE and EPA. The international agreement addresses major environmental security concerns emanating from inadequate Russian management of naval nuclear materials. DOE will utilize its unique capabilities in handling and disposing of spent fuel. World level attention is being given to this concern including at bilateral U.S.-Russian and G-7 Summits; under the Gore-Chernomyrdin Commission meetings; and with deliberations as a part of the London Dumping Convention. (C). SOUTHEAST EUROPEAN COOPERATIVE INITIATIVE (SECI). In May 1997, an agreement was reached by DOE and cooperating countries under the SECI. Program initiatives will assist economies in transition to develop new and, in particular, to strengthen existing energy efficiency demonstration zones that provide practical, observable examples of how to reduce policy, management and financial barriers to energy efficiency and to increase the participation of foreign and local business

partners. This agreement is the basis for Environmental Security Initiative (ESI) projects expansion in the region.

Science & Technology

ST-01 MAINTAINING HIGH STANDARD OF SERVICE DELIVERY AT DOE SCIENCE FACILITIES

Assessment: Successful

Description: Provide and operate major user facilities needed for DOE research and foster research partnerships with industry and the scientific community. These facilities include synchrotron radiation sources, neutron sources, and electron beam microanalytical instruments which are essential forefront research tools that scientists use to advance knowledge and develop new products, materials, and manufacturing processes. (ER)

□ Success will be measured by:

- *Operating DOE's basic energy sciences user facilities as follows in FY 1997:*
 - *Stanford Synchrotron Radiation Laboratory - 5000 hours*
 - *National Synchrotron Light Source - 4500 hours*
 - *Advanced Light Source - 4500 hours*
 - *Advanced Photon Source - 3000 hours*
 - *Intense Pulse Neutron Source - 3800 hours*
 - *Los Alamos Neutron Scattering Center - 3600 hours*
 - *High Flux Isotope Reactor - 4500 hours.*

FY 1997 Results:

Operating DOE's basic energy sciences user facilities:

- Stanford Synchrotron Radiation Laboratory - 5000 hours
- National Synchrotron Light Source - 5600 hours
- Advanced Light Source - 4800 hours
- Advanced Photon Source - 3300 hours
- Intense Pulse Neutron Source - 3800 hours
- Los Alamos Neutron Scattering Center - 3600 hours
- High Flux Isotope Reactor - 5300 hours

ST-02 CONTINUING SCIENCE-BASED PROGRAMS TO FIND NEW METHODS FOR ENVIRONMENTAL CLEANUP

Assessment: Successful

Description: Focus the Nation's science infrastructure on critical DOE environmental management problems. Forge new and diverse partnerships between the Department's Scientific and Program community to apply scientific knowledge that will revolutionize technologies and clean-up approaches to significantly reduce future costs, schedules and risk. (ER)

□ Success will be measured by:

- *Institutionalizing the Environmental Management Science Program in FY 1997, through the partnership between scientists in the Office of Energy Research (ER) who understand how to select and manage research, and engineers in the Office of*

Environmental Management (EM) directly involved in cleanup who understand cleanup problems and research needs by:

- *Issuing a request for research proposals, including minority participation, for new approaches to the cleanup problems by December 1996.*
- *Completing a review of all high scientific merit applications received, in response to the above request, through a full, external merit peer review by July 1997, and making research awards for projects proposing most promising approaches by October 1997.*
- *Making research awards to qualified applicants by October 1997.*
- *Holding 4 workshops or scientific meetings to identify site-specific research needs.*

FY 1997 Results: A call for research grant applications for the Environmental Management Science Program (EMSP) was issued on December 6, 1996. A similar notice was issued to the DOE laboratories at the same time. In response to these notices, more than 1,200 preapplications were received by the deadline of January 15, 1997. These were evaluated for responsiveness to the solicitations by program managers in both EM and ER, and about 425 were recommended for encouragement of formal applications. - A total of 542 applications and proposals were received by the deadline of April 16, 1997. These submissions were evaluated for scientific merit by peer review panels organized by ER program managers in early June and for relevance and program priority by panels of EM federal staff in late June, ahead of the stated goal of July 1997. Beyond the EMSP program, ER has also developed (in consultation with EM program staff) and issued a notice for the Natural and Accelerated Bioremediation Research program. Nearly 200 applications were received for this program, which supports fundamental research in bioremediation that may solve problems faced by the EM cleanup programs but is also directed more broadly at enabling application of bioremediation in the full range of environmental problems faced by the nation. - Several meetings have taken place during FY 1997 to identify research needs to be addressed by the EMSP. Meetings have been held at Oak Ridge and Idaho Falls to address needs of those sites. A tank wastes workshop has been held in Richland, focusing on the needs of the Hanford and Savannah River sites. A plutonium workshop has taken place in Santa Fe, addressing scientific and technology progress and needs of the sites that must deal with this material. Other meetings relevant to EMSP have taken place in addition to these four, for example a workshop organized by the groups funded in the 1996 EMSP for research into

sonification engineering, meeting the stated goal of holding four workshops on site-specific research needs.

ST-03 TRANSFERRING ENVIRONMENTAL TECHNOLOGIES

Assessment: Successful

Description: Demonstrate new environmental technologies and systems and transfer them to private industry and Federal facilities. (EM)

Success will be measured by:

- *Demonstrating 20 new environmental technologies and systems.*

FY 1997 Results: The Office of Science and Technology has demonstrated 56 new environmental technologies and systems.

- *Making 40 environmental technologies available for transfer to and use by private industry and Federal facilities.*

FY 1997 Results: The Office of Science and Technology has made 51 environmental technologies available for transfer and use by private industry and Federal facilities.

ST-04 EXPLORING THE FRONTIER OF HIGH ENERGY PHYSICS

Assessment: Successful

Description: Continue to pursue international collaboration on large science projects. Conclude a formal U.S. Agreement with the European Laboratory for Particle Physics (CERN) leading to U.S. Participation in the Large Hadron Collider (LHC) and major detector projects. (ER)

Success will be measured by:

- *Concluding negotiations and signing the DOE-NSF/CERN Umbrella Agreement on Participation in the European Laboratory for Particle Physics (CERN) Large Hadron Collider (LHC) program which will provide for participation by U.S. scientists in the LHC and the A Toroidal LHC Apparatus (ATLAS) and Compact Muon Solenoid (CMS) detectors.*

FY 1997 Results: Negotiations were concluded with CERN on the Formal Agreement for US participation in the LHC accelerator and the ATLAS and CMS detectors, and requested funding has been provided by the Congress in the FY 1998 budget. The agreement was signed by Secretary Peña and Neal Lane, Director of the National Science Foundation (NSF), at a ceremony hosted by the Presidential Science Advisor, on December 8, 1997.

- *Completing a cost, schedule, and management review of U.S. plans for DOE and NSF participation in the two large LHC detectors.*

FY 1997 Results: Management reviews of the two detectors were conducted in May and June 1997. Management will continue to conduct such reviews in the future as the detector projects progress.

- *Ensuring, through close management review, that U.S. universities and laboratories honor their commitments to provide R&D and prototypes of deliverables under the existing Interim Memorandum of Understanding (MOU) for the two LHC detectors and under the Interim Implementing Arrangement (IA) for the LHC Accelerator.*

FY 1997 Results: The university and laboratory groups working on the LHC continued their efforts under the interim MOUs and IA. This is an ongoing success factor and is judged to be partially successful since the management details and staffing are not fully in place.

ST-05 INVESTIGATING THE CAUSES OF GLOBAL CLIMATE CHANGE

Assessment: Successful

Description: Continue to acquire data and develop the understanding necessary to predict if and how energy production and use can affect global and regional environment. (ER)

Success will be measured by:

- *Completing a series of experimental atmospheric measurements at an Atmospheric Radiation Measurement site to resolve whether the difference between observed and modeled absorption of solar radiation by the atmosphere under cloudy sky conditions is due to measurement errors or to a failure of the radiative transfer code in General Circulation Models to accurately model absorption under cloudy sky conditions.*

FY 1997 Results: Both the promised campaign and additional measurements have been carried out. The Fall 1997 campaign was successful and provided much important data that is currently being analyzed. Although substantial disagreement among members of the scientific community still exists, the range of issues that are in question has been decreased by these investigations.

ST-06 CONTINUING PEACEFUL USES OF THE ATOM

Assessment: Successful

Description: Continue cooperative efforts with Russia begun in 1973 for fundamental properties of matter, magnetic

confinement fusion, nuclear reactor safety, environmental restoration and nuclear waste management under the Peaceful Uses of Atomic Energy Agreement (PUAE). (PO)

Success will be measured by:

- *Renewing the existing umbrella PUAE, which will expire June 1997, for 12-18 months and beginning negotiations of a new and expanded PUAE Agreement.*

FY 1997 Results: The U.S. submitted a diplomatic note to the Russians soon after the expiration of the umbrella agreement proposing an 18 month extension of the umbrella. The Russians have now responded and the agreement is extended until December 1, 1998.

- *Extending the Memorandum of Cooperation with Russia on fundamental Properties of Matter for its full 5-year term.*

FY 1997 Results: All four Memoranda of Cooperation have been extended for their full 5-year terms.

ST-07 ENSURING THE AVAILABILITY OF ISOTOPES FOR INDUSTRY, RESEARCH, AND HEALTH CARE

Assessment: Successful

Description: Produce and distribute radioisotopes and enriched stable isotopes for research and development, medical, industrial, agricultural, and other useful applications. (NE)

Success will be measured by:

- *Reconfiguring the Annular Core Research Reactor for increased molybdenum-99 production capability by September 1997.*

FY 1997 Results: Hardware reconfiguration of the reactor was completed five days ahead of schedule.

- *Issuing four requests for proposals (RFP) by September 1997 for privatization of isotope program activities.*

FY 1997 Results: One RFP was issued in final on October 2, 1997. A second RFP was issued on December 8, 1997. A draft RFP, which combined two activities was issued on November 7, 1997.

- *Reducing the cost of isotope production in order to maintain a gross profit for all isotope sales of 20-25 percent by the end of FY 1997 despite a decreased world market for isotopes.*

FY 1997 Results: The gross profit of 20-25 percent was not achieved because of changes in commercial markets, foreign competition, customer requirements, loss of revenue from the High Flux Isotope Reactor, and accounting reclassification. Final adjusted number s provided by the KPMG Independent Accounting Firm after completing the audit included: \$10.9 million in revenues and \$13.3 million in production expenses resulting in a \$2.4 million loss.

ST-08 PROVIDING RADIOISOTOPE POWER SYSTEMS FOR U.S. SPACE EXPLORATION

Assessment: Successful.

Description: Design, fabricate and assemble radioisotope thermoelectric generators (RTGs) and radioisotope heater units (RHUs) for delivery to the National Aeronautics and Space Administration (NASA) for use on the Cassini mission, scheduled for launch in October 1997, and the Mars Pathfinder mission, scheduled for launch in December 1996. (NE)

Success will be measured by:

- *Completing safety test program for Cassini mission, issuing Cassini Final Safety Analysis Report, and supporting NASA in obtaining nuclear launch safety approval for the October 1997 launch.*

FY 1997 Results: The safety test program for the Cassini mission was completed and the Final Safety Analysis Report was approved on July 31, 1997. The Department supported NASA in obtaining nuclear launch safety approval for Cassini for the October 1997 launch.

- *Supporting launch of NASA Mars Pathfinder spacecraft (which uses three DOE-provided RHUs) in December 1996 by providing onsite technical support personnel and by having DOE emergency response capabilities in a full-readiness mode.*

FY 1997 Results: The Department provided onsite technical support personnel and emergency response capabilities for the NASA Mars Pathfinder spacecraft which was successfully launched in December 1996 and landed on Mars July 1, 1997.

- *Supporting launch of Cassini mission to Saturn, scheduled for October 1997, by completing RTG assembly and acceptance testing and shipping three new Cassini RTGs and the flight spare RTG to Kennedy Space Center at least three months prior to launch.*

FY 1997 Results: The Department successfully completed RTG assembly and acceptance testing and shipped three new Cassini RTGs and the flight spare RTG to the

Kennedy Space Center in May 1997 ahead of schedule five months prior to launch.

ST-09 CONTINUING TO IMPLEMENT A REDIRECTED FUSION ENERGY SCIENCES RESEARCH PROGRAM

Assessment: Successful

Description: Advance plasma science through the pursuit of national science and technology goals, development of fusion science and technology, and plasma confinement innovations as the central theme of the domestic program, and pursue fusion energy science and technology as a partner in the international effort. (ER)

Success will be measured by:

- *Establishing a Basic Plasma Science Program at three to five universities as part of a multi-agency effort aimed at support of fundamental science issues associated with the plasma state of matter by January 1997.*

FY 1997 Results: From proposals submitted in January 1997, five physicists have been selected to receive Plasma Physics Junior Faculty Development Program grants totaling \$1.8 million over three years. The program provides grants to outstanding plasma researchers early in their careers to maintain the vitality of university plasma research and to assure continued excellence in the teaching of plasma physics and related disciplines. In addition, DOE and the National Science Foundation have established a partnership for basic research in plasma science and engineering. In response to a Program Announcement, more than 240 proposals were received and subjected to a peer review process, resulting in the awarding of about 35 grants, 15 of which will be funded and managed by DOE.

- *Completing the Tokamak Fusion Test Reactor experimental research program in the third quarter of FY 1997 and implementing a safe shutdown by the end of FY 1997, consistent with Congressional guidance.*

FY 1997 Results: From December 1982 to April 1997, the Tokamak Fusion Test Reactor (TFTR) at the Princeton Plasma Physics Laboratory served as the largest US magnetic fusion research facility, setting the existing world record for fusion power production (10 MW) and achieving its ultimate scientific goals for studying the physics of reactor-grade fusion plasmas. Safe shutdown of TFTR began in April 1997 and was completed on schedule within 6 months. The facility will be in a caretaking mode until resources are available for dismantling and disposing of its components.

- *Beginning a competitive selection process for new proposals aimed at stimulating innovative fusion*

concepts with cost-effective development paths by mid-FY 1997.

FY 1997 Results: The competitive selection process began as scheduled in March 1997. Forty proposals were received by the May due date. A technical merit peer review was completed in July 1997, and the ER will announce the selection of the four top rated proposals for funding.

- *Completing and reviewing, jointly with our international partners, the International Thermonuclear Experimental Reactor Detailed Design Report (ITER DDR), including cost estimates and safety assessments by August 1997.*

FY 1997 Results: The ITER DDR was completed by the Joint Central Team in December 1996. The ITER Council's Technical Advisory Committee reviewed the report in January 1997 and found it to be a sound basis for proceeding to the Final Design. The Council then invited each of the ITER participating parties to present its views on the DDR at the August 1997 Council Meeting. In the US, the Fusion Energy Sciences Advisory Committee conducted an extensive review of the DDR, broadly engaging the U.S. fusion community. At its July 1997 meeting, the Council heard the positive views of the parties, based on in-depth domestic reviews, and approved the DDR and its related technical documentation as the basis on which to continue the technical work for the remainder of the ITER Engineering Design Activities.

ST-10 BUILDING THE NEXT GENERATION INTERNET

Assessment: Successful

Description: Implement the Presidential Initiative on the Next Generation Internet is a multi-agency effort that includes the Defense Department, Energy Department, National Science Foundation, National Aeronautics and Space Administration (NASA), and the Commerce Department. Build a foundation of computer network technology applications for the future will be built through coordinated research activities. (ER)

Success will be measured by:

- *Developing a plan for implementation of the Next Generation Internet (NGI) initiative and by developing Congressional support to secure funding for the initiative in cooperation with other Federal agencies and stakeholders.*

FY 1997 Results: IMPLEMENTATION PLAN: DOE has completed a number of activities related to this commitment. This is an interagency effort with NSF, NASA, DARPA, NIH, NOAA, and NIST. A multi agency strategic plan for the NGI was completed and released to

the public in May; DOE participated in a public workshop to get public comment on the strategic plan; a detailed implementation plan for the initiative, based on the budgets in the President's FY 1998 Request, has been produced; Director of the Office of Energy Research has held a number of public meetings to develop a technical roadmap for the initiative. The Director of the Office of Energy Research and other DOE staff participated in a NASA meeting in Silicon Valley to discuss government plans with leaders in industry. DOE and NSF signed a Memorandum of Agreement (MOA) to define how they would jointly manage the connections to universities.

ST-11 ADVANCING THE STATE OF GENOMIC RESEARCH

Assessment: Successful

Description: Work with the National Institutes of Health and the international community to advance the state of human genome research by reducing cost and increasing speed and quality of DNA sequencing and improving quality and efficiency of data entry into public data bases. Increase number of microbial sequences in public databases and identify microbial enzymes useful for DOE missions, including environmental cleanup. (ER)

Success will be measured by:

- *Establishing a DOE Joint Human Genome Institute by combining the strengths of three national laboratories: Lawrence Livermore, Los Alamos, and Lawrence Berkeley.*

FY 1997 Results: A DOE Joint Human Genome Institute (JGI) was established with the signing of a Memorandum of Understanding between Lawrence Livermore, Los Alamos, and Lawrence Berkeley. The JGI has developed an operating and research plan, established a management team and structure, and has been reviewed by both an external group of scientific experts and their own scientific advisory group. The JGI and its Production Sequencing Facility will be responsible for contributing DOE's share of human DNA sequencing to the U.S. Human Genome Project. The JGI will continue developing and using sequencing strategies that automate as many steps in the process as possible from sample preparation to sequencing to data analysis to submission of data to public databases. The JGI sequencing factory will also be a community resource for testing and implementing new sequencing methodologies or tools that show the greatest promise for markedly reducing cost and increasing accuracy and speed.

- *Expanding the Microbial Genome Program by starting the characterization of microbial genes to identify enzymes with important DOE applications.*

FY 1997 Results: The Microbial Genome Program determined the complete genomic sequence or the sequence of microbial plasmids of several microorganisms with relevance to DOE. These include microbes, microbial gene pathways, or microbial genes for methane production, for the degradation of complex organic molecules, that are responsible for oil well fouling, and that produce gas vesicles that float on the surface of water. These have potential impacts on a number of DOE programs including the development and use of alternative fuel sources, environmental cleanup, improved yields from oil wells, and cleanup of oil spills. In addition, the Microbial Genome Program has expanded its research portfolio following a successful competition for a major microbial genome sequencing laboratory, for tools to better predict the function of microbial genes from their genomic sequence data, and for improved tools for the use and analysis of microbial genomic data in public databases. This new research will be funded in FY 1998.

ST-12 DIVERSIFYING AMERICA'S SCIENCE WORKFORCE

Assessment: Successful

Description: Develop a comprehensive agency-wide research and education program for the participation of minority educational institutions in Department of Energy missions and functions. (ED)

Success will be measured by:

- *Reaching a goal of \$100 million to support programs with minority educational institutions to assist the Department in carrying out its programmatic missions. 1500 minority students will graduate with science degrees as a result of DOE's contribution to more than 75 minority educational institutions in 1997.*

FY 1997 Results: The Department awarded \$63 million to minority educational institutions through grants and cooperative agreements, which amounted to 63 percent of the goal. The Department's support to minority educational institutions resulted in more than 1,600 students receiving science degrees. These statistics are validated by the American Association of Engineering Societies.

- *Adopting a Department-wide coordinated funding strategy to support mandates outlined in Executive Orders: 12876 (Historically Black Colleges and Universities), 12900 (Educational Excellence for Hispanic Americans), and 13021 (Tribal Colleges and Universities) for the purpose of defining mission-related funding opportunities within Departmental elements.*

FY 1997 Results: The Department's funding strategy resulted in significant mission-related opportunities for minority educational institutions, such as:

- an environmental education award to the United Negro College Fund.
- selection of a renowned nuclear physicist to receive the first Chair of Excellence Professorship in nuclear physics at a historically Black college and university.
- first-time partnerships between U.S. Hispanic-serving institutions and Latin American counterparts to develop synergy with the Department's national laboratories in the area of international energy-related environmental research.
- technical assistance workshops to assist minority educational institutions in preparation of applications and proposals for participation in the Department's missions and functions.

ST-13 EVALUATING RESEARCH PROGRAMS USING PERFORMANCE MEASUREMENT

Assessment: Successful

Description: Formalize application of performance measures in four critical areas to evaluate research programs: (1) excellence in basic research, (2) relevance to DOE missions and national needs, (3) stewardship of research capabilities including essential scientific disciplines, institutions, and scientific user facilities, and (4) program management. For each of these areas of performance measurement, include, as applicable, the use of peer reviews, metrics, customer and stakeholder input, qualitative assessments such as historical retrospectives and annual program accomplishments. (ER)

Success will be measured by:

- *Formalizing a Performance Measurement Process for the Department's scientific research programs by September 1997.*

FY 1997 Results: The Office of Energy Research established a Performance Measurement Team with representatives from its research offices. The Team developed a format whereby each research office will report its performance in each dimension of performance (i.e. quality, relevance, stewardship, and research management) and as appropriate evaluate accomplishments using the accepted set of assessment tools: peer review, metrics (counting things), stakeholder input, and program accomplishments.

ST-14 BUILDING THE NATIONAL SPALLATION NEUTRON SOURCE

Assessment: Successful

Description: Build the next-generation, high power, pulsed spallation neutron source. The National Spallation Neutron Source (NSNS) now in planning at Oak Ridge National

Laboratory, will put the U.S. at the international forefront of neutron science. (ER)

Success will be measured by:

- *Success will be measured by completing a peer review of a Conceptual Design Report (CDR) for the National Spallation Neutron Source by sixty independent, world-wide experts by July 1997.*

FY 1997 Results: The successful validation review of the CRD, covering cost, schedule, technical baselines and management of the NSNS project was conducted on June 23-27, 1997, and a review report has been issued.

ECONOMIC PRODUCTIVITY

EP-01 INCREASING U.S. ENERGY TECHNOLOGY EXPORTS AND INVESTMENTS

Assessment: Successful

Description: Stimulate sales of U.S. energy technology and capital investments in countries with large emerging markets. Diversify world wide supply through targeted support for U.S. industry efforts to invest in new oil and gas supplies and energy efficiency and renewable technologies. (FE/EE)

□ Success will be measured by:

- *Removing barriers to U.S. companies in coal technology, energy efficiency and renewables markets, including those in China, Brazil, India, South Africa, and other developing countries that will use coal by: establishing U.S. and foreign partnerships, and providing technical expertise to multilateral and regional financing institutions in evaluation of finance applications.*

FY 1997 Results: For coal technology: China - The U.S./China Energy and Environmental Technology Center has been established. U.S. companies were escorted to China on specific trade missions. Work has been ongoing with the Asian Development Bank to develop frameworks for financing projects in China. New work plans for Fluidized Bed Combustion (FBC), Integrated Gasification Combined Cycle (IGCC), environmental control technologies, have been developed. Brazil - Work is ongoing with the World Bank Group for financing projects in Brazil. Assisted in developing framework for Coal Policy in Brazil which includes limiting import taxes. Facilitated U.S. industries activity for specific projects. South Africa - In August 1997, DOE and Tuskegee University co-sponsored the International Mini-Conference '97, Joint Ventures: Tuskegee University Capacity Building Program in Collaboration with the Republic of South Africa, American Businesses and Academia at Tuskegee University in Alabama. Participants included the Director of Coal Energy, the RSA Department of Minerals and Energy; representatives of ESKOM, the Embassy of South Africa and Witwatersand University, RSA. Representatives from Fort Hare University, RSA; M.L. Sultan Technikon, RSA, and U.S. energy industry and academia attended the conference. Conference participants were able to: (1) establish dialogue on Clean Coal Technologies and opportunities for both U.S. and South Africa; (2) explore opportunities for technology transfer, and (3) seek collaboration for joint ventures in coal utilization. Progress in Energy Efficiency & Renewable Energy includes: CORECT (Committee on Renewable Energy Commerce & Trade) and COEECT (Committee on Energy Efficiency Commerce & Trade) continued to develop appropriate partnerships to reduce barriers to

utilization of efficiency and renewable technologies. Technical assistance is being provided to multilateral lending institutions to assure that efficiency and renewable technologies are included in their lending portfolios and that financing decision makers are aware of the benefits of using these U.S. technologies.

- *Initiating a forum for Arctic oil and gas practices with the Russian producing associations.*

FY 1997 Results: Under the Gore-Chernomyrdin Binational Commission's (GCC9) Energy Policy Committee, Business Development Committee, and the Environment Committee, a concept paper was developed to propose a U.S. -- Russian Marine Discharges Workshop, and the paper was delivered in Moscow by EPA officials, during GCC9, to discuss with appropriate Russian Ministries. The original idea of the forum on Arctic practices was revised to reflect the changing business climate and input by U.S. industry and the Russian Government to address a discrete subject area.

- *Opening of oil, gas, energy efficiency and renewable technology opportunities for U.S. companies by Ukraine.*

FY 1997 Results: DOE, under the Gore--Kuchma Binational Commission, wrote and delivered two papers to the Government of Ukraine: "Opportunities and Obstacles to Investment in Ukraine's Oil and Gas Sector" and "Comments on the Draft Law of Ukraine on Production Sharing Agreements". DOE hosted senior Ukrainian Government officials and U.S. industry in May 1997, to discuss the PSA legislation and they agreed to use some of our suggestions. In May 1997, Gore and Kuchma agreed in the "Joint Initiative on Gas Sector Reform" to jointly develop a strategy and action plan leading to a market-oriented, competitive, transparent, and efficient gas sector in Ukraine. DOE discussed Production Sharing Agreement legislation and gas sector reform in Energy Working Group and Sustainable Economic Cooperation meetings in Kiev in October 1997. Progress in Energy Efficiency includes: (1) Completed financial & technical assessment for a \$38 million loan to improve the efficiency of public buildings in Kiev under the World Bank Kiev Institutional Buildings Assessment and Demonstration Project (KIBA). Completed installation of demonstration project applying energy efficient controls and measures in four schools. Presented computers to those schools as a representation of the energy savings they made. (2) Two large industrial plants received assistance and developed financing packages for energy efficiency improvements. One facility is expected to announce soon implementation of \$50 million dollars of efficiency measures. In addition, at

four other plants, initial efficiency assessments have been conducted and two plants have been identified to receive technical assistance for development of financing packages.

(3) The European Bank for Reconstruction and Development (EBRD) has responded affirmatively to DOE's request to be involved in EBRD's plan to develop projects for its UkrESCO (the energy service company sponsored by the bank). (4) After further analysis of the structure of Ukrainian district heating systems, a "subsidy shift" approach to the District Heating initiative was found to be unwarranted. Instead, a Gas Savings Project was initiated as a better way to address the problem. (5) A new Memorandum of Understanding (MOU) was signed related to the Task Force on Energy Efficiency Financing. The State Committee on Oil, Gas, and Oil Refining Industry of Ukraine was a new signatory to the MOU which also includes the U.S. Department of Energy and the State Committee of Ukraine for Energy Conservation., This is a top priority for Ukraine. (6) A Phyto Remediation project proposal developed for (i) biomass remediation of Strontium 90 and Cesium 137, and (ii) biomass power generation in the Chernobyl Exclusion Zone was reviewed. The Office of Nuclear Energy, Science, and Technology and the Office of Energy Efficiency and Renewable Energy are working together on developing a plan to implement this initiative. DOE representatives attended meetings in December in Slavutich and Chernobyl and follow up meetings and round tables are scheduled for February 1998. (7) DOE under the U.S. Business Development Support program awarded a contract to AIDCO to work with Ukraine's Orizon to finance a facility manufacturing energy-efficient windows.

EP-02 IMPROVING EFFICIENCY IN ENERGY INTENSIVE INDUSTRIES

Assessment: Successful

Description: Work with the most energy-intensive industries to focus cooperative research, increase energy and resource efficiency and improve U.S. competitiveness resulting in over \$10 billion of industry energy cost saving by the year 2010. (EE)

Success will be measured by:

- *Signing an aluminum industry partnership agreement by October 1996; signing a chemical partnership agreement by April 1997; and working with industry members to develop a consensus petroleum refining vision in the industry by September 1997.*

FY 1997 Results: Aluminum industry partnership signed in October 1996. Chemical industry partnership signed February 1997. Refining industry members prepared a preliminary vision in February 1997 but have decided to discontinue work and have put off development of an industry vision indefinitely.

- *Continuing roadmapping activities with six industries of the future.*

FY 1997 Results: Roadmapping activities are underway in six industries of the future - Forest Products, Chemicals, Glass, Steel, Metal Casting, and Aluminum.

EP-03 DELIVERING THE BENEFITS OF EFFICIENCY AND RENEWABLE ENERGY RESEARCH, DEVELOPMENT, AND DEPLOYMENT TO U.S. CONSUMERS

Assessment: Successful

Description: Work with our customers, partners and stakeholders to develop and make available to consumers energy saving and renewable energy products that will reduce their energy bills, improve the economy, prevent pollution and improve the environment. Save the public more than five dollars for each dollar of government investment in energy technology, with an average per person saving of \$40 per year by the year 2000. Continue to build the industry base for a sustainable energy strategy and meet the growth in domestic and international demand for fuel and clean energy products. (EE)

Success will be measured by:

- *Saving \$10 billion in consumer energy cost in their homes, buildings, businesses, industries, and vehicles.*

FY 1997 Results: Based on this year's growth in market sales and application of products dependent upon EE developed technologies, services, and processes, consumers have realized more than \$10 billion in energy cost savings this year. Some of those products that EE has developed include efficient windows, efficient oil burners, lighter weight cars, more efficient appliances, and efficient motors.

- *Saving \$700 million in Government energy costs.*

FY 1997 Results: Preliminary data indicate the Federal government avoided \$823 million in Federal buildings systems energy costs in FY 1997.

- *Producing over \$600 million dollars worth of new sustainable energy capacity. Reducing imports by 1 billion fewer gallons of gasoline, thus saving \$300 million.*

FY 1997 Results: U.S. renewable industry annual sales surpassed \$700 million.

- *Reducing imports by 1 billion gallons of gasoline, thus saving \$300 million.*

FY 1997 Results: Saved 1 billion gallons of oil as a result of DOE transportation technologies RD&D.

- *Avoiding 15 million tons of pollutants.*

FY 1997 Results: Consumers saved money by using products and processes that require less energy such as installing efficient windows or oil burners, lighter weight cars, and more efficient appliances or electric motors. These energy savings reduced the amount of carbon dioxide emissions by 30 million tons and concomitant amounts of CO, Carbon, SO_x, NO_x, and particulates.

EP-04 PLANNING THE BUILDINGS AND COMMUNITIES OF THE 21ST CENTURY

Assessment: Successful

Description: Work with the national experts and building community leaders and customers to develop and implement a strategic vision, roadmap, and implementation plan to improve the energy efficiency and environmental performance of buildings and communities. This plan will result in 50 percent more efficient new homes and commercial buildings, and 20 percent more efficient existing homes saving 3 quadrillion watts (quads) of energy and preventing nearly 70 million metric tons of carbon emissions by the year 2010. (EE)

Revision: A clarifying piece of information: The 50 percent more efficient new homes and commercial buildings is in relation to efficiency in 1993. The equivalent goal stated in relation to current building efficiency would result in a 30 percent improvement. The difference is due to substantial savings that have accrued as a result of state adoptions of more stringent codes.

Success will be measured by:

- *Developing a plan for increasing the energy efficiency of buildings through the adoption of an approach the buildings industry calls systems integration or "whole buildings" by December 1997.*

FY 1997 Results: Draft implementation plans have been developed and are being incorporated into the strategic planning process and have been used to help shape the FY 1999 budget submission.

- *Establishing strategy implementation teams with members of the design, construction, materials, and equipment manufacturing trades and the financing community who will commit to assist in the implementation.*

FY 1997 Results: Implementation teams were created on March 3, 1997. The teams may be reconfigured based on the final strategic plan.

- *Establishing a sustainable communities network of 25 cities with priority for Empowerment zone cities.*

FY 1997 Results: Completed over 70 on-site consultations, presentations, and other assistance. Of the sites visited, over 20 of those were in Empowerment Zones (EZ) or Enterprise Communities (EC). In addition to the on-site consultations, presentations and other assistance, eight grants to EZ communities were awarded. The grants funded projects that will help the neighborhoods engage in sustainable development and incorporate energy efficiency into that development. The grants are going to organizations in the following communities: Los Angeles, CA; El Paso, TX; San Diego, CA; Mississippi County, Ark.; Atlanta, GA; Houston, TX; Kansas City, MO; and eastern Virginia for projects in neighborhoods that have been declared Federal Empowerment Zones or Enterprise Communities.

EP-05 FACILITATING THE GROWTH AND DEVELOPMENT OF SMALL BUSINESSES

Assessment: Successful

Description: Develop a comprehensive Departmental strategy to provide for increased procurement opportunities for small business. (ED)

Success will be measured by:

- *Creating an on-line quarterly update of the Department's Forecast of Contracting and Subcontracting Opportunities for FY 1997.*

FY 1997 Results: The FY 1997 Forecast was developed and printed in October 1996. The printed Forecast was updated December 1996 and placed on the Office of Economic Impact and Diversity's homepage in January 1997, to allow for quarterly updates. Queried DOE offices in May for updated Forecast opportunities for the third and fourth quarter of FY 1997 and no updated opportunities were reported.

- *Expand participation in the small business Mentor-Protégé Program by increasing participation of the prime contractors by 50 percent.*

FY 1997 Results: The Department continued to expand the Mentor Protégé initiative that links small disadvantaged, 8(a) and women-owned businesses with major DOE contractors during FY 1997. In FY 1997, the program added six new mentors. The program had nine mentors at the end of 1996. The Department will continue the pilot program until final guidelines are codified.

- *Increasing 8a awards by 5 percent over 1996 by removing impediments through enhanced partnerships with the Small Business Administration (SBA).*

FY 1997 Results: Departmental FY 1997 8(a) totals were incomplete at time of publishing.

- *Conducting a comprehensive subcontracting plan review to assure compliance under contract reform, diversity clause provisions.*

FY 1997 Results: The Department has reviewed the Diversity Plans for the Oak Ridge Environmental contract; Chicago's Brookhaven Laboratory, DynMcDermot at the Strategic Petroleum Reserve Project Office site and Pacific Northwest laboratory at Richland as required by the diversity clause. Reviews have been conducted for all DOE contracts over \$3 million for small business participation.

- *Co-sponsor at least three training and technical assistance seminars with other Federal agencies to exchange lessons learned and innovative initiatives.*

FY 1997 Results: The Office of Small Business successfully increased its business outreach and training activity during FY 1997. DOE's training seminars have been particularly useful to the minority and women-owned business community. The Office co-sponsored and hosted the Region IV 8(a) Contractor Associating meeting in April; co-sponsored the conference and exposition in Upper Marlboro, Maryland in June; in August, the Office co-hosted a Women-owned Business Procurement Fair with Headquarters' Procurement center and the SBA.

- *Improving women-owned business procurement by increasing access to contracting opportunities, increasing women-owned businesses on bidder mailing list, and conducting outreach to alert women owned business to opportunities available in the agency.*

FY 1997 Results: FY 1997 the Office designated a point of contact as part of the women-owned business initiative. The Department's on-line small business homepage and Forecast accessibility expanded the informational material enormously on contracting opportunities. DOE supplied it's management and operating contractors with the SBA's computer listing of over 1,000 8(a) women-owned businesses nationwide.

CORPORATE MANAGEMENT

CT-01 MAKING MORE INFORMATION AVAILABLE TO THE PUBLIC

Assessment: Successful

Description: Declassify information under the Atomic Energy Act and Executive Order 12958, reduce the volume of new information classified and make information more accessible. (NN)

Success will be measured by:

- *Reviewing an additional 440,000 documents for possible declassification.*

FY 1997 Results: Reviewed an additional 400,590 documents for possible declassification department-wide, and met 91 percent of the Department's goal.

- *Completing a review for declassification and by releasing a cumulative total of 35 percent of historically significant records 25-years old and older under E.O. 12958.*

FY 1997 Results: Exceeded the goal by 3 percent. Specifically, in 1997, completed reviews on 2.3 million pages of permanent, historically valuable classified record collections under the DOE's Executive Order 12958 declassification plan. A cumulative total of 3.8 million pages have been determined to be unclassified.

CT-02 IMPROVING SERVICES TO CUSTOMERS AND STAKEHOLDERS

Assessment: Successful

Description: Develop techniques to improve delivery of services and products to customers and stakeholders. (HR)

Comments: The Department has made good progress in improving and streamlining its Freedom of Information function and has been successful in improving access to its information to our customers and stakeholders by ensuring that our information systems are more reliable, cost-effective, and easy to access. The Department will continue phasing in program offices into the FOIA Centralization Pilot and continue reducing the FOIA backlog.

Success will be measured by:

- *Phasing-in four additional program offices within centralization pilot by March 1997 and eliminate any FOIA backlog in 1995 requests by December 1997.*

FY 1997 Results: FOIA Staff have identified and met with the four additional program offices for the centralization pilot. Due to budget constraints and downsizing in the FOIA office, the schedule for phase-in has been revised:

One office will be phased-in effective November 3, 1997; a second office effective November 24, 1997; and, the final two offices by January 1998. Although the FY 1995 FOIA backlog was not completely eliminated, it was reduced by 70 percent during the fiscal year. The reduction of the FY 1996 FOIA backlog exceeded our 50 percent goal, and was reduced by 71 percent.

- *Conducting the first annual 360-degree review of laboratory management by community leaders and stakeholders by October 1997 to set an initial benchmark so that future annual reviews can confirm progress made in improving services to customers and stakeholders.*

FY 1997 Results: It has been determined that the 360-degree review of laboratory management by community leaders and stakeholders is more appropriately a function of the laboratories themselves. This requirement will be included in laboratory contracts at the time of their renewal.

- *Improving access to Departmental information by the public and other stakeholders through more reliable and cost-effective information systems by:*
 - *Identifying Departmental mission-essential information systems and ensuring that they all have year 2000-compliant implementation plans by the middle of FY 1997.*
 - *Increasing by 50 percent the utilization of existing government-wide contracts for procurement of information management purchases as measured by the dollar value of purchases in FY 1997.*
 - *Achieving \$6 million in Strategic Alignment Initiatives savings through improved information management acquisitions.*

FY 1997 Results: By June 30, 1997, the Department identified 272 mission-essential systems with plans for ensuring Year 2000 compliance. Subsequently, an additional 196 mission-essential systems were identified and all have Year 2000 Compliance Plans in place. Utilization of existing contracts by the field increased by 50 percent and saved the Department \$3 million through the end of FY 1997. The Department has saved \$7.3 million through improved information management acquisitions which exceeded our Strategic Alignment Initiative goal of \$6 million.

CT-03 INVOLVING STAKEHOLDERS IN THE POLICY MAKING PROCESS

Assessment: Successful

Description: Assure that the business of DOE will be open to the full view and input of those whom it serves, consistent with applicable laws, regulations, and contracts. (EM)

Success will be measured by:

- *Ensuring that Environmental Management decisions consider the input of site-specific groups, and increasing the number of Site-Specific Advisory Boards to 13 by the end of FY 1997.*

FY 1997 Results: In June 1997, an Environmental Management Site-Specific Advisory Board (SSAB) was established in Maywood, New Jersey. There are now 13 SSABs located at DOE sites throughout the country comprised of stakeholders affected by the Department's environmental management activities. These citizen boards provide informed advice and recommendations on national and site-specific issues to the DOE Office of Environmental Management. Many other public participation activities were conducted in FY 1997. The Environmental Management Advisory Board continued to provide advice and recommendations to DOE on national environmental management issues. This board is comprised of stakeholders from government agencies, academic institutions, environmental organizations, public interest groups, Native American Tribes, and other organizations. In addition, a wide range of public involvement activities were completed at Headquarters and in the field, including stakeholder meetings, briefings, budget workouts, interactive workshops, and conferences with the Assistant Secretary for Environmental Management, field office managers and other DOE staff.

- *Completing a third national survey of DOE stakeholders' attitudes, needs, and expectations of DOE to assess the Department's progress against the FY 1993 and FY 1995 results.*

FY 1997 Results: The Third National Public Trust and Confidence Survey was completed in April 1997. The objective of the survey was to determine the views and opinions of stakeholders associated with DOE, and identify ways to improve public trust and confidence in the Department. More than 600 stakeholders from across the country were interviewed for the survey. Results indicate that overall public trust and confidence in the Department have shown significant improvement since 1992. Among the stakeholders associated with EM, 73 percent agreed that "DOE's policies are basically on the right track," 65 percent reported that the Department "can be counted on to do the right thing," and 80 percent were satisfied with

DOE's efforts over the past two years to open the decision-making process to public input.

HR-01 STREAMLINING MANAGEMENT STRUCTURE

Assessment: Successful

Description: Reduce management layers and encourage employee empowerment. (HR)

Comments: Human Resources has provided guidance and tools such as buy-outs, early retirement options, etc., to assist organizations to reduce the number of supervisors and senior level positions as the Department continues its downsizing. We exceeded our target on reducing the number of supervisors.

Success will be measured by:

- *Reducing the number of supervisors from 2,015 at the end of FY 1996 by an additional 10 percent.*

FY 1997 Results: The number of supervisors has been reduced to 1,526 (24 percent reduction) which exceeds the target of 1,813.

- *Decreasing the number of employees in senior-level positions (SEs, GS-15s, and GS-14s) from the FY 1995 base of 5,532 to 5,185 by the end of FY 1997.*

FY 1997 Results: The number of senior level positions has been reduced to 5,259, which is within 74 of the target of 5,185. The number of senior level employees anticipated to leave the Department in FY 1997 did not materialize and the target was not achieved in this area. It should be noted that a number of senior level employees will be departing DOE due to buyouts, attrition, etc. over the first quarter of FY 1998 which should enable the Department to achieve the overall target.

HR-02 ENSURING WORKFORCE DIVERSITY

Assessment: Successful

Description: Maintain a diverse workforce by integrating diversity principles into operational and organizational activities, and implementing the recently issued Hispanic Outreach Initiative (ED)

Success will be measured by:

- *Completing a survey to assess the Department's level of implementation of the "Strategic Plan for Diversity" and the Hispanic Outreach Initiative by April 1997.*

FY 1997 Results: Conducted a survey to assess the Department's level of implementation of the strategic diversity plan. The survey revealed that the Department has fully implemented the plan. While the Department did little

or no recruiting during FY 1997 for budget-related reasons, the Department successfully established a) Mentor-Protégé Programs, b) Diversity Councils, c) Diversity Partnership Programs for specific ethnic and minority groups [i.e., Hispanic Association of Colleges and Universities (HACU), the National Association for Equal Opportunity in Higher Education (NAFEO); the American Indian Science and Engineering Society (AISES) and Center for the Advancement of Hispanics in Science and Engineering Education (CAHSEE)]; d) Continuing Labor/Management Partnership between the Department and NTEU and/or M/O Contractors; e) Employment and Training Action Plan between Headquarters and Blacks in Government; and f) Developed and issued an Employee Guide on Family Friendly Programs. **HISPANIC OUTREACH INITIATIVE:** A survey assessing the Department's level of implementation of the Hispanic Outreach Initiative was completed. The assessment was important in determining what needed to be done to fulfill the objectives of the Initiative. The survey revealed the following notable achievements: a) Education: The Department exceeded its annual spending goal of \$20 million dollars for Hispanic educational initiatives by 100 percent. It launched innovative new partnerships with various organizations in support of environmental capacity building for U.S. Hispanic Serving Institutions working with universities in Mexico and Chile; b) Employment: Diversity achievements were maintained while remaining committed to increase Hispanic employment throughout the Department; c) Small business opportunities: the Department's major contractors are being required to have program and performance measures in place for education, employment, small business, community and economic development outreach.

- *Issuing Quarterly reports on the Diversity Program Monitoring System which reflects the Department's efforts to maintain diversity achievements during downsizing in FY 1997.*

FY 1997 Results: We periodically review reports of the Department's workforce statistics. The Department's workforce remained relatively static during FY 1997, with very little impact on minority and women representation in the workforce and notwithstanding a reduction in force, effective January 3, 1997.

- *Randomly surveying 2 percent of the personnel selecting officials regarding diversity goals, including Hispanic representation in the work force.*

FY 1997 Results: The Department conducted a survey that revealed personnel selecting officials are fully committed to achieving diversity. The number surveyed have incorporated diversity goals into their organizational plans, with notable achievements, as indicated elsewhere in this

report. Additionally, the personnel selecting officials have committed themselves to increasing the representation of Hispanics at all levels of the workforce. The Department's downsizing efforts and hiring freeze have limited the selecting officials' ability to bring on new hires. However, the partnerships established with employees and minority group organizations will greatly enhance the selecting officials' ability to meet their diversity goals.

- *Implementing the Department's diversity strategy through contract reform addressing employment, education, small business, and community outreach.*

FY 1997 Results: With respect to the contractor workforce, the Department issued Equal Employment Opportunity and Diversity Programs Guidelines (DOE G 311.1A-1), which contain a chapter addressing operating and onsite service contractor facilities. Further, the Department held its annual Contractors Diversity Conference in May 1997, to discuss diversity issues. The conference was very successful in that senior management actively participated.

HR-03 IMPROVING TECHNICAL QUALIFICATIONS OF PERSONNEL

Assessment: Successful

Description: Use tracking systems to ensure improved technical qualifications. (HR)

Success will be measured by:

- *Meeting or exceeding applicable Technical Qualification Standards by 55 percent, or more, of 1,750 covered employees by November 1997.*

FY 1997 Results: The Defense Nuclear Facilities Safety Board has recommended and the Department has agreed to revise the 93-3 Implementation Plan to address continuing challenges in improving technical work force competency. Data collection on the Technical Qualifications Program (TQP) has been temporarily suspended pending a major redesign of the TQP as part of the 93-3 revision.

- *Developing an action tracking system by December 1996, to report on actions taken by program and operations offices to address the 73 positions identified as critical unmet technical safety needs.*

FY 1997 Results: An Action Tracking System has been implemented. Critical unmet technical safety needs are reported monthly, and as otherwise necessary, by the Program and Operations Offices. Their inputs are compiled into a single report, which is then provided to management. The system will be further automated as the Corporate

Human Resources Information System is implemented throughout the Department.

- *Establishing a tracking system by December 1996 to help ensure that individual development plans for employees covered by the Technical Qualifications Standards will be reviewed and updated by August 1997 to maintain and enhance the operational safety of nuclear facilities.*

FY 1997 Results: By December 1996, Program and Operations Offices implemented either "TQP Tracker," a module of the SMART Management Information System, or their own tracking system. These allow the Individual Development Plan to be incorporated into a real time process of identifying and satisfying technical training requirements.

- *Improving employee competence serving in technical safety management positions at defense nuclear facilities by raising qualification requirements, using excepted service appointments, retraining and other personnel flexibilities.*

FY 1997 Results: The Federal Technical Work Force Review Group (Review Group) was established as an outcome of the joint Department of Energy and Board off-site conference held in June 1996. The Review Group oversaw the development of the Senior Technical Safety Manager Qualification Standard, identified senior technical safety management positions throughout the Department, and developed detailed technical competency criteria for each of these positions to ensure that incumbents are technically competent to carry out their safety management responsibilities. Through September 30, 1997, 63 positions have been filled using the Department's excepted service authorities. An updated handbook entitled "RECRUITING, HIRING, AND RETAINING HIGH QUALITY TECHNICAL STAFF, A Manager's Guide to Administrative Flexibilities," was issued in January 1997 and distributed to senior technical managers, servicing personnel and training offices.

HR-04 IMPROVING HUMAN RESOURCE PRACTICES

Assessment: Successful

Description: Develop techniques for ensuring management success in achieving performance goals critical to realizing the Department's mission. (HR)

□ Success will be measured by:

- *Implementing the Department's Strategic Alignment Initiative on the Corporate Approach to Training by designating and making operational two, pilot,*

corporate training Centers of Excellence by December 1997.

FY 1997 Results: New "Centers of Excellence" Program Description, Application, and Criteria have been drafted for review by the Training and Development Management Council. These documents reflect the commitments in the DOE Strategic Plan, as well as the transition from SAI-44 "Corporate Approach to Training" to the new DOE Training and Development Business Plan. It is anticipated that the two Centers of Excellence applications will be reviewed and approved by December 30, 1997.

- *Providing 32 learning activities using advanced training technology related methods among at least three different, physically separated sites to reduce costs and/or increase availability of shared, cross-cutting employee learning activities.*

FY 1997 Results: 28 learning activities have been reviewed and approved by Human Resources. Two additional learning activities (Quality Assurance and Fire Protection) are being reviewed and it is anticipated that these will be finalized in early FY 1998. Two remaining learning activities (Thermo, Heat Transfer, and Fluid Flow as well as Senior Technical) were in development at the end of the year. Learning activities have been provided using advance training technology related methods such as interactive, satellite-based instruction and computer-based training (e.g., The General Employee Technical Base Training and Chemical Processing).

- *Improving the leadership skills of the Department's workforce as indicated by the performance feedback of managers and employees by:
Providing the training "Leaders for a Customer-Driven Organization" to at least 60 percent of the Department's managers in FY 1997 with follow-on assistance in cascading the leadership concepts to all levels within their organizations. (QM)*

FY 1997 Results: Within the constraints of budget reductions, the Leadership Forum training was delivered to all teams who requested training. Next fiscal year, training will continue to provide managers with the information necessary to respond to Administration and congressional mandates. Component 1 of Leaders for a Customer Driven Organization: 206 Senior Managers out of a target audience of 600 (34.3 percent) trained in "Leaders for a Customer-Driven Organization" from October 1 - September 30, 1997. Component 2 Cascade System: - 156 employees trained in the cascade Component. Component 3 Strategic Support: - 209 employees developed in Strategic Support Component of the Leadership Forum. The Executive Leadership Forum provides leadership skills

to senior managers and cascades these concepts to employees at all levels throughout the Department. All activities of the Leadership forum are designed to support management success in meeting the goals of the National Performance Review and DOE Strategic Alignment initiatives, including the Government Performance and Results Act, the Executive Order on Customer Service, Organizational Assessment, Empowerment and Workforce Diversity. The practical application of Forum learnings have helped to: streamline business operations, improve strategic planning efforts, emphasize the value of organizational assessment, measure progress and organizational results, focus on improved human resources practices, and strengthen effective partnerships throughout the Department. The Executive Leadership Forum is a uniquely designed organizational intervention which includes team-based training; systematic cascading of leadership concepts; organizational development and consulting support on action planning. This program engages a systems approach to change management by explaining linkages of Administration and Department initiatives and highlights the critical role of leadership in achieving the departmental goals using quality principles and continuous improvement.

HR-05 PROVIDING TRANSITION ASSISTANCE TO EMPLOYEES

Assessment: Successful

Description: Offer career transition assistance to minimize the impacts of downsizing on Headquarter's employees. (HR)

Success will be measured by:

- *Expanding services to include:*
 - *Ten specialized 2-day workshops for displaced employees.*
 - *DOE-HQ Intranet system to provide on-line job search, counseling, and other career transition information and assistance by November 1996.*

FY 1997 Results: Ten Specialized Workshops were conducted and completed by Human Resources in January 1997, and a DOE On-Line System was developed and utilized during the entire fiscal year.

- *Developing and implementing an outplacement and career development tracking system, using patron profiles, exit interviews, and follow-up interviews and evaluating outplacement services by September 1997.*

FY 1997 Results: An Outplacement and Career Development Tracking System was developed and implemented. The System has received excellent reviews during the evaluation phase.

EH-01 IMPROVING EFFICIENCY AND EFFECTIVENESS OF PROTECTING WORKERS, THE PUBLIC, AND THE ENVIRONMENT

Assessment: Successful

Description: Prevent worker accidents, protect the public and environment, while saving time and resources through safety and health contract provisions and more effective work planning. (EH)

Success will be measured by:

- *Incorporating strong and effective safety management systems provisions in four Management and Operation contracts to protect environment, safety, and health.*

FY 1997 Results: Updated safety management provisions were incorporated in five M&O contracts during FY 1997. This includes Lawrence Livermore Lab, Lawrence Berkeley Lab, Los Alamos Lab, Mound, and Oak Ridge EM.

- *Implementing Enhanced Work Planning at major DOE sites over the next three years by involving approximately a third of the DOE workers every year in more effective work planning and hazard identification.*

FY 1997 Results: Enhanced Work Planning (EWP) has successfully expanded to include all but a very few major DOE sites. In August 1997, workers at eight DOE sites received the Vice President's "Hammer Award" for the successful implementation of EWP.

EH-02 IDENTIFYING PRACTICAL WAYS TO ADDRESS THE MOST SIGNIFICANT HEALTH RISKS TO FORMER WORKERS

Assessment: Successful

Description: Survey selected former workers and workplace hazards to examine possible links between hazardous substances exposure during work and adverse health effects. (EH)

Success will be measured by:

- *Success will be measured in FY 1997 by completing six assessments, which will establish the basis for a more comprehensive program of medical follow-up of former workers.*

FY 1997 Results: Three Phase 1 assessments were completed during FY 1997 and the remaining three assessments were completed during the first quarter of FY 1998. Proposals for further phases of these assessments are being formulated and will be evaluated during first quarter FY 1998. Awards for up to four additional Phase 1

assessments are also expected within the first quarter of FY 1998.

EH-03 PRESERVING AND PROTECTING VALUABLE RUSSIAN RECORDS

Assessment: Partially Successful

Description: Ensure the archival preservation of vulnerable and fragile Russian worker radiation records in the Urals, to help the U.S. gain further insight into radiation safety. (EH)

Success will be measured by:

- *Completing the preservation microfilming of worker dosimetry records at Mayak.*

FY 1997 Results: Travel to Mayak, Russia by historians/archivists was postponed during FY 1997, due to unavoidable international circumstances. However, preservation microfilming is currently underway with completion expected in FY 1998.

EH-04 MAINTAINING A MULTI-DISCIPLINARY INDEPENDENT OVERSIGHT PROCESS

Assessment: Successful

Description: Maintain a multi-disciplinary, fully integrated oversight process for independently evaluating environment, safety, and health, and safeguards and security programs. (EH)

Success will be measured by:

- *Completing value-added, comprehensive oversight evaluations, focusing on environment, safety, and health-management systems at four DOE sites before October 1997.*

FY 1997 Results: Four safety management evaluations were completed during FY 1997: Brookhaven, Los Alamos, Sandia and East Tennessee Technology Park.

MP-01 CONTINUING THE STRATEGIC ALIGNMENT INITIATIVES TO STREAMLINE AND RE-ENGINEER

Assessment: Successful

Description: Implement planned Federal staffing and resource reductions through the Strategic Alignment Initiative to achieve a savings of \$304 million in FY 1997 and cumulative savings of \$1.7 billion by FY 2000. (FM)

Success will be measured by:

- *Reducing Federal staffing to 11,503, down by an additional 1,100 positions from the FY 1996 target and thus achieving cumulative savings for FY 1996 and FY 1997 of \$173 million. (HR)*

FY 1997 Results: Both the staffing and savings targets were achieved. The FY 1997 end-of-year staffing was 11,168 and the combined savings from reductions in FY 1996 and FY 1997 were \$59,670,000 and \$153,562,500, respectively for a cumulative savings of \$213,232,500.

- *Saving through continued improvements and re-engineering activities including:*
 - *\$90 million in support contracting. (HR)*
 - *\$31 million in Information Resource Management. (HR)*
 - *\$35 million in travel. (CFO)*

FY 1997 Results: The baseline for this initiative was previously set as FY 1994 with \$700 million obligated against support service contracts. In FY 1997, the Department's support service contracts obligations were \$453 million, or a cost avoidance of \$243 million in support service contracting for the year. Savings in the area of Information Resource Management were \$70 million for FY 1997. Savings in FY 1997 were \$48 million from reduced Federal and M&O contractor travel.

- *Returning \$15 million to the treasury from the sales of additional surplus assets. (WT)*

FY 1997 Results: The total deposited from asset sales in FY 1997 were over \$26 million primarily from the sale of the Weeks Island Crude Oil Pipeline in Louisiana (\$22 million).

MP-02 BECOMING A WORLD CLASS QUALITY ORGANIZATION

Assessment: Successful

Description: Using the President's/Malcolm Baldrige Quality Award criteria, measure organizational performance, identifying measures and successes in support of the Government Performance Results Act (GPRA) and the National Performance Review (NPR). (QM)

Success will be measured by:

- *Improving Quality assessment scores as measured by the Department's Quality Award Program.*

FY 1997 Results: The program received 22 applications from organizations within the Department. The examination process was held in May. Judging was completed in August. Overall scores increased from 341 to 359. This was the second consecutive year where scores improved.

- *Increasing number of first tier Headquarters and Field organizations completing an organizational self-assessment using the Baldrige criteria.*

FY 1997 Results: The 1997 Self-Assessment, normally performed in October, will be postponed until February 1998. February will be the new date for self-assessments in order to more closely align with the Energy Quality Award. Those Federal organizations who apply for the Energy Quality Award, will have performed all the necessary steps in the assessment process and will additionally receive feedback from outside their own organization.

- *Improving the effectiveness of Departmental decision making and planning processes by: (PO)*
 - *Implementing the Strategic Management System developed in FY 1996.*
 - *Improving and updating the DOE Strategic Plan.*
 - *Preparing an FY 1998 Annual Performance Plan.*
 - *Submitting the FY 1996 Annual Performance Report.*

FY 1997 Results: The DOE Strategic Plan was completed and delivered to OMB on September 30. The distribution has also been made to the Congress, employees, contractors and stakeholders. The Strategic Plan is also accessible on the World Wide Web. The Department's FY 1998 Budget was submitted with a Performance Plan, a year ahead of the GPRA schedule. FY 1996 Annual Performance Report documenting results against all of the FY 1996 Agreement was drafted but never published. The U.S. Department of Energy Consolidated Financial Statements for FY 1996, which incorporates selected performance agreement results were published.

MP-03 IMPROVING CONTRACTOR PERFORMANCE AND ACCOUNTABILITY

Assessment: Successful

Description: Make continual improvements to the Department's contracting practices through increased competition, use of performance-based contracts, greater contractor financial accountability, and use of new contracting strategies such as privatization where appropriate. (S3)

Success will be measured by:

- *Increasing the number of performance-based management contracts from 15 to 21. As with prior performance-based management contracts, these additional 6 will incorporate the full range of contract reform which includes, increased competition, performance measures, performance incentives, results-oriented statements of work, greater contractor financial accountability, and increased use of fixed price contracts.*

FY 1997 Results: Twenty-two performance-based management contracts have been put in place. Note: At the time this measure was developed, the term "performance-based management contract" was intended to include both

Management and Operation (M&O) and Management and Integrating (M&I) contracts. Since then, the term has been narrowly defined to include only M&O contracts. For consistency, this measure continues to include both the M&O and M&I contracts.

- *Awarding at least 15 percent of service contracts as performance based service contracts.*

FY 1997 Results: Of the 80 prime service contracts awarded by the end of the fourth quarter, 25 were performance based service contracts: 31 percent. Note: This measure considers only contracts over \$100,000; contracts under \$100,000 are considered small purchases.

- *Publishing by July 1997 the Final Rule on competition, contractor accountability, diversity contract clause, make-or-buy decisions, and other matters.*

FY 1997 Results: The final rule was published on June 27, 1997.

- *Completing by July 1997 a Self-Assessment of the Contract Reform Initiative.*

FY 1997 Results: The self assessment was completed September 1997.

- *Completing the development of the privatization implementation plan by September 1997.*

FY 1997 Results: This measure is on hold pending the selection of a Director for the Office of Contract Reform and Privatization.

MP-04 REDUCING FEDERAL REGULATIONS

Assessment: Successful

Description: Eliminate unnecessary prescriptive requirements, as well as nonessential processes, reports, forms, and directives.

Success will be measured by:

- *Reducing the number of paper purchase orders by 20 percent and reducing the actual cost per transaction from \$56.00 to \$25.00 by the end of FY 1997, by implementing a Department-wide Electronic Commerce system for small purchases.*

FY 1997 Results: Through September 30, 1997, the Department has exceeded its target to reduce paper purchase orders by 20 percent, with an actual reduction of over 40 percent. The Department purchased over \$24 million in goods and services in Fiscal Year 1997 using electronic commerce.

- *Reducing cycle time by up to 30 percent by the end of FY 1997, by applying business process reengineering to major acquisitions, interagency agreements, and payment processing.*

FY 1997 Results: Procurement and Financial Assistance regulations were reduced by 50 percent. Business process reengineering was applied to major processes, with Headquarters procurement process leadtime being reduced by 30 percent to 70 percent. Similar reductions were made in the Department's field offices.

- *Reducing the administrative costs of printing and distribution of DOE Directives by increasing the number of DOE organizations that rely on the Paperless Directives System to 50 percent.*

FY 1997 Results: 50 percent of DOE Offices have converted to the Paperless Directives System which meets the target. The administrative costs associated with printing and distributing DOE directives has been reduced accordingly.

MP-05 REDUCING THE OVERSIGHT BURDEN ON FIELD ACTIVITIES

Assessment: Successful

Description: Further improve the efficiency of DOE oversight of field offices by consolidating oversight visits and simplifying administrative reviews. (FM)

Success will be measured by:

- *Promulgating DOE-wide policies on business management oversight to guide initial implementation efforts of seven remaining operation offices and other programmatic field offices by September 1997.*

FY 1997 Results: The guidance for implementation at the remaining field offices was issued on September 9, 1997.

MP-06 EFFECTIVE USE OF DOE LANDS AND FACILITIES THROUGH COMPREHENSIVE PLANNING

Assessment: Successful

Description: Initiate comprehensive planning to integrate life cycle asset management goals of stakeholders and the Department and to determine ways to broaden the use of DOE lands and facilities. (FM)

Success will be measured by:

- *Integrating planning efforts for asset acquisition, use, maintenance, disposition, real property management, energy conservation and utilities through the*

implementation of the comprehensive planning process at 60 percent of the major sites.

FY 1997 Results: All 11 Operations and Field Offices had or were finalizing a performance agreement which implemented comprehensive planning under DOE O 430.1, Life-Cycle Asset Management. This equates to 31 of the 50 major operating or clean-up sites, or 62 percent of the sites. Excluding the eight sites which are purely clean-up operations with defined end-states, comprehensive planning has been implemented at 71 percent of major sites. Two other offices, the Strategic Petroleum Reserve Office, and Yucca Mountain Project Office have, or are putting comprehensive planning processes in place, and plan to have self assessment agreements with DOE Field Management in the near future.

- *Completing at least 12 major actions to make land and facilities available for broader public or Federal use.*

FY 1997 Results: 44 major actions were reported by DOE sites. Details of the 44 actions can be found on the Internet at: <http://www.fm.doe.gov/>, FY 97 President's Performance Agreement, MP-6.

MP-07 IMPROVING THE DEPARTMENT OF ENERGY'S MANAGEMENT OF ITS LABORATORIES

Assessment: Partially Successful

Description: Review with a view toward improving the Department's key management processes that effect the size, cost, and mission focus of its laboratories. (S2)

Success will be measured by:

- *Reducing laboratory operating costs by \$400 million in FY 1997 toward the goal of reducing these costs by \$2.0 billion over the next five years, without reducing research outputs.*

FY 1997 Results: Cost savings for FY 1997 are projected to be \$434 million and are expected to grow each subsequent year to reach a total of \$2.5 billion by FY 2000.

- *Use the Laboratory Operations Board to review by July 1997: - The program management mechanism of each of the Department's mission areas and recommend improvements to enhance the Department's effectiveness. - The smaller laboratories with a view toward improving the contractual arrangements. - The laboratory institutional planning for better alignment with the Department's strategic planning process. - The Department's mechanism for evaluating the scientific and technical merit of work at the laboratories to determine how it compares with*

other governmental organizations and the extent to which changes may be needed.

FY 1997 Results: Findings and recommendations from the program management reviews were presented to the Secretary at the September 1997 Secretary of Energy Advisory Board meeting and action plan is being written. Smaller labs study terms of reference is being written. Integration of laboratory institutional planning and DOE strategic planning underway following July workshop. Peer review study results are being written.

MP-08 PROVIDING QUALITY FINANCIAL PRODUCTS AND SERVICES

Assessment: Successful

Description: Utilize the most current and innovative techniques to achieve increased responsiveness, effectiveness, and efficiency in providing the financial management information that is needed by the Department's decision makers in order to realize programmatic and corporate goals.(CFO)

Success will be measured by:

- *Preparing and submitting Department-wide audited financial statements for FY 1996 with an unqualified opinion to the Office of Management and Budget by March 1997.*

FY 1997 Results: The Department-wide audited financial statements for FY 1996 were prepared by the Office of Chief Financial Officer, received an unqualified opinion from the Office of the Inspector General, and were submitted to the Office of Management and Budget on February 28, 1997. The Department is the only cabinet level agency or Department to receive an unqualified opinion on the first attempt to prepare financial statements.

- *Establishing a reporting system that provides useful financial information to customers for analyzing and controlling functional support costs by September 1997.*

FY 1997 Results: A Functional Cost Reporting System has been established, and has compiled functional cost reports from 21 Departmental sites. The functional cost reports display FY 1994 through FY 1997 financial information for customers to utilize in efforts to better understand and control functional support costs.

- *Supporting Departmental and Congressional decision making by analyzing, monitoring, and reporting on the Department's efforts to control, manage, and where appropriate, reduce uncosted balances and construction project balances.*

FY 1997 Results: The Department has taken aggressive actions to control and reduce uncosted balances and construction project balances during FY 1997. In June 1997, the Department issued its Report on Uncosted Balances for FY 1996 and indicated that the total uncosted balance is the lowest it has been in over 15 years. Total Department-wide balances were reduced from approximately \$8.9 billion in FY 1995 to an FY 1997 level of \$6.2 billion. The Department has also been successful in managing and reducing construction project balances. The Department issued the FY 1996 Prior Year Construction Project Report in April 1997. The report shows a reduction in the number of open projects from 340 open project in FY 1994 to only 159 open projects in FY 1996. This reduction demonstrates the Department's efforts to oversee open construction projects and diligently close out completed projects.

- *Consolidating and franchising financial activities where the activity can be more cost effectively or efficiently performed elsewhere. - Consolidating payment processes for 19 accounting offices into three financial service centers - Establishing a Memorandum of Understanding with Department of Interior and conducting a workshop to delineate the process for outsourcing the Department's payroll by September 1997.*

FY 1997 Results: The Department has successfully consolidated payment processes for 19 accounting offices into three financial service centers at Headquarters, Oak Ridge and Albuquerque. The Department has also achieved its goals of completing the Memorandum of Understanding with the Department of Interior and conducting a workshop to delineate the process for outsourcing the Department's payroll functions. During this period, the Department received additional data which revealed that the Department of Interior's estimated costs and projected implementation date were cost prohibitive and untimely for development of an interface with the DOE personnel system. As a result, the Department partnered with the Federal Energy Regulatory Commission in evaluating other payroll service providers. An initial proposal for an alternative provider was presented to DOE management on August 27, 1997 and a final proposal and discussion paper will be presented in the first quarter of FY 1998.

- *Developing and initiating implementation of an Executive Information System (EIS) to make useful financial information readily available to the Department's managers.*

FY 1997 Results: An EIS Information and Technology Workshop was held in March that included Headquarters and Field Participants. The workshop provided a medium

for information exchange and was an integral part of the process for identifying business information requirements and evaluating EIS software before making an information technology investment. During July and August, an EIS prototype system was designed and developed to provide a demonstration model for managers to view system capabilities, and further define requirements for analyzing business information. The EIS Pilot system was implemented and made available for use on September 30, 1997. The EIS supports summary analyses for senior management use, as well as provides information for external summary level reporting. The initial pilot system is being deployed to selected Headquarters and Field Office staff.

- *Transitioning from a compliance-based oversight of the Headquarters, Field, and Contractor financial operations, to an integrated performance-based financial management process.*

FY 1997 Results: Partnering with Headquarters and Field organizations have resulted in proposals from all participating pilot sites on performance measures to be included in the performance-based financial management process. The Chief Financial Officer reviewed the proposed financial performance measures, and issued the CFO's critical performance measures to the 10 pilot Field sites on September 22, 1997 for agreement and use in the Business Management Oversight Process.

Glossary of Acronyms

Offices

CFO	Chief Financial Officer
DP	Defense Programs
ED	Economic Impact & Diversity
EE	Energy Efficiency & Renewable Energy
EH	Environment, Safety & Health
EM	Environmental Management
ER	Energy Research
FE	Fossil Energy
FM	Field Management
HR	Human Resources and Administration
MD	Fissile Materials Disposition
NE	Nuclear Energy
NN	Nonproliferation & National Security
PO	Policy and International Affairs
QM	Quality Management
RW	Civilian Radioactive Waste Management
S2	Deputy Secretary
S3	Under Secretary
WT	Worker & Community Transition

Business Lines

ST-	Science and Technology
NS-	National Security
EQ-	Environmental Quality
ER-	Energy Resources
EP-	Economic Productivity

Corporate Management

CT-	Communication and Trust
HR-	Human Resources
EH-	Environment, Safety, & Health
MP-	Management Practices