

DEPARTMENT OF ENERGY

Revised Final Annual Performance Plan FY 2003



SECRETARY OF ENERGY
SPENCER ABRAHAM

Editor's Notes

DOE's Inspector General and the Power Marketing Administrations are included in this plan. However, the Federal Energy Regulatory Commission (FERC) has prepared separate GPRA documents. See their web page at: <http://www.ferc.gov/about/mission/mission-intro.htm>.

This plan was prepared by the Office of Program Analysis and Evaluation in the Office of the Management, Budget and Evaluation (PA&E/OMBE) with input from all offices within DOE. The DOE point of contact for this document is Debbie Dayton (202) 586-8278, Debra.Dayton@hq.doe.gov.

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DEPARTMENT OF ENERGY

OVERVIEW

This is the Department of Energy's Revised Final Annual Performance Plan for FY 2003. It allows Congress and the public to examine the results the Department plans to deliver for the requested FY 2003 budget. Each year's performance plan has been prepared under the Government Performance and Results Act of 1993 ("GPRA" or the "Results Act") and in accordance with Office of Management and Budget (OMB) guidance. The plan is one of the three recurring documents required by the Results Act, namely the Strategic Plan, Annual Performance Plan, and the Annual Performance and Accountability Report. Together, they create a continuing cycle of planning, program execution, and reporting.

The primary reason for producing this Plan is to document the impact of Congressional Funding. These performance measures for FY 2003 have been updated to reflect enacted appropriations for FY 2003. As a result of Congressional funding, some annual targets were dropped and some modified.

We have organized program-level performance goals ("Program Strategic Performance Goals" or "PSPGs") by the seven DOE goals, as listed in the draft Strategic Plan, directly linking resources to results. These performance goals give us a basis to separate long-term, "outcome-oriented" performance indicators from annual, "output-oriented" targets. As in the past, we appreciate the comments and constructive feedback we receive from Congress, the General Accounting Office (GAO), and OMB, as part of our continued commitment to making this a useful tool in managing our work in delivering the products and services for the taxpayers.

The Department of Energy's overarching mission is:

To advance the national, economic and energy security of the United States; to promote scientific and technological innovation in support of that mission; and to ensure the environmental cleanup of the national nuclear weapons complex.

INTRODUCTION

Results for Resources

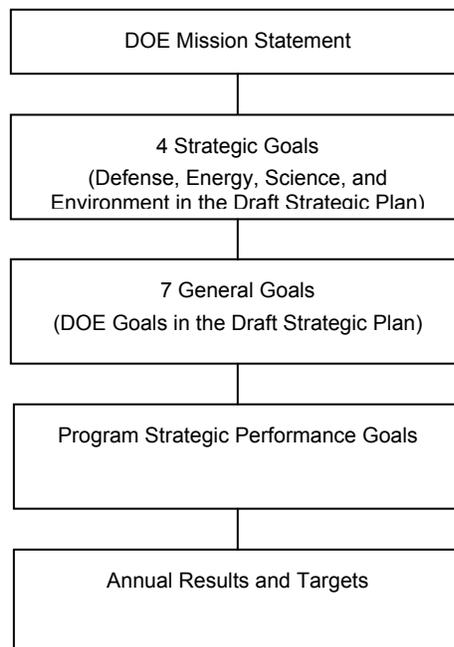
Our government is committed to improving accountability to the taxpayers through implementation of the Government Performance and Results Act of 1993 (the “Results Act” or GPRA). This law requires agencies to develop long-range strategic plans, annual performance plans, and annual performance reports. This Annual Performance Plan has been prepared to meet the law’s requirements: (1) establishing performance goals that include the level of performance to be achieved written in meaningful, objective, quantifiable, and measurable form; (2) briefly describing the resources required to meet those performance goals; and (3) describing how performance will be measured and compared with the goals. The President’s Office of Management and Budget (OMB) has issued guidance to agencies for preparing these plans, but has provided flexibility in choosing the appropriate format.

The Department of Energy’s FY 2003 Annual Performance Plan (APP) builds upon the progress in integrating budget and performance, one of the five initiatives addressed under President Bush’s Management Agenda. The performance goals and measures in this plan are an executive level summary of the goals and measures in the Department’s budget. The process of developing performance goals and measures for this plan was an integral part of the budget development process, the program effectiveness scoring process using the Program Assessment Rating Tool (PART), and the R&D investment criteria scoring process.

Consistency with the Strategic Plan and Relationship to the Budget

DOE maintains a close relationship between the Strategic Plan, the APP, and the budget. The Department is currently revising its Strategic Plan due for publication in the fall of 2003. The performance goals and targets have been rearranged and presented around the 7 DOE goals in the draft Strategic Plan. This APP begins with the Department’s mission statement. The mission is accomplished through 7 operational goals proposed for FY 2003. These goals are supported by Program Strategic Performance Goals (PSPGs), which are implemented through GPRA Program Activities and are rearranged and presented in alignment with the draft Strategic Plan.

Department of Energy Performance Plan Hierarchy



This hierarchical relationship to the Strategic Plan is encoded in the reference numbering of each level. Department goals are coded with two letters: NS for National Nuclear Security, ER for Energy Resources, etc. The strategic objectives in use at the time the budget was submitted are indicated by the first number. The program strategic performance goals are numbered to indicate the department goal, the strategic objective, and the sequential number of the program strategic performance goal, e.g., ER1-1. The GPRA program activities are not numbered because they support multiple program strategic performance goals that can support different strategic objectives in different department goals.

Tables 1 and 2, located at the end of this introduction, lists the Department's four strategic goals, seven general goals, and PSPGs.

Organization of this Plan and Presentation Format

In the chapters that follow, we associated each DOE general goal with the PSPGs supporting that goal. Then for each PSPG, we list one or more annual targets the Department will use to measure progress.

Consultation

In preparing this APP, we are incorporating improvements based on the GAO and Congressional feedback we received on the FY 1999 through FY 2003 Initial APP. Consultation with Congress on the content of this plan was conducted through the Congressional review of the budget.

The Department recognizes that the preparation of this Annual Performance Plan is an inherently governmental function. As such, only Federal employees developed the content of the plan, and no non-Federal parties made any contributions.

Next Steps for this Plan

The Department intends to track progress on a quarterly basis and report to the public and Congress annually as required by the GPRA, Government Management Reform Act of 1994, the Reports Consolidation Act of 2000, and the DOE Organization Act of 1977.

Validation and Verification of Performance

Validation and verification (V&V) of the Department's performance will be accomplished by periodic reviews, certifications, and audits. Because of the size and diversity of the Department's portfolio, V&V is supported by extensive automated systems, external expert analysis, and management reviews.

For the overall Agency, the Office of Program Analysis and Evaluation in the Office of Management, Budget and Evaluation (PA&E/OMBE), will issue GPRA guidance on reporting in the December timeframe when the staff begins to report on the first quarter status. DOE's end-of-year reporting process includes certifications by heads of organizational elements regarding the accuracy of reported results. The results are reviewed for quality and completeness by PA&E/OMBE, and are reviewed and audited by the Office of the Inspector General. Multiple data sources exist within the program offices performing the work, the National Laboratories, or our contractors. The performance reporting process requires that heads of Departmental elements report the status of the revised final performance measures and certify that the information provided is accurate and complete.

In FY 2002, the Department acquired new commercial software for performance tracking. The new system, "Joule," is being used for tracking FY 2003 results. Joule is a computer system used to collect and present results and performance. This is a system that allows remote data entry, monitoring, and oversight. Data entry is controlled through a password system that provides an auditable record of changes. Program offices and managers directly update results and performance assessments during the year and the end-of-year information is used for analysis and preparation of the Performance and Accountability Report. In accordance with the Federal Managers' Financial

Integrity Act of 1992 (FMFIA), the Department will continue evaluations of its management controls in effect during the fiscal year. Our evaluations include an assessment of whether the management controls of the Department were in compliance with the standards prescribed by the Comptroller General. The purpose of these evaluations is to provide reasonable assurance that the management controls are working effectively, that program and administrative functions including the accuracy and reliability of the reporting of performance results are performed in an economical and efficient manner consistent with applicable laws, and potential for waste, fraud, abuse, or mismanagement of assets was minimized.

Management Challenges

The Department has been identifying for the President, Congress, and ultimately the public, areas of vulnerability in the operations of Government. DOE's internal control process has been established to identify Departmental Management Challenges and develop plans to address them, under FMFIA. In FY 2002 the internal controls committee added Performance Management as a new management challenge. The Department's performance management processes need to be improved in order to ensure that our programmatic activities are results driven and focused on achieving valid outcome-oriented goals.

Waivers

The Department intends to continue to combine performance reporting with its financial statements. The Department's Performance and Accountability Report, prepared in accordance with the Reports Consolidation Act of 2000, will also meet the requirements for an annual performance report in accordance with the Results Act. The Department has made no request for waivers of administrative requirements to provide managerial flexibility.

Table 1: Linkage Between the Department's 4 Strategic Goals and the 7 General Goals listed in the Revised Strategic Plan

Defense Strategic Goal: To protect our national security by applying advanced science and nuclear technology to the Nation's defense.

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|-------------------------------------|---|
| Goal 1: Nuclear Weapons Stewardship | Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security and reliability of the U.S. nuclear weapons stockpile. |
| Goal 2: Nuclear Nonproliferation | Provide technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance the technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons. |
| Goal 3: Naval Reactors | Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation. |

Energy Strategic Goal: To protect our national and economic security by promoting a diverse supply of reliable, affordable, and environmentally sound energy.

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| Goal 4: Energy Security | Enhance energy security by developing technologies that foster a diverse supply of affordable and environmentally sound energy, improving energy efficiency, providing for reliable delivery of energy, exploring advanced technologies that make a fundamental change in our mix of energy options and guarding against energy emergencies. |
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Science Strategic Goal: To protect our national and economic security by providing world-class scientific research capacity and advancing scientific knowledge.

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| Goal 5: World-Class Scientific Research Capacity | Provide world-class scientific research capacity needed to ensure the success of Department missions in national and energy security, to advance the frontiers of knowledge in physical sciences and areas of biological, medical, environmental, and computational sciences, and to provide world-class research facilities for the Nation's science enterprise. |
|--|---|

Environment Strategic Goal: To protect the environment by providing a responsible resolution to the environmental legacy of the Cold War and by providing for the permanent disposal of high-level radioactive waste.

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| Goal 6: Environmental Management | Accelerate cleanup of nuclear weapons manufacturing and testing sites, completing cleanup of 108 contaminated sites by 2025. |
| Goal 7: Nuclear Waste | License and construct a permanent repository for nuclear waste at Yucca Mountain and begin acceptance of waste by 2010. |

Table 2. Crosswalk from the Previous Departmental Goal Numbering Convention to the Revised DOE Strategic Plan General Goals in the Annual Performance Plan

| Previous Numbering Convention | Goal Description | APP Location |
|---|---|---------------------|
| <i>National Nuclear Security</i> | | |
| NS1 | Maintain and enhance the safety, security, and reliability of the nation's nuclear weapons stockpile to counter the threats of the 21 st century. (NA-DP) | Goal 1 |
| NS2 | Detect, prevent, and reverse the proliferation of weapons of mass destruction while promoting nuclear safety worldwide. (NA-NN) | Goal 2 |
| NS3 | Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation. (NA-NR) | Goal 3 |
| NS4 | Ensure the vitality and readiness of the NNSA's nuclear security enterprise. (NA) | Goal 1 |
| <i>Energy Resources</i> | | |
| ER1 | Use public-private partnerships to promote energy efficiency and productivity technologies in order to enhance the energy choices and quality of life of Americans in 2020 relative to 2000 by: reducing the oil intensity of the U.S. economy by 25 percent (compared to 23 percent without EE programs); reducing energy intensity in the U.S. economy by 32 percent (compared to 28 percent without EE programs); and, reducing the need for additional electricity generating capacity by 10 percent (compared to the case without EE programs). (EE) | Goal 4 |
| ER2 | Use public private partnerships to bring cleaner, more reliable, and more affordable energy technologies to the marketplace, enhancing the energy choices and quality of life of Americans in 2020, relative to 2000, by: increasing the share of renewable energy to 10 percent (compared to 8 percent without EE programs); increasing the share of renewable-generated electricity to 12 percent (compared to 8 percent without EE programs); and, doubling the share of capacity additions accounted for by distributed power, which increases distributed generation to 11 percent of all electricity generation (compared to 8 percent without EE programs). (EE) | Goal 4 |
| ER3 | Reduce the burden of energy prices on low-income families by working with state and local agencies to weatherize at least 123,000 homes per year from 2003 through 2005. (EE) | Goal 4 |
| ER4 | Create public-private partnerships to provide technology to ensure continued electricity production from the extensive U.S. fossil fuel resource, including control technologies to permit reasonable-cost compliance with emerging regulations, and ultimately, by 2015, zero emission plants (including carbon) that are fuel-flexible, and capable of multi-product output and efficiencies over 60 percent with coal and 75 percent with natural gas. (FE) | Goal 4 |
| ER5 | By 2015, develop technologies to expand the 2003 domestic oil and gas economically recoverable resource base by 2.2 billion barrels of oil and 120 trillion cubic feet of natural gas (TCF); ensure the safe, reliable, and secure delivery of oil and gas to the end user with minimal environmental impact; and lower by 25 percent the cost of hydrogen from natural gas. (FE) | Goal 4 |
| ER6 | Maintain the Strategic Petroleum Reserve in a state of readiness to supply oil at sustained rate of 4.4 million barrels per day for 90 days within 15 days notice by the President. (FE) | Goal 4 |
| ER7 | Expand the capability of nuclear energy to contribute to the Nation's near and long-term energy needs by investing in our Nation's nuclear R&D infrastructure and promoting advanced research, such that by December 2004, the average capacity of existing U.S. of existing U.S. nuclear power plants will increase from 90 to 92 percent; a new nuclear power plant construction project which portions are will be initiated in the United States; and a conceptual design will be developed for a nuclear energy system that addresses | Goal 4 |

the technology issues hindering the worldwide expansion of nuclear power. (NE)

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| ER8 | Provide national and international energy data, analysis, information and forecasts to meet the needs of the energy decision-makers and the public in order to promote sound policy-making, efficient energy markets and public understanding. (EIA) | Goal 4 |
| ER9 | The power marketing administrations ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable injuries frequency rate at or below our safety performance standard (PMAs) | Goal 4 |

Science

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| SC1 | Determine whether the Standard Model accurately predicts the mechanism that breaks the symmetry between natural forces and generates mass for all fundamental particles by 2010 or whether an alternate theory is required, and on the same timescale determine whether the absence of antimatter in the universe can be explained by known physics phenomena. (SC) | Goal 5 |
| SC2 | By 2015, describe the properties of the nucleon and light nuclei in terms of the properties and interactions of the underlying quarks and gluons; by 2010, establish whether a quark-gluon plasma can be created in the laboratory and, if so, characterize its properties; by 2020, characterize the structure and reactions of nuclei at the limits of stability and develop the theoretical models to describe their properties, and characterize using experiments in the laboratory the nuclear processes within stars and supernovae that are needed to provide an understanding of nucleosynthesis. (SC) | Goal 5 |
| SC3 | By 2010, develop the basis for biotechnology solutions for clean energy, carbon sequestration, environmental cleanup, and bioterrorism detection and defeat by characterizing the multiprotein complexes that carry out biology in cells and by determining how microbial communities work as a system; and determine the sensitivity of climate to different levels of greenhouse gases and aerosols in the atmosphere and the potential resulting consequences of climate change associated with these levels by resolving or reducing key uncertainties in model predictions of both climate change that would result from each level and the associated consequences. (SC) | Goal 5 |
| SC4 | Provide leading scientific research programs in materials sciences and engineering, chemical sciences, biosciences, and geosciences that underpin DOE missions and spur major advances in national security, environmental quality, and the production of safe, secure, efficient, and environmentally responsible systems of energy supply; as part of these programs, by 2010, establish a suite of Nanoscale Science Research Centers and a robust nanoscience research program, allowing the atom-by-atom design of revolutionary new materials for DOE mission applications; and restore U.S. preeminence in neutron scattering research and facilities. (SC) | Goal 5 |
| SC5 | Enable advances and discoveries in DOE science through world-class research in the distributed operation of high performance, scientific computing and network facilities; and to deliver, in 2006, a suite of specialized software tools for DOE scientific simulations that take full advantage of terascale computers and high speed networks. (SC) | Goal 5 |
| SC6 | Advance the fundamental understanding of plasma, the fourth state of matter, and enhance predictive capabilities, through the comparison of well-diagnosed experiments, theory and simulation; for Magnetic Fusion Energy (MFE), resolve outstanding scientific issues and establish reduced-cost paths to more attractive fusion energy systems by investigating a broad range of innovative magnetic confinement configurations; advance understanding and innovation in high-performance plasmas, optimizing for projected power-plant requirements; develop enabling technologies to advance fusion science, pursue innovative technologies and materials to improve the vision for fusion energy; and apply systems analysis to optimize fusion development; for Inertial Fusion Energy (IFE), leveraging from the Inertial Fusion Confinement (ICF) program sponsored by the National Nuclear Security Administration's Office of Defense Programs, advance the fundamental understanding and predictability of high energy density plasmas for IFE. (SC) | Goal 5 |
| SC7 | Provide major advanced scientific user facilities where scientific excellence is validated by external review; average operational downtime does not exceed 10 percent of schedule; | Goal 5 |

construction and upgrades are within 10 percent of schedule and budget; and facility technology research and development programs meet their goals. (SC)

Environmental Quality

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| EQ1 | Safely and expeditiously manage waste; clean up facilities and the environment; and stabilize and store nuclear material and spent nuclear fuel, with the intent to complete cleanup of 14 additional sites by the end of 2006 bringing the total number of sites cleaned to 92 out of the total 114. (EM) | Goal 6 |
| EQ2 | Obtain requisite licenses, construct and, in 2010, begin acceptance of spent nuclear fuel and high-level radioactive wastes at the repository. (RW) | Goal 7 |
| EQ3 | Reduce the number of deaths, injuries and illnesses and environmental releases from environment cleanup and other operational activities such that DOE organization activities remain below their averages established by DOE's last 5 years of data for (1) Total Recordable Case Rate; (2) Occupational Safety Cost Index; (3) Hypothetical Radiation Dose to the Public; (3) Average measurable dose to DOE workers; and, (5) Reportable Occurrences of Releases to the Environment. (EH) | None |
| EQ4 | Assist DOE contract workers and communities that have been adversely affected as the result of downsizing or closing of Department facilities due to a change in or termination of their program mission by providing (1) separation benefits comparable to industry standards while achieving annual savings that are three times the one-time cost of separation; and, (2) creating and retaining jobs in the communities to absorb the displaced workers. (WT) | None |

Corporate Management

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|-----|--|---------|
| CM1 | Achieve effective and efficient management of the Department of Energy by implementing the President's Management Agenda initiatives on Strategic management of Human Capital; Competitive Sourcing; Improved Financial Performance; and Budget and Performance Integration. (ME, ED) | None |
| CM2 | Implement the President's E-government initiatives by developing a framework for existing Information Technology and building a roadmap for corporate direction. (CIO) | None |
| CM3 | Ensure secure, efficient, effective and economical operations of the Department's Information Technology Systems and Infrastructure. (CIO) | Removed |
| CM4 | Provide analysis of domestic and international energy policy, develop implementation strategies, ensure policies are consistent across DOE and within the Administration, communicate analyses and priorities to the Congress, public, industry, foreign governments, and domestic and international organizations, and enhance the export and employment of energy technologies internationally. (PI) | Removed |
| CM5 | Reduce adverse security incidents, worker injuries, and environmental releases through policy development, counterintelligence, intelligence, and oversight of the Nation's energy infrastructure, nuclear weapons, materials, facilities, and information assets. (SO, CN, IN, OA) | None |
| CM6 | Operate a robust review program and provide timely performance information and recommendation to facilitate: (1) implementation of the President's Management Agenda; (2) resolution of Management Challenges; (3) execution of the Secretary's priorities; (4) completion of statutory Inspector General mandates; (5) recovery of monies and opportunities for savings; and, (6) the integrity of the Federal and contractor workforce. (IG) | Removed |

The Department's General Goals and Appropriated Budget

| FY 2003 Funding By General Goal | | (In Thousands) |
|---|---|--|
| General Goal | Activity | FY 03 Appropriation (Congressional Scoring) |
| Goal 1 Nuclear Weapons Stewardship | Weapons Activities | 5,982,502 |
| Goal 2 Nuclear Nonproliferation | Nuclear Nonproliferation | 1,193,266 |
| Goal 3 Naval Reactors | Naval Reactors | 702,196 |
| Goal 4 Energy Security | Natural Gas Tech | 47,013 |
| | Nuclear Energy | 264,069 |
| | Oil Technology | 42,025 |
| | Transportation Sector | 246,451 |
| | Hydrogen | 39,460 |
| | Fuel Cells | 63,608 |
| | Strategic Petroleum Reserve | 179,648 |
| | Naval Petroleum & Oil Shale Reserves | 17,715 |
| | Energy Efficiency & Renewables | 387,001 |
| | Coal & Other Power Systems | 346,732 |
| | Energy Conservation | 645,318 |
| | Power Marketing Admin. - TOTAL | 202,181 |
| | Energy Information Administration | 80,087 |
| | TOTAL | 2,561,308 |
| Goal 5 World-Class Scientific Research | Science | 3,272,629 |
| Goal 6 Environmental Management | Non-Defense Environmental Services | 455,572 |
| | Defense Environmental Services | 157,369 |
| | Defense Site Acc. Completion | 1,130,915 |
| | Defense Environmental Restoration & Waste Management | 5,005,051 |
| | Non-Defense Site Acc. Completion | 213,702 |
| | TOTAL | 6,962,609 |
| Goal 7 Nuclear Waste | Nuclear Waste Disposal | 144,058 |
| | Defense Nuclear Waste Disposal | 312,952 |
| | TOTAL | 457,010 |
| Other Activities Performed to Support the General Goals | | 1,017,311 |
| TOTAL FY 03 Appropriation | | 22,148,831 |

Goal 1: Nuclear Weapons Stewardship. *Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U.S. nuclear weapons stockpile.*

NS1-1: Conduct a program of warhead evaluation, maintenance, refurbishment, and production, planned in partnership with the Department of Defense.

Annual targets for FY 2003:

Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapon stockpile.

Meet all annual weapons maintenance, refurbishment, and dismantlement schedules developed jointly by the DOE and DoD.

NS1-2: Develop science, design, engineering, testing and manufacturing capabilities needed for long-term stewardship of the stockpile.

Annual targets for FY 2003:

Meet the critical FY 2003 Campaign performance targets contained in the NNSA Future-Year Nuclear Security Plan (FYNSP).

Implement the recommendations requested by the Nuclear Posture Review to refine test scenarios and evaluate the cost/benefit tradeoffs to sustain optimum test readiness that best supports the New Triad.

NS4-1: Provide a capability for the safe transport of nuclear weapons, components, and materials that will meet projected DOE, DoD and other customer requirements.

Annual targets for 2003:

There were no related targets, targets begin in FY 2004.

NS4-2: Provide state-of-the-art facilities and infrastructure supported by advanced scientific and technical tools to meet operational and mission requirements.

Annual targets for 2003:

Meet established facility operating plans and construction schedules to ensure the physical infrastructure and facilities are operational, safe, secure, and compliant, and that a defined state of readiness is sustained at all needed facilities.

Execute a multi-year Recapitalization Program to arrest the deterioration and reduce the backlog of maintenance and repair projects.

NS4-3: Protect NNSA personnel, information and assets against attacks/espionage and respond to worldwide incidents involving nuclear or radiological weapons/materials.

Annual targets for 2003:

Assess line management's progress in implementing Integrated Safeguards and Security Management.

Complete implementation of “Higher Fences” to enhance the protection of certain Restricted Weapons Data within the DOE and DoD. (FMFIA)

Goal 2: Nuclear Nonproliferation. *Provide technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance the technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons.*

NS2-1: Enhance the capability to detect Weapons of Mass Destruction (WMD), including nuclear, chemical, and biological systems, and terrorist threats.

Annual targets for FY 2003:

Demonstrate prototype commercial cargo inspection system to detect fissile materials and high explosives.

Provide two assays for biological threat agents to the Center for Disease Control Laboratory Response Network.

Demonstrate a fixed system to protect complex, key infrastructure facilities, components, and capabilities.

NS2-2: Prevent and reverse proliferation of Weapons of Mass Destruction (WMD).

Annual targets for FY 2003:

Expedite the retrieval of spent nuclear fuel from Central Asia.

Work with U.S. Customs personnel to familiarize them with nuclear equipment, material, and technology, and to improve real-time analysis of suspect shipments.

Expand bilateral physical protection visits, physical protection training, and the IAEA’s International Physical Protection Advisory Service to help protect WMD facilities around the world against terrorist attack and sabotage.

NS2-3: Protect or eliminate weapons and weapons-usable nuclear material or infrastructure and redirect excess foreign weapons expertise to civilian enterprises.

Annual targets for FY 2003:

Complete Title II (detailed) design of the Mixed Oxide Fuel Fabrication Facility for disposition of excess U.S. weapons-grade plutonium, and commence down blending of off-specification highly enriched uranium at the Savannah River Site. (FMFIA)

Install Material Protection Control and Accountability (MPC&A) upgrades on nuclear weapons and materials, eliminate weapons-usable materials, and consolidate the number of storage locations for weapons-usable materials into fewer building and sites to improve security in Russia.

Enhance nonproliferation efforts in the Russian nuclear cities, and accelerate several Russian technology development efforts that have clear counter-terrorism or terrorism response applications under the Russian Transition Initiatives.

NS2-4: Reduce the risk of accidents in nuclear fuel cycle facilities worldwide.

Annual targets for FY 2003:

Successfully complete and close down the Soviet-designed reactor safety program.

Evaluate and prioritize nuclear safety concerns at nuclear power plants, research reactors and non-reactor nuclear fuel cycle facilities, and prepare needs assessments for technology transfers of nuclear safety methods based on risk with potential participant countries.

Goal 3: Naval Reactors. *Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation.*

NS3-1: Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operations.

Annual targets for FY 2003:

Complete safe streaming of approximately two million miles in nuclear-powered ships.

Achieve a utilization factor of at least 90 percent for operation of test reactor plants.

Next-generation submarine reactor design 99 percent complete.

Next-generation aircraft carrier reactor design 55 percent complete.

No personnel exceed 5 rem/year.

Operations have no adverse impact on human health or the quality of the environment.

Goal 4: Energy Security. *Enhance energy security by developing technologies that foster a diverse supply of affordable and environmentally sound energy, improving energy efficiency, providing for reliable delivery of energy, exploring advanced technologies that make a fundamental change in our mix of energy options, and guarding against energy emergencies.*

ER1-1: (1) By 2005, FEMP activities will support Federal agency efforts to decrease energy intensity in standard Federal facilities by 30 percent and, by 2010, 35 percent, relative to the 1985 statutory baseline levels of 139,143 Btus per gross square foot; (2) by 2005, the costs to the DOE for energy and utilities will decline by 10 percent or \$30 million annually at expected purchased energy prices; (3) Departmental Energy Management Program Team activities will decrease the energy consumption intensity in DOE facilities by 45 percent by 2005, relative to the 1985 baseline levels of 441,776 Btus per square foot.

Annual targets for FY 2003:

Provide technical and design assistance for more than 40 energy efficiency, renewable energy, and water conservation projects; 10 will be large-scale distributed energy resources and combined heat and power projects. Report results achieved through the end of FY 2001.

Achieve between \$80 and \$120 million in private sector Energy Savings Performance Contract (ESPC) investment.

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Complete at least 35 energy assessments including SAVEnergy Audits, industrial facility assessments and operation and maintenance assessments to identify energy and cost saving opportunities.

Integrate information on standby power into Defense Logistics Agency and General Services Administration's product schedules in accordance with E.O. 13221.

Train 4,000 Federal energy personnel in best practices supporting National Energy Policy education goals.

Complete the selection process for between four and twelve energy projects that will reduce the annual energy use in DOE facilities by 15 billion Btu's.

ER1-2: Between 1991 and 2010, contribute to a 25 percent decrease in energy intensity (as compared to 1991) by the energy-intensive industries of the future (a potential savings of 4.5 quads).

Annual targets for FY 2003:

Commercialize four new energy efficient technologies in partnership with the most energy intensive industries.

6,200 energy-intensive U.S. plants that will apply EERE technologies and services achieving up to a 15 percent improvement in energy productivity per plant.

Turn over 25 percent of projects in the R&D portfolio.

Help industry save more than 180 trillion Btu of energy worth at least \$720 million. (Assumes industrial average energy prices of \$4.00 a million Btu.)

ER1-3: (1) by 2006, the Heavy Vehicle Systems activity develops technologies that will enable reduction of parasitic energy losses, including losses from aerodynamic drag, from 39 percent of total engine output in 1998 to 24 percent; (2) by 2010, Hybrid and Electric Propulsion R&D activities will reduce the production cost of a high power 25kW battery for use in light vehicles from \$3,000 in 1998 to \$500, with an intermediate goal of \$750 in 2006 enabling cost competitive market entry of hybrid vehicles; (3) by 2007, Advanced Combustion Engine R&D activities will reduce NO_x emissions in light duty diesel vehicles from 1.0 grams per mile (g/m) in 2000 to 0.07 g/m in 2007 and 0.03 g/m in 2010 and in heavy duty diesel engines from 2.0 grams per brake horsepower hour (g/bhp hr) in 2002 to 0.2 g/bhp hr in 2006 to satisfy the greater than 90 percent reduction required by the light duty Tier II and heavy duty 2007 federal standards, while maintaining or improving engine efficiency; (4) by 2006, Transportation Materials Technologies R&D activities will reduce the production cost of carbon fiber from \$12 per pound in 1998, to \$3 per pound; and (5) by 2007, Fuel Utilization R&D activities will identify an advanced petroleum-based fuel formulation that enables light and heavy duty Compression-Ignition Direct Ignition (CIDI) engine/vehicle systems to meet regulated emissions levels with minimum effect on fuel economy, and perform in full compliance with specified durability requirements.

Annual targets for FY 2003:

Reduce high power 25 kW estimated battery cost to \$1,180 per battery system.

Demonstrate optimized emission control system that achieves 0.07 g/mile NO_x and 0.01 g/mile PM short-term performance in light duty vehicles.

Reduce parasitic losses of heavy vehicle systems to 30 percent and benchmark additional reductions through heavy truck electrification.

Complete R&D on technology, which, if implemented in high volume, could reduce the price of automotive-grade carbon fiber to less than \$7/pound.

Start identification of an advanced petroleum-based fuel formulation that enables light and heavy-duty CIDI engine/vehicle systems to meet regulated emissions levels with minimum effect of fuel economy, and perform in full compliance with specified durability requirements.

ER1-4: (1) By 2008, research, develop, and demonstrate at least 10 design packages for specific climates and home types that can achieve from 40 to 70 percent increase in the purchased energy efficiency of new prototype homes relative to the 2000 Model Energy Code, and 4 to 6 design packages that can achieve 20 percent increase in efficiency of existing homes; (2) Develop 5 to 7 design packages that can achieve an average of 40 percent increase in the purchased energy efficiency in applicable new commercial buildings or 15 percent increase in existing prototype commercial buildings; (3) Introduce 5 new cost-effective, ready for transition to market, efficient building products through component and equipment R, D& D activities; (4) By 2009, complete 30 formal proposals to enhance national building codes, and 20 final rules enhancing product minimum efficiency standards and test procedures; and (5) by 2010, develop 3 to 5 cost-effective, marketable Zero Energy Building (ZEB) design packages capable of satisfying 100 percent of whole-house energy requirements, net on an annual basis.

Annual targets for 2003:

Pursue six promising technical solutions considering regional and housing type differences targeting 40 percent reductions in residential space conditioning, hot water, and lighting loads. Based on Building America systems research results, develop regional Building System Performance Packages for five climate zones describing “best practice” systems that reduce space conditioning energy use by 30 percent.

Facilitate a 10 percent increase in commercial building designs that have meaningful consideration of energy efficiency by developing improved design tools, including code compliance tools, and completing six research assisted design case studies in cooperation with industry.

Complete investigation of five methods to increase the optimum selection of equipment components for air conditioning and heat pumps.

Conduct four rulemakings to amend appliance standards and test procedures.

Expand ZEB trams to include more climates and continue partnership with industry to more fully integrate solar electric and thermal energy into buildings.

ER1-5: (1) By 2008, DEER Program will complete development and testing of a portfolio of distributed generation and thermally activated technologies that show an average 25 percent increase in efficiency (compared to 2000 baseline) with NOx emissions less than 0.15 grams/kWh; (2) by 2008, demonstrate the feasibility of integrated systems in three new customer classes, which could achieve 70 percent efficiency and customer payback in less than 4 years, assuming commercial-scale production; (3) by 2008, demonstrate the capability to double the power carrying capacity of transmission and distribution wires compared to that available in 2000, and (4) by 2012, develop a portfolio of technologies and software tools that allow real-time monitoring, understanding, and control of the transmission and distribution system by identifying over 90 percent of incipient system disturbances and cuing the operator for action as necessary (reducing response time through automated actions) to mitigate disturbance propagation.

Annual targets for FY 2003:

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Complete the 12 Beta Field Test Units of high efficiency natural gas fired heat pump (60 percent better than pulse combustion furnace) and install at field test sites hosted by major U.S. gas utilities.

Complete 4000-hour field test of ceramic composite shroud components to demonstrate performance and emission benefits to a gas turbine.

Contract with three companies to support research on demonstrating a 5 percent increase in efficiency for an advanced microturbine system.

Increase the capability to reproducibly fabricate a 10-meter length of Second Generation HTS wire to carry 50 amps of electricity and 1-meter lengths that carry 100 amps from a 40-amp base.

Support the field test of a 100kW lithium battery system for 700 hrs at a utility site

ER2-1: (1) Hydrogen Technology subprogram will develop and demonstrate hydrogen generation technology that will reduce the cost of producing hydrogen from natural gas from (untaxed) \$5.00 per gallon of gasoline equivalent in 2000, when produced in large quantities, to (untaxed) \$1.50 per gallon of gasoline equivalent in 2010; (2) Fuel Cell R&D activities will reduce the production cost of the hydrogen –or gasoline- fueled, 50kW vehicle fuel cell power system (including hydrogen storage) from \$275/kW in 2002 to \$45/kW in 2010 at production levels of 500,000 units per year (projected cost); (3) Stationary Fuel Cell R&D activities will increase the efficiency of natural gas or propane fueled 50kW stationary fuel cell systems from 35 percent in 2002 to 50 percent in 2010.

Annual targets for FY 2003:

Verify low electricity and hydrogen production cost (<\$.08/kWh and <\$3.60/gal equivalent untaxed when produced in quantity) through cost shared operation of a 50kWe stationary fuel cell and hydrogen co-production facility for six months.

Complete design of the 5,000 psi cyro-gas tank and 10,000 psi compressed gas tank to achieve 1.3 kWh/kg and 1.0 kWh/l.

Achieve \$225/kW for a 50 kW fuel cell power system.

Achieve 30 percent efficiency at full power for a natural gas/propane 50kW stationary fuel cell. Plan technology validation activity.

ER2-2: The Wind Energy and Hydropower Program has the following overall performance goals: (1) by 2010, wind energy R&D activities will provide the technologies to reduce the cost of wind powered electricity generation in Class 4 wind areas from 5.5 to 3 cents per kWh ; and (2) hydropower R&D activities will enable commercialization of a fish passage technology capable of reducing turbine-induced fish mortality from 5–30 percent to 2 percent or less.

Annual targets for FY 2003:

Complete low wind speed turbine conceptual design studies and fabricate and begin testing advanced wind turbine components optimized for low wind speed application initiated under industry.

Complete the pilot-scale testing of a fish friendly hydroelectric turbine, providing the basis for future full-scale testing at an operational site. Successful testing will provide industry with a proven design, helping attain the 2 percent mortality goal.

ER2-3: (1) By 2010, develop and verify gasification technologies which enable the increased efficiency of biopower systems from the current 20 percent efficiency to 30-35 percent; by 2010, complete development and field verify the efficiency of next generation, small, modular, biopower generation systems, with a unit cost reduction of 50 percent from the 11 cents per kWh baseline in 2000 to 5.5 cents per kWh (as stand alone systems outside of the biorefinery); (2) by 2005, develop the bioconversion technologies necessary for reducing the production cost of cellulosic ethanol from \$1.40 to \$1.20 per gallon, and, by 2010, to \$1.07 per gallon, through technology improvements for the co- production of ethanol, electricity, and bio-based chemicals (this cost is equivalent to the cost of high value petroleum based additives that refineries must pay in order to produce gasoline that satisfies octane and emission requirements specified by EPA and the automobile manufacturers); (3) by 2008, develop and verify in a demonstration biorefinery, the technologies and systems needed to co-produce at least one cost competitive biobased chemical or material product, along with biofuels and/or biopower. By 2010, through collaborative research projects with industry, universities and national laboratories, develop and verify cost competitive, energy efficient, process technologies for biobased products that will enable, by 2020, a domestic market of at least 50 billion lbs per year of biobased products — an increase of more than threefold — from current sales of about 15 billion lbs/yr; (4) by 2009, develop and demonstrate gasification technology for solid biomass (hog fuel) with an interim cost goal of 5.4 cents per kWh; by 2012, develop and demonstrate fully integrated, high efficiency black liquor and solid biomass gasification/combined cycle systems with an electricity cost of 3.7 cents per kWh and thermal energy efficiencies equal or better than the current 65 percent for steam generation in the forest products industry.

Annual targets for FY 2003:

Develop an improved enzyme preparation for reducing the cost of producing ethanol from biomass. Evaluate its impact on production costs using an updated computer model of the production process.

Establish testing program at three existing gasifiers at partner sites for the development and application of technology components (e.g. gas clean-up, gas engines, fuel cells, etc.) that need to be integrated with the gasification components to produce power, fuels, and chemicals.

In partnership with industry, complete pilot scale demonstration of two new biobased product technologies for economic, technical, and product performance.

A 2-cycle engine oil derived from soy oil is commercialized for the emerging bioproducts industry.

Complete the thermochemical options analysis to assess various pathways to fuels (e.g., F-T, gasoline, diesel, alcohols).

ER2-4: (1) By 2006, reduce the cost of grid-tied (battery free) photovoltaic systems to the end user (including operation and maintenance costs) to \$4.50 per Watt, from a median value of \$6.25 per Watt in 2000, which requires a reduction in the cost of the PV module itself to \$1.75 per Watt, compared with a current cost of \$2.50 per Watt and would reduce the average cost of electricity generated by PV systems from a current \$0.25/kWh to \$0.19/kWh; and (2) by 2005, reduce the cost of solar water heating from \$0.08/kWh in 2001 to \$0.04/kWh.

Annual targets for FY 2003:

Reduce manufacturing cost of PV modules to \$2.10 per watt (equivalent to \$0.19 to \$0.24 per kWh price of electricity from an installed solar system).

ER2-5: By 2010, the leveled cost of power will be reduced from 5-8 cents in 2000, to 3-5 cents per kWh.

Annual targets for FY 2003:

Support industry opening and initial operation of a 1 MW small-scale geothermal power plant in the State of New Mexico.

ER3-1 (1) From 2003 to 2011, complete weatherization upgrades for a total of 1.2 million low income households; (2) by 2008, award cumulative total of 280 grants to 56 States and Territories; (3) cumulatively for the years 2003 through 2007, complete 15 or more state collaborative industrial research, development, and field testing cooperative agreements; (4) from 2003 to 2007, provide technical assistance to facilitate Rebuild America partners' retrofitting of an additional 400 million square feet of commercial and public/institutional space, with average efficiency improvement of 18 percent; (5) from 2003 through 2007, provide access to energy efficiency information for 20 million consumer contacts; (6) by 2008, facilitate adoption of upgraded model residential and commercial building energy codes (10 percent improvement) in 20 additional states, and by 2008, train 10,000 architects, engineers, builders and code officials to use and enforce upgraded energy codes; (7) By 2007, work with Clean Cities coalitions to increase the number of Alternative Fuel Vehicles (AFV's) from 110,000 in 2001, to 250,000 in 2007, and 400,000 in 2010, leveraging an outcome of 1,000,000 AFV's, consuming one billion gallons of alternative fuel by 2010; (8) from 2001 to 2010, increase the market share for ENERGY STAR windows from 25 to 40 percent, and market share for ENERGY STAR appliances from 15 to 25 percent; (9) from 2003 through 2008, fund 30 or more National Industrial Competitiveness through Energy, Environment and Economics (NICE3) industry partnerships for initial efficient technology demonstrations; (10) from 2003 to 2008, competitively fund 75 or more inventors and small businesses to develop energy efficiency technologies; (11) cumulatively, from 2003 through 2008, fund international technical assistance projects for sustainable energy planning in 7 or more new towns or cities, sponsor 3 or more renewable energy workshops, and fund foreign participation in 15 or more expert forums; (12) support to the maximum extent practicable DOE international goals and specific commitments contained in bilateral and multilateral agreements; and support the Clean Energy Technology Exports (CETE) initiative for joint public-private cooperation to increase the export of U.S. products and services; and (13) from 2003 to 2008, fund technical assistance to Native American Tribes in support of 50 or more economic development projects, 15 or more feasibility studies, and 15 or more workshops to promote energy efficiency and renewable energy resource development on Tribal lands.

Annual targets for FY 2003:

Award \$223 million in FY 2003 funds through 53 Weatherization program grants, including all 50 states, to enable the direct weatherization of 93,000 homes. This will bring the cumulative number of homes weatherized to over 5.2 million.

Assist 450 Rebuild America community partnerships, upgrade 80 million square feet of floor space in K-12 schools, colleges, public housing, and State and local governments.

Achieve a total of 135,000 alternative fuel vehicles in operation in Clean Cities which will displace 180 million gallons of gasoline and diesel a year.*

Recruit 375 additional Energy Star partners including retail stores, utilities, and manufacturers.

*The Clean Cities program is comprised on 4,500 partners and 80 Clean City coalitions, which operate on a calendar year basis, with data collection and processing ending in spring of the following year. Annual program growth is expected to continue at more than 15 percent a year, this performance carryover from 2002 to 2003 is made to align the reporting cycles of the program and the annual performance plan.

ER4-1: Support the President's Clear Skies Initiative by completing in 2005 initial demonstration tests of technologies with potential to reduce: Mercury by 50–70 percent; NO_x to less than 0.15 lb/mmBtu at ¾ cost of Selective Catalytic Reduction (SCR); PM_{2.5} by 99.9 percent; and acid gases by 95 percent. By 2010, test technologies for advanced cooling, mercury reduction by 90 percent and 66 percent increase in byproducts utilization.

Annual targets for FY 2003:

Complete preliminary field testing of alternate mercury control technologies representing at least three approaches for achieving 50 percent or greater removal.

Initiate developmental testing of SCR catalysts for reducing NO_x emissions from alternatively fueled boilers.

Complete fine particulate monitoring in the Upper Ohio River Valley region; complete field testing of alternative particulate matter collection technologies representing at least two approaches for achieving 99.99 percent removal; initiate research of PM_{2.5} and mercury transport and deposition.

Initiate projects for developing technologies to address emerging electric utility/water issues and combustion byproducts utilization and disposal.

ER4-2: By 2008, complete development of an advanced coal power systems capable of achieving 50 percent thermal efficiency at a capital cost of \$1,000/kW or less.

Annual targets for FY 2003:

Establish the design basis for a one to five ton per day facility capable of determining engineering feasibility, defining technical performance, and establishing operating costs for oxygen separation using membrane technology.

Complete initial laboratory-scale performance testing of hydrogen separation membranes using simulated gas streams.

Complete initial laboratory tests to determine performance capabilities of sorbents, sieves, and membranes for removing mercury, sulfur, nitrogen, and CO₂ from gas streams.

Conduct gasification support tests on leachability of gasifier residues, improved refractories, and oxygen-blown gasification of alternative fossil fuel feedstocks, and develop a simulator for a Vision 21 plant.

Develop technical and cost information sufficient for DOE decision-making on the viability of proceeding with plans for construction of a co-production plant.

ER4-3: By 2007 demonstrate at a pilot plant scale, technologies to reduce the cost of carbon dioxide separation and capture from new coal-based power systems by 75 percent compared to current (circa 2000) systems. By 2012, develop technologies that result in less than 10 percent increase in the cost of new energy services to separate, capture, transport, and sequester carbon using either direct or indirect systems.

Annual targets for FY 2003:

Complete initial set of field tests of advanced monitoring and verification methods for carbon inventories on natural and engineered terrestrial systems and establish a database for min-continent planning of geological storage projects. Establish regional carbon sequestration partnerships.

Initiate evaluations of three novel concepts, comprising integrated sequestration with enhanced coal bed methane recovery, mineral carbonation, and CO₂ flooding during enhanced oil recovery and establish initial recommendations for long-term monitoring of CO₂ geological storage to assure acceptability as a safe, long-term storage option.

Complete initial planning, field testing, or analyses of sequestration concepts involving saline aquifer storage, ocean storage, and scientific feasibility of CO₂ storage as hydrate on the ocean floor and complete initial comparative evaluation of energy technology scenarios to identify promising concepts for CO₂ sequestration.

ER4-4: By 2010 introduce prototypes of: a) modular fuel cells with 10-fold cost reduction (\$400/kW) with 45 to 50 percent efficiency; b) fuel cell-turbine hybrids with a 60 to 70 percent efficiency adaptable for coal.

Annual targets for FY 2003:

Communicate fuel cell program objectives and results and conduct peer-reviews through conferences, workshops, and website tools. Manage the PSPG R&D portfolio through assessment of results and selection of new projects to fill portfolio gaps.

Conduct cost reduction R&D programs involving near term developers, Siemens Westinghouse and FuelCell Energy, for the fuel cells, including manufacturing and Balance Of Plant (BOP) components.

Conduct field test necessary to establish feasibility of high temperature fuel cell hybrids and novel systems, including design, procurement, construction, and testing.

Conduct contracted and in-house State Energy Conversion Alliance (SECA) core technology of crosscutting and proof-of-concept R&D for transferred to one or more industrial teams, including know-how, patents, licenses, reports, papers in peer reviewed journals, etc.

The SECA industrial team shall conduct stack design and testing, including manufacturing approaches, and materials and BOP systems optimization leading prototypes.

ER5-1: By 2008, develop advanced technologies and employ scientifically based policy options to increase the Nation's economically recoverable resources by 15 TCF for natural gas and 140 million barrels for oil; and reduce future costs of exploration and production by \$10 billion. According to the USGS, EIA, and MMS, the economically recoverable oil resource base is estimated to be 120 million barrels at \$18/bbl and 149 billion barrels at \$30/bbl; the gas base is estimated to be 740 TCF at \$2.00/mcf and 920 TCF at \$3.50/mcf in 2002.

Annual targets for FY 2003:

Complete basin model for the Wind River Basin and well site selection in Greater Green River Basin to evaluate integrated remote sensing, seismic surveys and basin structural analysis to differentiate gas-bearing from uneconomic fractured reservoirs, complete a conceptual model of regional water distribution to help operators avoid poor production areas, and build and have field ready an initial prototype of a 400-geophone receiver array to improve seismic resolution necessary to locate economically productive gas zones.

Conduct two field tests of improved drilling technology that will improve the productivity of gas reservoirs and reduce drilling costs and two field tests of technologies to improve natural fracture detection to increase the percentage of economically producing wells of all wells drilled.

Increase access to the domestic oil reserves by using advanced technology. Focus on high-risk research (award six projects and issue one solicitation Micro-hole technologies) for future applications on state and federal lands and waters, and on addressing nearer-term barriers. Select and award five projects with independents, and on a regional basis award four projects-PUMP. Award two projects in Advanced Technologies and select and award projects under the Broad Funding Announcement.

Reduce the number of dry holes drilled in frontier areas, and increase near-term energy security through field testing (three projects) improved oil recovery techniques, seismic (one project), data acquisition (two projects); interpretation (one project) and streamflood simulation (one project) in existing light and heavy oil reservoirs at sites ranging from Alaska to Utah. Initiate full-scale field test of newly developed vibration sonic tool.

Analyze results of bench-scale reverse osmosis in produced water treatment equipment. Develop kinetics for model compounds to be used in enzymatic and biomimetic catalysts for upgrading heavy crude oils. Construct greenhouse

prototype for phytoremediation for methane (natural gas) from coal bed water. Collect data on fine particulate matter emission factors. Complete prototype methane leak detection refinery test. These studies will provide the scientific basis for lower-cost commercial-scale environmental technologies.

Conduct four field tests to demonstrate technical feasibility of advanced remote sensing and pipeline inspection technologies to reduce unintentional damage and increase pipeline integrity. Complete two field tests for underground gas storage facilities to improve gas storage well deliverability. Complete field testing of energy meter prototype.

ER5-2: By 2015, conduct scientific analyses and develop and field test a suite of methane hydrate characterization and diagnostic technologies that will provide a reliable inventory of Alaskan methane hydrate resources and resolve global environmental implications natural methane hydrate instability. By 2008, reduce the cost of producing hydrogen from natural gas by 15 percent.

Annual targets for FY 2003:

Exchange information and coordinate effort between government agencies. Award subprojects under Joint Industry Projects for Gulf of Mexico seafloor stability and monitoring programs. Issue newsletters, publish available technical reports on the methane hydrate website, and hold two workshops to coordinate program results to researchers. Conduct annual Federal Advisory Committee meeting.

Complete hydrate modeling for Alaska drilling program. Report strength and thermal property tests at national labs, this is fundamental data needed to model production and seafloor stability of hydrates. Develop prototype Raman Spectroscopy to use lasers to define hydrate molecular structure.

Complete initial report of improved hydrate coring device on Ocean Drilling Program, Leg 204. Study of oceanic samples is essential to understanding the distribution and properties of hydrate in nature. Drill one test well to determine aerial extent of hydrate occurrence in Alaska. Complete evaluation of hydrate occurrence in Gulf of Mexico to understand the interaction of hydrate and seafloor stability.

ER6-1: Maintain operational readiness of the Strategic Petroleum Reserve (SPR) to drawdown at a sustained rate of 4.4 million barrels per day for 90 days, within 15 days notice by the President, and fill the SPR to its current capacity of 700 million barrels by 2005.

Annual targets for FY 2003:

Add 39.8 million barrels (cumulative from April 2002). EOY crude oil inventory will equal 628 million barrels.

Complete the Degas Plant design.

ER7-1: Deploy new nuclear generation to meet energy and climate goals by enabling an industry decision to deploy at least one new advanced nuclear power plant in the U.S. by 2010 to support the President's goal of reducing greenhouse gas intensity by 18 percent by 2012; completing design of an economic, commercial-scale hydrogen production system using nuclear energy by 2015; and developing a next-generation nuclear system for deployment by 2010 but before 2030 that provides significant improvements in proliferation and terrorism resistance, safety and reliability, and economics.

Annual targets for FY 2003:

Under the cooperative agreements with U.S. power generation companies, support the preparation and submittal of at least two Early Site Permit applications for commercial sites to NRC.

Following a competitive process, award at least one industry cost-shared cooperative agreement for technology development and regulatory demonstration activities.

Issue the Generation IV Technology Roadmap to develop the most promising next generation nuclear energy system concepts.

Develop preliminary functional requirements for the Generation IV Very-High-Temperature Reactor.

ER7-2: Maximize energy from nuclear fuel by enabling a decision by 2010 to forgo a second repository while still supporting expanded nuclear power in the U.S. and develop the technology to reduce commercial high-level waste by a factor of four by 2015; and commercializing technology to reduce long-term radiotoxicity and heat load of spent fuel by 2030.

Annual targets for FY 2003:

Complete fabrication of test articles containing proliferation-resistant transmutation fuels for irradiation in the ATR beginning in FY 2004.

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

ER7-3: Protect existing nuclear generation to support the *National Energy Policy* objective to maintain and expand the Nation's electricity generation infrastructure by sponsoring innovative, investigator-initiated R&D to enhance the performance of light-water reactor technology to increase generating output from existing plants by at least an additional 500 megawatts by 2020.

Annual targets for FY 2003:

Complete 29 Nuclear Energy Research Initiative (NERI) projects initiated in FY 1999 and FY 2000 in the areas of advanced reactor technology, advanced reactor fuel, fundamental nuclear science technology, and/or nuclear waste management.

Award five new International NERI (I-NERI) projects in the areas of next generation reactor and fuel cycle technology, innovative nuclear plant design and advanced nuclear fuels and materials with the Republic of Korea.

ER7-4: Maintain and enhance national nuclear capabilities by producing highly-trained nuclear scientists and engineers to meet the Nation's energy, environmental, health care, and national security needs; preserving critical user facilities in a safe, secure, environmentally-compliant, and cost-effective manner to support national priorities; replenishing Federal technical and management staff with emphasis on obtaining high-caliber junior professionals with diverse backgrounds; and delivering isotope products and services for commercial, medical, and research applications where there is no private sector capability or sufficient capacity does not exist to meet United States needs such that by December 2004, deliveries continue to be made to customers as needed.

Annual targets for FY 2003:

Protect national nuclear research assets by funding four regional reactor centers; providing fuel to University Research Reactors; funding 20 to 25 DOE/Industry Matching Grants, 18 equipment and instrumentation upgrades, and 37 Nuclear Engineering Education Research grants; and providing 18 fellowships and 40 scholarships.

Keep cost and schedule milestones for upgrades and construction of key nuclear facilities within 10 percent of approved baselines.

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Safely operate each key nuclear facility within 10 percent of the approved plan, shutting down reactors if they are not operated within their safety envelope and expediting remedial action.

Demonstrate the operational capability of radioisotope power systems infrastructure by fabricating flight quality products at each of the major facilities (i.e., at least eight iridium clad vent sets at ORNL and at least eight encapsulated Pu-238 fuel pellets at LANL), and by processing at least two kilograms of scrap Pu-238 at LANL.

Complete the Idaho Integrated Safeguards and Security Plan to assure appropriate protective measures are taken commensurate with the risks and consequences for both laboratories on the Idaho site.

ER8-1: Provide national and international energy data, analyses, information, and forecasts to meet the needs of energy decision-makers and the public in order to promote sound policymaking, efficient energy markets, and public understanding.

Annual targets for FY 2003:

Conduct informational briefings for high-level energy policymakers in the Administration and Congress to provide timely information and analyses on topical energy issues and situations.

Increase the number of unique monthly users of Energy Information Administration's (EIAs) Website by at least 20 percent per year through 2005 (from a baseline of about 71,000 per month in 1997).

Increase the number of citations of EIA in major media outlets by at least 10 percent per year through 2005 (from a baseline of 73 citations in major media outlets in 1999).

ER 9-1 Bonneville Power Administration - Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's (NERC's) Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency rate at or below our safety performance standard.

Annual targets for FY 2003:

Ensure that the power system control area operated by the Bonneville Power Administration receives Control Compliance Ratings of "Pass" on both of the North American Electric Reliability Council's reliability performance standards in every month.

Bonneville Power Administration will meet planned repayment of principal on power investment.

Bonneville Power Administration will achieve a safety performance of a 3.3 recordable accident frequency rate for recordable injuries per 200,000 hours worked or the Bureau of Labor Statistics' industry rate, whichever is lower.

ER 9-2 Southwestern Power Administration - Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's (NERC's) Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency rate at or below our safety performance standard.

Annual targets for FY 2003:

Ensure that the power system control area operated by the Southwestern Power Administration receives, Control Compliance Ratings of "Pass" on both of the North American Electric Reliability Council's reliability performance

standards in every month

Southwestern Power Administration will meet planned repayment of principal on power investment

Southwestern Power Administration will achieve a safety performance of a 3.3 recordable accident frequency rate for recordable injuries per 200,000 hours worked or the Bureau of Labor Statistics' industry rate, whichever is lower.

ER 9-3 Southeastern Power Administration - Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's (NERC's) Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency rate at or below our safety performance standard.

Annual targets for FY 2003:

Ensure that the power system control area operated by the Southeastern Power Administration receives, Control Compliance Ratings of "Pass" on both of the North American Electric Reliability Council's reliability performance standards in every month.

Southeastern Power Administration will meet planned repayment of principal on power investment

Southeastern Power Administration will achieve a safety performance of a 3.3 recordable accident frequency rate for recordable injuries per 200,000 hours worked or the Bureau of Labor Statistics' industry rate, whichever is lower.

ER 9-4 Western Power Administration - Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's (NERC's) Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency rate at or below our safety performance standard.

Annual targets for FY 2003:

Ensure that each power system control area operated by the Western Area Power Administration receives, Control Compliance Ratings of "Pass" on both of the North American Electric Reliability Council's reliability performance standards in every month.

Western Area Power Administration will meet planned repayment of principal on power investment.

Western Area Power Administration will achieve a safety performance of a 3.3 recordable accident frequency rate for recordable injuries per 200,000 hours worked or the Bureau of Labor Statistics' industry rate, whichever is lower.

Goal 5: World-Class Scientific Research Capacity: *Provide world-class scientific research capacity needed to ensure the success of Department missions in national and energy security, to advance the frontiers of knowledge in physical sciences and areas of biological, medical, environmental, and computational sciences, and to provide world-class research facilities for the Nation's science enterprise.*

SC1-1: Exploit U.S. leadership at the energy frontier by conducting an experimental research program that will establish the foundations for a new understanding of the physical universe.

Performance target for FY 2003:

Deliver integrated luminosity as planned 225 pb⁻¹ to CDF and D-Zero at the Tevatron.

Complete research and development of two new accelerator systems for the recycler and the Tevatron electron lens.

SC1-2: Explain the observed absence of antimatter in the universe through understanding of the phenomenon of Charge Parity (CP) Violation.

Annual targets for FY 2003:

Increase the total data delivered to BaBar at the SLAC B-factory by delivering 45 fb⁻¹ of total luminosity.

Add one new Radio Frequency (RF) station.

Measure CP violation in B mesons with an uncertainty of +/- 0.06.

SC2-1: Determine the structure of nucleons in terms of bound states of quarks and gluons. Measure the effects of this structure on the properties of atomic nuclei.

Annual targets for FY 2003:

Collect first data with the Bates Large Acceptance Spectrometer (BLAST) detector at MIT/Bates, studying the structure of nucleons and few body nuclei as elements of the electron beam program.

Map out the strange quark contribution to nucleon structure using the G0 detector, utilizing the high intensity polarized electron beam developed at TJNAF as elements of the electron beam program.

Collect first data with polarized protons with the Solenoidal Tracker RHIC (STAR), Pioneering High Energy Nuclear Interacting Experiment (PHENIX), and pp2pp detectors.

SC2-2: Determine the behavior and properties of hot, dense nuclear matter as a function of temperature and density. Discover and characterize the quark-gluon plasma, if it is possible to be created under laboratory conditions.

Annual targets for FY 2003:

Initiate first round of experiments with collisions with other ions to compare to results of gold-gold collisions.

SC2-3: Determine the low energy properties of nuclei, particularly at their limits of stability. Use these properties to understand energy generation and the origin of the elements in stars, and the fundamental symmetries of the "Standard Model" of elementary particle physics.

Annual targets for FY 2003:

Collect first data from KamLAND, a joint U.S.-Japan experiment measuring neutrinos produced in nuclear reactors.

Complete preparation for tests of the prototype high-energy, high-power gas catcher for the Rare Isotope Accelerator (RIA).

Prepare for tests of prototype targets for the proposed RIA.

Complete initial beam emittance tests for Electron Cyclotron Resonance (ECR) ion source for RIA.

Complete tests for the development of the intermediate energy superconducting Radio Frequency (RF) cavities for the RIA.

SC3-1: Determine, compare, and analyze DNA sequences of microbes and other organisms that will underpin development of biotechnology solutions for clean energy, carbon sequestration, and environmental cleanup.

Annual targets for FY 2003:

Complete the high quality DNA sequencing of human chromosome 5.

Increase capacity of Production Genomics Facility (PGF) to sequence 12 billion base pairs of DNA per year, an increase of approximately 50 percent from FY 2002.

Establish at least 30 diverse collaborations for high throughput DNA sequencing with scientists outside the DOE Joint Genome Institute important for conducting Genomics and Genomes to Life research.

Produce draft DNA sequences of more than 30 microbes vital to future U.S. energy security and independence, carbon sequestration, and environmental cleanup.

SC3-2: Establish the scientific foundation for determining a safe level of greenhouse gases and aerosols in the atmosphere by resolving or reducing key uncertainties in predicting their effects on climate, and provide the foundation to predict, assess, and mitigate potential adverse effects of energy production and use on the environment.

Annual targets for FY 2003:

Improve the precision of climate models by delivering a more realistic cloud submodel that reduces the uncertainty in calculations of the atmospheric energy budget by 10 percent.

Increase the spatial resolution of the atmospheric and ocean and sea ice submodels to 1.4 degrees (about 150 kilometers) and approximately 0.7 degrees (about 75 kilometers), respectively, for the fully coupled climate model.

SC4-1: Build leading research programs in the scientific disciplines encompassed by the Basic Energy Sciences (BES) mission areas and provide world-class, peer-reviewed research results cognizant of DOE needs as well as the needs of the broad scientific community.

Annual targets for FY 2003:

Competitively select and peer review at least 80 percent of all new research projects, using guidelines defined in 10 CFR 605 for the university projects and similar guidelines established by BES for the laboratory projects.

Competitively evaluate approximately 30 percent of ongoing projects using guidelines defined in 10 CFR 605 for the university projects, and similar guidelines established by BES for the laboratory projects.

As part of the continuing, high-level review of the management processes and the quality, relevance, and national and international leadership of BES programs, review the materials sciences and engineering activities using a BESAC-chartered Committee of Visitors.

Evaluate the following ongoing efforts using BESAC and BES sponsored workshops, with the goal of directing the activities toward international leadership and relevance to emerging technologies: photovoltaics, hydrogen, electron microscopy, and catalysis.

Through a BESAC-chartered workshop on “Basic Research Needs to Assure a Secure Energy Future,” evaluate future basic research directions appropriate for all activities of the BES program.

SC4-2: Enable U.S. leadership in nanoscale science, allowing the atom-by-atom design of materials and integrated systems of nanostructured components having new and improved properties for applications as diverse as high-efficiency solar cells and better catalysts for the production of fuels.

Annual targets for FY 2003:

Begin construction of one Nanoscale Science Research Center (NSRC), meeting the cost and timetables within 10 percent of the baselines given in the construction project data sheets for Project Number 03-R-312.

Conduct Project Engineering Design (PED) activities to establish construction baselines on the two other NSRCs.

Establish the instrument suites and identify fabrication capabilities for the new NSRC-based upon user community, based on input at national workshops held in late FY 2001 and FY 2002.

SC4-3: Develop advanced research instruments for x-ray diffraction, scattering, and imaging to provide diverse communities of researchers with the tools necessary for exploration and discovery in materials sciences and engineering, chemistry, earth and geosciences, and biology.

Annual targets for FY 2003:

Select and begin upgrade/fabrication of at least two instruments at the BES synchrotron light sources, based on peer review of submitted proposals, to keep the facilities at the forefront of science. Because the lifetime of an instrument is about 7 – 10 years, this addresses the need to renew instruments on a regular basis.

Establish collaborative, national Research & Development programs for common needs at the BES synchrotron light sources, e.g., for detectors and other components.

SC5-1: Build leading research programs in focused disciplines of applied mathematics, computer science, and network and collaboratory research important to national and energy security to spur revolutionary advances in the use of high-performance computers and networks.

Performance target for FY 2003:

Complete the definitive analysis of the advantages and issues associated with lightweight kernel operating systems rather than full kernels for the compute nodes of extreme-scale scientific computers, resolving a critical issue for the future of high performance computers in the U.S.

SC5-2: Create the Mathematical and Computing Systems Software and the High Performance Computing Facilities that enable Scientific Simulation and Modeling Codes to take full advantage of the extraordinary capabilities of terascale computers, and the Collaboratory Software Infrastructure to enable geographically-separated scientists to effectively work together as a team as well as provide electronic access to both facilities and data.

Annual targets for FY 2003:

Begin installation of next generation NERSC computer, NERSC-4, that will at least double the capability available to solve leading edge scientific problems.

Initiate at least five competitively selected interdisciplinary research teams to provide computational science and applied mathematics advances that will accelerate biological discovery in microbial systems or develop the next generation of computational tools required for nanoscale science based on peer review, in partnership with the Biological and Environmental Research (BER) and Basic Energy Sciences (BES) programs, respectively, of submitted proposals.

SC6-1: Develop the basis for a reliable capability to predict the behavior of magnetically confined plasma and use the advances in the Tokamak concept to enable the start of the burning plasma physics phase of the U.S. fusion sciences program.

Annual targets for FY 2003:

Complete installation of internal coils for feedback control of plasma instabilities on DIII-D.

Conduct a first set of experiments demonstrating the effectiveness of these coils in controlling plasma instabilities, and compare the results with theoretical predictions.

Produce high temperature plasmas with five megawatts of Ion Cyclotron Radio Frequency (ICRF) power for pulse lengths of 0.5 seconds in the Alcator C-Mod. Assess the stability and confinement properties of these plasmas, which would have collisionalities in the same range as that expected for the burning plasma regime.

SC6-2: Develop the cutting edge technologies that enable Fusion Energy Sciences (FES) research facilities to achieve their scientific goals and investigate innovations needed to create attractive visions of designs and technologies for fusion energy systems.

Annual targets for FY 2003:

Complete testing of the High-Power Prototype advanced ion-cyclotron radio frequency antenna that will be used at the Joint European Torus (JET).

Complete preliminary experimental and modeling investigations of nano-scale thermodynamic, mechanical, and creep-rupture properties of nanocomposited ferritic steels.

SC7-1A: Manage High Energy Physics (HEP) facility operations to the highest standards of performance, using merit evaluation with independent peer review. Meet U.S. commitments to the accelerator and detector components of the Large Hadron Collider (LHC) facility now under construction.

Annual targets for FY 2003:

Meet the completion targets for the U.S. portion of the LHC project

- Meet the completion targets for the U.S. portion of the LHC project – CMS, 78 percent
- Meet the completion targets for the U.S. portion of the LHC project - ATLAS, 74 percent
- Meet the completion targets for the U.S. portion of the LHC project - Accelerator, 86 percent.

Maintain and operate HEP forefront scientific facilities such that unscheduled downtime is less than 20 percent of the total scheduled operating time.

SC7-1B: Perform research and development needed to support the operation and upgrade of existing HEP facilities and to provide the tools and technology to develop new forefront facilities.

Annual targets for FY 2003:

Demonstrate operation of advanced design accelerating structure for the Next Linear Collider (NLC) at 70 MV/m.

SC7-1C: Conduct, using outside experts, a review (1) of the operations and performance of the HEP-supported accelerator facility at Fermilab (Tevatron) to identify opportunities to optimize efficiency and performance.

Annual targets for FY 2003:

Conduct, using outside experts, a review (1) of the operations and performance of the HEP-supported accelerator facility at Fermilab (Tevatron) to identify opportunities to optimize efficiency and performance.

SC7-2: Manage all Nuclear Physics (NP) facility operations and construction to the highest standards of overall performance, using merit evaluation with independent peer review.

Annual targets for FY 2003:

Maintain and operate NP scientific user facilities so that the unscheduled operational downtime will be kept to less than 20 percent, on average, of total scheduled operating time.

Upgrade the RHIC cryogenics system to eliminate seal gas compressor single point failure.

Meet the cost and schedule milestones for construction of facilities and Major Items of Equipment within 10 percent of baseline estimates. Specifically, complete the Solenoidal Tracker at RHIC (STAR) Electro-Magnetic Calorimeter (EMCAL).

SC7-3: Manage all Biological & Environmental Research (BER) facility operations and construction to the highest standards of overall performance using merit evaluation with independent peer review.

Annual targets for FY 2003:

Keep within 10 percent of cost and schedule milestones for upgrades and construction of scientific user facilities.

Begin operation of the new high performance computer at the EMSL at the PNNL.

Complete construction of the Laboratory for Comparative and Functional Genomics (LCFG) at ORNL.

Maintain and operate the BER scientific user facilities so the unscheduled downtime on average is less than 10 percent of the total scheduled operating time.

SC7-4A: Manage BES facility operations and construction to the highest standards of overall performance using merit evaluation with independent peer review.

Annual targets for FY 2003:

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Continue upgrades on the major components of the SPEAR 3 storage ring at the Stanford Synchrotron Radiation Laboratory (SSRL), maintaining cost and schedule within 10 percent of baseline.

Maintain and operate the BES scientific user facilities so the unscheduled downtime on average is less than 10 percent of the total scheduled operating time. Maintain the cost and schedule milestones within 10 percent for upgrades and construction of scientific user facilities.

SC7-4B: Restore U.S. preeminence in neutron scattering research, instrumentation, and facilities to provide researchers with the tools necessary for the exploration and discovery of advanced materials.

Annual targets for FY 2003:

Continue construction of the Spallation Neutron Source (SNS), meeting the cost and timetables within 10 percent of the baselines given in the construction project data sheet, Project Number 99-E-334. At the end of FY 2003, construction of the SNS will be 61 percent complete.

Select and begin fabrication of one additional instrument for the SNS.

Select and begin upgrade/ fabrication of one instrument each at the High Flux Isotope Reactor and the Manuel Lujan, Jr. Neutron Scattering Center. Commitment at the Lujan Center is conditional upon Los Alamos Neutron Science Center (LANSC) demonstrating reliable operations, as determined by a Basic Energy Science Advisory Committee (BESAC) review to be conducted in FY 2003.

SC7-5: Provide advanced scientific user facilities where scientific excellence is validated by external review; average operational downtime does not exceed 10 percent of schedule; construction and upgrades are within 10 percent of schedule and budget; and facility technology research and development programs meet their goals.

Annual targets for FY 2003:

Maintain and operate facilities, including NERSC and ESnet, so the unscheduled downtime on average is less than 10 percent of the total scheduled operating time.

Complete the review of Advanced Scientific Computing Research (ASCR) high performance computing facilities by the Advanced Scientific Computing Advisory Committee (ASCAC) and implement action plans to respond to recommendations.

SC7-6: Manage all Fusion Energy Sciences (FES) facility operations and construction to the highest standards of overall performance, using merit evaluation and independent peer review.

Annual targets for FY 2003:

Keep deviations in cost and schedule for upgrades and construction of scientific user facilities within 10 percent of approved baselines.

Keep deviations in weeks of operation for each major facility within 10 percent of the approved plan.

Complete the National Compact Stellarator Experiment (NCSX) Conceptual Design, and begin the Preliminary Design.

Goal 6: Environmental Management. *Accelerate cleanup of nuclear weapons manufacturing and testing sites, completing cleanup of 108 contaminated sites by 2025.*

EQ1-1: By 2006, complete geographic cleanup at as many of the Department's 37 sites remaining at the end of FY 2004 as possible. Continue cleanup at the remaining sites, including the five largest sites, scheduled for completion in the post 2006 timeframe.

Annual targets for FY 2003:

Complete remediation at two additional geographic sites, the Maxey Flats Disposal Site in Kentucky and the Salmon Site in Mississippi, increasing the total completed to 77 of the 114 geographic sites.

Complete 193 release sites.

Complete two nuclear facilities.

Complete 10 radioactive facilities.

Complete 43 industrial facilities.

EQ1-2: Safely and expeditiously dispose of waste generated during past and current DOE activities. Continue shipment of transuranic (TRU) waste for disposal at the Waste Isolation Pilot Plant (WIPP).

Annual targets for FY 2003:

Eliminate 700,000 gallons of liquid waste.

Close one liquid waste tank.

Package 130 containers of high-level waste for final disposition.

Ship 4,135 cubic meters of transuranic waste to WIPP.

Dispose of approximately 78,388 cubic meters of low-level waste/mixed low-level waste.

EQ1-3: Stabilize nuclear material and spent nuclear fuel by producing safer chemical and/or physical forms of the material, and reduce the level of potential risk to personnel from radiation exposure and to the environment from contamination.

Annual targets for FY 2003:

Package 2,836 containers of plutonium metals or oxide for long-term storage.

Package 283 containers of enriched uranium for long-term storage.

Package 934 kilograms of plutonium or uranium residues for disposition.

Package 857 metric tons of heavy metal of spent nuclear fuel for disposition.

Package 1,815 metric tons of depleted and other uranium for disposition.

Goal 7: Nuclear Waste. *License and construct a permanent repository for nuclear waste at Yucca Mountain and begin acceptance of waste by 2010.*

EQ2-1: Obtain a repository construction authorization from the Nuclear Regulatory Commission in 2008.

Annual targets for FY 2003:

Complete additional testing and analyses required to support license application design.

Complete development of repository conceptual design and request Acquisition Executive approval to start preliminary design, which will be used in the license application.

Complete and issue updated Total System Life Cycle Cost and Fee Adequacy reports in preparation for license application.

EQ2-2: Develop the national and Nevada transportation infrastructure to support the anticipated shipment of spent nuclear fuel and high-level radioactive waste to the repository, beginning in 2010.

Annual targets for FY 2003:

Develop and issue the OCRWM Strategic Transportation Plan.

Corporate Management.

DOE's Strategic and General Goals will be accomplished not only through the efforts of the major program offices in the Department, but with additional effort from staff offices which support the programs in carrying out the mission. DOE's staff offices perform critical functions necessary for success in achieving the Department's goals which include, but are not limited to, managing information technology, ensuring sound legal advice and fiscal stewardship, developing and implementing uniform policy and procedures, maintaining and supporting our workforce, safeguarding our work spaces, and providing Congressional and public liaison.

To maintain focus on the Department's program results and most pressing management priorities in this plan, we have limited the presentation to goals and measures related to (1) implementation of the President's Management Agenda, (2) improving Security, and (3) Department's major management challenges.

CM1-1: Implement the DOE 5-Year Workforce Restructuring Plan that will improve Departmental Human Capital Management by initiating comprehensive human resource strategies.

Annual targets for FY 2003:

Cascade a new performance management system (based upon the SES model) down to all GS-15 and below managers and supervisors.

Initiate implementation of a workforce planning methodology that identifies critical skills for key scientific and technical positions.

Ensure Departmental leadership succession by developing a cross-cutting succession planning process within DOE for mission critical occupations.

Reduce managerial layering and shift staffing resources to front line, mission critical positions consistent with Administration guidelines.

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Complete the milestones listed in the FMFIA corrective action plan for the Departmental challenge of human capital management. (FMFIA)

CM1-2: By the end of FY 2004, complete competitive sourcing studies. Conduct additional studies in FY 2005 and beyond based on requirements established by the Office of Management and Budget and an assessment of Departmental needs.

Annual targets for FY 2003:

Complete public, private or direct conversion competitions for two studies in FY 2003, towards the 15 percent goal.

Identify potential functions for future studies, to include expansions of existing studies.

CM1-3: Manage the Department's financial resources and other assets; obtain an unqualified opinion by independent auditors on the Department's annual financial statements; and integrate financial, budget, and program information.

Annual targets for FY 2003:

Complete all planned External Independent Reviews (EIRs) of projects on schedule, to support both the needs of the project managers and the validation of the performance baselines. (Approximately 15 – 20 EIRs will be scheduled per FY, based upon program requested EIRs.)

Issue policies and guidance and modify and test financial systems for integrating financial information, with budget and program information to ensure implementation in FY 2004.

Publish the Departmental directive related to the implementation of a facilities and infrastructure program by June 2003.

Issue standards for acceptable cost and schedule performance.

All projects greater than \$5M that are not performing within established targets for technical, cost and schedule performance baselines are reported to the Deputy Secretary.

Issue DOE Manual 413.3x, Program and Project Management for the Acquisition of Capital Assets. Issuing the manual completes remaining action items contained in the NRC Report.

Pilot six of eleven core courses on Project Management Career Development Program.

Resolve 10 and have an action plan in place for 6 of the 16 remaining recommendations requiring action identified in the National Research Council Report, "Progress in Improving Project Management at the Department of Energy, 2001."

Issue timely and accurate interim financial statements within 45 days of the end of each quarter.

Obtain an unqualified opinion on the Department's FY 2002 financial statements with no material internal control weaknesses reported by auditors by January 31, 2003.

Meet major milestones for the implementation of the Integrated Management System (I-MANAGE) Standard Accounting and Reporting System (STARS), Standard Budget System, and Data Warehouse projects.

CM1-4: By the end of FY 2004, all of the Department's goals and performance measures in the Strategic Plan, the Annual Performance Plan and the Budget will be aligned, written in quantifiable and measurable terms, and will demonstrate clear outcomes and/or outputs, such that these goals and measures will provide a basis to evaluate progress, justify resource decisions, and ensure management accountability for results.

Annual targets for FY 2003:

Track the performance measures contained in the Department's Annual Performance Plan using the new tracking software.

Complete Departmental Strategic Plan and initiate the development of Program Plans based upon the revised Strategic Plan.

CM2-1: Advocate E-Government citizen service delivery by taking the following actions.

Annual targets for FY 2003:

Optimize IT investments using portfolio management and Enterprise Architecture.

Promote a more secure DOE Cyber security environment through: improved understanding of risk; better planning to preempt risk; more consistent implementation of security controls; and regular testing and validating control effectiveness.

Improve DOE employees' and contractors' overall knowledge and awareness of cyber security policies and practices through online security and awareness training.

Improve and maintain DOE's Secure Telecommunication Capability.

Improve OCIO staff skill sets to leverage IT to better support key business lines.

Improve IT operations through centralization.

Improve cyber security, efficiency and service delivery of common IT services at Headquarters through the implementation of the excite e-Government initiative that will consolidate all aspects of common IT systems and services throughout Headquarters.

Strengthen cyber security posture for Headquarters information systems and assets.

CM5-1: Develop policies and strategies to protect national security and other critical assets entrusted to the Department of Energy (DOE), deploy technological solutions to enhance security, protect Headquarters personnel and facilities, and provide other specialized security activities.

Annual targets for FY 2003:

Issue revised Design Basis Threat that identifies a revised range of Departmental threats that sites will use in providing appropriate security countermeasures.

Publish DOE Strategic Plan for Security (10 years) detailing counter measures to evolving security threat with improved protection capabilities (carried forward from FY 02). Revise DOE Security Strategic Plan by September 30, 2003, that provides a framework for addressing emerging threats from an existing 10 year to a 25 year period.

Implement increased security protective measures for DOE facilities in the National Capital Area including conducting 24 hours of mandatory training on use of force and 12 hours of mandatory tactical and CPR training for all armed security force members; conducting a minimum of 15 emergency response training exercises per month at both Forrestal and Germantown facilities; reinforcing vulnerable areas of Germantown and Forrestal perimeter with improved physical barriers; and installing badge readers at all facility access control points.

Enhance the Executive Protection Force which provides protection to the Secretary of Energy and other designated principals by: increasing staff; revising Office of Special Operations policies, procedures, and standards for executive protection; and designing a comprehensive Executive Protection training course to train all executive protection personnel employed by DOE.

Finalize development of a DOE-wide Continuity of Operations Plan and explore alternate back-up locations.

Complete a comprehensive study to refocus DOE's Emergency Operations Center to a state-of-the-art response facility that maintains current information on security and other critical operational conditions for DOE.

Complete biannual program reviews of Non-proliferation and National Security Institute (NNSI) to assure courses embrace ever-changing security requirements and develop a Project Management Implementation Plan and facility plan with milestones to achieve college status with associate and baccalaureate degrees.

Demonstrate a positive return on investment of at least 90 percent for the Technology and Systems Development Program (TSDP) projects scheduled for completion in FY 2003. The 90 percent return on investment is measured by an acceptable product and/or transfer of product to private industry for commercialization.

Validate data on Government-owned nuclear materials, including sealed sources, in the Nuclear Materials Management and Safeguards System at non-DOE facilities to address Inspector General audit and emerging security issues.

Examine 5 million pages of National Archives and Records Administration (NARA) documents and remove all classified documents containing nuclear weapon design and use information to prevent the compromise of classified or controlled information.

Finalize and publish an Annual Assessment of Policy Report that promulgates safeguards and security technological solutions to meet priority needs.

Issue revised DOE Order 142.X on unclassified foreign national visits and assignments that will address the open recommendations in an IG report on DOE's Export License Process for Foreign Visits and Assignments.

Issue revised DOE Order 470.1A on Safeguards and Security Program that will address the open recommendations in an IG report on Inspection of Selected Aspects of DOE's Classified Document Transmittal Process.

Conduct approximately 22,475 personnel security investigations and reinvestigations for the DOE.

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| <p>EQ3-1: Reduce the number of reportable deaths, injuries and illnesses and environmental releases from environment cleanup and other operational activities; identify health concerns, integrate worker health screening programs, and upgrade medical record systems for Energy Employees Occupational Illness Compensation Program Act worker compensation programs.</p> |
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Annual targets for FY 2003:

Reduce the number of reportable deaths, injuries and illnesses and environmental releases.

Provide medical screening to a minimum of 4,000 DOE workers exposed to beryllium, radiation, or other hazards during their employment at DOE facilities.

Assess injuries and illnesses in at least 70,000 workers across 12 DOE sites.

EQ4-1: Minimize the social and economic impacts to individuals and communities caused by changes in the Department's work force by (1) providing separation benefits comparable to industry standards while achieving annual savings that are three times the one-time cost of separation, and (2) creating and retaining jobs in the community to diversify the economy and employ displaced workers.

Annual targets for FY 2003:

Achieve annual recurring cost savings from separated workers that are at least three times the one-time cost of separation.

Support local community transition activities that create or retain, cumulatively, 29,000 to 30,500 private sector jobs by the end of FY 2003.

Publish an annual report providing updates of work force restructuring and community transition activities, as required under Section 3161 of the authorizing legislation.

In cooperation with the community reuse organizations, develop criteria to guide community transition funding allocations.