

Fiscal Year 2010 Annual Performance Report



U.S. DEPARTMENT OF
ENERGY

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MESSAGE FROM THE SECRETARY



I am pleased to present the U.S. Department of Energy's *FY 2010 Annual Performance Report*. This report provides key performance information that demonstrates our accountability to the American people for discovering the solutions to power and secure America's future.

Over the past year, the Department's efforts have brought it closer to its goals of expanding the frontiers of science (science, discovery and innovation); creating clean energy jobs (economic prosperity); curbing the carbon pollution that threatens our planet (clean, secure energy); and reducing nuclear dangers (national security). This report is one of three integrated reports. The two

other reports, the *FY 2010 Agency Financial Report* and the *FY 2010 Summary of Performance and Financial Information*, are available on our web site at Energy.gov.

Fiscal year 2010 was the second year of implementing the American Recovery and Reinvestment Act (Recovery Act). The Department contributed to the Administration's goal of stimulating the U.S. economy through ramping up its activities in energy-related areas of spending, project performance, and job creation. I am especially proud of the Department's accomplishments in obligating \$32.7 billion in Recovery Act contract and grant funds in an unprecedented 18 months to specific clean energy and science projects. Significant impacts were seen throughout the country including the weatherization of low-income homes, the clean-up of several nuclear sites, Smart Grid investments, advanced batteries grants, major investments in wind and solar power, and project commitments for carbon sequestration. Many of these activities have contributed to economic growth while laying the foundation for long-term prosperity through a clean energy economy.

This momentum needs to be sustained. However, it will require industry and government working together to accelerate innovation that addresses numerous challenges. It is the private sector that will ultimately drive this new industrial revolution and bring it to scale. As a scientist, I am an optimist and believe we can meet this challenge and lead the world in the 21st century.

Based on our internal evaluations, I can provide reasonable assurance that the performance information contained in this report is complete and reliable and accurately describes the results achieved by the Department.

As Secretary, I assure you that Department of Energy employees take their work seriously, and I commend them for their contributions.

A handwritten signature in black ink, appearing to read "Steven Chu".

Steven Chu
April 2011

MISSION

Discovering the solutions to power and secure America's future

SECRETARIAL PRIORITIES

- *Science, Discovery and Innovation*
- *Economic Prosperity*
- *Clean, Secure Energy*
- *National Security*

MANAGEMENT PRINCIPLES

1. Our mission is vital and urgent.
2. Science and technology lie at the heart of our mission.
3. We will treat our people as our greatest asset.
4. We will pursue our mission in a manner that is safe, secure, legally and ethically sound, and fiscally responsible.
5. We will manage risk in fulfilling our mission.
6. We will apply validated standards and rigorous peer review.
7. We will succeed only through teamwork and continuous improvement.

INTRODUCTION

The Department of Energy's (Department or DOE) *Annual Performance Report (APR)* compares the Department's performance results for fiscal year 2010 with the goals that were set in the President's fiscal year 2010 budget. The performance measures discussed in this report were outlined in the Department's congressional budget justifications and carried through the actual execution of the budget during the fiscal year. Because these measures were created before final congressional allocations, in some cases the actual appropriation levels did not match the Department's request and may have affected a program's ability to meet its planned performance level. Performance information is also presented for projects funded by the American Recovery and Reinvestment Act of 2009.

This report is one of three integrated documents that fulfill the annual financial and performance reporting requirements of the Government Performance and Results Act (GPRA), the Office of Management and Budget's (OMB) Circular A-136, Financial Reporting Requirements, and OMB's annual budget preparation guidance Circular A-11:

- ❖ ***Agency Financial Report (AFR)*** – contains all of the required financial statements, accompanying notes, independent auditor's report, Inspector General and management challenges, and management discussion and analysis (MD&A). The MD&A section includes an analysis of the financial statements, management controls and compliance information, as well as a high-level discussion of performance as it relates to DOE's major priorities.
- ❖ ***Annual Performance Report (APR)*** – focuses on detailed performance information including performance targets associated with the Department's budget activities. The report discusses individual and summary performance measure results through narrative descriptions with references to supporting documentation, high-level program challenges and benefits, and the status of all FY 2009 unmet measures.
- ❖ ***Summary of Performance and Financial Information*** – a concise report on the Department's financial results and performance information from the *AFR* and *APR*. It addresses both recent accomplishments and challenges for the Department.

All three of these reports are accessible through the DOE website:
www.energy.gov/about/budget

PERFORMANCE BACKGROUND

Performance Framework

The Department of Energy's performance programs are designed to achieve well-defined outcome goals that support the President's national objectives and the Department's strategic priorities. The Department uses a performance framework approach in developing program performance metrics to ensure that the right data are measured and to inform program managers, senior leaders, and stakeholders on the progress being made toward the strategic goals. The performance framework is a hierarchical relationship from the Department mission to individual performance standards, as follows:

- The **Mission** of the Department of Energy is “*Discovering the solutions to power and secure America's future.*”
- To accomplish the mission, the Department focuses on four supporting **Secretarial Priorities**: Science, Discovery and Innovation; Economic Prosperity; Clean, Secure Energy; and National Security.
- The Department has established seven **High-Priority Performance Goals** which represent the top priorities for the agency and the current administration and align with the secretarial priorities.
- Each program area within the Department has clearly defined **Program Goals** that also align with the strategic goals and objectives.
- Annual program **Performance Measures** and associated output and outcome targets support achievement of the program goals.
- Individual Employee and Contractor **Performance Standards** are linked directly to specific performance measures to ensure that individuals are held accountable for achieving results.

High-Priority Performance Goals

In FY 2010, the Department of Energy established seven high-priority performance goals which are intended to focus senior leadership's attention on top administration and departmental priorities and promote better coordination across agencies on key performance priorities. The first results associated with these goals are expected in FY 2011. These goals are also being integrated into the formulation process for DOE's new strategic plan which is expected to be released in FY 2011.

A “high-priority performance goal” is a measurable commitment to a specific result the federal government will deliver for the American people. DOE goals are as follows:

- **Renewable Capacity** – Double renewable energy generating capacity (excluding conventional hydropower) by 2012;
- **Advanced Batteries** – Assist in the development and deployment of advanced battery manufacturing capacity to support 500,000 plug-in hybrid electric vehicles per year by 2015;
- **Nuclear Loans** – Commit (conditionally) to loan guarantees for two nuclear power facilities to add new low-carbon emission capacity of at least 3,800 megawatts during 2010;
- **Retrofits** – Department of Energy and Department of Housing and Urban Development will work together to enable the cost-effective energy retrofits of 1.1 million housing units

through FY 2011 (of this number, Department of Energy programs will contribute to retrofits of an estimated 1 million housing units);

- **Secure Nuclear** – Make significant progress towards securing the most vulnerable nuclear materials worldwide within 4 years;
- **Nuclear Weapons** – Maintain the U.S. nuclear weapons stockpile and dismantle excess nuclear weapons to meet national nuclear security requirements as assigned by the President through the Nuclear Posture Review; and
- **Legacy Waste** – Reduce the Department’s Cold War legacy waste site footprint by 40%, from 900 square miles to 540 square miles by 2011.

Performance Validation and Verification

Validation and verification of performance data support the general accuracy and reliability of performance information, reduce the risk of inaccurate performance data, and provide a sufficient level of confidence that the information presented is credible. Internal controls are used by the Department to meet these requirements, as follows:

- **Reviews/ Audits:** The program offices, the national laboratories, and the Department’s contractor work force maintain source data substantiating performance results. The Department internally reviews these performance data and results, while independent auditors evaluate key internal controls related to performance reporting.
- **Budget Preparation Analysis:** Performance targets submitted during each phase of budget development are reviewed to ensure that they contribute effectively to the achievement of program goals and are aligned with the Department’s strategic priorities.
- **Training:** The Department offers training to employees to assist them in formulating quality performance measures that meet internal control standards.
- **Performance Measure Manager System:** The Performance Measure Manager (PMM) is a performance-management database that aligns annual performance measures with the Department’s Strategic Plan and into various hierarchical structures to show the relationship between individual performance targets and overall departmental performance. Departmental program and staff offices input performance measures and results directly into PMM on a quarterly basis. This system is then used to produce the “Performance Results” section of this report.

PROGRAM EVALUATION

The general purpose of program assessments and reviews are to evaluate each program's quality and effectiveness, to support program planning and improvement, and to encourage programs to develop directions and manage in ways that reflect the Department's strategic priorities. The Department's current program evaluation structure does not dedicate direct funding for agency-directed evaluation activities. The program offices within the Department determine their own staffing and allocate funding resources to planning and conducting evaluations. They allocate time, funding, and personnel to conduct regular and systematic program assessment. The program evaluations assess challenges, strengths, weaknesses, and progress in achieving program goals.

The Department program offices are responsible for evaluation planning and implementation of program evaluations and to determine what activities should be evaluated. The program offices develop key research questions and select the appropriate methodologies for each study. Components of the program are periodically reviewed by independent experts knowledgeable about the program and who have competence in the evaluation process and the results are used for continuing program development. The program assessment process is structured to measure the goals and standards of the program; instruments used are valid and reliable for their intended purpose. Program offices planning and conducting the assessment activities have expertise in various forms of program evaluations. These include peer and merit reviews, advisory committee reviews, National Academies of Science studies, and audits by the Government Accountability Office and the Inspector General.

The following is an inventory of current DOE program evaluation efforts:

Office of Energy Efficiency and Renewable Energy (EERE)

The lead federal evaluator in EERE's Planning, Budget, and Analysis office and the EERE Chief Technology Officer frequently conduct programs' peer reviews. They also review draft impact evaluation plans and study reports. Impact evaluation studies are all conducted by independent, third-party professional evaluators, and their evaluation plans and study reports are reviewed by additional external experts, per requirements set by EERE standard operating procedures.

Office of Fossil Energy (FE)

The FE/National Energy Technology Lab (NETL) conducted peer review meetings with independent, technical experts to assess ongoing research projects and, where applicable, to make recommendations for improvement. The American Society of Mechanical Engineers assembled a panel of leading government, academic, and industry experts to conduct a review of selected Advanced Gasification research projects supported by NETL. The peer review panel of recognized technical experts provided recommendations on how to improve the performance, management, and overall results for each individual research project.

Office of Nuclear Energy (NE)

The NE headquarters' organizations regularly assess the adequacy and the effectiveness of oversight processes carried out by the DOE Idaho Operations Office (DOE-ID). This is accomplished by NE headquarters participation in planned DOE-ID oversight activities, DOE-ID self-assessments, and independent assessments conducted by NE headquarters' personnel on the adequacy of the scope and conduct of the oversight activities performed by DOE-ID.

NE and DOE-ID have a significant number of subject matter experts available to conduct evaluations in a number of functional areas. Also, contract mechanisms are in place to obtain the services of independent experts when internal resources are inadequate. Policies, plans, and formal management, tracking, and archiving systems are in place to ensure all evaluations conducted by NE and DOE-ID are properly documented and available for lessons learned and auditing purposes. NE maintains the Oversight Proficiency Assurance Program to ensure that the NE staff conducting evaluations have the minimum baseline set of knowledge, skills, abilities, and experience necessary to conduct effective oversight/evaluations. DOE-ID evaluators maintain required oversight proficiency through participation in the Federal Technical Capability Program.

Office of Electricity Delivery and Energy Reliability (OE)

The OE Research and Development program conducts periodic peer reviews. The peer reviews provide the principal investigators with an expert, unbiased assessment of strengths, weaknesses, and specific changes that would improve the project.

Office of Science (SC)

All SC research projects and facilities undergo regular peer review and merit evaluation based on procedures set down in 10 CFR 605 for the extramural grant program and under a similar process for the laboratory programs and scientific user facilities. All new projects are selected through peer review and merit evaluation. While 10 CFR 605 governs financial assistance, the SC applies the same principles to national laboratory research reviews as well.

SC has established for each of the six SC programs a Federal Advisory Committee, governed by the Federal Advisory Committee Act (FACA) of 1972 (Public Law 92-463) and all applicable FACA amendments, federal regulations, and executive orders. The committees include experts from universities, national laboratories, and industries, and provide valuable, independent advice to SC upper management regarding the scientific and technical issues that arise in the planning, management, and implementation of the research programs. The Director of the Office of Science charges the relevant Federal Advisory Committees to assemble subcommittees (called Committees of Visitors (COV)) to assess a program's activities on a regular basis. Every SC program element must be reviewed by a COV at least once every 3 years. Each COV panel is composed of a group of recognized scientists and research program managers with broad expertise in the designated program areas. Panel members are familiar with DOE research programs; however, a significant fraction of the COV members do not receive DOE funding.

Environmental Management Program (EM)

The National Academy of Sciences (NAS) is chartered to evaluate technology gaps and provide technical and strategic advice to support further development of EM Technology. The NAS is also chartered to evaluate the scientific and technological bases for specific aspects of the EM program, including assessments of existing and proposed standards, criteria, and approaches for the management of radioactive waste; and proposed priorities for research and funding.

Rigorous External Technical Reviews enable DOE-EM to trend technical risk and implement technical risk reduction strategies. These reviews are independent and advisory to DOE (i.e., not the site or project contractor) that focus on technical scope and risk. The Environmental Management Advisory Board (EMAB) the Federal Advisory Committee Act (FACA) provide independent and external advice, information, and recommendations to the Assistant Secretary

for EM on corporate issues relating to cleanup and risk reduction. EMAB may study and propose options, recommendations, contracts, acquisition strategies, public and worker health and safety, integration and disposition of waste, regulatory agreements, roles and authorities, risk based end-states activities and risk reduction, cost-benefit analyses, program performance and functionality, and science requirements and applications. Specifically, at the request of the Assistant Secretary or the Site Managers, the Board may provide advice and recommendations concerning the following EM site-specific issues: clean-up standards and environmental restoration, waste management and disposition, stabilization and disposition of non-stockpile nuclear materials, excess facilities, future land use and long term stewardship, risk assessment and management, and clean-up science and technology activities. Independent Project Reviews are also conducted to provide reasonable assurance that a project's work activities can be accomplished within the stated cost, schedule, and scope.

Legacy Management Program (LM)

As a high performing organization (HPO), the Office of Legacy Management conducts quarterly internal evaluations to evaluate its performance against targets established when the HPO designation was made. The targets are consistent with the Department's Strategic Plan and include performance measures identified in the LM Strategic Plan.

LM also conducts independent evaluations of its program activities on a rotating basis. The focus, methodology, and external participation of each evaluation are dependent upon the activity. The outcome of these evaluations includes an overall assessment of the respective activity, identification of potential issues, and recommendations for future management.

National Nuclear Security Administration (NNSA)

To evaluate program performance, the NNSA conducts various internal and external reviews and audits. The NNSA programmatic activities are subject to continuing review by the Congress, the U.S. Government Accountability Office, the Department's Inspector General, the National Security Council, the Defense Nuclear Facilities Safety Board, the Department's Office of Engineering and Construction Management, the Department's Office of Health, Safety and Security, and various scientific groups. Each year, numerous external independent reviews are conducted for selected program and projects. Additionally, the NNSA Headquarters senior management and field managers conduct frequent, in-depth reviews of cost, schedule, and scope to ensure projects are on-track and within budget.

Chief Financial Officer (CFO), Office of Risk Management

The Office of Risk Management conducts program evaluations on issues raised in audit reports, including follow-up on implementation of recommendations, assessment of Department-wide impacts of audit findings, and assessment of trends and recurring issues and assessments and special projects directed by CFO management to inform financial management decisions. Current examples include reviews of the Department's pension liability and management, reviews of security costs at DOE sites and the extent of indirect funding for security costs, assessments of whether sites have highlighted appropriate management risks, assessments of whether DOE sites have identified adequate internal controls to mitigate identified risks, assessments of the sufficiency of testing for identified controls, and assessments of the sufficiency of corrective action plans.

Office of the Inspector General (IG)

The IG conducts performance inspections which focus on fact-finding and analysis regarding specified management issues/topics. The scope of each performance inspection is usually tightly focused around a particular issue or topic. The IG also conducts special, expedited reviews involving high profile or sensitive matters, such as critical issues of immediate interest to Congress, the IG, and/or DOE senior management. The IG issues a host of reports identifying concrete opportunities to reform Department management: contract management; waste management; environment, safety and health stewardship; research and development; major facilities and project construction and operation; and human capital.

PERFORMANCE BY SECRETARIAL PRIORITY

The following performance discussion is aligned with the Secretary’s priorities of Science, Discovery and Innovation; Economic Prosperity; Clean, Secure Energy; and National Security. The performance measures are associated with FY 2010 appropriations and funding provided by the American Recovery and Reinvestment Act of 2009 (Recovery Act). Some measures are examples of current quantitative performance metrics that are trendable and link to an outcome goal—ranging from market deployment of new technologies to timely completion of a capital or cleanup project.

The Department established performance measures to capture the activities of more than 100 distinct Recovery Act projects. Depending on the scope and timing of the project some output performance measures track the Department’s progress in distributing funds to worthwhile projects on schedule. With other projects the Department developed outcome-oriented results measures. The central commitments from the Recovery Act were to move funds out quickly to projects with enduring value, ensure unprecedented transparency and accountability, and make a meaningful down payment on the nation’s energy and environmental future.

Program performance targets were met for 79% of the programs areas in FY 2010. This chart displays the progress in measuring program effectiveness over time:

	FY 2010*	FY 2009*	FY 2008	FY 2007
Targets Met	273	285	203	189
Targets Not Met	65	62	15	14
Results Unknown**	6	3	2	0
<i>Total Number of Measures</i>	<i>344</i>	<i>350</i>	<i>220</i>	<i>203</i>

* Includes performance measures for Recovery Act projects (142 in FY 2009, 141 in FY 2010)

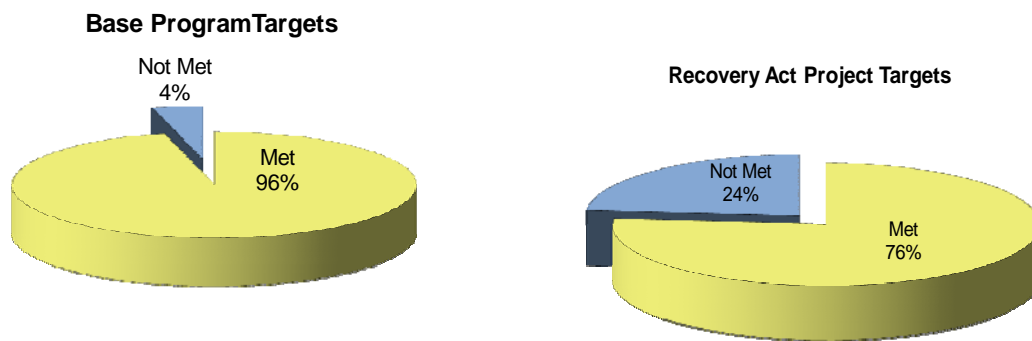
**Results not available by end of fiscal year

Priority 1. Science, Discovery and Innovation: *Invest in science to achieve transformational discoveries*

The Department’s science mission is the delivery of scientific discoveries and major scientific tools to transform our understanding of nature and to advance the energy, economic, and national security of the United States. This mission supports the president’s plan to increase federal investment in the sciences, train students and researchers in scientific fields, invest in areas important to our clean energy future, and to make the United States a leader in climate change solutions while maintaining a role in international science and energy experiments. The Department supports more than 12,000 Ph.D. scientists who work in the 17 national labs and 25,000 visiting Ph.D.s, graduate students, undergraduates, engineers, and technicians. The progress in achieving this goal is measured annually through detailed performance measures; the FY 2010 results follow below.

Priority 1: Performance Summary – The Department tracked 25 performance measures for base programs with FY 2010 budgetary expenditures totaling \$4.8 billion. A total of 24 targets were met, and 1 target was not met. Under Recovery Act projects within this priority area, 51

performance measures were tracked with FY 2010 budgetary expenditures totaling \$703 million. A total of 39 targets were met, and 12 targets were not met.



Budget and Performance

Secretarial Priority	Base Program (funded from FY 2010 appropriations)	FY 2010 Budgetary Expenditures ^a (million \$)	FY 2010 Performance		
			Targets Met	Targets Not Met	Results Unknown
1. Science, Discovery and Innovation	High Energy Physics	765	4		
	Nuclear Physics	585	4	1	
	Biological & Environmental Research	633	7		
	Fusion Energy Sciences	366	3		
	Basic Energy Sciences	2,109	4		
	Advanced Scientific Computing Research	379	2		
	Total	\$4,837	24	1	0
Recovery Act Project (funded from FY 2009 Recovery Act appropriations)					
Science:					
	- High Energy Physics	78	6	1	
	- Nuclear Physics	74	7	4	
	- Biological & Environmental Research	117	5	1	
	- Fusion Energy Sciences	28	5	4	
	- Basic Energy Sciences	188	6		
	- Advanced Scientific Computing Research	46	4	1	
	- Infrastructure	119	4		
	- Fellowships/Career Awards	6	1		
	- Small Business Research	17		1	
	Advanced Research Projects Agency-Energy	30	1		
	Total	\$703	39	12	0

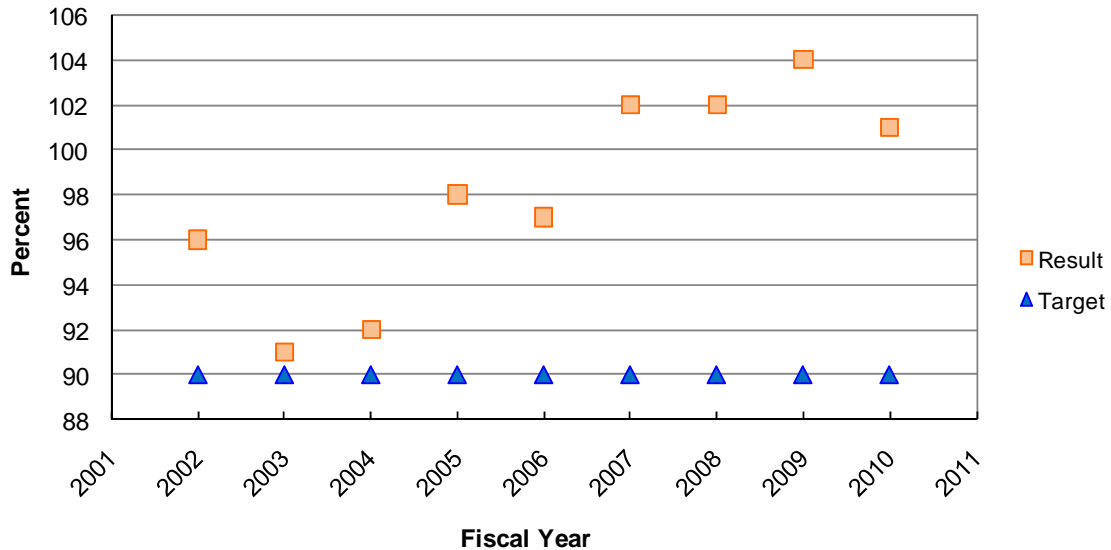
^a Synonymous with delivered orders -- amounts accrued or paid for services performed, goods and tangible property received, or for programs for which no current service is required such as loans. Budgetary expenditures are obtained from the Budgetary Standard General Ledger and are recorded/reported based on budgetary accounting rules. Includes capital expenditures but excludes such items as depreciation, changes in unfunded liability estimates, and certain other non-fund costs and allocations of Departmental Administration activities.

Priority 1: Performance Highlights – The table below contains a representative sample of measures that summarize the performance of programs within this priority area. Additional discussion of the measures follows this table. Detailed reports for all measures are in the section titled “Performance Measures Details” at the back of this report.

Base Program	Measure	FY 2010 Target	FY 2010 Result
Science – High Energy Physics/ Scientific Facilities	Achieved average operation time of scientific user facilities (Fermilab Tevatron) as a percentage of the total scheduled annual operating time	>80%	89%
Science – Basic Energy Science/ Scientific Facilities	Achieved average operation time of scientific user facilities as a percentage of the total scheduled annual operating time	>90%	101%
Science – Nuclear Physics/ CEBAF Detector	Effective usage of integrated delivered beam for experimental research in each Hall at the Continuous Electron Beam Accelerator Facility (CEBAF)	80%	68%
Science – Advanced Scientific Computing Research/ NERSC Capability Computing	Usage of primary supercomputer at National Energy Research Scientific Computing Center (NERSC) for capability computing (computations that require at least 1/8 of this resource, or 4,096 processors)	30%	58%
Recovery Act Project	Measure	FY 2010 Target	FY 2010 Result
Science – Research Collaborations	Universities that were awarded one of the 16 Energy Frontier Research Collaboration grants that have their centers fully operational	All	All
Science – General Plant Projects	General Plant Projects completed out of 18 projects funded by Recovery Act	2	2
Science – Fellowships & Early Career Awards	Creation of graduate fellowships and early career research awards to stimulate research careers in energy, environmental, and climate change sciences	Award grants	Awarded grants
Advanced Research Projects Agency–Energy (ARPA-E)	Funding Opportunity Announcements issued that focus on transformational energy technology projects	3 rounds	3 rounds

Scientific Facilities. The Department measures progress in maximizing potential discoveries at the forefront of science through tracking the efficient operations of unique scientific user facilities and physical experiment tools. This metric is calculated as the average achieved operation time of the scientific user facilities as a percentage of the total scheduled annual operating time. The chart below shows the results for the Basic Energy Sciences (BES) facilities, where the ratio of actual average operation time to planned operational hours has been greater than the target of 90% for each year. These results demonstrate efficient use of funding for leading research in intense x-ray sources, neutron scattering centers, electron beam characterization capabilities, and nanoscale science.

Average Achieved Operation Time of BES Scientific User Facilities as Percentage of Total Scheduled Annual Operating Time



Note: Percentages may exceed 100% due to the definition for this metric of “scheduled hours” as “estimated planned hours” at the time the appropriation becomes law.

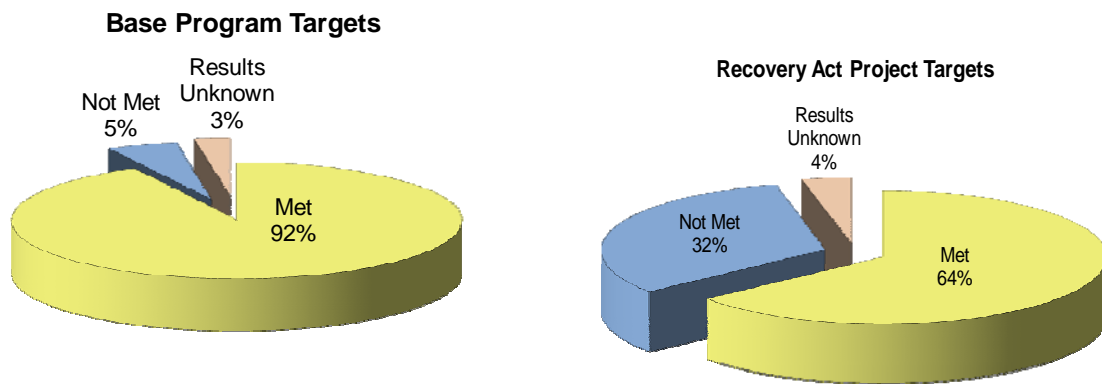
Energy Frontier Research Centers. DOE laid the groundwork to achieve urgent energy and security challenges by emulating mission-oriented, cross-disciplinary approaches. In FY 2009, 46 Energy Frontier Research Centers (EFRCs) were funded (16 funded by the Recovery Act). These virtual centers, composed of self-assembled teams of investigators, will address fundamental science questions that must be solved in order to remove roadblocks to transformational energy technologies. Each center will tackle a specific problem, such as energy storage, photoconversion, and carbon dioxide sequestration. In FY 2010, all 46 EFRCs began full operations.

ARPA-E. The Advanced Research Projects Agency-Energy (ARPA-E) was established within DOE in FY 2009 through \$400 million in Recovery Act funding. It supports transformational energy research in high-risk, high-reward technologies to advance energy efficiency, reduce oil consumption, and mitigate greenhouse gas emissions. In FY 2010, the ARPA-E announced numerous new funding awards. The first round was a broad call for the best ideas in any area that could have a transformational impact on energy, ranging from an all-liquid metal battery that could provide grid-scale storage and cut costs by 90% to a novel carbon capture process that emulates the processes of the human body; 41 projects were funded. The second funding solicitation focused on developing better batteries, carbon capture processes, and electrofuels, which use microorganisms to harness energy and convert carbon dioxide into liquid fuels; 38 projects were funded. The final round of awards was for work in grid-scale energy storage, highly efficient cooling technologies and air conditioners, advanced power converters, and other energy technologies; 42 projects were funded. There are plans to conduct workshops in the near future to discuss other potential advanced energy technology areas.

Priority 2. Economic Prosperity: *Drive the revolution to create clean energy jobs and increase competitiveness*

The Department has been working to help communities across the nation become more prosperous by providing the means to produce a clean energy infrastructure and use energy more effectively. DOE has provided grants and incentives for efficient energy; promoted the development of an efficient, “smart” electricity transmission and distribution network; and funded the production of low-carbon energy sources, batteries, fuels, and electric transportation infrastructure domestically – programs that have helped create and save jobs. The progress in achieving this goal is measured annually through detailed performance measures; the FY 2010 results follow below.

Priority 2: Performance Summary – The Department tracked 40 performance measures for base programs with FY 2010 budgetary expenditures totaling \$11.8 billion. A total of 37 targets were met, 2 targets were not met, and the results for 1 were unknown as of the end of FY 2010. Under Recovery Act projects within this priority area, 28 performance measures were tracked with FY 2010 budgetary expenditures totaling \$4.2 billion. A total of 18 targets were met, 9 targets were not met, and the results for 1 were unknown as of the end of FY 2010.



Budget and Performance

Secretarial Priority	Base Program (funded from FY 2010 appropriations)	FY 2010 Budgetary Expenditures ^a (million \$)	FY 2010 Performance		
			Targets Met	Targets Not Met	Results Unknown
2. Economic Prosperity	Loan Guarantees	3,024	1	1	
	Electricity Delivery & Energy Reliability	766	8	1	
	Western Area Power Administration	628	4		
	Bonneville Power Administration	3,691	3		
	Southeastern Power Administration	48	2		
	Southwestern Power Administration	71	4		
	Building Technologies	211	5		
	Industrial Technologies	684	2		
	Federal Energy Management Program	46	1		1
	Weatherization	2,163	2		
	State Energy Program	203	2		
Petroleum Reserves	220	3			

Total	\$11,755	37	2	1
Recovery Act Project (funded from FY 2009 Recovery Act appropriations)				
Energy Efficiency and Renewable Energy:				
- Building Technologies	48	2	3	
- Industrial Technologies	69	3	1	
- Federal Energy Management Program	19	2		
- Facilities & Infrastructure	29		2	1
- Appliance Rebates	197		1	
- Weatherization & Intergovernmental	2,686	4	1	
Loan Programs	544		1	
Electricity Delivery & Energy Reliability	586	7		
Total	\$4,178	18	9	1

^a Synonymous with delivered orders -- amounts accrued or paid for services performed, goods and tangible property received, or for programs for which no current service is required such as loans. Budgetary expenditures are obtained from the Budgetary Standard General Ledger and are recorded/reported based on budgetary accounting rules. Includes capital expenditures but excludes such items as depreciation, changes in unfunded liability estimates, and certain other non-fund costs and allocations of Departmental Administration activities.

Priority 2: Performance Highlights – The table below contains a representative sample of measures that summarize the performance of programs within this priority area. Additional discussion of the measures follows this table. Detailed reports for all measures are in the section titled “Performance Measures Details” at the back of this report.

Base Program	Measure	FY 2010 Target	FY 2010 Result
Electricity Delivery & Energy Reliability (OE) – Smart Grid	Demonstrate peak load reduction or improvement in asset utilization on two feeder systems	10%	10%
Energy Efficiency & Renewable Energy (EERE) – Building Technologies	Completed proposals to update appliance standards and test procedures published in the Federal Register	14-17	17
EERE – Building Technologies	Achieve efficiency of white light solid state lighting in a lab device	113 lumens/watt	139 lumens/watt
EERE – Weatherization Assistance	Low-income family homes weatherized annually with DOE funds (based on appropriation of \$450 million)	21,510 - 31,087	24,492
EERE – State Energy Program	Average annual energy savings	9-10 trillion Btu	11 trillion Btu
Recovery Act Project	Measure	FY 2010 Target	FY 2010 Result
Loan Programs	Commitment of credit subsidy budget	15%	2%
OE – Smart Grid Investment Grants	Award first round of grants; receive, review, select, and award second round of grants or cancel second round; monitor & report grant progress	Award grants	Awarded grants
OE – Smart Grid Regional & Energy Storage Demonstrations	Select and award all grants; monitor & report grant progress	Award grants	Awarded grants
OE – Workforce Training for Electric Power Sector	Receive grant applications; review, select and award grants; monitor and report progress for all awardees	Award grants	Awarded grants

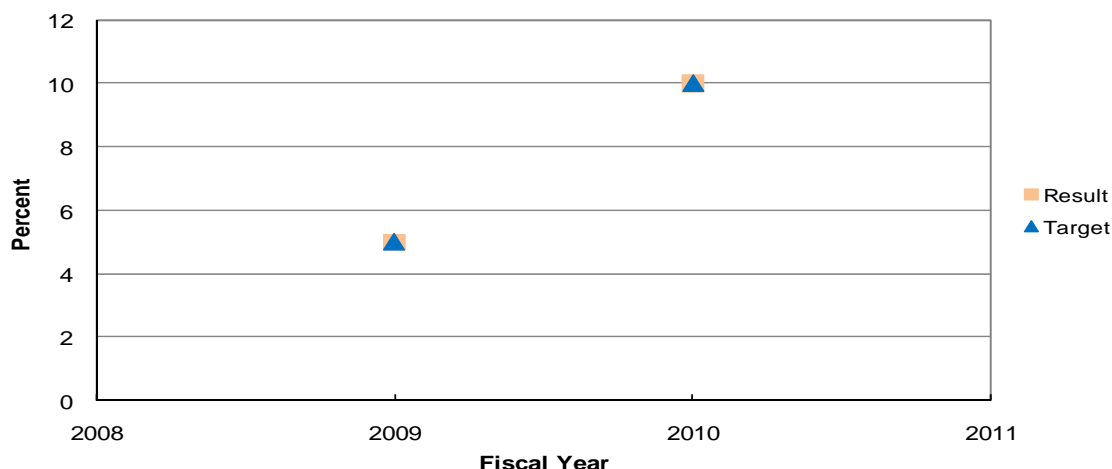
EERE – Energy Efficiency & Conservation Block Grants	Complete obligation of funds and monitor grantee performance; calculate program outcomes based on aggregated projected savings from grantee applications	\$2.7 billion	\$2.7 billion
EERE – State Energy Program	Percentage of Recovery Act funds awarded and progress tracked for state and territory use of State Energy Program Recovery funds resulting in energy efficiency projects that are expected to lead to energy savings	100%	100%
EERE – Weatherization Assistance	Low-income homes weatherized	197,500	207,920

Loan Programs. Title XVII of the 2005 Energy Policy Act gave DOE the authority to provide loan guarantees for innovative clean energy technologies. In addition to the original program (Section 1703), the Recovery Act established a new Section 1705 of Title XVII in FY 2009 and appropriated a subsidy to pay for the costs of loan guarantees for certain renewable energy systems, electric power transmission systems, and leading edge biofuel projects that commence construction no later than September 30, 2011. As of the end of FY 2010, the Department closed almost \$800 million in loan guarantees obligating 2% of the \$2.435 in appropriated subsidy for the Section 1705 program provided by the Recovery Act. Including conditional commitments and closings, the Department announced over \$5.7 billion in loans for renewable energy and transmission projects under the Section 1705 program by the end of FY 2010. The Department remains on track to obligate the remaining appropriated subsidy by September 30, 2011.

Smart Grid. The Department seeks to develop technologies and tools for greater efficiency and reliability in the U.S. electricity supply grid. Through additional funding from the Recovery Act, the Department launched a multi-year initiative to demonstrate peak-load reductions in grid regions and successfully organized to issue Funding Opportunity Announcements and make awards for the Recovery Act Smart Grid Investment Grant Program (\$3.4 billion) and the Smart Grid Regional and Energy Storage Demonstration Project (\$700 million). These matching grant projects facilitated the deployment of smart meters and real-time system monitoring tools to increase consumer choice, reduce cost, and increase the reliability and flexibility of the energy system.

Reduction in peak demand achieved through “smart” system management tools is a key performance measure. It translates to customer savings by eliminating or deferring the need for new transmission and generation capacity. In FY 2010, DOE achieved its target of demonstrating peak load reduction or improvement in asset utilization on two feeder systems usage by 10%. Plans are to run multiple demonstration projects (funded through the Recovery Act) to reduce peak loads by up to 15%.

Peak Load Reduction in Asset Utilization in Feeder Systems



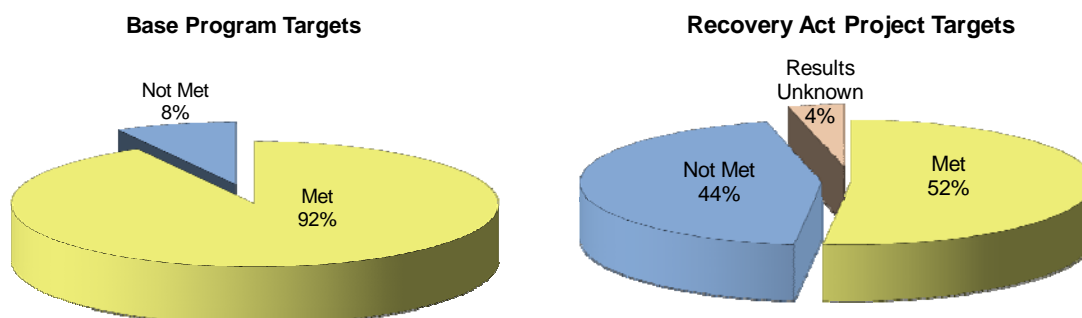
Weatherization Assistance. The Department met its goals of weatherizing low-income homes in FY 2010. A total of 24,492 low-income family homes were weatherized using base appropriation funds, while 207,920 low-income homes were weatherized using Recovery Act funding. The energy conservation resulting from these efforts of state and local agencies helps our country reduce its dependence on foreign oil and decrease the cost of energy for families in need while improving the health and safety of their homes. During the past 33 years, DOE has provided weatherization services to more than 6.4 million low-income households. Families receiving weatherization services see their annual energy bills reduced by an average of about \$437, depending on fuel prices. Because the energy improvements that make up weatherization services are long lived, the savings add up over time to substantial benefits for weatherization clients, their communities, and the nation as a whole.

Priority 3. Clean, Secure Energy: *Cut the carbon pollution that is changing our climate, while reducing our dependence on oil*

Achieving President Obama’s climate change goal to reduce U.S. greenhouse gas emissions to 17% below 2005 levels by 2020 and 83% by 2050 necessitates contributions from the full portfolio of available clean energy technologies – from efficiency programs and building technologies that can be deployed in the near term to long-term investments in new nuclear power and carbon capture and storage. DOE is making investments in a variety of renewable sources of electricity generation and deploying technologies to decrease energy use in homes, transportation, and industry. Investments in energy efficiency projects through grants to states and weatherization assistance have had immediate tangible benefits by reducing energy use and lowering energy bills. Near-zero emissions coal plants will help allow fossil fuels to be used as abundant and low-carbon emitting energy resources in the future. Nuclear energy is a fundamental component of the energy mix as well, and currently supplies about 20% of the nation’s electricity. The progress in achieving this goal is measured annually through detailed performance measures; the FY 2010 results follow below.

Priority 3: Performance Summary – The Department tracked 50 performance measures for base programs with FY 2010 budgetary expenditures totaling \$2.8 billion. A total of 46 targets

were met, and 4 targets were not met. Under Recovery Act projects within this priority area, 27 performance measures were tracked with FY 2010 budgetary expenditures totaling \$751 million. A total of 14 targets were met, and 12 targets were not met, and the results for 1 were unknown as of the end of FY 2010.



Budget and Performance

Secretarial Priority	Base Program (funded from FY 2010 appropriations)	FY 2010 Budgetary Expenditures ^a (million \$)	FY 2010 Performance		
			Targets Met	Targets Not Met	Results Unknown
3. Clean, Secure Energy	Hydrogen	25	4		
	Biomass	298	4	1	
	Solar Energy	414	5	1	
	Wind Energy	109	2	2	
	Geothermal Technologies	118	1		
	Water Power	39	3		
	Vehicle Technologies	621	4		
	Zero Emissions Coal-Based Electricity & Hydrogen Production	538	12		
	New Nuclear Generation Technologies	415	5		
	National Nuclear Infrastructure	85	3		
	Energy Information Administration	126	3		
Total		\$2,788	46	4	0
Recovery Act Project (funded from FY 2009 Recovery appropriations)					
Energy Efficiency and Renewable Energy:					
- Biomass					
		83	2	2	
- Solar Energy					
		35	2	1	
- Geothermal Technology					
		50	1	4	
- Wind Energy					
		44	2	2	
- Water Power					
		13		1	
- Vehicle Technologies					
		427	3	2	
Fossil Energy					
		99	4		1
Total		\$751	14	12	1

^a Synonymous with delivered orders -- amounts accrued or paid for services performed, goods and tangible property received, or for programs for which no current service is required such as loans. Budgetary expenditures are obtained from the Budgetary Standard General Ledger and are recorded/reported based on budgetary accounting rules. Includes capital expenditures but excludes such items as depreciation, changes in unfunded liability estimates, and certain other non-fund costs and allocations of Departmental Administration activities.

Priority 3: Performance Highlights – The table below contains a representative sample of measures that summarize the performance of programs within this priority area. Additional discussion of the measures follows this table. Detailed reports for all measures are in the section titled “Performance Measures Details” at the back of this report.

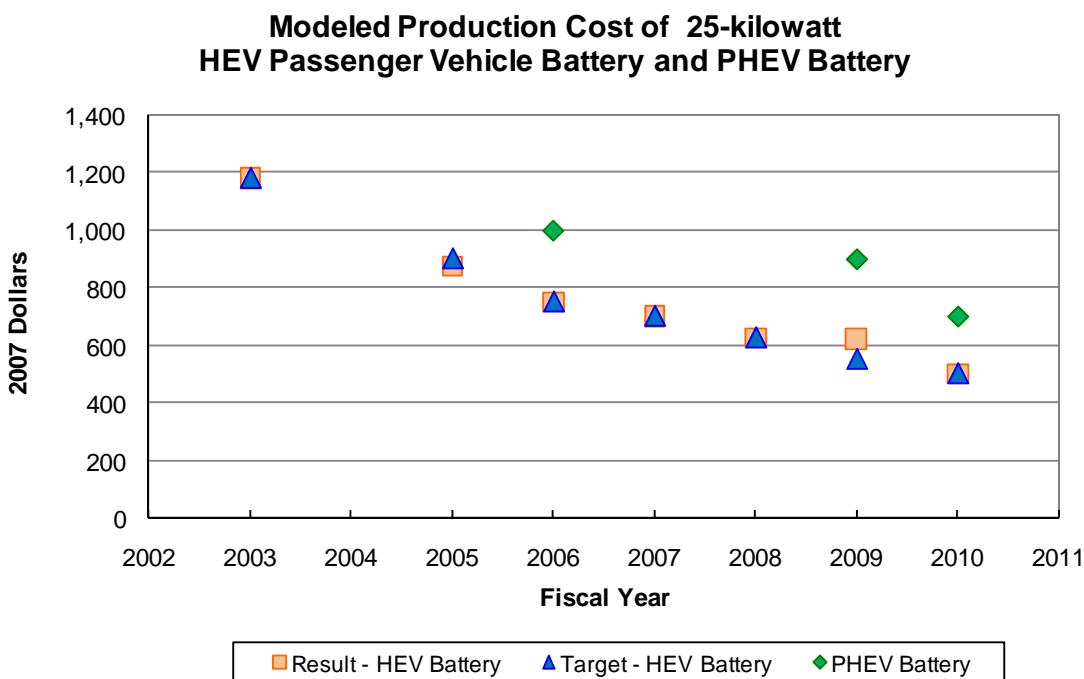
Base Program	Measure	FY 2010 Target	FY 2010 Result
Energy Efficiency & Renewable Energy (EERE) – Biomass	Modeled ethanol price for thermochemical gasification followed by mixed alcohol synthesis and ethanol separation	\$1.90 per gallon	\$1.90 per gallon
EERE – Solar/Photovoltaic	Modeled levelized cost for utility-scale CSP applications	10-12 cents per kilowatthour	13 cents per kilowatthour
EERE – Wind	Modeled cost of wind power in land-based Class 4 wind speed areas (i.e., 13 mph annual average wind speed at 33 feet above ground)	3.8 cents per kilowatthour	Not Met
	Modeled cost of wind power in Class 6 wind speed areas (i.e., 15 mph annual average wind speed at 33 feet above ground) for shallow offshore systems.	9.1 cents per kilowatthour	Not Met
EERE – Vehicle Technologies	Modeled production cost of high-power, 25-kilowatt lithium-ion battery for hybrid electric vehicles (HEV)	\$500	< \$500
Fossil Energy – Clean Coal	Net cost of CO ₂ capture and sequestration for an IGCC plant as measured by percent of cost of electricity; cost of electricity increase is for 90% CO ₂ capture and sequestration when compared to a conventional (off-the-shelf) non-capture power plant	15%	15%
Nuclear Energy – Next Generation Nuclear Power	Determine a path forward for the design and construction of a next generation nuclear power plant by 2011 by partnering with private industry on the development of NNGP, performing environmental assessment activities, and continuing with the research, analysis, design, and licensing activities to establish the basis for determining whether the project should continue to Phase 2	Meet milestones	Met milestones
Recovery Act Project	Measure	FY 2010 Target	FY 2010 Result
Fossil Energy – Carbon Capture & Storage/ FutureGen	Initiate FutureGen detailed design, including long-lead equipment (energy conversion plant, sequestration system, balance of power, and final design report)	Initiate design	Initiated design
EERE – Battery Manufacturing	Contract awards for Electric Drive Vehicle Battery and Component Manufacturing facility projects	35	30
EERE – Biomass	Funds obligated through budget period Phase 1 or Phase 2 awards to projects selected from this FOA	Obligate funds	Obligated \$509 million

Renewable Energy. DOE uses similar trendable performance metrics for incrementally lowering the cost of renewable energy technologies. Cost target ranges are created for technologies to

track how R&D activities result in lower costs of fuel cells, wind energy, and different types of solar power. In FY 2010 DOE achieved a modeled ethanol price of \$1.90 per gallon through research and pilot scale experiments conducted at the National Renewable Energy Laboratory. To further monitor technology adoption by the market, DOE tracks the number of new units of distributed wind turbines deployed in U.S. markets as well as the number of states with newly installed wind energy generation capacity.

The Recovery Act provided \$16.8 billion to accelerate of investments in renewable energy and energy efficiency. Examples include: accelerated validation of multiple advanced biofuel pathways to help reach DOE’s goal of making cellulosic ethanol cost-competitive by 2012; the acceleration of next-generation geothermal, or enhanced geothermal systems (EGS), technology development; particularly pilot and demonstration projects, and component technology R&D. Intensified work on these projects will help to prove the technical feasibility of EGS systems by 2015; and the expansion of near-term market and manufacturing opportunities, which will help to support the acceleration fuel cell market transformation.

Vehicle Technologies. DOE has demonstrated progress in the vehicle technologies area by lowering the modeled cost of a 25-kilowatt, lithium-ion battery for hybrid electric vehicles (HEV) from a baseline cost of \$3,000 in 1998 to \$1,180 in FY 2003 to below \$500 in FY 2010. Cost effective PHEV batteries will enable even greater reductions in oil use over the long term. It should be noted that the performance metric for HEV batteries is the total cost for a 25-kilowatt battery system where 25 kilowatts is the battery power requirement for a mid-sized vehicle. Because the key challenge for a PHEV battery is storing a lot of energy (but at relatively low cost), the PHEV performance measure is the cost per unit of energy stored (\$/kilowatthour). The target PHEV battery performance measure for FY 2010 is shown in green below; the PHEV battery baseline is the PHEV battery normalized energy cost in 2006 (\$1,000 per kilowatthour).

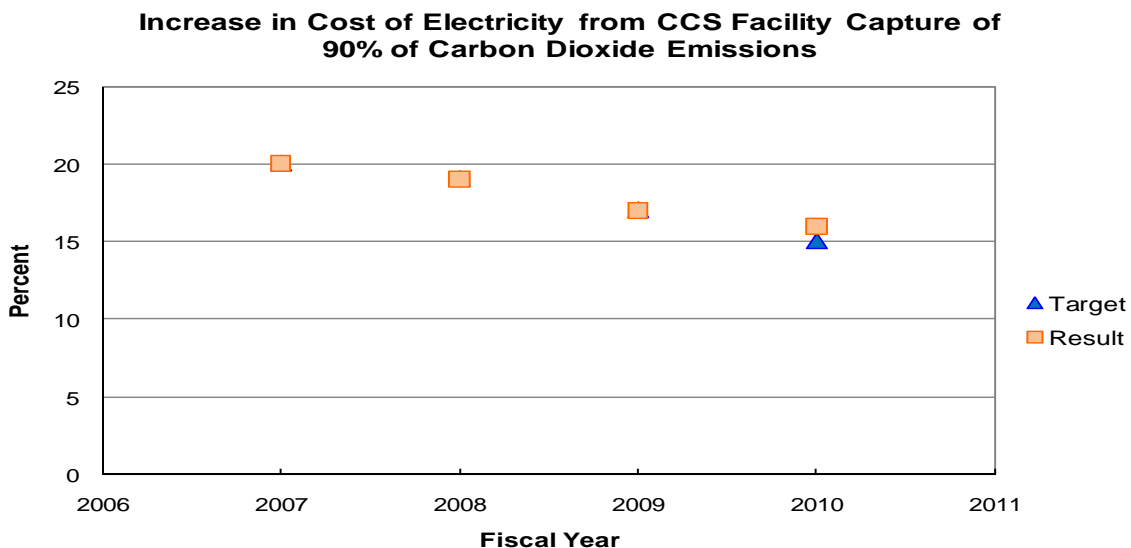


In FY 2009, the Oak Ridge National Lab demonstrated an engine efficiency of 44.1% using lab data and modeling. An organic Rankine cycle was used to generate more than 2.9 kilowatts of net electrical power from the exhaust heat of a General Motors 1.9-L diesel engine. The additional power raised the effective efficiency of the engine from 42.3% brake thermal efficiency (BTE) to a combined BTE of 44.1%.

Clean Coal. In FY 2009, DOE began construction of one major CCPI Round 1-2 project(s) that will promote and bring the best emerging new coal-based power generating technologies to demonstration through the use of industry partnerships. Awards were made for project selected under CCPI-Round III. The Project Definition Phases were initiated for four projects selected under the Clean Coal Power Initiative Round III: American Electric Power Service Corporation, NRG Energy, Summit Texas Clean Energy LLC, and Hydrogen Energy California LLC. In FY 2010, the Southeast Regional Carbon Sequestration Partnership conducted a two-step, large-volume injection test in the lower Tuscaloosa Formation and Paluxy Formation. The DOE-sponsored Weyburn-Midale Monitoring and Storage project is the second large-volume carbon storage project to inject more than 1 million metric tons of carbon dioxide (CO₂). The current injection rate of over 2 million metric tons of CO₂ per year is being accomplished at the Weyburn Oil Field in Saskatchewan, Canada. These field tests will demonstrate the capacity of the formations to sequester carbon by developing technologies and best practices that can safely and economically store CO₂ from coal-based energy systems.

To advance the goal of developing commercially viable Carbon Capture and Storage (CCS) technology, DOE is measuring incremental decreases in the additional cost of electricity for the capture of CO₂. A sustained focus on reducing the additional cost of CO₂ capture, along with developing sequestration options, are critical drivers for future market adaption of CCS technologies, which could help mitigate climate change by permanently, storing millions of metric tons of CO₂ in geologic formations.

Starting with a FY 2007 baseline of a 20% increase cost of electricity for advanced Integrated Gasification Combined Cycle power plants with carbon capture technology to capture 90% of CO₂ emissions, DOE has developed systems engineering studies decreasing the modeled cost to a 15% increase in the cost of electricity in FY 2010, and projects pilot-scale tests are expected to lower the additional cost of electricity to 10% by FY 2015.



The Recovery Act provided \$3.4 billion for Fossil Energy projects to leverage federal funding, stimulate private sector investment, accelerate development of CCS technology, and demonstrate the integration of coal-based energy systems and industrial processes with capture and permanent storage of CO₂ in geologic formations. In FY 2010, DOE met their targets to begin construction of the first large-scale industrial CCS projects and initiate FutureGen detailed design (Title II), including long-lead equipment (for example, energy conversion plant, sequestration system, balance of power, and final design report).

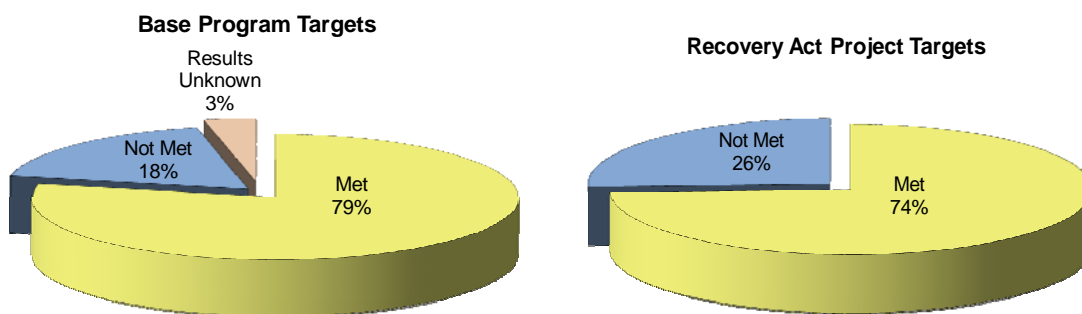
Nuclear Power. All FY 2010 program milestones for the Next Generation Nuclear Plant (NGNP) were met, and all deliverables were completed and submitted for review. The program is on track to meet all Phase I Energy Policy Act of 2005 deliverables on schedule. The Nuclear Energy Advisory Committee review of NGNP and a decision from the Secretary of Energy concerning whether NGNP will proceed to Phase II is scheduled for August 2011.

Priority 4. National Security: *Maintain nuclear deterrent and prevent proliferation*

The Department continues its efforts to meet goals for nonproliferation, weapons stewardship, nuclear propulsion, and legacy cleanup – leveraging science to promote national security. President Obama established goals for the United States to lead an international effort to make significant progress in securing the most vulnerable nuclear weapons around the world within 4 years; establish new nuclear nonproliferation treaties and partnerships to reduce stockpiles and ban testing; and maintain a safe, secure, and effective arsenal to deter any adversary. To deliver on the Department’s obligations stemming from 50 years of nuclear research and weapons production during the Cold War, the Department continues to focus its resources on those activities that will yield the greatest risk reductions, with safety as the utmost priority. DOE’s diverse and technically complex cleanup mission includes: decontaminating and decommissioning (D&D) nuclear facilities, remediating contaminated soil and ground water, constructing and operating facilities to treat radioactive liquid tank waste, securing and storing nuclear material, and transporting and disposing of transuranic and low-level wastes. The

progress in achieving this priority is measured annually through detailed performance measures; the FY 2010 results follow below.

Priority 4: Performance Summary – The Department tracked 88 performance measures for base programs with FY 2010 budgetary expenditures totaling \$19.2 billion. A total of 69 targets were met, 16 targets were not met, and the results for 3 were unknown as of the end of FY 2010. Under Recovery Act projects within this priority area (all under the Environmental Management program), 35 performance measures were tracked with FY 2010 budgetary expenditures totaling \$3.1 billion. A total of 26 targets were met, and 9 targets were not met.



Budget and Performance

Secretarial Priority	Base Program (funded from FY 2010 appropriations)	FY 2010 Budgetary Expenditures ^a (million \$)	FY 2010 Performance		
			Targets Met	Targets Not Met	Results Unknown
4. National Security	Office of the Administrator	440	2		
	Directed Stockpile Work	1,597	2	2	
	Science Campaign	321	2	1	
	Engineering Campaign	158	5		
	Inertial Confinement Fusion Ignition & High Yield Campaign	487	3	2	1
	Advanced Simulation & Computing Campaign	586	4		
	Readiness Campaign	97	3		
	Readiness in Technical Base & Facilities	1,761	4		
	Secure Transportation Asset	208	3		
	Nuclear Counterterrorism Incident Response	223		1	
	Facilities & Infrastructure Recapitalization	114	2		
	Site Stewardship	44	2	1	
	Defense Nuclear Security	662	4		
	Cyber Security	135	1	1	1
	Nonproliferation & Verification R&D	347	6		
	Elimination of Weapons-Grade Plutonium Production	120	1	2	
	Nonproliferation & International Security	180	5		
	International Nuclear Materials Protection & Cooperation	537	2	3	
Fissile Materials Disposition	567	2	1		
Global Threat Reduction Initiative	377	4			

	Naval Reactors	927	5		
	Environmental Management	8,950	4	2	
	Legacy Management	224	2		
	Nuclear Waste Disposal	160	1		1
	Total	\$19,222	69	16	3
Recovery Act Project (funded from FY 2009 Recovery Act appropriations)					
	Environmental Management	\$3,075	26	9	0

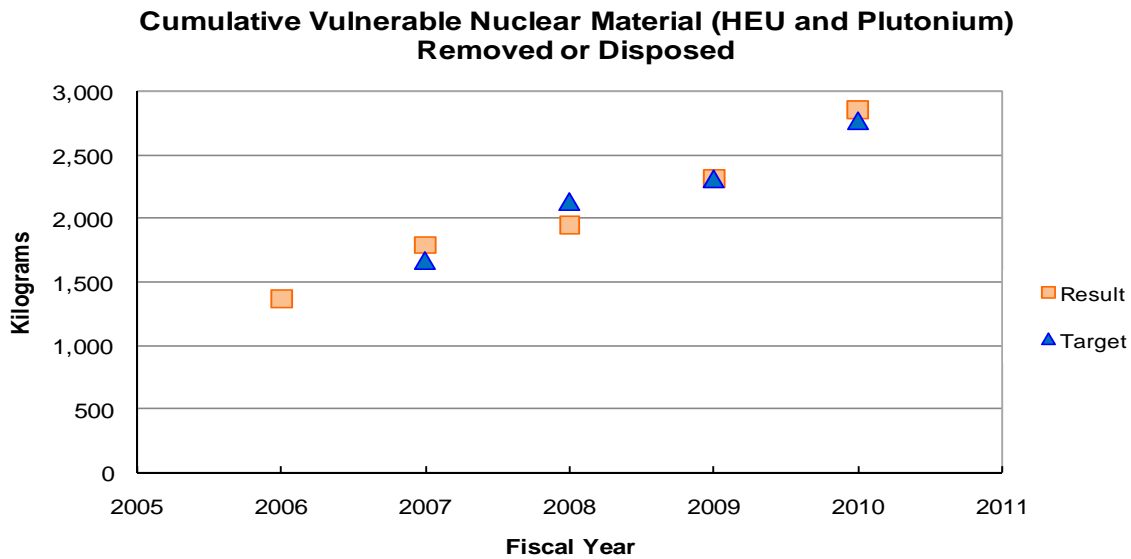
^a Synonymous with delivered orders -- amounts accrued or paid for services performed, goods and tangible property received, or for programs for which no current service is required such as loans. Budgetary expenditures are obtained from the Budgetary Standard General Ledger and are recorded/reported based on budgetary accounting rules. Includes capital expenditures but excludes such items as depreciation, changes in unfunded liability estimates, and certain other non-fund costs and allocations of Departmental Administration activities.

Priority 4: Performance Highlights – The table below contains a representative sample of measures that summarize the performance of programs within this priority area. Additional discussion of the measures follows this table. Detailed reports for all measures are in the section titled “Performance Measures Details” at the back of this report.

Base Program	Measure	FY 2010 Target	FY 2010 Result
National Nuclear Security Administration (NNSA) – Global Threat Reduction Initiative	Cumulative amount of vulnerable nuclear material (HEU and plutonium) removed or disposed	2,767 kilograms	2,853 kilograms
NNSA – Directed Stockpile Work	Annual percentage of warheads in the Stockpile that is safe, secure, reliable, and available to the President for deployment	100%	100%
NNSA – Facilities & Infrastructure Recapitalization	Cumulative percentage of legacy deferred maintenance baseline of \$900 million funded for elimination	86%	89%
NNSA – Naval Reactors	Cumulative percentage of completion on the next-generation aircraft carrier reactor plant design	91%	91%
Environmental Management – Radioactive Facilities	Cumulative number of radioactive facilities where decommission work is complete	369	369
Environmental Management – Nuclear Facilities	Cumulative number of nuclear facilities where decommission work is complete	99	94
Environmental Management – Enriched Uranium	Cumulative total of enriched uranium containers packaged for disposition	7,728	7,728
Recovery Act Project	Measure	FY 2010 Target	FY 2010 Result
Environmental Management – Environmental Cleanup/ Idaho	Industrial facilities with decommissions completed	11	10

Environmental Management – Environmental Cleanup/ Moab, Utah	Additional uranium mill tailings disposed	1,221,089 short tons	1,292,236 short tons
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Global Threat Reduction. DOE’s efforts in the area of global threat reduction contribute to the goal of preventing nuclear terrorism by reducing and protecting vulnerable nuclear and radiological materials located at civilian sites worldwide. The chart below shows that DOE removed or disposed an additional 536 kilograms of highly enriched uranium or plutonium in FY 2010, surpassing 60% of the outcome goal; an aggressive schedule is planned for the next few years.

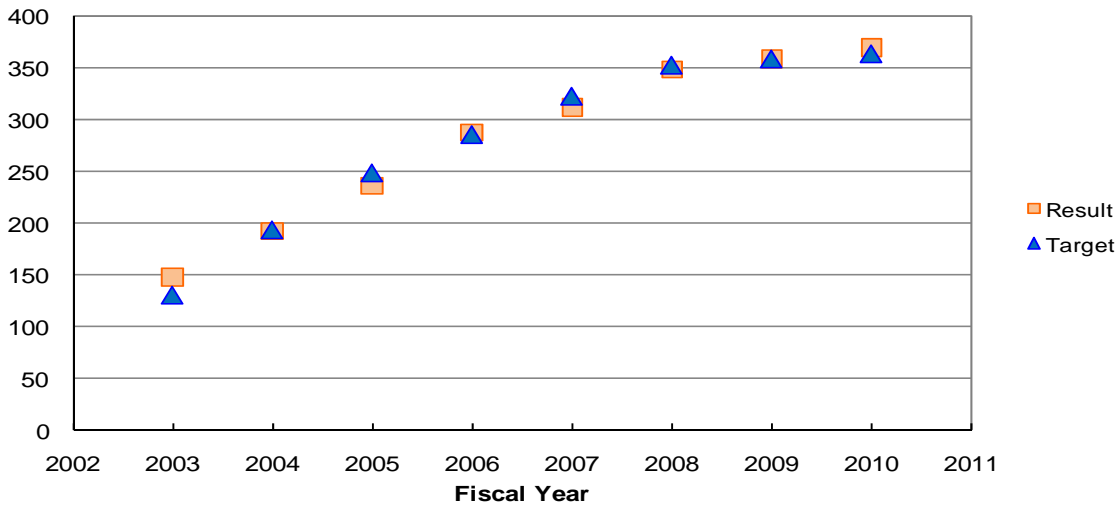


Stockpile Work. DOE has consistently coordinated to meet the critical metric that 100% percent of warheads in the nuclear weapons stockpile are safe, secure, reliable, and available to the President for deployment. DOE also continues progress towards achieving the goal of funding \$900 million of legacy deferred maintenance reduction. The average annual dollar value funded from FY 2007-2010 was \$77 million. At the end of FY 2010, DOE was ahead of schedule and 89% complete.

Naval Reactors. DOE tracks cumulative progress on the next-generation aircraft carrier reactor plant design. Work is currently on schedule, completing 91% of the work scope for designing the A1B reactor plant for the Navy.

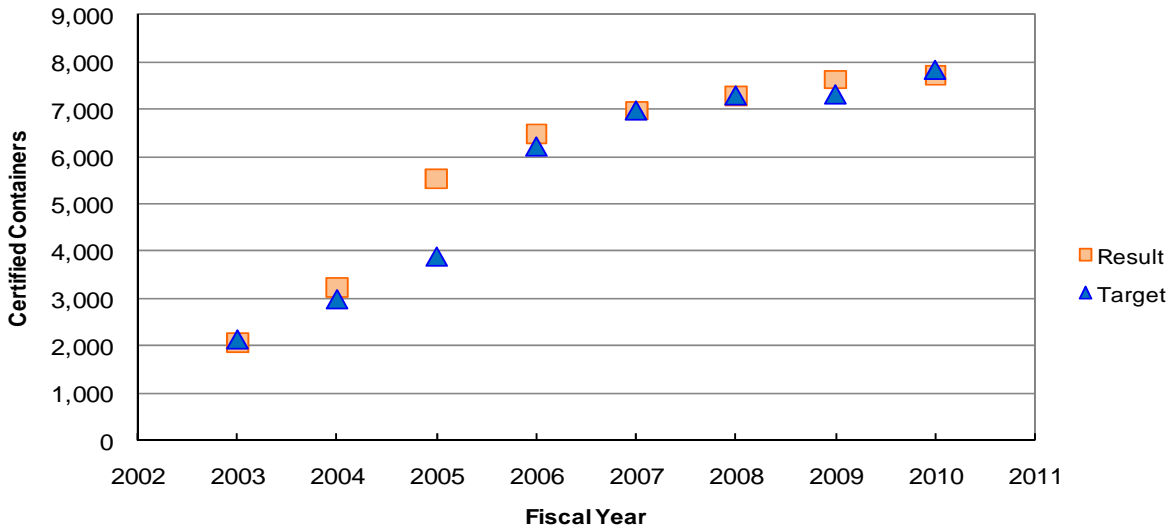
Radioactive Facilities. Facility completion measures mark the endpoints for DOE responsibility for facilities based on cumulative work to decommission, deactivate, dismantle, demolish, or transfer the complex to another owner. In order to identify and control radiological and non-radiological safety and health hazards, DOE tracks all facilities that are required to be completed: nuclear, radiological, and industrial. With a life-cycle goal of 992 facilities spanning most DOE sites, the radioactive facility measure is perhaps the best indicator of overall site cleanup progress. In FY 2010, DOE completed 11 radioactive facilities for a cumulative total of 369.

Cumulative Radioactive Facilities Completed



Enriched Uranium. DOE fulfills the goal of securing vulnerable nuclear materials by reducing the inventory of high-risk nuclear materials located in U.S. sites and preparing them for long-term storage or disposition. In FY 2010, DOE completed packaging 5,089 containers of plutonium and metal oxide, and is consolidating the material at central sites to reduce risk. DOE is also nearing completion of the work of treating and packaging containers of enriched uranium for long-term storage. The chart below shows the cumulative total for FY 2010 was 7,728 containers packaged for long-term storage.

Cumulative Enriched Uranium Packaged for Long-Term Storage



Environmental Management Recovery Projects. In FY 2010, DOE met a set of process measures and cumulatively obligated the remainder of its \$6.0 billion in Recovery Act funds. This money is expected to accelerate cleanup work to reduce site footprint by approximately 40% by 2011—results that will save taxpayers money by reducing long-term liability costs.

PERFORMANCE RESULTS

The Department's performance measures are tracked quarterly through a Performance Measure Manager (PMM) system. For FY 2010, the Department tracked 203 performance measures that provide detailed information and assessment of progress for the Department's 52 program goals associated with its budget. These performance measures are shown under "FY 2010 Targets" in the "Annual Performance Results and Targets" tables in DOE's FY 2011 Congressional Budget Request. The annual progress made toward outcome-oriented, multi-year program goals is a key indicator of whether the Department is making progress toward its strategic priorities. In addition to these budget measures, the Department tracked 141 performance measures for 26 major project areas funded through the Recovery Act.

Priority 1: Science, Discovery and Innovation

Office: Office of Science

Program: Advanced Scientific Computing Research

Website: http://www.sc.doe.gov/Program_Offices/ASCR.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Improve Computational Science Capabilities**

Improve Computational Science Capabilities. Average annual percentage increase in the computational effectiveness (either by simulating the same problem in less time or simulating a larger problem in the same time) of a subset of application codes, tools or libraries. FY 2010 > 100%

2010 Results

Commentary: Met Annual goal met. Computational effectiveness of each application (TD-SLDA, POP, LS3DF, and Denovo) improved by more than 100% for the year (TD-SLDA by 211%; POP by 329.9%; LS3DF by 260%; and Denovo by 3,100%).

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Documentation: Quarterly and EOY: Test reports on selected codes. In the first Quarter of FY 2010, the Suite of applications, tools or libraries to be evaluated is proposed by ASCR to ASCAC. After the list is approved by ASCAC, an initial set of baseline science problems for each application, or baseline scaling performance for tools and libraries, is defined in detail. The time to solution on each of these baselines, using the application software, tool or library as of the beginning of FY 2009 is determined. Progress towards the 100% goal is determined by monitoring the time to solution of the baseline as the application software, tool or library is improved during the FY or the increase in the size or complexity of the baseline science problem that is possible without increasing the time to solution. Reports detailing these evaluations reside in the files of the ASCR Office (SC-21).

Associated Performance in Prior Years

FY 2009: Met Average annual percentage increase in the computational effectiveness (either by simulating the same problem in less time or simulating a larger problem in the same time) of a subset of application codes, tools and/or libraries. In FY09, the computational effectiveness is greater than 100%.

FY 2008: Met Average annual percentage increase in the computational effectiveness (either by

simulating the same problem in less time or simulating a larger problem in the same time) of a subset of application codes. In FY08, the computational effectiveness is greater than 100%

FY 2007: Met

Average annual percentage increase in the computational effectiveness (either by simulating the same problem in less time or simulating a larger problem in the same time) of a subset of application codes within the Scientific Discovery through Advanced Computing (SciDAC) effort. In FY07, the computational effectiveness is greater than 100%.

Office: Office of Science

Program: Advanced Scientific Computing Research

Website: http://www.sc.doe.gov/Program_Offices/ASCR.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **National Energy Research Scientific Computing Center - Capability Computing**

Focus usage of the primary supercomputer at the National Energy Research Scientific Computing Center (NERSC) on capability computing. For FY10, at least 30% of the computing time will be used by computations that require at least 1/8 (4,096 processors) of the NERSC resource.

2010 Results

Commentary: Met Annual goal met. 57.7% of the time used on Franklin was used by jobs running with 4,096 or more processors.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Quarterly and EOY: This data comes directly from the batch queue accounting system at NERSC. The Documentation: Number of CPU hours accounted for by jobs that use at least 4,096 processors is divided by the total number of CPU hours delivered to all jobs in the batch system. Reports detailing this progress reside in the files of the ASCR Office (SC-21).

Associated Performance in Prior Years

FY 2009: Met Focus usage of the primary supercomputer at the National Energy Research Scientific Computing Center (NERSC) on capability computing. At least forty percent (40%) of the computing time will be used by computations that require at least 1/8 (2,040 processors) of the NERSC resource. FY09 goal 40%.

FY 2008: Met Focus usage of the primary supercomputer at the National Energy Research Scientific Computing Center (NERSC) on capability computing. Thirty percent (30%) of the computing time will be used by computations that require at least 1/8 (2,040 processors) of the NERSC resource. FY08 goal 30%.

FY 2007: Met Focus usage of the primary supercomputer at the National Energy Research Scientific Computing Center (NERSC) on capability computing. Percentage of the computing time used that is accounted for by computations that require at least 1/8 of the total resource. In FY 2007, the time used is at least 40%.

Office: Office of Science

Program: Basic Energy Science

Website: http://www.sc.doe.gov/Program_Offices/BES.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **BES Const/MIE Cost & Schedule**

Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. In FY10, it is at least 10% and 10%, respectively.

2010 Results

Commentary: Met Annual Goal met. 0.9% (cost variance) and 1.7% (schedule variance)
References: Reports from the DOE Federal Project Directors on all BES construction projects reside in the files of the Office of Basic Energy Sciences (SC-22).

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting BES Projects include those that have an approved performance baseline at the start of FY 2009, which
Documentation: include: LCLS, SING-I, SING-II, NSLS-II, ALS User Support Building, TEAM, and PULSE. Another project is expected to obtain an initial performance baseline (CD-2) during FY09, i.e., LUSI.

Supporting data reside in the DOE Office of Engineering and Construction Management's (OECM, ME-50) Project Assessment and Reporting System (PARS) and with Basic Energy Science's Division of Scientific User Facilities (SC-22.3).

Associated Performance in Prior Years

FY 2009:	Met	Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. In FY09, it is at least 10% and 10%, respectively.
FY 2008:	Met	Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. In FY08, it is at least 10% and 10%, respectively.
FY 2007:	Not Met	Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. In FY 2007, it is at least 10% and 10%, respectively.

Office: Office of Science

Program: Basic Energy Science

Website: http://www.sc.doe.gov/Program_Offices/BES.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **BES Facility Ops**

Achieve an average operation time of the scientific user facilities as a percentage of the total scheduled annual operating time of greater than 90%.

2010 Results

Commentary: Met Annual Goal met. 101.1% (average annual operating time at BES facilities as a percentage of planned scheduled time; i.e., 32,562 actual total hours delivered to users versus 32,200 total planned hours)

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Documentation: Supporting documents consist of the required quarterly and annual reports submitted to BES by the BES user facilities at the completion of each quarter and at the end of the fiscal year. These final reports reside in the files of the Office of Basic Energy Sciences (SC-22).

The total planned operating hours for this goal is obtained from the planned operating hours of these individual user facilities: NSLS 5,300; SSRL 5,300; ALS 5,500; APS 5,000; HFIR 3,500; Lujan 3,000; and SNS 4,600 for a total of 32,200 hours (28,980 hours is 90%).

Associated Performance in Prior Years

FY 2009: Met Achieve an average operation time of the scientific user facilities as a percentage of the total scheduled annual operating time of greater than 90%. In FY09, the performance goal will be met if more than 27,630 hours are delivered and will be exceeded if greater than 30,700 hours (which is 100% of scheduled operating time) are delivered.

FY 2008: Met Achieve an average operation time of the scientific user facilities as a percentage of the total scheduled annual operating time of greater than 90%.

FY 2007: Met Achieve an average operation time of the scientific user facilities as a percentage of the total scheduled annual operating time of greater than 90%.

Office: Office of Science

Program: Basic Energy Science

Website: http://www.sc.doe.gov/Program_Offices/BES.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Spatial Resolution**

Maintain spatial resolutions for imaging in the hard x-ray region of <100 nm and in the soft x-ray region of <18 nm, and spatial information limit for an electron microscope of 0.08 nm.

2010 Results

Commentary: Met Annual goal met:
 Hard x-ray - 90 nanometers
 Soft x-ray - 15 nanometers
 Electron microscope - 0.05 nanometers

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11

Shortfalls:

Supporting Documentation: No further quantitative improvements are expected in these measures in FY 2010 as compared to the level of achievement for FY 2009. Performance levels for spatial resolution have reached the maximum for the current suite of available instruments. This target is a measure of SC's intent to maintain the maximum level of performance for users of the current SC facilities until the next generation of instruments and facilities becomes available.

Associated Performance in Prior Years

FY 2009:	Met	Maintain spatial resolutions for imaging in the hard x-ray region of <100 nm and in the soft x-ray region of <18 nm, and spatial information limit for an electron microscope of 0.08 nm.
FY 2008:	Met	Maintain spatial resolutions for imaging in the hard x-ray region of <100 nm and in the soft x-ray region of <18 nm, and spatial information limit for an electron microscope of 0.08 nm.
FY 2007:	Met	Maintain spatial resolutions for imaging in the hard x-ray region of <100 nm and in the soft x-ray region of <18 nm, and spatial information limit for an electron microscope of 0.08 nm.

Office: Office of Science

Program: Basic Energy Science

Website: http://www.sc.doe.gov/Program_Offices/BES.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Temporal Resolution**

Maintain x-ray pulses that are <100 femtoseconds in duration and have an intensity of >100 million photons per pulse ($>10^8$ photons/pulse).

2010 Results

Commentary: Met Annual Goal met: 70 femtosecond pulses with 100 million photons per pulse. References: Results are from the Sub-Picosecond Pulse Source at the Stanford Linear Accelerator Center: A. M. Lindenberg, et al., "Atomic-Scale Visualization of Inertial Dynamics", Science 308, 392 (2005); A. L. Cavalieri, et al., "Clocking Femtosecond X Rays", Phys. Rev. Lett. 94, 114801 (2005); K. J. Gaffney, et al., "Observation of Structural Anisotropy and the Onset of Liquidlike Motion During the Nonthermal Melting of InSb", Phys. Rev. Lett. 95, 125701 (2005).

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Documentation: No further quantitative improvements are expected in these measures in FY 2010 as compared to the level of achievement for FY 2009. Performance levels for temporal resolution have reached the maximum for the current suite of available instruments. This target is a measure of SC's intent to maintain the maximum level of performance for users of the current SC facilities until the next generation of instruments and facilities becomes available.

Associated Performance in Prior Years

FY 2009: Met Maintain X-ray pulse of less than 100 femtoseconds in duration and containing more than 100 million photons per pulse (10^8 photons/pulse).

FY 2008: Met Maintain X-ray pulse of less than 100 femtoseconds in duration and containing more than 100 million photons per pulse (10^8 photons/pulse).

FY 2007: Met Demonstrate an X-ray pulse of less than 100 femtoseconds in duration and containing more than 100 million photons per pulse (10^8 photons/pulse).

Office: Office of Science

Program: Biological and Environmental Research

Website: http://www.sc.doe.gov/Program_Offices/BER.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Artificial Retina**

Advance blind patient sight: FY10: Initiate preclinical studies of 200 electrode implantable device. Complete specification for 1000 pixel device.

2010 Results

Commentary: Met Goal met. Initiate preclinical studies of 200 electrode implantable device. Complete specification characteristics of more than 200 electrodes were verified to be within the design parameters after the implantation.

Future Plans /

Explanation of DOE funded work completed, measure completed/closed.

Shortfalls:

Supporting Quarterly - Emails from the designated performers reporting the research results and field site experiment Documentation: results (per documented control process).

EOY - Emails reporting the results and publication/availability of the results (per documented control process).

The e-mails reside at <http://artificialretina.energy.gov/gpra2010.shtml>

Associated Performance in Prior Years

FY 2009:	Met	Advance blind patient sight. FY09: Complete in vitro/benchttop development of implantable 200+ electrode prototype.
FY 2008:	Met	Advance blind patient sight: Optimize the 200+ Artificial Retina Using Data from Clinical Results
FY 2007:	Met	Advance blind patient sight: complete design and construction of final 256 electrode array. Begin in vitro testing and non-stimulating testing in animals.

Office: Office of Science

Program: Biological and Environmental Research

Website: http://www.sc.doe.gov/Program_Offices/BER.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Climate Facility Ops**

The achieved operation time of the scientific user facility (ARM Climate Research) as a percentage of the total scheduled annual operating time is greater than 98%. For FY10 total possible operating hours for ARM is 7884. At 98%, the total target operating hours is 7726.

2010 Results

Commentary: Met Annual Goal met. The ARM facility operated for 8178 hours, which exceeds the annual goal of 7726 hours.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Quarterly - Emails reporting the progress (per documented control process).

Documentation:

EOY - Emails reporting the results and data availability (per documented control process).

The e-mails reside at: <http://www.arm.gov/acrf/opsstats.stm>.

Associated Performance in Prior Years

FY 2009: Met The achieved operation time of the (climate change) scientific user facility as a percentage of the total scheduled annual operating time is greater than 98%. In FY09, the ARM Climate Research Facilities performance goal will be met if more than 7726 hours are delivered and will be exceeded if greater than 7884 hours (which is 100% of scheduled operating time) are delivered.

FY 2008: Met The achieved operation time of the (climate change) scientific user facility as a percentage of the total scheduled annual operating time is greater than 98%. ARM Climate Research Facilities - 7884 total hours annually, so 98% is greater than 7726 hours.

FY 2007: Met The achieved operation time of the (climate change) scientific user facility as a percentage of the total scheduled annual operating time in FY 2007 is greater than 98%.

Office: Office of Science

Program: Biological and Environmental Research

Website: http://www.sc.doe.gov/Program_Offices/BER.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Determine Scalability of Laboratory Results in Field Experiments**

Determine the dominant processes controlling the fate and transport of contaminants in subsurface environments and develop quantitative numerical models to describe contaminant mobility at the field scale. For FY 2010: Develop a reactive transport model for a complex field site that accounts for heterogeneity and objectively evaluate against field data.

2010 Results

Commentary: Met Annual goal met. A report that outlines a new experimental design that will better account for site complexity is posted at:
http://esd.lbl.gov/research/projects/ersp/generalinfo/milestones/ersd_data10.html.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Quarterly - Emails from the designated performers reporting the research results and field site experiment Documentation: results (per documented control process).

EOY - Emails reporting the results and publication/availability of the results (per documented control process).

The e-mails reside at: <http://www.lbl.gov/ERSP/generalinfo/milestones.html> and/or
<http://www.lbl.gov/NABIR/generalinfo/>

Associated Performance in Prior Years

FY 2009: Met Determine scalability of laboratory results in field environments -- Determine the dominant processes controlling the fate and transport of contaminants in subsurface environments and develop quantitative numerical models to describe contaminant mobility at the field scale. For FY09: Test geophysical techniques that measure parameters controlling contaminant movement under field conditions in at least two distinct subsurface environments.

FY 2008: Met Determine the dominant processes controlling the fate and transport of contaminants in subsurface environments and develop quantitative numerical models to describe contaminant mobility at the field scale. For FY08: Identify the critical redox reactions and metabolic pathways involved in the transformation/ sequestration of at least one key DOE contaminant in a field environment.

FY 2007: Met Implement a field-oriented, integrated experimental research program to quantify coupled processes that control reactive transport of at least one key DOE contaminant.

Office: Office of Science

Program: Biological and Environmental Research

Website: http://www.sc.doe.gov/Program_Offices/BER.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Environmental Facility Ops**

The achieved operation time of the scientific user facility (Environmental Science—EMSL) as a percentage of the total scheduled annual operating time is greater than 98%. For FY10, the total possible operating hours for the EMSL is 4352 hours. At 98%, the total target operating hours for EMSL for FY10 is 4265 hours.

2010 Results

Commentary: Met For the year to date, EMSL has achieved 4329 operational hours and exceeds the annual goal of 4265 hours.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Quarterly - Emails reporting the progress (per documented control process).

Documentation:

EOY - Emails reporting the results and data availability (per documented control process).

The e-mails will reside at: <http://www.emsl.pnl.gov/homes/hours.shtml>

Associated Performance in Prior Years

FY 2009: Met The achieved operation time of the (environment) scientific user facility as a percentage of the total scheduled annual operating time is greater than 98%. In FY09, the Environmental Molecular Sciences Laboratory (EMSL) performance goal will be met if more than 4277 hours are delivered and will be exceeded if greater than 4365 hours (which is 100% of scheduled operating time) are delivered.

FY 2008: Met The achieved operation time of the (environment) scientific user facility as a percentage of the total scheduled annual operating time is greater than 98%. Environmental Molecular Sciences Laboratory: 4365 total hours annually, so 98% is greater than 4277 hours.

FY 2007: Met The achieved operation time of the (environment) scientific user facility as a percentage of the total scheduled annual operating time is greater than 98%.

Office: Office of Science

Program: Biological and Environmental Research

Website: http://www.sc.doe.gov/Program_Offices/BER.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Improve Climate Models**

Improve climate models— Develop a coupled climate model with fully interactive carbon and sulfur cycles, as well as dynamic vegetation to enable simulations of aerosol effects, carbon chemistry, and carbon sequestration by the land surface and oceans and the interactions between the carbon cycle and climate. FY 2010: Provide a new parameterization for aerosol effects on cloud drizzle for incorporation into atmospheric models.

2010 Results

Commentary: Met Annual goal met. A new parameterization for aerosol effects on cloud drizzle for incorporation into atmospheric models has been delivered.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Quarterly - Emails from the designated performers reporting the research results (per documented control Documentation: process).

EOY - Emails reporting the results and publication/availability of the results (per documented control process).

Report is available at: <http://www.arm.gov/science/metrics.stm>.

Associated Performance in Prior Years

FY 2009:	Met	Improve climate models -- Develop a coupled climate model with fully interactive carbon and sulfur cycles, as well as dynamic vegetation to enable simulations of aerosol effects, carbon chemistry and carbon sequestration by the land surface and oceans and the interactions between the carbon cycle and climate. FY09: Provide improved climate simulations on subcontinental, regional, and large watershed scales, with an emphasis on improved simulation of precipitation and produce new continuous time series of retrieved cloud, aerosol, and radiation for Arctic region.
FY 2008:	Met	Report results of decade-long control simulation using geodesic grid coupled climate model and produce new continuous time series of retrieved cloud, aerosol, and dust properties, based on results from the ARM mobile facility deployment in Niger, Africa.
FY 2007:	Met	Provide new mixed-phase cloud parameterization for incorporation in atmospheric GCMs and evaluate extent of agreement between climate model simulations and observations for cloud properties in the arctic.

Office: Office of Science

Program: Biological and Environmental Research

Website: http://www.sc.doe.gov/Program_Offices/BER.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Increase the rate and decrease the cost of DNA sequencing**

Increase by 10% the number (in billions) of high quality (less than one error in 10,000) bases of DNA from microbial and model organism genomes sequenced the previous year, and decrease by 10% the cost (base pair/dollar) to produce these base pairs from the previous year (FY09) actual results. FY10: Sequence 1,100 billion base pairs at a rate of 15,942 bp/\$1, based on FY09 actual of 1,003 billion base pairs at a rate of 15,430 bp/\$1.

2010 Results

Commentary: Exceeded Annual goal met. JGI exceeded the pair production with 6.04 Trillion base pairs of DNA were sequenced. JGI also exceeded the base pair produced per dollar: actual was 87,536 bp/\$1 compared to a goal of 15,942 bp/\$1.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Quarterly - Emails reporting the progress of actual counts of base pairs sequenced (per documented control Documentation: process).

EOY - Emails reporting the results and data availability (per documented control process). The number of base pairs will be divided by the total funding to the Joint Genome Institute to calculate the cost of DNA sequencing.

Joint Genome Institute – <http://www.jgi.doe.gov/sequencing/statistics.html>.

Associated Performance in Prior Years

FY 2009:	Met	Increase by at least 10% the number of high quality (less than one error in 10,000) bases of DNA from microbial and model organism genomes sequenced the previous year, and decrease by at least 10% the cost (billion base pair/dollar) to produce these base pairs from the previous year's actual results. FY09: Sequence 253 billion base pairs at a rate of 4600bp/\$1, based on FY08 actual of 125.5 billion base pairs at a rate of 2350bp/\$1. (NOTE: The enhanced annual goals/targets are based on anticipated FY09 sequencing technology improvements.)
FY 2008:	Met	Increase by 10% the number (in billions) of high quality (less than one error in 10,000) bases of DNA from microbial and model organism genomes sequenced the previous year, and decrease by 10% the cost (base pair/dollar) to produce these base pairs from the previous year actual results. FY08: 42.8 billion base pairs (bp) and 785bp/\$1 (based on FY07 actual of 38.95 Billion base pairs (bp), and JGI achieving 714bp/\$1.)
FY 2007:	Not Met	Increase the rate and decrease the cost of DNA sequencing - Number (in billions) of high quality (less than one error in 10,000 bases) of DNA microbial and model organisms' genome sequenced annually, and the cost (base pairs per dollar) to produce these base pairs. (FY07: 40, 644).

Office: Office of Science

Program: Biological and Environmental Research

Website: http://www.sc.doe.gov/Program_Offices/BER.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Life Sci Facility Ops**

The achieved operation time of the scientific user facility (Biological Systems Science JGI) as a percentage of the total scheduled annual operating time is greater than 98%. FY10 total hours are 8400.

2010 Results

Commentary: Met Annual goal met. JGI operated at 104% of scheduled operating time (actual hours were 8712, scheduled hours 8400).

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Quarterly - Emails reporting the progress (per documented control process).

Documentation:

EOY - Emails reporting the results and data availability (per documented control process).

The e-mails will reside at: <http://www.jgi.doe.gov/sequencing/statistics.html>

Associated Performance in Prior Years

FY 2009: Met The achieved operation time of the (life sciences) scientific user facility as a percentage of the total scheduled annual operating time is greater than 98%. In FY09, the Production Genomics Facility (PGF) performance goal will be met if more than 8232 hours are delivered and will be exceeded if greater than 8400 hours (which is 100% of scheduled operating time) are delivered.

FY 2008: Not Met The achieved operation time of the (life sciences) scientific user facility as a percentage of the total scheduled annual operating time is greater than 98%. Production Genomics Facility (PGF): 8400 total hours annually, so 98% is greater than 8232 hours.

FY 2007: Met The achieved operation time of the (life sciences) scientific user facility as a percentage of the total scheduled annual operating time is greater than 98%.

Office: Office of Science

Program: Fusion Energy Sciences

Website: http://www.sc.doe.gov/Program_Offices/fes.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **FES Facility Based Experiments**

Conduct experiments on major fusion facilities to improve understanding of the heat transport in the tokamak scrape-off layer (SOL) plasma, strengthening the basis for projecting divertor conditions in ITER. The divertor heat flux profiles and plasma characteristics in the tokamak SOL will be measured in multiple devices to investigate the underlying thermal transport processes. The unique characteristics of C-Mod, DIII-D, and NSTX will enable collection of data over a broad range of SOL and divertor parameters (e.g., collisionality, beta, parallel heat flux, and divertor geometry). Coordinated experiments using common analysis methods will generate data that will be compared with theory and simulation.

2010 Results

Commentary: Met Annual goal met. Experiments were conducted on DIII-D, NSTX, and C-Mod. Fundamental characteristics of heat transport and divertor heat flux profiles in the tokamak scrape-off layer (SOL) plasma were examined. The results achieved were used to strengthen the basis for projecting divertor conditions in ITER, and to identify critical research areas to improve the extrapolation.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11

Shortfalls:

Supporting The V&V website is: <http://www.science.doe.gov/ofes/performance/targets.shtml>

Documentation:

This site provides quarterly progress reports and documentation of achievement for this annual target. The results will be updated on a timely basis.

Associated Performance in Prior Years

FY 2009: Met Conduct experiments on the major fusion facilities (DIII-D, Alcator C-Mod, NSTX) leading toward the predictive capability for burning plasmas and configuration optimization. In FY 2009, FES will identify the fundamental processes governing particle balance by systematically investigating a combination of divertor geometries, particle exhaust capabilities, and wall materials. Alcator C-Mod operates with high-Z metal walls, NSTX is pursuing the use of lithium surfaces in the divertor, and DIII-D continues operating with all graphite walls. Edge diagnostics measuring the heat and particle flux to walls and divertor surfaces, coupled with plasma profile data and material surface analysis, will provide input for validating simulation codes. The results achieved will be used to improve extrapolations to planned ITER operation.

FY 2008: Met Conduct experiments on the major fusion facilities (DIII-D, Alcator C-Mod, NSTX) leading toward the predictive capability for burning plasmas and configuration optimization. In FY 2008, FES will evaluate the generation of plasma rotation and momentum transport, and assess the impact of plasma rotation on stability and confinement. Alcator-Mod will investigate rotation without external momentum input, NSTX will examine very high rotation speeds, and DIII-D will vary rotation speeds with neutral beams. The results achieved at the major facilities will provide important new data for estimating the magnitude of and assessing the impact of rotation on ITER plasmas.

FY 2007: Met Conduct experiments on the major fusion facilities (DIII-D, Alcator C-Mod, NSTX)

leading toward the predictive capability for burning plasmas and configuration optimization. In FY 2007, FES will measure and identify magnetic modes on NSTX that are driven by energetic ions traveling faster than the speed of magnetic perturbations (Alfvén speed); such modes are expected in burning plasmas such as ITER.

Office: Office of Science

Program: Fusion Energy Sciences

Website: http://www.sc.doe.gov/Program_Offices/fes.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **FES Facility Operations**

Average achieved operational time of major national fusion facilities as a percentage of total planned operational time is greater than 90%.

2010 Results

Commentary: Met Annual goal met. A total of 45.6 weeks of baseline operations exceeded the target of 38 weeks (90% of planned operating time of 42 weeks.)

- DIII-D completed 15.2 weeks of experiments on April 6 (plus 3 additional weeks supported with Recovery Act funding).
- NSTX completed 14.4 weeks of experiments on September 24 (plus 1 additional week supported with Recovery Act funding).
- C-Mod completed 16 weeks of experiments on September 10 (plus 5 additional weeks supported with Recovery Act funding).

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting The V&V website is: <http://www.science.doe.gov/ofes/performancetargets.shtml>

Documentation: This site provides quarterly progress reports and documentation of achievement for this annual target. The results will be updated on a timely basis.

FES's major national fusion facilities are:

- the DIII-D Tokamak at General Atomics in San Diego, California;
- the Alcator C-Mod Tokamak at the Massachusetts Institute of Technology;
- the National Spherical Torus Experiment at the Princeton Plasma Physics Laboratory.

42 weeks total (baseline) are expected for FY10.

Associated Performance in Prior Years

FY 2009: Met Average achieved operation time of the major national fusion facilities (DIII-D, Alcator C-Mod, NSTX) as a percentage of the total planned operation time is greater than 90%. In FY09, the performance goal will be met if more than 34 weeks are delivered and will be exceeded if greater than 38 weeks (which is 100% of scheduled operating time) are delivered.

FY 2008: Met Average achieved operation time of the major national fusion facilities (DIII-D, Alcator C-Mod, NSTX) as a percentage of the total planned operation time in FY08 of greater than 90%.

FY 2007: Met Average achieved operation time of the major national fusion facilities (DIII-D, Alcator C-Mod, NSTX) as a percentage of the total planned operation time in FY 2007 of greater than 90%.

Office: Office of Science

Program: Fusion Energy Sciences

Website: http://www.sc.doe.gov/Program_Offices/fes.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Simulation Resolution**

Optimizing confinement and predicting the behavior of burning plasmas require improved simulations of toroidal momentum transport, since it influences plasma rotation which plays a critical role in reducing the loss of heat from the plasma and in stabilizing macroscopic instabilities.

In FY 2010, gyrokinetic simulations of turbulent transport of toroidal momentum with Boltzmann and with kinetic electrons will be carried out. These simulations will explore the Ion Temperature Gradient (ITG) and the Collisionless Trapped Electron Mode (CTEM) regimes.

2010 Results

Commentary: Met Annual goal met. The 2010 effort significantly advanced our predictive understanding of toroidal momentum transport and rotation, including intrinsic rotation. It established that toroidal momentum transport is driven by parallel and perpendicular Reynolds stresses, clarified the role of residual stress and other off-diagonal contributions to the momentum flux and their role in driving intrinsic rotation, and identified several mechanisms responsible for the symmetry breaking creating the residual stress.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting The V&V website is: <http://www.science.doe.gov/ofes/performancetargets.shtml>

Documentation:

This site provides quarterly progress reports and documentation of achievement for this annual target. The results will be updated on a timely basis.

Associated Performance in Prior Years

FY 2009: Met Continue to increase resolution in simulations of plasma phenomena -- optimizing confinement and predicting the behavior of burning plasmas require improved simulations of edge and core plasma phenomena, as the characteristics of the edge can strongly affect core confinement. In FY 2009, gyrokinetic edge electrostatic turbulence simulations will be carried out across the divertor separatrix with enhanced resolution down to the ion gyroradius scale.

FY 2008: Met Increase resolution in simulations of plasma phenomena—optimizing confinement and predicting the behavior of burning plasmas require improved simulations of edge and core plasma phenomena, as the characteristics of the edge can strongly affect core confinement. In FY 2008, improve the simulation resolution of ITER-relevant modeling of lower hybrid current drive experiments on Alcator C-Mod by increasing the number of poloidal modes used to 2,000 and the number of radial elements used to 1,000 using the Office of Science's high performance computing resources.

FY 2007: Met Plasma Phenomena - Increase resolution in simulations of plasma phenomena -- optimizing confinement and predicting the behavior of burning plasmas require improved simulations of edge and core plasma phenomena, as the characteristics of the edge can strongly affect core confinement. In FY 2007, improve the simulation

resolution of linear stability properties of Toroidal Alfvén Eigenmodes driven by energetic particles and neutral beams in ITER by increasing the number of toroidal modes used to 15.

Office: Office of Science

Program: High Energy Physics

Website: http://www.sc.doe.gov/Program_Offices/HEP.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **CDF/D-Zero Detector**

Deliver within 20% of baseline estimate a total integrated amount of data (1700 pb-1) to CDF and D-Zero detectors at the Tevatron.

2010 Results

Commentary: Met Delivered 2477 pb-1.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11

Shortfalls:

Supporting <http://www-bdnew.fnal.gov/operations/lum/supertable.html>.

Documentation:

This page, "Quarterly Performance Numbers," lists the number of inverse picobarns for each quarter. Target performance is determined from the average integrated luminosity (average of CDF and D-Zero).

Associated Performance in Prior Years

FY 2009:	Met	Deliver within 20% of baseline estimate a total integrated amount of data (in inverse picobarns, [pb-1]) to the CDF and D-Zero detectors at the Tevatron. The FY09 baseline is 1684 pb-1, so within 20% of baseline is 1347 pb -1.
FY 2008:	Met	Deliver within 20% of baseline estimate a total integrated amount of data (in inverse picobarns, [pb-1]) to the CDF and D-Zero detectors at the Tevatron . The FY08 baseline is 1000 pb-1, so within 20% of baseline is 800 pb-1.
FY 2007:	Met	Deliver within 20% of baseline estimate a total integrated amount of data (in inverse picobarns, [pb-1]) to the CDF and D-Zero detectors at the Tevatron . The FY 2007 baseline is 800 pb-1, so within 20% of baseline is 640 pb-1.

Office: Office of Science

Program: High Energy Physics

Website: http://www.sc.doe.gov/Program_Offices/HEP.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **HEP Const/MIE Cost and Schedule**

Achieve less than 10% for both the cost-weighted mean percentage variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.

2010 Results

Commentary: Met All projects met the required variances for the year.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Derived from Quarterly Project Reports for the following projects:

Documentation: 1) NOvA; 2) Reactor Neutrino Detector; 3) Dark Energy Survey; 4) BELLA.

Cost and schedule variance calculated by Earned Value for each project is averaged, weighted by the Total Project Cost for that project.

The supporting documentation resides in the files of the HEP Office (SC-25), and a web site is under development.

Associated Performance in Prior Years

FY 2009:	Met	Achieve less than 10% for both the cost-weighted mean percentage variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.
FY 2008:	Met	Achieve less than 10% for both the cost-weighted mean percentage variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.
FY 2007:	Met	Achieve less than 10% for both the cost-weighted mean percentage variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.

Office: Office of Science

Program: High Energy Physics

Website: http://www.sc.doe.gov/Program_Offices/HEP.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **HEP Facility Ops**

Achieve greater than 80% average operation time of the scientific user facilities (the Fermilab Tevatron) as a percentage of the total scheduled annual operating time.

2010 Results

Commentary: Met Uptime for the year was 89.4%.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11

Shortfalls:

Supporting Documentation: Derived from letters from Lab Directors or designee. Fermi data are reported at <http://www-bdnew.fnal.gov/operations/lum/supertable.html>.

The scientific user facilities and scheduled hours:

- the Fermilab Tevatron, 5040 for a total of 5040 hours (4032 hours is 80%).

Unscheduled downtime reported by each facility is averaged, weighted by the Facility Operations cost. Facility Operations costs are defined in the Facilities Summary section of the HEP FY09 budget submission.

Associated Performance in Prior Years

FY 2009:	Met	Achieve greater than 80% average operation time of the scientific user facilities (the Fermilab Tevatron) as a percentage of the total scheduled annual operating time. In FY09, the performance goal will be met if more than 4032 hours are delivered and will be exceeded if greater than 5040 hours (which is 100% of scheduled operating time) are delivered.
FY 2008:	Met	Achieve greater than 80% average operation time of the scientific user facilities (the Fermilab Tevatron and the Stanford Linear Accelerator (SLAC) B-factory) as a percentage of the total scheduled annual operating time.
FY 2007:	Met	Achieve greater than 80% average operation time of the scientific user facilities (the Fermilab Tevatron and the Stanford Linear Accelerator (SLAC) B-factory) as a percentage of the total scheduled annual operating time. (3.1/2.46.4)

Office: Office of Science

Program: High Energy Physics

Website: http://www.sc.doe.gov/Program_Offices/HEP.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **MINOS Detector**

Measure within 20% of the total integrated amount of data (2.7×10^{20} protons on target) delivered to the MINOS detector using the NuMI facility.

2010 Results

Commentary: Met Measured 3.2×10^{20} protons on target.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11

Shortfalls:

Supporting <http://www-bdnew.fnal.gov/operations/lum/supertable.html>

Documentation: This page, "Quarterly Performance Numbers," lists the number of protons-on-target for each quarter."

Associated Performance in Prior Years

FY 2009:	Met	Measure within 20% of the total integrated amount of data (in protons-on-target) delivered to the MINOS detector using the NuMI facility. The FY09 baseline is 2.2×10^{20} protons-on-target; goal will be met if total integrated amount of data measured is greater than or equal to 1.8×10^{20} protons-on-target.
FY 2008:	Met	Measure within 20% of the total integrated amount of data (in photons-on-target) delivered to the MINOS detector using the NuMI facility. The FY08 baseline is 2.0×10^{20} photons-on-target, so within 20% of baseline is 1.6×10^{20} photons-on-target.
FY 2007:	Met	Measure within 20% of the total integrated amount of data (in protons-on-target) delivered to the MINOS detector using the NuMI facility. The FY 2007 baseline is 1.5×10^{20} protons-on-target, so within 20% of baseline is 1.2×10^{20} protons-on-target. (3.1/2.46.5)

Office: Office of Science

Program: Nuclear Physics

Website: http://www.sc.doe.gov/Program_Offices/NP.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **ATLAS - HRIBF Detectors**

Achieve at least 80% of the integrated delivered beam used effectively for all experiments run at each of the Argonne Tandem Linac Accelerator System (ATLAS) and the Holifield Radioactive Ion Beam (HRIBF) facilities measured as a percentage of the scheduled delivered beam considered effective for each facility.

2010 Results

Commentary: Met Annual goal met. Percentage of integrated delivered beam considered effective for ATLAS (91%) and HRIBF (82%).

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Documentation: The percentage of integrated delivered beam used effectively by the experiments is determined by the experimenters that are collecting data through a survey. Records of the fractional amount of beam that satisfies the experimenters' requirements are documented along with the criteria used and how the beam is monitored and kept at each laboratory.

Achieving 100% of integrated delivered beam that was used effectively means that 100% of the annual beam allocated to the experiments satisfied the experimenters' criteria for producing useful data.

Quarterly: Email from ANL and ORNL management to NP program office reporting the cumulative percentage fractional integrated delivered beam achieved used effectively for that quarter.

EOY: Official letters from ANL and ORNL management to NP Office reporting and certifying the total percentage integrated delivered beam achieved for the year.

Documentation resides in the Office of Nuclear Physics (SC-26) files.

Associated Performance in Prior Years

FY 2009: Not Met Achieve at least 80% of the integrated delivered beam used effectively for all experiments run at each of the Argonne Tandem Linac Accelerator System (ATLAS) and the Holifield Radioactive Ion Beam (HRIBF) facilities measured as a percentage of the scheduled delivered beam considered effective for each facility.

FY 2008: Met Weighted average number (within 20% of baseline estimate) of billions of events recorded by experiments at the Argonne Tandem Linac Accelerator System (ATLAS) and Holifield Radioactive Ion Beam facilities (HRIBF), respectively. FY08 Baseline: 20, 2.4; within 20% of baseline 16, 1.9.

FY 2007: Met Weighted average number (within 20% of baseline estimate) of billions of events recorded by experiments at the Argonne Tandem Linac Accelerator System (ATLAS) and Holifield Radioactive Ion Beam facilities (HRIBF), respectively. FY 2007 Baseline: ATLAS-22, HRIFB-1.8; FY 07 within 20% of baseline ATLAS-17.6, HRIFB-1.4. (3.1/2.47.1)

Office: Office of Science

Program: Nuclear Physics

Website: http://www.sc.doe.gov/Program_Offices/NP.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **CEBAF detector**

Achieve at least 80% of the integrated delivered beam used effectively for experimental research in each of Halls A, B and C at the Continuous Electron Beam Accelerator Facility (CEBAF) measured as a percentage of the scheduled delivered beam considered effective for each Hall.

2010 Results

Commentary: Not Met Annual goal not met. The values of the 3 Halls at CEBAF are averaged for an End of the Year result of 68%.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Documentation: The percentage of integrated delivered beam used effectively by the experiments in each Hall is determined by the collection of data meeting the experimenter's requirements. Records of the fractional amount of beam that satisfies the experimenters' requirements are documented along with the criteria used and how the beam is monitored and kept at the laboratory. The values from each Hall are then averaged for the end of year result.

Achieving 100% of integrated delivered beam that was used effectively means that 100% of the annual beam allocated to the experiments satisfied the experimenters' criteria for producing useful data.

Quarterly: Email from TJNAF management to NP program office reporting the cumulative percent fractional integrated delivered beam achieved for Hall A, B, C at CEBAF for that quarter.

EOY: Official letter from TJNAF management to NP Office reporting and certifying the total percentage integrated delivered beam used effectively in Hall A, B, C at CEBAF achieved for the year.

Documentation resides in the Office of Nuclear Physics (SC-26) files.

Associated Performance in Prior Years

FY 2009: Not Met Achieve at least 80% of the integrated delivered beam used effectively for experimental research in each of Halls A, B and C at the Continuous Electron Beam Accelerator Facility (CEBAF) measured as a percentage of the scheduled delivered beam considered effective for each Hall.

FY 2008: Met Weighted average number (within 20% of baseline estimate) of billions of events recorded by experiments in Hall A, Hall B, and Hall C at the Continuous Electron Beam Accelerator facility (CEBAF). FY 2008 Baseline: Hall A: 2.9, Hall B: 14.9, and Hall C: 3.2; within 20% of baseline Hall A: 2.3, Hall B: 11.9, and Hall C: 2.5.

FY 2007: Met Weighted average number (within 20% of baseline estimate) of billions of events recorded by experiments in Hall A, Hall B, and Hall C at the Continuous Beam Accelerator facility. FY 2007 Baseline: Hall A 2.2, Hall B 11.6, and Hall C 2.6; FY 07 within 20% of baseline Hall A 1.76, Hall B 9.28, and Hall C 2.08.

Office: Office of Science

Program: Nuclear Physics

Website: http://www.sc.doe.gov/Program_Offices/NP.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **Heavy-Ion Collision Events**

Achieve at least 80% of the projected integrated heavy-ion collision luminosity for each of the PHENIX and STAR experiments at the Relativistic Heavy Ion Collider, where the projected values take into account anticipated collider performance and detector data-taking efficiencies.

2010 Results

Commentary: Met Annual goal met. Cumulative percentage of delivered beam considered effective: STAR 229% and PHENIX 199%.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Documentation: The percentage of projected integrated heavy-ion collision luminosity considered effective by PHENIX and STAR is determined by the collection of data meeting the experimenter's requirements. Records of the fractional amount of beam that satisfies the experimenters' requirements are documented along with the criteria used and how the beam is monitored and kept at the laboratory.

Achieving 100% of integrated delivered beam that was used effectively means that 100% of the annual beam allocated to the experiments satisfied the experimenters' criteria for producing useful data.

Quarterly: Email from BNL management to NP program office reporting the cumulative percent fractional projected integrated heavy-ion collision luminosity sampled by each PHENIX and STAR experiments at RHIC for that quarter.

EOY: Official letter from BNL management to NP Office reporting and certifying the total percentage of projected integrated heavy-ion collision luminosity sampled by each PHENIX and STAR experiments at RHIC for the year.

Documentation resides in the Office of Nuclear Physics (SC-26) files.

Associated Performance in Prior Years

FY 2008: Met Weighted average number (within 30% of baseline estimate) of millions of heavy-ion collision events sampled by the PHENIX and recorded by the STAR detectors, respectively, at the Relativistic Heavy Ion Collider.
FY08 Baseline: PHENIX sample= 200,000; STAR recorded=65.
Within 30% of baseline: PHENIX sample= 140,000; STAR recorded=45.5.

FY 2007: Met Weighted average number (within 30% of baseline estimate) of millions of heavy-ion collision events sampled by the PHENIX and recorded by the STAR detectors, respectively, at the Relativistic Heavy Ion Collider. FY07 Baseline: PHENIX sample= 6500; STAR recorded=60. FY07 within 30% of baseline: PHENIX sample= 4500; STAR recorded=42.

Office: Office of Science

Program: Nuclear Physics

Website: http://www.sc.doe.gov/Program_Offices/NP.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **NP Const/MIE Cost & Schedule**

Achieve within 10% for both the cost-weighted mean percentage variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.

2010 Results

Commentary: Met Annual goal met: CPI = 0.95; SPI = 0.98.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Derived from the Monthly Report preceding the end of the quarter for the following projects:

Documentation: - 12 GeV CEBAF Upgrade

Cost and schedule variance calculated by Earned Value for each project is averaged, weighted by the Total Project Cost for that project.

The supporting documentation resides in the files of the ONP (SC-26).

Associated Performance in Prior Years

FY 2009:	Met	Achieve within 10% for both the cost-weighted mean percentage variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.
FY 2008:	Met	Achieve within 10% for both the cost-weighted mean percentage variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects.

Office: Office of Science

Program: Nuclear Physics

Website: http://www.sc.doe.gov/Program_Offices/NP.htm

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Measure: **NP Facility Ops**

Achieve at least 80% average operation time of the scientific user facilities as a percentage of the total scheduled annual operating time.

2010 Results

Commentary: Met Annual goal met. NP facilities operated at 88.1% for the year.

Future Plans /

Explanation of Annual measure will be continued with a revised goal based on appropriated funding for FY11.

Shortfalls:

Supporting Documentation: Quarterly: Emails from ANL (ATLAS), BNL (RHIC), ORNL (HRIBF), and TJNAF (CEBAF) management to NP Office with statistics regarding breakout of beam hours (per documented control process); NP program office worksheet showing calculations and compiled average. The current total estimated operating hours for ATLAS, RHIC, HRIBF and CEBAF supported by the FY 2010 Congressional Budget is 19,560 hours (80% is 15,648 hours). The achieved operation time of a facility as a percentage of the total scheduled annual operating time is calculated as follows: $\text{Operation Time} = \frac{\text{Actual Operating Hours}}{\text{Actual Operating Hours} + \text{Actual unscheduled downtime}}$ where $\text{Actual Operating Hours} = \text{Hours for Research} + \text{Hours for Beam Studies} + \text{Hours for Tuning/Setup}$.

EOY: Official letters from ANL (ATLAS), BNL (RHIC), ORNL (HRIBF), and TJNAF (CEBAF) management to NP Office reporting and certifying annual achieved operation time of the user facility (per documented control process); NP program office worksheet showing subsequent calculation and compiled average of the achieved operation time as a percent of total scheduled annual operating time.

Documentation resides in the Office of Nuclear Physics (SC-26) files. This target, a measure of the reliability of NP facilities, is met when the average of the calculated percentages is greater than 80%.

Associated Performance in Prior Years

FY 2009:	Met	Achieve at least 80% average operation time of the scientific user facilities as a percentage of the total scheduled annual operating time. In FY09, the performance goal will be met if more than 12,352 hours are delivered and will be exceeded if greater than 15440 hours (which is 100% of scheduled operating time) are delivered.
FY 2008:	Met	Achieve at least 80% average operation time of the scientific user facilities as a percentage of the total scheduled annual operating time.
FY 2007:	Met	Achieve at least 80% average operation time of the scientific user facilities as a percentage of the total scheduled annual operating time.

Priority 2: Economic Prosperity

Office: Loan Programs

Program: Loan Guarantees

Website: <http://loanprograms.energy.gov/>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Loan Guarantee Loss Rate**

Contain loss rate to less than 4 percent.

2010 Results

Commentary: Met Loss rate of guaranteed loans was 0 percent for the year.

Future Plans /

Explanation of Continue to maintain loss rate under 4 percent.

Shortfalls:

Supporting

Documentation: Accounting records.

Office: Loan Programs

Program: Loan Guarantees

Website: <http://loanprograms.energy.gov/>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Percentage of LGPO projects at commercial operation stage**

7 percent of projects receiving DOE loan guarantees have achieved and maintained commercial operations.

2010 Results

Commentary: Not Met Not met because DOE has closed a total of 4 loan guarantees as of end of quarter 4. These projects will come online at the beginning of 2011.

Future Plans /

Explanation of Projects receiving DOE loan guarantees are projected to start coming online in 2011 and beyond.

Shortfalls:

Supporting

Documentation: Independent engineering reports

Office: Energy Efficiency and Renewable Energy

Program: Building Technologies

Website: <http://www.energy.gov/energyefficiency/buildings.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Buildings - Appliance Standards**

Complete 14-17 proposals to update appliance standards and test procedures publish in the Federal Register. Final rules will be issued for 10 of these product categories, consistent with the law, to amend appliance standards and test procedures that are economically justified and will result in significant energy savings.

2010 Results

Commentary: Met Proposals for 17 Products: 1) Battery Chargers, 2) External Power Supplies, 3) Commercial Clothes Washers, 4) Small Motors, 5) Res. Water Heaters, 6) Direct Heating Equipment, 7) Pool Heaters, 8) Walk-In Coolers and Freezers, 9) Fluorescent Ballasts, 10) Clothes Dryers, 11) Room Air Conditioners, 12) Res. Refrigerators, 13) Furnaces, 14) Boilers, 15) Central Air Conditioners, 16) HID lamps, 17) Microwave Ovens.

Final Rules for 10: 1) Commercial Clothes Washers, 2) Small Motors, 3) Metal Halide Ballasts, 4) Res. Water Heaters, 5) Heating Products, 6) Pool Heaters, 7) HID Lamps (determination), 8) Non-Class A External Power Supplies (determination), 9) Televisions (repeal), 10) Microwave Ovens (repeal)

Future Plans /

Explanation of Measure was met on-time.

Shortfalls:

Supporting Documentation: NREL will provide a full technical report and a summary statement outlining the results and findings.

Associated Performance in Prior Years

FY 2009: Met Complete 14-16 proposals to update appliance standards and test procedures publish in the Federal Register. Final rules will be issued for 4-6 of these product categories, consistent with the law, to amend appliance standards and test procedures that are economically justified and will result in significant energy savings.

FY 2008: Met Complete 11-13 proposals to update appliance standards and test procedures publish in the Federal Register. Final rules will be issued for 1-2 of these product categories, consistent with the law, to amend appliance standards and test procedures that are economically justified and will result in significant energy savings

FY 2007: Not Met Final rules will be issued for 3-5 product categories, consistent with enacted law, to amend appliance standards and test procedures that are economically justified and will result in significant energy savings. This includes final rules for distribution transformers and residential furnaces and boilers.

Office: Energy Efficiency and Renewable Energy

Program: Building Technologies

Website: <http://www.energy.gov/energyefficiency/buildings.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Buildings - Commercial Buildings**

Complete four design technology packages for new commercial buildings (that achieve at least 50 percent increase in energy efficiency relative to the ASHRAE 90.1-2004 benchmark) with five year or less payback.

2010 Results

Commentary: Met A total of four technology packages as Technical Support Documents were completed by NREL and PNNL. They were 50% savings for Large Office (NREL), 50% savings for Large Hospital (NREL), 50% savings for Small Office (PNNL), and 50% savings for Quick Service Restaurant (PNNL)

Future Plans /

Explanation of Measure was met on-time as planned.

Shortfalls:

Supporting NREL will provide a full technical report and a summary statement outlining the results and findings.

Documentation: (<http://www1.eere.energy.gov/buildings/labs.html>)

Associated Performance in Prior Years

FY 2009:	Met	Complete four additional design technology packages for new commercial buildings (that achieve 30 percent increase in energy efficiency relative to the ASHRAE 90.1-2004 benchmark) with five year or less payback. These design technology packages will be for small to medium-sized commercial buildings.
FY 2008:	Met	Complete four additional design technology packages for new commercial buildings (that achieve 30 percent increase in energy efficiency relative to the ASHRAE 90.1-2004 benchmark) with five year or less payback. These design technology packages will be for small to medium-sized commercial buildings.
FY 2007:	Met	Complete the development of one new design technology package for a second small to medium sized commercial building type to achieve 30% energy savings over American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) 90.1-2004.

Office: Energy Efficiency and Renewable Energy

Program: Building Technologies

Website: <http://www.energy.gov/energyefficiency/buildings.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Buildings - Operational Efficiency Measure**

Maintain administration costs at less than 12% of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of Measure may fold into one larger, combined, OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009:	Met	Maintain administration costs at less than 12% of total program costs.
FY 2008:	Met	Maintain administrative costs as a percent of total program costs less than 12%.
FY 2007:	Met	Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%.

Office: Energy Efficiency and Renewable Energy

Program: Building Technologies

Website: <http://www.energy.gov/energyefficiency/buildings.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Buildings - Residential Buildings**

Complete two design technology packages for new residential buildings (that are 40 percent more energy efficient relative to the 2004 Building America benchmark) at net zero financed cost to the homeowner for two climate zones

2010 Results

Commentary: Met This milestone has been successfully completed. Two design technology packages were developed for the hot humid climate region and the mixed humid climate region.

Future Plans /

Explanation of Measure was met on-time as planned.

Shortfalls:

Supporting A report documenting milestone completion will be posted on the EERE website

Documentation: (<http://www1.eere.energy.gov/buildings/index.html>)

Associated Performance in Prior Years

FY 2009:	Met	Complete one design technology packages for new residential buildings (that are 40 percent more energy efficient relative to the 2004 Building America benchmark) at net zero financed cost to the homeowner for one climate zones.
FY 2008:	Exceeded	Complete one design technology package for new residential buildings (that is 40 percent more energy efficient relative to the 2004 Building America benchmark) at net zero financed cost to the homeowner for one climate zone
FY 2007:	Met	Document in Technology Package Research Reports research results for production ready new residential buildings that are 30% more efficient in 1 climate zone and 40% more efficient in 1 climate zone than the whole-house Building America benchmark.

Office: Energy Efficiency and Renewable Energy

Program: Building Technologies

Website: <http://www.energy.gov/energyefficiency/buildings.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Buildings - Solid State Lighting**

Achieve efficiency of white light solid state lighting in a lab device of at least 113 lumens per Watt.

2010 Results

Commentary: Met Recent market released LUXEON Rebel LED by Philips Lumileds with a single InGaN die and phosphor conversion shows high performance. The top bin LED has following characteristics: up to 139 lm/W and 138 lm at 350 mA with a forward voltage of the device is 2.83 V. The CCT is 5385 K. The color coordinates are: $u' = 0.2015$ and $v' = 0.4877$. The CRI of the device is 70. The performance gain partially results from chip level electrical injection efficiency improvement (V_f reduction) and optical extraction efficiency improvement which were funded by DOE Great White.

Future Plans /

Explanation of Measure was met on-time as planned.

Shortfalls:

Supporting CREE will provide a data sheet that details the photometric testing results and gives a full technical report Documentation: and a summary statement outlining the results and findings.

Associated Performance in Prior Years

FY 2009:	Met	Achieve efficiency of white light solid-state lighting in a lab device, of at least 110 lumens per Watt.
FY 2008:	Met	Achieve efficiency of "white light" solid-state lighting in a lab device, of at least 101 lumens per Watt.
FY 2007:	Met	Achieve at least 86 lumens per Watt (in a laboratory device) of white light from solid state devices based on cost-shared research which is competitively selected.

Office: Energy Efficiency and Renewable Energy

Program: Federal Energy Management Program

Website: <http://www1.eere.energy.gov/femp/>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Federal Energy Management Program (FEMP) Contract Awards**

Estimated lifecycle energy savings expected in federal agency facilities as a result of FEMP activities are 50.0 trillion Btus (TBtu). FEMP facilitation activities include alternative financing and technical assistance. These savings should result in about a 0.7 percent annual reduction in energy intensity

2010 Results

Commentary: Data Not Available Results unknown.

Future Plans /

Explanation of Performance will be evaluated when year-end data becomes available.

Shortfalls:

Supporting Documentation: Program will submit completion letters

Associated Performance in Prior Years

FY 2009:	Met	Estimated lifecycle energy savings expected in Federal agency facilities as a result of FEMP activities are 34.4 trillion Btus (TBtu). FEMP facilitation activities include alternative financing and technical assistance. These savings should result in about a 0.5 percent annual reduction in energy intensity.
FY 2008:	Met	Estimated lifecycle energy savings expected in Federal agency facilities as a result of FEMP activities are 20.2 trillion Btus (TBtu). FEMP facilitation activities include alternative financing, technical assistance, and directly funded energy efficiency projects within the Department. These savings should result in about a 0.4 percent annual reduction in energy intensity.
FY 2007:	Met	Complete Energy Savings Performance Contract (ESPC) and Utility Energy Savings Contract (UESC) contract awards, fund DOE retrofit projects and provide technical assistance that will result in lifecycle Btu savings of 17.1 trillion.

Office: Energy Efficiency and Renewable Energy

Program: Federal Energy Management Program

Website: <http://www.energy.gov/energyefficiency/stateactivities.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Federal Energy Management Program (FEMP) Operational Efficiency Measure**

Maintain administration costs at less than 12 percent of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of Measure was met on-time as planned. Measure may be folded into a larger, over-arching OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009:	Met	Maintain administration costs at less than 12 percent of total program costs
FY 2008:	Met	Maintain administrative costs as a percent of total program costs less than 12 percent.
FY 2007:	Met	Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%.

Office: Energy Efficiency and Renewable Energy

Program: Industrial Technologies

Website: <http://www.energy.gov/energyefficiency/industry.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Industry - Emerging Technologies**

Commercialize 2 new technologies in partnership with the most energy-intensive industries that improve energy efficiency of an industrial process or product by at least 10 percent

2010 Results

Commentary: Met ITP-sponsored technology resulted in a commercial success - SeaMicro Inc. delivered its first commercial server in 2010 with a potential of 75% reduction in power use per unit of computation relative to a conventional server.

Future Plans /

Explanation of Measure was met on-time as planned.

Shortfalls:

Supporting PNNL will provide a full technical report and a summary statement outlining the results and findings
Documentation: detailing the Impacts Tracking of Commercial Technologies.

Associated Performance in Prior Years

FY 2009:	Met	Commercialize 3 new technologies in partnership with the most energy-intensive industries that improve energy efficiency of an industrial process by at least 10 percent
FY 2008:	Met	Commercialize 3 new technologies in partnership with the most energy-intensive industries that improve energy efficiency of an industrial process or product by at least 10 percent.
FY 2007:	Met	Commercialize 3 new technologies in partnership with the most energy-intensive industries that improve energy efficiency of an industrial process or product by at least 10%.

Office: Energy Efficiency and Renewable Energy

Program: Industrial Technologies

Website: <http://www.energy.gov/energyefficiency/industry.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Industry - Operational Efficiency Measure**

Maintain administration costs at less than 12 percent of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of Measure may be folded into a larger, over-arching OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009: Met Maintain administration costs at less than 12 percent of total program costs

FY 2008: Met Maintain administrative costs as a percent of total program costs less than 12 percent.

FY 2007: Met Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%.

Office: Energy Efficiency and Renewable Energy

Program: Industrial Technologies Program

Website: <http://www.energy.gov/energyefficiency/industry.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Industry - Unique Energy-Intensive Industrial Plants**

An estimated 100 trillion Btus energy savings from applying EERE technologies and services to 600 energy-intensive U.S. plants

2010 Results

Commentary: Met A total of 2,197 unique energy-intensive plants in the US were impacted by program in FY 2010. This exceeds the goal of 600 plants. We have shown a total of 363 TBtu per year of persistent energy savings in FY2010. This has exceeded the yearly goal of 100 TBtu per year.

Future Plans /

Explanation of The performance measure will be updated to reflect the program's progress and continued in FY 2010.

Shortfalls:

Supporting

Documentation: ORNL will provide a full technical report and a summary statement outlining the results and findings.

Associated Performance in Prior Years

FY 2009: Met An estimated 100 trillion Btus energy savings from applying EERE technologies and services to 600 energy-intensive U.S. plants.

FY 2008: Met An estimated 100 trillion Btus energy savings from applying EERE technologies and services to 400 energy-intensive U.S. plants.

FY 2007:	Met	An estimated 125 trillion Btus saved by an additional 1,000 energy intensive U.S. plants applying EERE technologies and services.
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Office: Energy Efficiency and Renewable Energy

Program: State Energy Program

Website: <http://www.energy.gov/energyefficiency/weatherization.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **State Energy Program**

Achieve an average annual energy savings of 9-10 trillion source Btus (an estimated \$65-70 million in annual energy cost savings) with DOE funds

2010 Results

Commentary: Met Expenditure of FY 2010 SEP allocation (\$50M) should result in a savings of 10.95 trillion source BTUs (an estimated \$78 million in annual energy cost savings) ORNL/CON-492 evaluates performance in PY 2002, using an 11:11 (non-federal:federal) leverage ratio. More appropriate leverage ratio for FY 2010 is 2:1.

Future Plans /

Explanation of Measure was met on-time as planned. Will continue to adjust ratios and measures accordingly.

Shortfalls:

Supporting Documentation: ONRL will provide a full technical report and a summary statement outlining the results or findings.

Associated Performance in Prior Years

FY 2009:	Met	Achieve an average annual energy savings of 6-7 trillion source Btus (an estimated \$45 million in annual energy cost savings) with DOE funds
FY 2008:	Met	Achieve an average annual energy savings of 10-12 trillion source Btus (an estimated \$60-70 million in annual energy cost savings) with DOE funds
FY 2007:	Met	Achieve an average annual energy savings of 12-14 trillion source Btus (an estimated \$72-78 million in annual energy cost savings) with DOE funds. (1.4.22.1)

Office: Energy Efficiency and Renewable Energy

Program: State Energy Program

Website: <http://www.energy.gov/energyefficiency/weatherization.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **State Energy Program - Operational Efficiency Measure**

Maintain administration costs at less than 12 percent of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of Measure may be folded into a larger, over-arching OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009:	Met	Maintain administration costs at less than 12 percent of total program costs
FY 2008:	Met	Maintain administrative costs as a percent of total program costs less than 12 percent.
FY 2007:	Met	Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%.

Office: Energy Efficiency and Renewable Energy

Program: Weatherization Program

Website: <http://www.energy.gov/energyefficiency/weatherization.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Weatherization - Operational Efficiency Measure**

Maintain administration costs at less than 12 percent of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of Measure may be folded into a larger, over-arching OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009:	Met	Maintain administration costs at less than 12 percent of total program costs
FY 2008:	Met	Maintain administrative costs as a percent of total program costs less than 12 percent.
FY 2007:	Met	Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%.

Office: Energy Efficiency and Renewable Energy

Program: Weatherization Program

Website: <http://www.energy.gov/energyefficiency/weatherization.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Weatherization Assistance Program**

Weatherize 21,510 to 31,087 low-income family homes

2010 Results

Commentary: Met FY10 production to date: 24,492

Future Plans /

Explanation of Measure was met on-time as planned. Data updated to reflect FY 2010 Q4 data.

Shortfalls:

Supporting WINSAGA database contains a full technical report and a summary statement outlining the results and Documentation: findings.

Associated Performance in Prior Years

FY 2009:	Not Met	95,821 low-income family homes weatherized annually with DOE funds. (Based on appropriation amount of \$450 million.)
FY 2008:	Met	75,848 low-income family homes weatherized annually with DOE funds, and support the weatherization of 50,000 additional homes with leveraged funds.
FY 2007:	Met	Weatherize 70,051 units with DOE funds.

Office: Fossil Energy

Program: Petroleum Reserves

Website: <http://fossil.energy.gov/>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Strategic Petroleum Reserve Drawdown Readiness**

Ensure drawdown readiness by achieving > or = 95% of monthly maintenance and accessibility goals.

2010 Results

Commentary: Met This is a weighted average of several maintenance performance elements calculated on a monthly basis. Achieved a 98.4% for FY 2009.

Future Plans /

Explanation of Shortfalls: The program will continue efforts to achieve cost efficiencies wherever possible.

Shortfalls:

Supporting

Documentation: This is tracked by SAP enterprise resource planning software.

Associated Performance in Prior Years

FY 2009: Met Ensure drawdown readiness by achieving > or = 95% of monthly maintenance and accessibility goals.

FY 2008: Met Ensure drawdown readiness by achieving > 95% of monthly maintenance and accessibility goals.

Office: Fossil Energy

Program: Petroleum Reserves

Website: <http://www.fe.doe.gov/programs/reserves/index.html>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Strategic Petroleum Reserve (SPR) Operating Cost**

Ensure cost efficiency of SPR operations by achieving operating cost per barrel of \$0.220.

2010 Results

Commentary: Met This measure is a calculation of annual program costs divided by the total storage capacity in barrels (727 million barrels). Year-end annual costs equate to an operating cost per barrel of \$0.213. Cost efficiencies were achieved by favorable negotiation of the Seaway terminalling contract which resulted in elimination of standby charges. Additionally, accelerating the schedule for relocation of the vapor pressure plant from the Big Hill to the Bryan Mound site resulted in Power and Operations cost savings. Achieved an operating cost of \$0.207 per barrel of capacity in FY 2009.

Future Plans /

Explanation of The program will continue efforts to achieve cost efficiencies wherever possible.

Shortfalls:

Supporting

Documentation: Year-end financial reports from the Department's accounting system, STARS.

Associated Performance in Prior Years

FY 2009: Met Achieve operating cost per barrel of capacity of \$0.213.

FY 2008: Met Ensure cost efficiency of SPR operations by achieving operating cost per barrel of capacity of \$0.204

FY 2007: Met Achieve operating cost per barrel of capacity of \$0.203.

Office: Fossil Energy

Program: Petroleum Reserves

Website: <http://www.fe.doe.gov/programs/reserves/index.html>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Strategic Petroleum Reserve (SPR) Sustained (90-day) Drawdown Rate**

Achieve maximum sustained (90-day) drawdown rate of 4.4 million barrels/day.

2010 Results

Commentary: Met At year-end, the SPR's drawdown rate was 4.4 million barrels per day as evidenced in the SPR Drawdown Readiness and Capability (RECAP) Report and the Online Readiness Computerized Assessment (ORCA) System. This metric reflects the drawdown rate (in barrels per day) that the SPR can sustain for an initial 90 days in order to distribute crude oil from underground storage sites to distribution points.

Future Plans /

Explanation of SPR will continue to work towards maintaining a drawdown rate of 4.4 million barrels.

Shortfalls:

Supporting SPR Drawdown Readiness and Capability (RECAP) Report and the Online Readiness Computerized Documentation: Assessment (ORCA) System.

Associated Performance in Prior Years

FY 2009: Met Achieve maximum sustained (90-day) drawdown rate of 4.4 MMB/Day.

FY 2008: Met Enable ready distribution of SPR oil by achieving maximum sustained (90-day) drawdown rate of 4.4 million barrels per day.

FY 2007: Met Achieve maximum sustained (90-day) drawdown rate of 4.4 MMB/Day.

Office: Electricity Delivery and Energy Reliability
Program: Electricity Delivery and Energy Reliability
Website: <http://www.oe.energy.gov/storage.htm>

Secretarial
Priority Economic Prosperity
Supported:

Measure: **Energy Storage Program**

Demonstrate the capability of novel lead-carbon ultra-batteries, using operational modes developed specifically for PV-hybrid battery systems, to provide at least four times the cycle life of batteries currently used.

Lead acid (VRLA) batteries, currently used to support residential PV, are reduced to 80% capacity after 40 cycles. Advanced lead-carbon batteries have been shown to have a cycling life similar to Li-Ion batteries but at one third the cost. After developing appropriate charge/discharge and equalization protocols, the ability of these new batteries to sustain effectiveness for over 160 full cycles will be demonstrated, resulting in a corresponding decrease in system cost.

2010 Results

Commentary: Not Met Data not available. Alternate milestone was also pursued and met. All project goals were achieved and all milestones were met on schedule. The FY10 target of showing that the Ultrabattery technology was capable of achieving four times the cycle-life of conventional VRLA batteries in a specific PV-hybrid cycling environment was easily met. Results to date indicate that the Ultrabattery technology is capable of achieving over six times greater cycle life than conventional VRLA technology. The secondary goals of this work were also achieved by defining operating parameters for using the Ultrabattery in PV-hybrid power systems. Full details will be available in the final report on the project.

Future Plans / Explanation of Shortfalls: The original project proposed for FY10 consisted of a joint project with Duke Energy to deploy a 2.8MWh Premium Power flow battery for peak shaving. Duke Energy planned to provide most of the funding, while OE (Sandia) was to contribute the monitoring system, data collection, and data evaluation. At the end of FY09, when the project was proposed, the project was on track. All contracts were in place and the site had been prepared. However, by January 2010, Premium Power, after shipping their unit to Duke, encountered a battery malfunction. It was subsequently shipped back to the factory. When Premium Power missed several deadlines set for delivery, Duke canceled the project. Consequently, the storage system was never completed.

Due to this failure, an alternative, and much more significant, project was proposed. All milestones and the annual target for this project were met successfully.

Supporting Documentation: Detailed documentation available from Office of Electricity Delivery and Energy Reliability.

Associated Performance in Prior Years

FY 2009:	Met	Finalize conceptual system design for a Flywheel Energy Storage System for Voltage Support and Distribution Upgrade Deferral in collaboration with the New York State Energy Research and Development Authority (NYSERDA).
FY 2008:	Met	Test three ionic liquids for possible use as electrolytes in batteries or electrochemical capacitors with the potential for doubling the energy and increasing the power by at least 50% for capacitors or doubling the lifetime and improving safety of rechargeable non-aqueous batteries.
FY 2007:	Met	Commission two major pioneering energy storage systems in collaboration with the CEC and NYSERDA, and complete data collection and monitoring of three systems commissioned during FY 2006.

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability

Website: <http://www.oe.energy.gov/hts.htm>

Secretarial

Priority Economic Prosperity

Supported:

Measure: **High Temperature Superconductivity**

Demonstrate prototype 70,000 A-m critical current-length for second generation wire.

2010 Results

Commentary: Met Milestone and end of the year target was met. Both SuperPower and AMSC have established standard processing procedures that routinely produce at greater than 80 meters per hour, long-length and uniform prototype second generation wires that exceed 70,000 A-m critical current-length performance.

Future Plans /

Explanation of Will be used by industry.

Shortfalls:

Supporting

Documentation: FY 2010 Target Annual Report (from ORNL)

Associated Performance in Prior Years

FY 2009: Met Maintain progress in routinely manufacturing prototype superconducting wires to fabricate, test and produce 2 Tesla magnetic fields at 65 Kelvin (K) coils for electric power applications.

FY 2008: Met Demonstrate prototype 50,000 A-m critical current-length for second generation wire.

FY 2007: Met Complete six months operation of superconducting cable operating on the grid at greater than 10 kilovolts.

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability

Website: www.oe.energy.gov/our_organization/iser.htm

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Operations and Analysis/Infrastructure Security and Energy Restoration**

In cooperation with the private sector, complete an analysis of a pilot study to expand OE understanding of the US energy system and its interdependencies in order to further enhance the reliability, survivability and resiliency of energy systems

2010 Results

Commentary: Met Q4 milestone and end of year target were met. While the web-based, industry-wide survey pilot was implemented, ISER has revisited the methodology and determined a change to a more applicable capability to meet the mission demand is needed and in the process has targeted an additional 5% of the oil and natural gas industry and those industries that support the oil and natural gas industry.

Future Plans / Continued development of the web-based, industry-wide survey, incorporating a new methodology to meet mission requirements and expanding user base to the electric infrastructure. Continued development of the tool will be an iterative process, utilizing industry (user) input.

Supporting Documentation: Detailed documentation available from Office of Electricity Delivery and Energy Reliability.

Associated Performance in Prior Years

FY 2009: Met Formally request in writing access to electric transmission information from relevant regional stakeholders in order to have near real time visualization capability within the Energy Response Center of the entire U.S. electric transmission grid at 230 Kilovolts (KV) and above, thereby enabling improved situational awareness during emergencies.

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability

Website: www.oe.energy.gov/our_organization/psa.htm

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Operations and Analysis/Permitting, Siting and Analysis**

Support and participate in at least two events (workshops or technical conferences) to facilitate collaborative efforts among groups of States or other stakeholders to address congestion problems identified in the Congestion Studies or other problems related to the modernization of electricity related infrastructure.

2010 Results

Commentary: Met PSA met all requirements for Q4 and the end of the year by hosting multiple webinars with the Western Electricity Coordinating Council (WECC) on July 27th and August 11th. Reporting was done western states' State-Provincial Steering Committee approved conceptual frameworks for three long-term futures it wishes to see modeled under RTEP: a High Demand-Side Management case, a High Load Growth case, and a Low Carbon case.

Future Plans / PSA will continue its involvement in activities to maintain collaborative efforts among States and other stakeholders to address congestion issues identified in the 2009 Congestion Study and in future Congestion Shortfalls: studies. Congestion studies are required every three years, and the next study is due in FY 2012.

Supporting The western states' State-Provincial Steering Committee approved conceptual frameworks - RTEP: a High Documentation: Demand-Side Management case, a High Load Growth case, and a Low Carbon case.

Associated Performance in Prior Years

FY 2009: Not Met Complete DOE's Second Study of National Electric Transmission Congestion.

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability

Website: www.oe.energy.gov/renewable.htm

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Renewable and Distributed Systems Integration**

Demonstrate 10% peak load reduction or improvement in asset utilization on two feeder systems.

2010 Results

Commentary: Met Milestone and end of year target met. Peak load reduction of 10% and improvement in asset utilization was demonstrated on two feeder systems. At the distribution feeder at ORNL, demonstrated and tested renewable penetration (at least 10%) impacts and evaluated benefits of inverter controls for mitigating A/C stall. On the Lanai Project managed by SNL and NREL, the PV system is providing 600kw and the CHP is providing approximately 800kW which is over 10% of the peak load between 4.5MW and 5MW. Storage that is being installed will add additional capabilities.

Future Plans / There are potential expansions to the distribution systems used in this measure, including the installation of energy storage and potential for additional distributed generation. This may increase the peak load reduction beyond 10%. This is not linked to the FY 11 measure which requires additional feeders to demonstrate a 10% reduction in peak load.

Explanation of Shortfalls: Supporting Documentation: NREL Hawaii Clean Energy Initiative (HCEI) Quarterly Report (Q4 - July 2010 to September 2010) and Annual report (FY10), Sandia Labs HCEI Lanai Project Battery Energy Storage System and Lanai Irradiance Network Experiment (L.I.N.E) Project – Metrics for Quarter 4, ORNL Distributed Energy Communications & Controls (DECC) Laboratory--Demonstrate & Test Renewable Penetration (at least 10%) impacts on Distribution Feeder and Evaluate Benefits of Inverter Controls for Mitigating A/C Stall Annual Report

Associated Performance in Prior Years

FY 2009: Met Demonstrate peak load reduction on distribution feeders with the implementation of Distributed Energy (DE) and Smart Grid technologies with a 5% reduction in peak load and 1 feeder analyzed/demonstrated.

FY 2008: Met Award contracts to demonstrate improvement in grid utilization of 5% by 2009 and 20% by 2015.

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability

Website: www.oe.energy.gov/our_organization/rnd

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Research and Development Program Efficiency Measure**

Maintain total Research and Development Program Direction costs in relation to total Research and Development costs of less than 12%

2010 Results

Commentary: Met Maintained total Research and Development Program Direction costs at 4.77% relative to total Research and Development programmatic costs.

Future Plans / Explanation of Shortfalls: OE intends to continue to maintain total R & D Program Direction costs at less than 12% of total R & D costs for 2011

Supporting Documentation: Detailed documentation available from Office of Electricity Delivery and Energy Reliability.

Associated Performance in Prior Years

FY 2009:	Met	Maintain total Research and Development Program Direction costs in relation to total Research and Development costs of less than 12%.
FY 2008:	Met	Maintain total Research and Development Program Direction costs in relation to total Research and Development costs of less than 12%.
FY 2007:	Met	Research and Development Program Efficiency Measure Maintain total Research and Development Program Direction costs in relation to total Research and Development costs of less than 12%.

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability

Website: www.sgicclearinghouse.org

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Smart Grid Research and Development - Smart Grid Clearing House**

Complete development of open-source-based database architecture and Web applications for the Smart Grid Information Clearinghouse.

2010 Results

Commentary: Met Q4 milestone and annual target met. Virginia Tech launched the "beta" version of the Smart Grid Information Clearinghouse (SGIC) on July 7, 2010 and concluded the "beta" version phase on 09/30/2010 with the launch of the "full version of the SGIC.

Future Plans / Explanation of Shortfalls: The clearinghouse project consisted of two phases of which Phase I is completed. Phase I consisted of designing, initially populating and launching the site.

Shortfalls:

Phase II (or future of the site) will consist of 1. Continuing to gather new data on established topics, 2. Analyze and review industry submitted content for posting; 3. Addition of new features such as RSS feed, context and keyword based content search future, online feedback form, an automated Q&A page, and overall maintenance of the site for three more years.

Supporting

Documentation: SGIC Report: DOE-OE0000031

Office: Electricity Delivery and Energy Reliability
Program: Electricity Delivery and Energy Reliability
Website: www.oe.energy.gov/our_organization/rnd

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Visualization and Control**

Demonstrate a grid stability prototype alarm tool.

2010 Results

Commentary: Met CETR met the annual target to 'Demonstrate a grid stability prototype alarm tool'. CETR has developed the specifications and design for a grid stability prototype alarm tool that is based on phase angle based operating limits. This prototype alarm tool is embedded in the Real Time Dynamics Monitoring System (RTDMS) Version 7.0. This prototype tool will be released on Sept 30, 2010 for industry demonstration and evaluation.

Future Plans / This deliverable also involved collecting baseline voltage phase angles on the electric grid to develop the prototype alarm tool now embedded in the Real time Dynamics Monitoring System (RTDMS) Version 7.0.

Shortfalls: OE is now managing ten ARRA projects that are installing approximately 870 phasor measurement units across the U.S. grid. The RTDMS tool is proposed for several of these projects, and can be used to collect additional baselining data to update and refine operating limits over a wide area, and also can begin to initiate alarms when phase angles are approaching these limits.

Supporting Documentation: This deliverable will be documented in the DOE/CERTS Quarterly Status Report to be released in mid October 2010.

Associated Performance in Prior Years

FY 2009: Met Develop Prototype Angle Stability Monitoring Tool

FY 2008: Met Commission an Area Interchange Error (AIE) visualization system at the North American Electric Reliability Corporation (NERC) for monitoring compliance with mandatory rules that will improve the reliability of the Nation's electric grid.

FY 2007: Met Visualization and Control Develop a plan that delineates the division of duties between DOE and the Electric Reliability Organization (ERO) relative to the research and development activities of DOE, and the deployment of a wide area transmission reliability measurement network in North America by the ERO.

Develop a plan that delineates the division of duties between DOE and the Electric Reliability Organization (ERO) relative to the research and development activities of DOE, and the deployment of a wide area transmission reliability measurement network in North America by the ERO.

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability

Website: www.oe.energy.gov/our_organization/rnd

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Visualization and Controls - Cyber Security**

Complete development of security audit files for 3 control systems.

2010 Results

Commentary: Met Target and Q4 milestone met. Security Audit files complete for 3 control systems including Siemens, Televent, and Areva. Testing is complete for Cisco system.

Future Plans / Explanation of Shortfalls: The Bandolier Security Audit Files have significantly helped improve the security of control systems that run the US critical infrastructure. Vendors are using Bandolier to insure that new systems are deployed in a secure configuration. Before Bandolier these systems were deployed in an insecure manner. Vendors are also using Bandolier as part of the Quality Assurance process for modifications. Owner/Operators are using Bandolier as part of acceptance testing and for periodic security assessments to insure security has not degraded. Bandolier audit results also are being used as evidence of compliance with certain NERC CIP requirements. This site is accessible to all Digital Bond subscribers. Over 200 subscribers are currently using the various files to provide cyber security audits/situational awareness. In addition, it is planned to add 3 more audit files during FY11.

Supporting A listing of all completed files is at

Documentation: http://www.digitalbond.com/wiki/index.php/List_of_Bandolier_Audit_Files

Associated Performance in Prior Years

FY 2009: Exceeded Complete cyber security assessments of 4 SCADA systems in a test bed environment.

Office: Southeastern Power Administration

Program: Southeastern Power Administration

Website: www.sepa.doe.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Repayment of Federal Power Investment Performance**

Repay the Federal Power Investment within the required repayment period.

2010 Results

Commentary: Met During FY 2010, Southeastern achieved 100% of required repayment of the Federal investment. Accomplishing this goal reflects Southeastern's commitment to repay the Federal investment and maintain financial integrity. Repaid \$29,040,951.

Future Plans /

Explanation of No shortfalls.

Shortfalls:

Supporting Third-party verification of supporting the Financial Audit data for tracking the repayment measures is Documentation: prepared by an independent accounting firm (KPMG).

Associated Performance in Prior Years

FY 2009:	Met	Repay the Federal Power Investment within the required repayment period.
FY 2008:	Met	Meet planned annual repayment of principal on Federal power investments. Repay the required repayment of \$22.2 million in FY 08.
FY 2007:	Met	Meet planned annual repayment of principal on Federal power investments. Repay the required repayment of \$1.0 million.

Office: Southeastern Power Administration

Program: Southeastern Power Administration

Website: www.sepa.doe.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **System Reliability Performance - NERC**

Meet North American Electric Reliability Council (NERC) Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.

2010 Results

Commentary: Met During FY 2010, Southeastern's average annual results are 234.10 for CPS 1 & 99.83 for CPS 2. Accomplishing this goal reflects Southeastern's ability to maintain safe, efficient and effective power system operation for control area performance.

Future Plans /

Explanation of No shortfalls noted.

Shortfalls:

Supporting Third-party verification of supporting CPS-1 & 2 documentation can be provided by the SERC Reliability Documentation: Corporation. Unlike other regions SERC data is not included in the SERC section of the NERC website due to confidentiality issues.

Associated Performance in Prior Years

FY 2009: Met Meet North American Electric Reliability Council (NERC) Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.

FY 2008: Met Meet North American Electric Reliability Council (NERC) Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.

FY 2007: Met Meet North American Electric Reliability Council (NERC) Control Performance Standards (CPS) of CPS1>100 and CPS2>90. CPS1: minute by minute measures a generating system's ability to match supply to changing demand requirements and support desired system frequency (about 60 cycles per second); CPS2: measures systems ability to limit the magnitude of generation and demand imbalances.

Office: Southwestern Power Administration

Program: Southwestern Power Administration

Website: www.swpa.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Annual Operating Cost Performance**

Provide power at the lowest possible cost by keeping total operation and maintenance cost per kilowatt-hour generated below the National median for public power.

2010 Results

Commentary: Met During FY 2010, cost per kilowatt-hour statistics are as follows:
Southwestern: \$0.0143
National industry average: \$0.062
Therefore, Southwestern is less than the National industry average.

Achieving this target reflects Southwestern's ability to control annual Operations and Maintenance costs, thereby providing power at the lowest possible cost.

Future Plans / Explanation of Shortfalls: Southwestern will continue to provide the lowest possible cost power by keeping average operation and maintenance cost below the National average.

Supporting Documentation: APPA Selected Financial and Operating Ratios of Public Power Systems, Annual Reports, Energy Information Administration Form 1 Reports, CBO Budget and Economic Outlook Forecast.

Associated Performance in Prior Years

FY 2009:	Met	Provide power at the lowest possible cost by keeping average operation and maintenance cost per kilowatt-hour below the National average for hydropower.
FY 2008:	Met	Provide power at the lowest possible cost by keeping average operation and maintenance cost per kilowatt-hour below the National average for hydropower.
FY 2007:	Met	Provide power at the lowest possible cost by keeping average operation and maintenance cost per kilowatt-hour below the National average for hydropower.

Office: Southwestern Power Administration

Program: Southwestern Power Administration

Website: www.swpa.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Repayment of the Federal Power Investment Performance**

Ensure timely repayment of Federal investment in accordance with DOE Order RA 6120.2 by maintaining unpaid investment (UI) equal to or less than the allowable unpaid investment (AUI).

2010 Results

Commentary: Met During FY 2010, Southwestern achieved the timely repayment of the Federal investment.

Achieving this target reflects Southwestern's commitment to meet repayment of the Federal investment, thereby achieving and maintaining financial integrity.

Future Plans / Explanation of Shortfalls: Southwestern will continue to efficiently operate its system and meet or exceed its annual repayment obligations.

Supporting Documentation: Annual Repayment Studies

Associated Performance in Prior Years

FY 2009: Met Repay the Federal Investment within the required repayment period.

FY 2008: Met Repay the Federal Investment within the required repayment period.

FY 2007: Met Repay the Federal Investment within the required payment period.

Office: Southwestern Power Administration
Program: Southwestern Power Administration
Website: www.swpa.gov

Secretarial
Priority Economic Prosperity
Supported:

Measure: **System Reliability Performance - NERC Rating**

System Reliability Performance: Meet NERC Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.

2010 Results

Commentary: Met During FY 2010, Southwestern achieved 6 out of 6 control compliance ratings. Southwestern's average annual results are 199.99 for CPS 1 & 99.87 for CPS 2.

Achieving this target reflects Southwestern's ability to maintain acceptable power system operation for control area performance, thereby operating the power system efficiently and effectively.

Future Plans /
Explanation of Shortfalls: Southwestern will continue to operate its system at the highest level of reliability and exceed NERC operating requirements.

Supporting Documentation: NERC Monthly Control compliance Rating Report for 2000 through 2010. Data can be found at <http://www.nerc.com/~filez/cps.html>.

Associated Performance in Prior Years

FY 2009:	Met	System Reliability Performance: Meet NERC Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.
FY 2008:	Met	Meet NERC Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.
FY 2007:	Met	Meet industry averages (CPS1: 161.81 and CPS2: 97.21) and at a minimum, meet NERC Control Performance Standards (CPS) of CPS1>100 and CPS2>90. CPS1: minute by minute measures a generating system's ability to match supply to changing demand requirements and support desired system frequency (about 60 cycles per second); CPS2: measures systems ability to limit the magnitude of generation and demand imbalances.

Office: Southwestern Power Administration

Program: Southwestern Power Administration

Website: www.swpa.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **System Reliability Performance - Outages**

Effectively operate the transmission system to limit the number of accountable outages to no more than three (3) annually.

2010 Results

Commentary: Met During FY 2010, Southwestern had one preventable customer outage.

Achieving this target reflects Southwestern's ability to provide reliable service to customers each year, thereby maintaining power system reliability.

Future Plans /

Explanation of Southwestern will continue to provide reliable service to their customers.

Shortfalls:

Supporting

Documentation: Southwestern's Point of Delivery Incidents Log

Associated Performance in Prior Years

FY 2009: Met Operate the transmission system so there are no more than 3 preventable outages annually.

FY 2008: Met Operate the transmission system so there are no more than three preventable outages annually.

FY 2007: Met Operate the transmission system so there are no more than 3 preventable outages annually.

Office: Western Area Power Administration

Program: Western Area Power Administration

Website: www.wapa.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Annual Operating Cost Performance**

Efficiency Performance: Provide power at the lowest possible cost by keeping total operation and maintenance expense per kilowatt-hour generated below the national median for public power (\$0.062).

2010 Results

Commentary: Met As calculated using Western's most recent audited financial statements, Western's FY 2010 ratio of O&M costs per kWh generated (\$0.012) is less the national median for public power (\$0.062).

Future Plans /

Explanation of Western will continue to manage O&M costs to ensure stable rates and the provision of low cost power.

Shortfalls:

Supporting Current American Public Power Association Selected Financial and Operating Ratios of Public Power Documentation: Systems as compared to applicable program costs reported in Western's annual audited financial statements.

Office: Western Area Power Administration

Program: Western Area Power Administration

Website: www.wapa.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **Repayment of Investment Performance**

Ensure unpaid investment (UI) is equal to or less than the allowable unpaid investment (AUI) in accordance with DOE Order RA 6120.2 and Reclamation Law.

2010 Results

Commentary: Met Collective repayment data for Western projects for FY 2010 indicate that UI is equal to or less than AUI (\$6.216 billion/\$8.930 billion).

Future Plans / Explanation of Shortfalls: Western will remain committed to repaying Federal investment within required repayment periods meeting our obligation to the U.S. Treasury.

Supporting Documentation: Final FY 2009 Power Repayment Studies

Associated Performance in Prior Years

FY 2009:	Met	Ensure unpaid investment (UI) is equal to or less than the allowable unpaid investment (AUI) in accordance with DOE Order RA 6120.2 and Reclamation Law.
FY 2008:	Met	Ensure unpaid investment (UI) is equal to or less than the allowable unpaid investment (AUI) in accordance with DOE Order RA 6120.2 and Reclamation Law.
FY 2007:	Met	Ensure unpaid investment is equal to or less than the allowable unpaid investment. Achieve a ratio of unpaid to allowable unpaid ≤ 1.00 .

Office: Western Area Power Administration

Program: Western Area Power Administration

Website: www.wapa.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **System Reliability Performance - NERC Rating**

Meet North American Electric Reliability Corporation (NERC) Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.

2010 Results

Commentary: Met Annual averages for CPS1 and CPS2 were 178.03 and 96.45, respectively.

Future Plans / Explanation of Shortfalls: Western will continue to operate the system efficiently which contributes to the stability of the Nation's integrated power grid.

Supporting Documentation: NERC Control Performance Report

Associated Performance in Prior Years

FY 2009:	Met	Meet North American Electric Reliability Corporation (NERC) Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.
FY 2008:	Met	Meet North American Electric Reliability Corporation (NERC) Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.
FY 2007:	Met	Attain acceptable North American Electric Reliability Corporation (NERC) ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load: 1) CPS1 which measures generation/load balance and support system frequency on one minute intervals (rating >100); and 2) CPS2 which limits any imbalance magnitude to acceptable levels (rating >90).

Office: Western Area Power Administration

Program: Western Area Power Administration

Website: www.wapa.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **System Reliability Performance - Outages**

Accountable customer and/or transmission element outages will not exceed 26 for FY 2010.

2010 Results

Commentary: Met For FY 2010, Western experienced 11 accountable outages against our target of 26 or less.

Future Plans / Explanation of Shortfalls: Western will continue to operate and maintain the power system effectively to ensure system reliability and dependable service to customers.

Supporting Documentation: FY 2010 Accountable Outages Report

Associated Performance in Prior Years

FY 2009:	Met	Accountable customer and/or transmission element outages will not exceed 26 for FY 2009.
FY 2008:	Met	Accountable customer and/or transmission element outages will not exceed 26 for FY 2008.
FY 2007:	Met	Accountable customer and/or transmission element outages will not exceed 26 for FY 2007.

Office: Bonneville Power Administration

Program: Bonneville Power Administration

Website: www.bpa.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **BPA Hydropower Generation Efficiency Performance**

Achieve 97.5% Heavy Load Hour Availability (HLHA) through efficient performance of Federal hydro-system processes and assets, including joint efforts of BPA, Army Corps of Engineers, and Bureau of Reclamation. HLHA is actual machine capacity available during heavy-load hours (0700-2200 Monday-Saturday), divided by planned available capacity during heavy-load hours.

2010 Results

Commentary: Met Bonneville and its FCRPS partners met this operational goal for the hydropower system with a result of 99.6%. Meeting this target demonstrates Bonneville's commitment and ability to provide reliable power to the region. By optimizing planned maintenance and taking into consideration expected forced outages, BPA's heavy load hour performance ensured that BPA had the system capacity to serve its system load.

Future Plans / Explanation of Shortfalls: There were no shortfalls in FY 2010. In FY 2011, BPA will work with the Army Corps of Engineers and Bureau of Reclamation to refine unit outage schedules for planned maintenance, and to enhance coordination activities required to return units to service, in order to ensure that BPA continues to efficiently provide reliable power to the region.

Supporting Documentation: Quarterly FY 2010 Findings Memo (from BPA Chief Operating Officer to BPA Administrator)

Associated Performance in Prior Years

FY 2009:	Met	Achieve 97.5% Heavy Load Hour Availability (HLHA) through efficient performance of Federal hydro-system processes and assets, including joint efforts of BPA, Army Corps of Engineers, and Bureau of Reclamation. HLHA is actual machine capacity available during heavy-load hours (0700-2200 Monday-Saturday), divided by planned available capacity during heavy-load hours.
FY 2008:	Met	Achieve > or = 97.5% Heavy-Load-Hour Availability (HLHA) through efficient performance of Federal hydro-system processes and assets, including joint efforts of BPA, Army Corps of Engineers, and Bureau of Reclamation.
FY 2007:	Met	Hydropower Generation Efficiency Performance Achieve > or = 97.5% Heavy Load Hour Availability (HLHA) through efficient performance of Federal hydro-system processes and assets, including joint efforts of BPA, Army Corps of Engineers, and Bureau of Reclamation. HLHA is actual machine capacity available during heavy-load hours (0700-2200 Monday-Saturday), divided by planned available capacity during heavy-load hours.

Office: Bonneville Power Administration

Program: Bonneville Power Administration

Website: www.bpa.gov

Secretarial

Priority Economic Prosperity

Supported:

Measure: **BPA Repayment of Federal Power Investment Performance**

Meet planned annual repayment of principal on Federal power investments.

2010 Results

Commentary: Met BPA met this performance target for the 27th straight year, demonstrating ongoing commitment to meeting its obligations to U.S. taxpayers. BPA made a total annual payment of \$864.1 million of which \$459.8 million was principal amortization.

Future Plans /

Explanation of Shortfalls: There were no shortfalls. BPA will continue to set rates in order to assure Treasury payment.

Shortfalls:

Supporting

Documentation: Quarterly Findings Memo (from BPA Chief Operating Officer to BPA Administrator)

Associated Performance in Prior Years

FY 2009: Met Meet planned annual repayment of principal on Federal power investments.

FY 2008: Met Meet planned annual repayment of principal on Federal power investments.

FY 2007: Met Meet planned annual repayment of principal on Federal power investments.

Office: Bonneville Power Administration

Program: Bonneville Power Administration

Website: www.bpa.gov; http://opi/reports/CPS

Secretarial

Priority Economic Prosperity

Supported:

Measure: **BPA System Reliability Performance - NERC Rating**

Attain average North American Reliability Council (NERC) compliance ratings for NERC Control Performance Standard 1 (CPS1) which measures generation/load balance on one-minute intervals (rating > or = 100).

2010 Results

Commentary: Met BPA achieved the CPS1 standard for 12 of 12 months. Meeting this target demonstrates Bonneville's ongoing commitment and ability to provide reliable transmission for the region.

Future Plans / Explanation of Shortfalls: There were no shortfalls. BPA will continue to carefully manage its transmission operations to ensure reliable power delivery in FY 2011.

Supporting Documentation: Quarterly FY 2010 Findings Memo (from BPA Chief Operating Officer to BPA Administrator)

Associated Performance in Prior Years

FY 2009: Met Attain average North American Reliability Council (NERC) compliance ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load, including support for system frequency: (1) CPS1, which measures generation/load balance on one-minute intervals (rating > or =100); and (2) CPS2, which limits any imbalance magnitude to acceptable levels (rating > or =90).

FY 2008: Met Attain average North American Reliability Council (NERC) compliance ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load, including support for system frequency: (1) CPS1, which measures generation/load balance on one-minute intervals (rating > or = 100); and (2) CPS2, which limits any imbalance magnitude to acceptable levels (rating > or = 90).

FY 2007: Met Attain average North American Electric Reliability Council (NERC) compliance ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load, including support for system frequency: (1) CPS1, which measures generation/load balance on one-minute intervals (rating > or = 100); and (2) CPS2, which limits any imbalance magnitude to acceptable levels (rating > or = 90). (1.3.18.1)

Priority 3: Clean, Secure Energy

Office: Energy Efficiency and Renewable Energy

Program: Biomass

Website: <http://www.energy.gov/energysources/bioenergy.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Biomass - Biomass Feedstock Platform**

"Achieve a modeled dry herbaceous feedstock logistics cost of \$37.80 per dry ton (excluding grower payment, in 2007\$).

Using Regional Feedstock Partnership trials and analysis efforts, determine feedstock types and regions in which nutrient use efficiency (tons of feedstock per pound of nutrients applied) and soil organic matter can be increased by at least 5%²⁰. This data will be input into designing integrated biomass production systems that incorporate positive services to the environment. "

2010 Results

Commentary: Met The focus was on methods to prevent storage losses due to bale moisture content. In FY 2009 a bale wrapping system was used to prevent the direct contact of water with bales to guarantee that losses due to moisture are kept below an acceptable 5%. In FY 2010, a more cost effective bale tarping method was investigated. A combination of the advancements made in the areas described above has resulted in the final cost of the supply system being reduced to the target cost of \$37.80 per DM ton. Nutrient use efficiency - Several key assumptions were made and a methodology was constructed that established nutrient use efficiencies (lbs biomass/lbs nutrients) for both conventional and dedicated energy crop agronomic systems. These efficiencies were then evaluated against the conventional system for each dedicated energy crop of interest in every county determining if that crop would provide at least a 5% increase in nutrient use efficiency. Soil organic matter – Due to the limited amount of data available from Sun Grant Regional Feedstock Partnership field trials, the approach to satisfying the milestone has relied on environmental process modeling. The residue removal analysis tool being developed under the Regional Partnership provided the analysis framework. The modeling process has implemented a county average soil and management approach. Utilizing the residue removal tool, USDA-NRCS soils data baseline soil organic matter levels have been determined. The analysis then utilized accepted, state-of-the-art models to introduce the herbaceous species and management practices into the production system.

Future Plans / A simulation from 2009-2030 was then performed for each model dedicated energy crop under the same environmental conditions in every county. The simulation results for SOC from each dedicated energy crop scenario in 2030 were compared to the results for SOC from continuation of the conventional system through 2030. This comparison was then used to determine which feedstocks and counties achieved a 5% increase in SOC under the given analysis scenario. Miscanthus shows the largest geographic potential for meeting the targets. Switchgrass shows the highest potential in the Southeast region, along with meeting the goals in several upper Great Plains counties. Energy sorghum and short rotation woody crop species (SRWC) show minimal geographic potential for achieving the 5% increases in the modeled scenario. The limiting factor for these crops was almost exclusively SOC.

Supporting Documentation: <https://bioenergykdf.net/biokdf>

Associated Performance in Prior Years

FY 2009:	Met	Initiate a GIS-based regional feedstock atlas system incorporating USDA agricultural datasets, energy crop field test results, residue removal trial results, DOE and USDA funded biorefinery project results, and other assessments from public and private sources to provide the best biomass resource database, models, and tools available for a wide variety of users including Federal and State governments, biorefinery developers, growers, and researchers. These efforts will enable evaluation of potential future feedstock supply in support of the goal of producing feedstocks at \$46 per dry ton by 2012.
FY 2008:	Met	Conduct replicated field trials across regions to determine the impact of residue removal on grain yield (in subsequent years); field trials (including genetic evaluations) to develop energy crops within a geographical region; resource assessments to determine regional feedstock supply curves (variable costs of feedstock across various sites); and economic studies that identify the best site conditions and general locations for biorefineries within a region, all of which can demonstrably contribute to the goal of producing feedstocks at \$32 per dry ton by 2012.
FY 2007:	Met	Complete a core R&D engineering design and techno-economic assessment of an integrated wet storage - biomass field pre-processing assembly system with a pretreatment process that could potentially be scaled up to produce feedstocks to achieve a reduction to \$35 per ton by 2012 from \$53 per ton as of 2003. This is based on the original baseline and cost reduction targets specific to corn stover.

Office: Energy Efficiency and Renewable Energy

Program: Biomass

Website: <http://www.energy.gov/energysources/bioenergy.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Biomass - Operational Efficiency Measure**

Maintain administration costs at less than 12 percent of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of Measure may be folded into a larger, over-arching OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009:	Met	Maintain administrative costs as a percent of total program costs less than 12 percent.
FY 2008:	Met	Maintain administrative costs as a percent of total program costs less than 12 percent.
FY 2007:	Met	Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%.

Office: Energy Efficiency and Renewable Energy

Program: Biomass

Website: <http://www.energy.gov/energysources/bioenergy.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Biomass - Platforms Research and Development - Sugars**

Achieve reduction of the modeled ethanol conversion cost to \$1.33/gallon through improvements in pretreatment and hydrolysis; this is in support of achieving the \$0.92 conversion cost necessary to achieve the ethanol production cost within the estimated cost competitive range of \$1.76-2.06/gallon by 2012 (in 2007\$).

2010 Results

Commentary: Met Data generated by NREL researchers and other external collaborators successfully demonstrated performance commensurate with the FY 2010 State of Technology MESP target of \$1.98/gal (\$1.33/gal conversion cost) (2007\$) through core research improvements in pretreatment, enzymatic hydrolysis, and fermentation. The resultant FY 2010 SOT MESP is \$1.94/gal ethanol, with \$1.27/gal attributed to conversion costs.

Future Plans /

Explanation of Measure was met on-time as planned.

Shortfalls:

Supporting EEGG Performance Reports will contain a full technical report and a summary statement outlining the Documentation: results or findings.

Associated Performance in Prior Years

FY 2009:	Met	Demonstrate alternative pretreatment technologies at bench-scale using advanced cellulase enzymes and integrated technologies that have the potential of achieving \$0.12 per pound of sugars on the pathway to \$0.073 per pound by 2012 (in \$2007). Reduced sugar costs will reduce cellulosic ethanol costs, leading to increased adoption of ethanol and reduced consumption of petroleum.
FY 2008:	Met	Achieve a modeled cost of a mixed, dilute sugar stream suitable for fermentation to ethanol of \$0.13 per pound of sugars (equivalent to \$2.39 per gallon of cellulosic ethanol) through the formulation of improved enzyme mixtures and pretreatments (in \$2007). The cost of the sugar stream ties directly to the price of ethanol, a substitute for gasoline and key output of a biorefinery. Reduction in the cost of sugars can lead to commercialization of biorefineries that produce fuels (such as ethanol), chemicals, heat, and power from biomass.
FY 2007:	Met	Complete integrated tests of pretreatment and enzymatic hydrolysis in conjunction with existing fermentation organisms at bench-scale on corn stover that validate \$0.125 per pound sugars on the pathway to achieving \$0.064 per pound in 2012.

Office: Energy Efficiency and Renewable Energy

Program: Biomass

Website: <http://www.energy.gov/energysources/bioenergy.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Biomass - Platforms Research and Development - Syngas**

Through improved tar reforming catalysts, achieve a modeled ethanol price of \$1.90/gal (2007\$ feedstock cost \$54.20/ton) for thermochemical gasification followed by mixed alcohol synthesis and ethanol separation

2010 Results

Commentary: Met Data generated by NREL researchers as well as external collaborators provided technical advancements that led to the successful demonstration of the FY 2010 Milestone to achieve a modeled ethanol price of \$1.90/gallon for thermochemical gasification of biomass feedstocks followed by mixed alcohol synthesis and ethanol separation.

In order to achieve this target, concerted efforts and specific accomplishments were made in the areas of:

- (1) Reforming catalyst performance and regeneration strategies
- (2) Mixed alcohol synthesis catalyst performance and integration into the State of Technology (SOT) model
- (3) Process and economic modeling (changes were made to more accurately represent the areas of alcohol synthesis and a high-pressure acid gas removal system)

Future Plans / Explanation of Shortfalls: These accomplishments have not only allowed the program to successfully demonstrate the 2010 ethanol production cost target, but also to show that the research program is continuing to make progress towards achieving the modeled 2012 MESP (minimum ethanol selling price) goals as outlined in OBP's Multi-Year Program Plan.

Supporting Documentation: EEGE Performance Reports will provide a full technical report and a summary statement outlining the results and findings

Associated Performance in Prior Years

FY 2009: Met By September 30, 2009 Achieve a modeled ethanol price of \$1.97/gal for thermochemical gasification followed by mixed alcohol synthesis and ethanol separation. This will be achieved by demonstrating pilot-scale technology capable of economically converting biomass feedstocks, and will be based on a feedstock cost of \$60/dry ton (calculated in 2007 dollars).

FY 2008: Met Achieve a modeled cost of a cleaned and reformed biomass-derived synthesis gas or oils of \$6.88/MBtu by demonstrating pilot-scale technology capable of economically converting biomass residues, pulping liquors, or waste fats and greases. Reduction in the cost of syngas can lead to commercialization of biorefineries that produce fuels, chemicals, heat, and power from biomass.

FY 2007: Met Demonstrate conversion of 50% of non-methane (C2+ higher) hydrocarbons that result in a syngas cost of \$7.15/MBtu in 2007 (equivalent electricity cost of 6.83 cents/kWh).

Office: Energy Efficiency and Renewable Energy

Program: Biomass

Website: <http://www.energy.gov/energysources/bioenergy.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Biomass - Utilization of Platform Outputs**

Resolution on critical factors (e.g. Loan Guarantees, Debt Financing, NEPA determination) allowing for a decision to enter into an Award 2 for the construction of up to four (4) more biorefinery projects (up to five in total).

2010 Results

Commentary: Not Met There existed three projects with potential to meet this target and start construction in FY 2010 – In Emmetsburg, IA (Poets Project Liberty plant); in Hugoton (Abengoa Hugoton Biorefinery Plant), and in Fulton, Mississippi (Kansas and BlueFire’s Fulton Biorefinery).

However, two major issues had to be resolved, but were not, in order for any two of the three to start construction. The issues were a) Obtaining sufficient construction debt financing to start the project; and b) Completing adequate engineering design to issue a contract to construct. In addition, the projects had to pass through a Critical Decision 3 level of review for DOE in accordance with DOE Orders 413.3A in order for DOE to lift any conditions to spend federal funds available to these projects. All three of the projects faced issue a) as cited above. Final engineering was largely completed for two of the projects but one had to rebaseline and could not finalize engineering designs.

In addition, the Environmental Impact Statement and Analysis was published in time for the Abengoa plant to start construction, but DOE needed to also issue a Record of Decision which probably will not issue until early October, 2010. Abengoa is prevented from starting construction until these NEPA requirements are met.

Future Plans / In order for the Department to issue its approval of start of construction three factors must be addressed in a Critical Decision 3 analysis.

Shortfalls: 1. Financing, 2. Project and site readiness, and 3. Satisfactory compliance with NEPA requirements.

Relative to item 1, DOE has been working with two federal lending opportunities, the DOE Loan Guarantee Program and the USDA Loan Guarantee program to facilitate progress on approving loan applications. This is a work in progress and debt financing is yet not assured with any of the three projects.

Relative to item 2, all three projects were evaluated by DOE’s Independent Engineer and engineering level reviews on readiness were prepared. Two had the Engineering Independent Review (EIR) analysis completed and a report issued to the Department – BlueFire and Abengoa. Poet had to rebaseline so their EIR report remains to be completed. Two projects, Abengoa and BlueFire, inked two draft construction contracts, and start dates are slated for the last quarter in calendar year 2010 or early in calendar year FY 2011.

Relative to item 3, Environmental Assessment determinations of a FONSI (finding of no significant impact) were made for BlueFire and Poet. The EIS for Abengoa is complete and a ROD for Abengoa is being prepared for publication. The expectation is that two projects could start excavating and site preparation in the last quarter of calendar year 2010 (Abengoa and BlueFire), and one in the spring of 2011 (Poet). Poet has also started building part of the infrastructure for the actual operation involving feedstock storage and processing facilities.

It should be noted that construction projects are not R&D projects which normally do not have to work through issues like debt financing, environmental permits, and NEPA. For that reason, forecasting firm milestones is a challenge and not always entirely in the control of the Department regardless of the state of readiness forecasted by these IBR projects themselves.

Supporting Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009:	Met	Initiate construction of at least one commercial-scale biorefinery project (designed to 700 tons per day feedstock processed) including orders for long lead items, vendor packages, and structural steel. Validation of biorefinery concepts will reduce technological risk and attract additional sources of capital to accelerate deployment and oil displacement.
FY 2008:	Met	Approve a final engineering design package of at least one commercial scale biorefinery capable of processing up to 700 metric tons per day of lignocellulosic feedstocks. The approved design package must address any findings from an independent engineering review to validate contractor costs and scheduled timeline. Validation of biorefinery concepts will reduce technological risk and attract additional sources of capital to accelerate deployment and oil displacement.
FY 2007:	Met	Complete a preliminary engineering design package, market analysis, and financial projection for at least one industrial-scale project for near term agricultural pathways (corn wet mill, corn dry mill, oilseed) to produce a minimum of 15 million gallons of biofuels per year (as mandated by the Energy Policy Act).

Office: Energy Efficiency and Renewable Energy

Program: Vehicle Technologies

Website: <http://www.energy.gov/energyefficiency/transportation.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Hybrid Electric Systems (Energy Storage)**

Reduce modeled production cost of high-power, 25 kW passenger vehicle lithium-ion battery to \$500. (Storage batteries are a key cost and performance component for hybrid vehicles, which offer improved fuel economy.)

2010 Results

Commentary: Met The modeled production cost of a high-power, 25-kW passenger vehicle lithium-ion battery has been reduced to less than \$500. The cost of the 25-kW lithium-ion battery depends on the battery chemistry used and the useable energy required. Manganese spinel (LMO) and lithium iron phosphate (LFP) positive electrodes offer the lowest battery costs for high-power hybrid electric vehicles because of proven high-rate capability and lower materials cost. The modeled cost of a 25-kW battery (with a useable energy of 150-Wh) using LMO positive and graphite negative electrodes is \$403 per pack at a production rate of 500,000 packs per year.

Future Plans /

Explanation of Measure was met on-time as planned.

Shortfalls:

Supporting Documentation: Results of the cost models are to be presented by the developers at the Quarterly Progress Reviews

Associated Performance in Prior Years

FY 2009:	Not Met	Reduce modeled production cost of high-power, 25 kW passenger vehicle lithium-ion battery to \$550. (Storage batteries are a key cost and performance component for hybrid electric vehicles, which offer improved fuel economy)
FY 2008:	Met	Reduce the projected cost at high volume of a high power, 25 kW, passenger vehicle lithium ion battery to \$625 per battery system for conventional hybrid vehicles.
FY 2007:	Met	Reduce high power, 25 kW, passenger vehicle, lithium ion battery cost to \$700 per battery system.

Office: Energy Efficiency and Renewable Energy

Program: Vehicle Technologies

Website: <http://www.energy.gov/energyefficiency/transportation.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Lightweight Materials Technology**

Reduce the modeled weight of a passenger vehicle body and chassis system by 50 percent relative to 2002 baseline

2010 Results

Commentary: Met A detailed cost model prepared by the Oak Ridge National Laboratory (ORNL) indicates that the 50% weight reduction in the body and chassis was achieved. The weight reduction is cost effective at gasoline prices above \$3/gallon; with carbon fiber @\$5.00/lb; and Mg ingot @\$1.75/lb.

Future Plans /

Explanation of Measure was completed on-time as planned.

Shortfalls:

Supporting Results are documented in a presentation for the VTP Merit Review prepared by the ORNL (June 2010). A Documentation: summary of the report will be included in the Materials Technology annual report.

Associated Performance in Prior Years

FY 2009:	Met	Reduce the modeled weight of a passenger vehicle body and chassis system by 40 percent relative to 2002 baseline. (Reducing vehicle weight will improve vehicle fuel economy.)
FY 2008:	Met	Reduce the modeled weight of a mid-sized passenger vehicle body and chassis components by 25 percent relative to baseline.
FY 2007:	Met	Develop technologies which, if implemented in high volume, could reduce the weight of body and chassis components by 10%.

Office: Energy Efficiency and Renewable Energy

Program: Vehicle Technologies

Website: <http://www.energy.gov/energyefficiency/transportation.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Vehicles - Operational Efficiency Measure**

Maintain administration costs at less than 12 percent of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of Measure may be folded into a larger, over-arching OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009:	Met	Maintain administrative costs at less than 12 percent of total program costs.
FY 2008:	Met	Maintain administrative costs as a percent of total program costs less than 12 percent.
FY 2007:	Met	Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%.

Office: Energy Efficiency and Renewable Energy

Program: Vehicle Technologies

Website: <http://www.energy.gov/energyefficiency/transportation.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Vehicles-Hybrid and Electric Propulsion/Advanced Power Electronics**

Demonstrate a combined inverter/motor with a specific power of 1.1 kW/kg, a power density of 2.6 kW/liter, and a cost of \$19/kW peak at an inlet coolant temperature of 90o C

2010 Results

Commentary: Met Based upon test data gathered by General Motors from prototype inverter and motor units, the traction drive parameters of 1.1 kW/kg and 2.6 kW/L have been attained for a coolant temperature of 90°C. Using vendor quotes obtained by General Motors and standard automotive costing practices, the cost target of \$19/kW has been achieved. This marks the completion of the year and will be documented in the Oak Ridge National Laboratory (ORNL) Monthly Status report for September 2010.

Future Plans /

Explanation of Measure was met on-time as planned.

Shortfalls:

Supporting

Documentation: Oak Ridge report

Associated Performance in Prior Years

FY 2009: Met Reduce the projected cost (modeled) of a combined inverter/motor to \$19/kW peak for a specific power of 1.0 kW/kg, a power density of 2.2 kW/liter and an inlet coolant temperature of 90° C.

FY 2008: Met In the laboratory, demonstrate a current source inverter for use in traction drive applications with an inherent boost capability of 3X, a reduction of motor voltage harmonic distortion of 90% and motor bearing leakage current by 90%, and a reduction in capacitor requirements from 2000uF to 200uF.

FY 2007: Met Demonstrate in the laboratory a motor with a specific power of 1.0 kW/kg, power density of 3.0 kW/liter, projected cost of \$9/kW peak, and efficiency of 90%.

Office: Energy Efficiency and Renewable Energy

Program: Geothermal Technologies

Website: <http://www.energy.gov/energysources/geothermal.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Geothermal - Operational Efficiency Measure**

Maintain administration costs at less than 12 percent of total program costs

2010 Results

Commentary: Met Met the 12% benchmark for OEM.

Future Plans /

Explanation of Measure may be folded into a larger, over-arching OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009:	Met	Maintain administration costs at less than 12 percent of total program costs
FY 2008:	Met	Maintain administrative costs as a percent of total program costs less than 12 percent.
FY 2007:	Met	Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12 percent.

Office: Energy Efficiency and Renewable Energy

Program: Hydrogen

Website: <http://www.energy.gov/energysources/hydrogen.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **HFCT - Technology Validation (Natural Gas)**

Conduct a down-select decision on advanced hydrogen storage materials with the potential to meet 2010 revised targets of 0.9 kWh/L and 1.5 kWh/kg when packaged in a system.

2010 Results

Commentary: Met The Hydrogen Storage Engineering Center of Excellence (HSECoE) has evaluated 14 recommended hydrogen storage materials from the 3 material classes. Based on the current status of known material properties, four materials have been eliminated from further consideration by the HSECoE. The remaining 10 materials will receive further consideration for modeling their performance in complete systems.

Future Plans /

Explanation of Measure was met as planned, will continue to adjust formulas as needed.

Shortfalls:

Supporting

Documentation: <http://www.eere.energy.gov/topics/geothermal.html>

Associated Performance in Prior Years

FY 2009:	Not Met	Verify under real world conditions (through demonstrations and modeling) hydrogen infrastructure technologies with a cost of \$3.00 per gge. (Based on high volume production.)
FY 2008:	Met	Fuel Cell vehicle(s) demonstrate the ability to achieve 250 mile range without impacting cargo or passenger compartments, leading to greater adoption of fuel cells. Technology Validation prior to FY 2008 showed 103-190 mile range under real world operating conditions.
FY 2007:	Met	Validate achievement of a refueling time of 5 minutes or less for 5 kg of hydrogen at 5,000 psi through the use of advanced sensor, control, and interface technologies.

Office: Energy Efficiency and Renewable Energy

Program: Hydrogen

Website: <http://www.energy.gov/energysources/hydrogen.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Hydrogen - Operational Efficiency Measure**

Maintain administration costs at less than 12 percent of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of Measure may be folded into a larger, over-arching OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009:	Met	Maintain administration costs at less than 12 percent of total program costs
FY 2008:	Met	Maintain administrative costs as a percent of total program costs less than 12 percent.
FY 2007:	Met	Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%.

Office: Energy Efficiency and Renewable Energy

Program: Hydrogen

Website: <http://www.energy.gov/energysources/hydrogen.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Hydrogen/Fuel Cells - Systems Analysis**

Identify technology gaps and metrics for 2 different fuel cell systems (solid-oxide and methanol) for at least 2 applications

2010 Results

Commentary: Met A workshop was held to identify key gaps and cost reduction opportunities for Phosphoric Acid (PAFC) and Molten Carbonate (MCFC) fuel cells. High platinum loading and anion adsorption on the catalyst were identified as technology gaps for PAFC. Proposed metrics included a 50% reduction in platinum and reducing the impact of anion adsorption to a loss of 50 mV or less. Power density and service life were identified as gaps for MCFC. Proposed metrics include extending the service life from 5 to 10 years and increasing power density by 20%.

Future Plans / The performance measure will be updated to reflect the program's progress and continued in FY 2011.

Explanation of Continued progress in identifying technology gaps and metrics for fuel cell systems supports program

Shortfalls: progress towards improving vehicle fuel economy.

Supporting
Documentation: NREL report

Office: Energy Efficiency and Renewable Energy

Program: Hydrogen

Website: <http://www.energy.gov/energysources/hydrogen.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Hydrogen/Fuel Cells - Fuel Cell Systems R&D**

Improve the catalyst utilization of fuel cell systems to 3.0 kW per gram of platinum group metal at operating pressures less than 2.5 bar.

2010 Results

Commentary: Met Achieved >5 kW/g platinum group metal in OEM 400 cm² short stacks (>20 cells) and lifetimes of 2,000 hours when tested with an automotive test cycle.

Future Plans /

Explanation of Measure was met as planned and on-time.

Shortfalls:

Supporting Documentation: NREL report

Office: Energy Efficiency and Renewable Energy

Program: Solar Energy

Website: <http://www.energy.gov/energysources/solar.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Concentrated Solar Power (CSP)**

Modeled levelized cost of \$0.10-\$0.12/kWh for utility-scale CSP applications

2010 Results

Commentary: Met The modeled cost is \$0.13/kWh even though R&D has improved trough efficiency from 15% to 15.5% during FY2010. This is a result of increased commodity costs - particularly nitrate salt, steel, and glass.

Future Plans /

Explanation of Measure was met as planned and on-time.

Shortfalls:

Supporting Documentation: NREL will provide a full technical report and a summary statement outlining the results and findings.

Associated Performance in Prior Years

FY 2009:	Not Met	Modeled levelized cost of power from large-scale concentrating solar power (CSP) plants in the range of \$0.11-\$0.13/kWh from completed R&D
FY 2008:	Met	Modeled levelized cost of power from large-scale concentrating solar power (CSP) plants in the range of \$0.11-\$0.13/kWh from completed R&D.
FY 2007:	Met	Develop CSP trough collector and receiver technologies that enable a system conversion efficiency of 13.1%. The levelized cost of energy from such a system is expected to be in the range of \$0.11-\$0.13/kWh.

Office: Energy Efficiency and Renewable Energy

Program: Solar Energy

Website: <http://www.energy.gov/energysources/solar.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Photovoltaic (PV) Energy Systems - Crystalline Silicon**

Modeled levelized cost of \$0.15-\$0.18/kWh for residential PV applications

2010 Results

Commentary: Met The expert elicitation of current residential photovoltaic system costs, as published in "Modeling the U.S. Rooftop Photovoltaics Market", are approx. \$6/W, which is within the range of the of \$0.15-0.22/kWh. (www.nrel.gov/docs/fy10osti/47823.pdf)

Future Plans /

Explanation of Measure was completed on-time as planned.

Shortfalls:

Supporting Documentation: NREL will provide a full technical report and a summary statement outlining the results and findings.

Associated Performance in Prior Years

FY 2009:	Met	Complete R&D that will reduce the manufacturing, installation, and operation costs of commercial PV systems to produce energy at a modeled levelized cost of \$0.12-\$0.16 /kWh for commercial applications
FY 2008:	Met	Reduce producer manufacturing cost of silicon PV modules to \$1.70 per Watt, roughly equivalent to a modeled levelized cost of energy of \$0.14-\$0.23/kWh.
FY 2007:	Met	Verify, using standard laboratory measurements, a conversion efficiency of 14.5% of U.S.-made, commercial crystalline silicon PV modules. Production cost of such modules is expected to be \$1.80 per Watt.

Office: Energy Efficiency and Renewable Energy

Program: Solar Energy

Website: <http://www.energy.gov/energysources/solar.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Photovoltaic Energy Systems - Thin-Film**

Modeled levelized cost of \$0.10-\$0.14/kWh for commercial PV applications

2010 Results

Commentary: Met The expert elicitation of current residential photovoltaic system costs, as published in "Modeling the U.S. Rooftop Photovoltaics Market", are approx. \$4.5/W, which is within the range of the of \$0.11-0.22/kWh. (www.nrel.gov/docs/fy10osti/47823.pdf)

Future Plans /

Explanation of Measure was met on-time as planned.

Shortfalls:

Supporting Documentation: NREL will provide a full technical report and a summary statement outlining the results and findings.

Associated Performance in Prior Years

FY 2009:	Met	Complete R&D that will reduce the manufacturing, installation, and operation costs of residential PV systems to produce energy at a modeled levelized cost of \$0.17 - \$0.20/kWh for residential applications
FY 2008:	Met	Complete R&D that will reduce the direct manufacturing cost of thin film PV modules to \$1.60 per Watt, roughly equivalent to a modeled levelized cost of energy of \$0.14-\$0.23/kWh.
FY 2007:	Met	Develop thin-film PV modules with an 11.8% conversion efficiency that are capable of commercial production in the U.S.

Office: Energy Efficiency and Renewable Energy

Program: Solar Energy

Website: <http://www.energy.gov/energysources/solar.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Solar - Market Integration**

Complete technical assistance to 20 Solar America Cities to address issues such as financing, permitting, city planning, and outreach.

2010 Results

Commentary: Not Met Delays are being resolved, and the program is on track to meet the target within 3 months.

Future Plans /

Explanation of Delays are being resolved and the target is on track to be met within 3 months.

Shortfalls:

Supporting
Documentation: NREL report

Office: Energy Efficiency and Renewable Energy

Program: Solar Energy

Website: <http://www.energy.gov/energysources/solar.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Solar - Operational Efficiency Measure**

Maintain administration costs at less than 12% of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of Measure may be folded into a larger, over-arching OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009:	Met	Maintain administration costs at less than 12% of total program costs
FY 2008:	Met	Maintain administrative costs as a percent of total program costs less than 12%.
FY 2007:	Met	Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%.

Office: Energy Efficiency and Renewable Energy

Program: Solar Energy

Website: <http://www.energy.gov/energysources/solar.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Solar - Systems Integration**

Identify at least 5 SEGIS awards to move into prototype development in Phase II

2010 Results

Commentary: Met Five awardees came out of Phase II. Only 4 of these were qualified to enter into Phase III.

Future Plans /

Explanation of Measure was met on-time as planned.

Shortfalls:

Supporting Documentation: NREL letter

Office: Energy Efficiency and Renewable Energy

Program: Water Power

Website: <http://www.energy.gov/energysources/hydropower.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Water - Generation and Flow Data**

Complete analysis of generation and water flow data at 20% of the hydropower projects in the U.S to establish baseline data

2010 Results

Commentary: Met The final draft of the National Hydropower Asset Assessment Project, which presents a new assessment of hydropower assets and a new integrated database constructed from available federal and non-federal sources to describe: (1) the current state of the hydropower infrastructure in the U.S. (age, type, ownership, etc.), (2) generation patterns from these assets, and (3) hydrologic conditions. The database was designed to integrate monthly hydrology and civil works information by river basin, for a period of at least the last 10 years. The database will be used to study patterns in generation variability, their causes, plus opportunities for upgrading hydropower facilities to stabilize and increase generation.

Future Plans / The performance measure will be updated to reflect the program's progress and continued in FY 2011.
Explanation of Continued progress to improve analysis of generation and water flow data supports program progress
Shortfalls: towards establishing baseline measureable data.

Supporting
Documentation: NHAAP report

Office: Energy Efficiency and Renewable Energy

Program: Water Power

Website: <http://www.energy.gov/energysources/hydropower.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Water Power**

Identify priority research areas to reduce project development costs by completing environmental impact assessment of marine and hydrokinetic energy development.

2010 Results

Commentary: Met Identified priority research areas to reduce project development costs and completed environmental impact assessment of marine and hydrokinetic energy development.

Future Plans /

Explanation of The performance measure will be updated to reflect the program's progress and continued in FY 2011.

Shortfalls:

Supporting

Documentation: EISA report

Associated Performance in Prior Years

FY 2009: Met Complete draft of MYPP

Office: Energy Efficiency and Renewable Energy

Program: Water Power

Website: <http://www.energy.gov/energysources/hydropower.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Water Power - Operational Efficiency Measure**

Maintain administration costs at less than 12% of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of The performance measure will be updated to reflect the program's progress and continued in FY 2011.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009: Met Maintain administration costs at less than 12 percent of total program costs

Office: Energy Efficiency and Renewable Energy

Program: Wind Energy

Website: <http://www.energy.gov/energysources/wind.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Wind - Distributed Wind Technology (DWT)**

800 new units of distributed wind turbines deployed in market.

2010 Results

Commentary: Met A total of 4,520 distributed wind turbines (1kW up to 1 MW rated power) were deployed in 2010 according to the report, "AWEA Small Wind Turbine Global Market Study 2009." This exceeds the 2009 goal by 930 units - 130 units beyond the 2010 incremental deployment goal of 800 units.

Future Plans /

Explanation of Measure was met on-time as planned.

Shortfalls:

Supporting Documentation: NREL will provide a full technical report and a summary statement outlining the results and findings.

Associated Performance in Prior Years

FY 2009:	Met	600 new units of distributed wind turbines deployed in market
FY 2008:	Met	500 new units of distributed wind turbines deployed in market.
FY 2007:	Met	COE of 10-15 cents /kWh in Class 3 winds.

Office: Energy Efficiency and Renewable Energy

Program: Wind Energy

Website: <http://www.energy.gov/energysources/wind.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Wind - Low Wind Speed Technology (LWST)**

3.8 cents per kWh modeled cost of wind power in land-based Class 4 wind speed areas (i.e., 13 mph annual average wind speed at 33 feet above ground).

9.1 cents per kWh modeled cost of wind power in Class 6 wind speed areas (i.e., 15 mph annual average wind speed at 33 feet above ground) for shallow offshore systems.

2010 Results

Commentary: Not Met This was a 5-year target that was changed in the fall of 2009. The supporting information from related activities is not of high enough quality to provide a full modeling run during FY 2010.

Future Plans / Explanation of Shortfalls: The Wind Energy program changed this EOY performance measure in the third quarter of 2009 to "NREL will document how their R&D accomplishments lead to COE reductions. NREL will also assist DOE in the development of new COE targets, and new methodologies for the measurement of progress towards achieving these targets." NREL has completed several activities in 2010 leading to COE reductions including wind resource studies, integration studies, gearbox reliability research, controls, aerodynamics, and design of advanced offshore floating platforms. WHTP is currently working on new Land Based and Offshore COE targets. Preliminary COE targets are included in the FY11 Budget Request.

Supporting Documentation: NREL will provide a full technical report and a summary statement outlining the results and findings.

Associated Performance in Prior Years

FY 2009: Not Met 3.9 cents per kWh modeled cost of wind power in land-based Class 4 wind speed areas (i.e., 13 mph annual average wind speed at 33 feet above ground).
9.15 cents per kWh modeled cost of wind power in Class 6 wind speed areas (i.e., 15 mph annual average wind speed at 33 feet above ground) for shallow offshore systems.

FY 2008: Not Met 4.0 cents per kWh modeled cost of wind power in land-based Class 4 wind speed areas (i.e., 13 mph annual average wind speed at 33 feet above ground); and 9.2 cents per kWh modeled cost of wind power in Class 6 wind speed areas (i.e., 15 mph annual average wind speed at 33 feet above ground) for shallow offshore systems.

FY 2007: Met COE of 4.1 cents/kWh in onshore Class 4 winds; 9.25 cents/kWh for shallow water offshore systems in Class 6 winds; and 11.93 cents/kWh for transitional offshore systems in Class 6 winds.

Office: Energy Efficiency and Renewable Energy

Program: Wind Energy

Website: <http://www.energy.gov/energysources/wind.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Wind - Operational Efficiency Measure**

Maintain administration costs at less than 12% of total program costs

2010 Results

Commentary: Met Overall performance is 6.3%; annual target is to be less than 12%.

Future Plans /

Explanation of Measure may be folded into a larger, over-arching OEM.

Shortfalls:

Supporting

Documentation: DOE financial accounting system (STARS)

Associated Performance in Prior Years

FY 2009:	Met	Maintain administration costs at less than 12% of total program costs.
FY 2008:	Met	Maintain administrative costs as a percent of total program costs less than 12%.
FY 2007:	Met	Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%.

Office: Energy Efficiency and Renewable Energy

Program: Wind Energy

Website: <http://www.energy.gov/energysources/wind.htm>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Wind - Technology Acceptance**

30 states with at least 100 megawatts (MW) of wind power capacity installed, and 7 states with over 1,000 MW wind power capacity installed

2010 Results

Commentary: Not Met The goal of 7 states with 1,000 MW installed wind capacity has been exceeded by 7 states for a total of 14 states. However, there are currently only 26 states (4 short of the 30 state goal) with at least 100 MW of installed wind capacity. The 1,000 MW state annual goals have been accelerated for FY 2011 and beyond. The 100 MW state goal is set to retire in FY 2012

Future Plans / Explanation of Shortfalls: Increase the overall number of states with 100 MW of installed wind capacity, while also increasing the wind power utilization in states to reach 1,000 MW of installed wind capacity.

Supporting Documentation: NREL will provide a full technical report and a summary statement outlining the results and findings.

Associated Performance in Prior Years

FY 2009: Not Met 27 states with at least 100 megawatts (MW) of wind power capacity installed, and 4 States with over 1,000 MW wind power capacity installed.

FY 2008: Met 22 states with at least 100 megawatts (MW) of wind power capacity installed.

FY 2007: Not Met 20 states with over 100 MW wind installed.

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **SECA Fuel Cells - Capitol Costs (System)**

\$400/kW (2000 dollars) capital cost of solid oxide fuel cell (SOFC) system. Projected system manufacturing cost is measured by validating technology improvements of the SECA fuel system to reduce the cost and environmental impact of new advanced coal fired plants (Integrated Gasification Combined Cycle plants).

2010 Results

Commentary: Met Fuel Cell Energy (FCE) tested a 16-cell stack at the Versa Power Systems (VPS) facilities in Calgary, Alberta, Canada. The stack achieved 467mW/cm² on July 17, 2010. The test results, in conjunction with FCE's Integrated Gasification Fuel Cell (IGFC) system and cost models, were used to establish the fuel cell power block system cost. The estimated fuel cell system (power block) cost is \$371/kW in year 2000 dollars. The SECA program supports the development of advanced fuel cell systems through fuel cell power block research, development, design and manufacturing. This work, validated through stack testing, will reduce the cost and environmental impact of new clean coal fired plants (Integrated Gasification Combined Cycle [IGCC] plants), enable 99% carbon dioxide (CO₂) capture, reduce water requirements substantially and increase energy security through increased use of domestic energy resources. Achievement of this annual target – fuel cell system (power block) costs of less than \$400/kW - reflects significant progress towards the SECA goal of low-cost, high-efficiency modular SOFC systems.

Future Plans / Focus on increasing the reliability of the SECA fuel cell technology to commercially acceptable levels, while maintaining the power block cost. Initiate design, development and testing of proof-of-concept modules that are building blocks for MW-class IGFC systems

Supporting Signed letter from the PI, Dr. Hossein Ghezel-Ayagh, of the FCE SECA Industry Team project (NT41837) Documentation: dated September 30, 2010. FCE Topical Report titled "Phase II Baseline SOFC Power Block Factory Cost Estimate," Revision 5, dated September 29, 2010 (contains non-public Protected Data in accordance with the Cooperative Agreement).

Associated Performance in Prior Years

FY 2009: Met Delphi, as a solid oxide fuel cell (SOFC) technology development subcontractor for the Solid State Energy Conversion Alliance (SECA) Industry Team led by UTC, designed, fabricated and tested a 5-cell short stack based upon the latest Gen 4 sealed cells. The tests demonstrated a power density of 496mW/cm². Based upon this performance, system and cost analysis predicts a high-volume manufacturing cost of \$163.22/kW. Furthermore, Versa Power Systems, as a SOFC technology development subcontractor for the SECA Industry Team led by FuelCell Energy, designed, fabricated and tested a 92-cell stack based upon the latest TSCII sealed cells. The tests demonstrated a power density of 393 mW/cm².

FY 2008: Met Capital cost of solid oxide fuel cell (SOFC) system reduced to at least \$600/kW projected manufacturing costs by validating technology improvements of the Solid State Energy Conversion Alliance (SECA) fuel system to reduce the cost and environmental impact of new clean coal fired plants.

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Advance Turbines**

Identify most promising material systems (base alloys, bond coats and thermal barrier coatings) for hot gas path, rotating and stationary airfoils and enhanced cooling effectiveness for reduce cooling air requirements. Reduce cooling air leakage to produce high temperature transition sections and turbine expanders. These improvements will contribute to meeting the IGCC efficiency goal of less than 10% increase in the LOCE with CCS metrics by increasing the turbine efficiency.

2010 Results

Commentary: Met A key requirement for developing gas turbines with higher efficiency and a lower cost-of-electricity is the optimization of material systems for turbine components subjected to the high temperature turbine gas path and the corresponding cooling effectiveness strategies to reduce the cooling air requirements. The two large industry team hydrogen turbine projects made excellent progress in the development of these critical components is demonstrated in large part by meeting all four of the FY10 GPRA quarterly milestones.

Future Plans / Explanation of Shortfalls: Demonstrate the ability to operate the 2010 syngas machine on hydrogen with marginal degradation in machine performance and maintain the same efficiency performance improvement realized in 2010 (2 to 3 percentage points). These achievements will result from improved aerodynamic and heat transfer tools and technologies developed through advanced rig testing and analysis. The projected performance improvements will be retained while demonstrating a reduction of manufacturing risk for new combustion and CMC components.

Supporting Documentation: Both industry team partners have submitted letters detailing their quarterly milestone accomplishments. They have also presented the milestone results at quarterly meetings and further details are included in the quarterly technical progress reports.

Associated Performance in Prior Years

FY 2009: Met Fabrication and testing of key components associated with optimizing turbine hot gas path and exhaust parameters.

FY 2008: Met Ensure the availability of a new generation of electric power generating "platforms" by initiating development of large frame hydrogen-fired turbine technologies (Phase II), including final combustion system down selection, and complete the test plan for the full head-end combustion system testing to achieve single digit NOx at progressively higher temperature and pressure. Complete preliminary rig tests of 3rd stage turbine blades as input to design for ability to withstand increased power output.

FY 2007: Met Complete prototype combustor module testing, demonstrate performance of achieving single digit NOx at lower flame temperatures (2100 degree F vs design inlet temperature of 2500 degrees F) and pressures, and identify the two most promising low NOx, high-hydrogen fueled, combustion concepts for further evaluation and testing in Phase II of the hydrogen turbine development projects.

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Advanced Research**

Emphasis is on pre-competitive engineering research that can foster transformational breakthroughs in materials, sensors and controls, and advanced computational processes.

2010 Results

Commentary: Met Extensive progress in the computational area was achieved to design and develop advanced energy systems. The capabilities of computational models was expanded through enhanced compatibility and incorporating additional models to improve simulation accuracy. Model development and validation also was successfully completed using the Multiphase Flow with Interphase Exchanges (MFIIX) code. The parallel version of the Discrete Element Method capability in MFIIX, used for modeling movement of discrete particles in the continuum flow has allow the model to simulated using multiple, computers and to run the models faster than with one processor/computer. The advantage to this enhanced capability is not only speed but the ability to simulate more complex systems as well as perform a greater number of simulations.

Successful computational research also included the development and incorporation of a model that represents energy related reactions into an open source user friendly interface. A Perfectly Stirred Reactor (PSR) Model was developed and embedded in a CAPE-OPEN compliant Unit Operation Dynamic Link Library (DLL). The capability to interface this model as well as other more complex models was also demonstrated using an AspenPLUS flowsheet in which a steady state simulation successfully showed how the model can be used to provide inputs and outputs to a complex energy plant flow sheet.

Computational Fluid Dynamics (CFD) Modeling was successfully used to determine the combustions conditions and gas compositions in an advanced ultra-supercritical, oxy-fired pulverized coal (PC) boiler. This data delineates the conditions under which the new materials will be exposed to in order to evaluate their performance and resistance to degradation under extreme conditions of ultra supercritical conditions. These materials are critical to enabling new more efficient combustion systems using coal and serve as the backbone of structural and functional materials for advanced power systems.

Advanced power systems also require new approaching to measurement and monitoring the status of the system as it operates under harsh conditions. Multiple designs of new of fiber-optic sensors were fabricated and the overall feasibility of using such devices in harsh conditions were verified in the laboratory under simulated conditions. Fiber optic sensors can include number of different types of glass material (silica) and ceramics that result in miniaturized devices (e.g. diameter of a human hair) for sensing temperature, pressure, strain, gas composition. Some fibers are fabricated using nanostructured materials inside and on the outside of the fibers to enable sensing. Additionally some fibers are coated with specialized nano material to enable detection of gases (e.g. Hydrogen). These devices show excellent promise under high temperature conditions and will continue to be developed and tested under harsh process conditions to assess the commercial viability of the devices. The Advanced Research Program supports a vast array of computational capability that is being developed and used to design, simulate and evaluate advanced energy plants

including systems and technologies that enable carbon capture and Carbon Dioxide Sequestration. Because this capability has been shown to reduce cost and shorten the timeline from bench scale to commercial deployment, simulations are being used to support FE goals of near zero emission plants and carbon capture. The design of new materials suitable for FutureGen type Oxy Combustion systems and other novel advanced combustion systems will enable these plants to operate in a reliable manner and achieve the environmental and carbon capture goals for advanced energy systems. Additionally, the use of new sensors, designed for use in harsh environments, will enable the energy plants to perform as designed including achieving higher efficiencies, near-zero emissions and reduction in carbon emissions.

Future Plans /

Explanation of The performance measure will be updated to reflect the program’s progress and continued in FY 2011.

Shortfalls:

Supporting Progress reports, MFIX Website and model data output from Aspen and CFD simulations

Documentation: www.mfix.netl.doe.gov

Associated Performance in Prior Years

FY 2009:	Met	In the S&C Area, projects were initiated to develop novel sensors for harsh environments including ceramic micro sensors and distributed and multiplexed fiber optic sensors for the measurement of temperature, strain and pressure under conditions common to Ultra Supercritical steam and gasification based plants. In CES, efforts to develop and demonstrate Reduced Order Model (ROM) algorithms were completed for fluidized bed systems thereby reducing the CPU processing time by two orders of magnitude. The capability to model and simulate unit processes and fully configured near-zero emission coal-based power plants will allow viable options to be identified, compared, and lead to a reduction in development costs associated with advanced power generation technologies. Additional developments include enhanced capabilities (cut cell techniques) in the multiphase computational fluid dynamics code (MFIX - Multiphase Flow with Interphase eXchanges) that resulted in enhanced simulation accuracy and simulation of complex gasifier designs. The Materials Program continued development in advanced alloys and coatings for new power systems. Computational and experimental developments were completed for candidate materials in the Ultra Supercritical, oxy-fired pulverized coal (PC) boilers systems.
FY 2008:	Met	Complete prototype demonstration of distributed fiber optic sensors capable of selective and accurate gas detection of hydrogen (H ₂) and carbon monoxide (CO). Demonstration of sensory technology will aim at functional sensors for high temperature (500°C), high pressure (200 PSI) in harsh (high temperature transient, corrosive and erosive) environments to be used in integrated temperature, pressure, and gas measurement applications by 2009, to enable and enhance the operation of gasification based near-zero emission power plants by providing measurement of key constituents.

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Carbon Sequestration - Net Cost**

15% net cost of CO₂ capture and sequestration as measured by percent of cost of electricity. Cost of electricity increase is for 90% CO₂ capture and sequestration when compared to a conventional (off-the-shelf) non-capture power plant. Performance is measured by validating technology improvements of an advanced power plant with carbon capture technology.

2010 Results

Commentary: Met Preliminary systems engineering studies have shown that when incorporated into the IGCC with 90% carbon capture and storage, technology advancements in the Advanced Power System and Sequestration Programs result in a cost of electricity increase of no greater than 15% relative to the reference non-capture IGCC. In addition, each of the quarterly milestones contributed to meeting the annual target by developing technologies that can be integrated into the power system to reduce the costs of electricity from capture. In FY10, nine new pre-combustion projects were selected that will address pre-combustion CO₂ capture technologies capable of validating technology improvements of an advanced power plant with CO₂ capture technology. These projects are focusing on high-temperature, high-pressure membranes; high-efficiency solvents; solid sorbents with commercially relevant separation capacity and regenerability; and advanced separation devices for separating CO₂ or hydrogen (H₂) from shifted syngas and novel approaches for pre-combustion removal and capture of the carbon content of fuels for storage. The construction of the Dispersed Bubble Reactor (DBR) system will allow evaluation of higher pressure regeneration at moderate temperatures, which can reduce CO₂ compression capital costs and corresponding energy requirements. In addition, higher loadings expected with the DBR system can reduce the amount of solvent required. Completion of the milestone to prepare a list of experimentally characterized ionic liquid candidates for development as high temperature solvents (NETL) contributes to meeting the annual target of a 15% net cost of CO₂ capture and separation as measured by percent of cost of electricity. This is achieved through improved understanding of a class of non-volatile solvents which are potentially applicable to CO₂ separation and identifying specific substances within that class which show promise in this application.

Future Plans / Explanation of Shortfalls: As the currently funded pre-combustion technologies are successfully developed at the laboratory scale, CO₂ capture options capable of achieving Sequestration program goals will then be scaled up toward commercialization.

Supporting Documentation: Preliminary engineering studies by Noblis have shown that when incorporated into the IGCC system with 90% carbon capture and storage, technology advancements in the Advanced Power Systems and Sequestration programs result in a cost of electricity increase of 15% relative to the reference non-capture IGCC

Associated Performance in Prior Years

FY 2009: Met 17% net cost of CO₂ capture and sequestration as measured by percent of cost of electricity. Cost of electricity increase is for 90% CO₂ capture and sequestration when compared to a conventional (off-the-shelf) non-capture power plant. Performance is measured by validating technology improvements of an advanced

power plant with carbon capture technology.

FY 2008: Met Net cost of carbon dioxide (CO₂) capture and sequestration as measured by percent of cost of electricity to 90% capture at a cost of electricity increase of 19% when compared to a conventional (off-the-shelf) non-capture power plant by validating technology improvements of an advanced power plant with carbon capture technology to ensure availability of affordable, environmentally responsible domestic energy.

FY 2007: Met Validate technology improvements of an advanced power plant with carbon capture technology that can be extrapolated and translates to 90% carbon capture at a cost of electricity increase of 20% when compared to a conventional (off-the-shelf) non-capture power plant.

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Carbon Sequestration - Phase III**

Inject 1 million metric tonnes of CO₂ cumulatively at large-volume field test sites since 2009 to demonstrate the formations capacity to sequester carbon by developing technologies that can safely and economically store carbon dioxide from coal-based energy systems.

2010 Results

Commentary: Met The Southeast Regional Carbon Sequestration Partnership (SECARB) is conducting a two-step, large-volume injection test in the lower Tuscaloosa Formation and Paluxy Formation. During the FY 2010 months from October 1, 2009 thru July 31, 2010, SECARB injected 1,368,098 metric tonnes (1,504,908 tons) of CO₂. This amount of CO₂ injected exceeds the Annual Target amount by 368,098 metric tonnes (504,908 tons).
The DOE-sponsored Weyburn-Midale Monitoring and Storage Project is the second large-volume carbon storage project to inject more than 1 million metric tonnes of CO₂. The current injection rate of over 2 million metric tonnes of CO₂ per year is being accomplished at the Weyburn Oil Field, Saskatchewan, Canada. These field tests will demonstrate the capacity of the formations to sequester carbon by developing technologies and best practices that can safely and economically store CO₂ from coal-based energy systems.

Future Plans / The Regional Carbon Sequestration Partnerships Phase III effort plans to develop eight additional injection projects throughout the United States. Each of these projects will inject at least 1 million metric tonnes of CO₂ at each site. These injection operations will occur between 2011 and 2017. The DOE is looking to develop large scale field tests that validate storage in a variety of different geologic storage formations. The program will continue to take lessons learned to develop best practice manuals for CCS which can be used by future project developers

Explanation of Shortfalls: In the Monthly Technical Progress Report, issued in August 2010, SECARB provided incremental and cumulative injection data for injection operations at the large-volume field test site. (A paper which documents the amount of CO₂ injected at Weyburn-Midale was presented September 2010 at the GHGT-10 Conference in Amsterdam, Holland by Steve Whittaker of the Petroleum Technology Research Centre, Regina, Saskatchewan, Canada. The paper is titled "A Decade of CO₂ Injection into Depleting Oil Fields: Monitoring and Research Activities of the IEA GHG Weyburn-Midale CO₂ Monitoring and Storage Project."

Associated Performance in Prior Years

FY 2009: Met Inject 0.5 million metric tonnes CO₂ total at 1 or more large-volume field test sites to demonstrate the formations capacity to sequester carbon by developing technologies that can safely and economically store carbon dioxide from coal-based energy systems.

FY 2008: Met Award initial round of Phase III (development) of the Regional Carbon Sequestration Partnerships, conduct site selection, and complete National Environmental Policy Act (NEPA) activities for at least four large volume field tests through the use of industry partnerships bringing the best emerging new coal-based power generating technologies to deployment.

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Clean Coal Power Initiative (CCPI) Technology Demonstrations - Round 3**

Begin construction of one major CCPI Round 1-2 project(s) that will promote and bring the best emerging new coal-based power generating technologies to demonstration through the use of industry partnerships. Make awards for CCPI-Round 3.

2010 Results

Commentary: Met NETL approved initiation of construction of the cooperative agreement with Southern Company, "Demonstration Of A Coal-Based Transport Gasifier" DE-FC26-06NT42391. The NEPA process was completed by issuing a Record of Decision, and the cooperative agreement was modified to approve construction. Construction has been initiated for the Southern Company project, site work, including grubbing and clearing is underway. In addition, awards were made for project selected under CCPI-Round 3. The Project Definition Phases were initiated for four projects selected under the Clean Coal Power Initiative Round III: American Electric Power Service Corporation, NRG Energy, Summit Texas Clean Energy LLC, and Hydrogen Energy California LLC. Initiating construction and awarding demonstration projects support FE goals through implementation of advanced technology demonstrations using public – private partnerships.

Future Plans / Explanation of Shortfalls: Continue construction of the IGCC system under the cooperative agreement with Southern Company, "Demonstration Of A Coal-Based Transport Gasifier" DE-FC26-06NT42391. Continue implementation of the project definition phases of the four CCPI-3 projects, completing at least one CCPI-3 front end engineering and design by the end of FY2011. The program also intends to complete all Round 1 projects in FY2011.

Supporting Documentation: Supporting documentation consists of the cooperative agreements for each of these projects, which are procurement sensitive documents that are kept in the official procurement file.

Associated Performance in Prior Years

FY 2009: Met Encourage the nation's energy industry to identify and cost share the best emerging new coal-based power generating technology by completing CCPI Round 3 solicitation, proposal evaluations and project selections to assemble the initial portfolio of advanced technology systems that capture and reuse or sequester carbon dioxide from coal-fired energy systems on a commercial scale.

FY 2008: Met Complete CCPI Round 3 solicitation, proposal evaluations and project selections to assemble the initial portfolio of advanced technology systems that sequester carbon dioxide to encourage the Nation's energy industry to identify and cost share the best emerging new coal-based power generating technology

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Fuels**

Complete testing to show the feasibility of modules capable of producing hydrogen from coal at \$0.9 per kilogram (\$30/barrel crude oil equivalent, without delivery, incentives or tax credits); when integrated with advanced coal power systems.

2010 Results

Commentary: Met During FY 2010, research was conducted to develop several technologies to reduce the cost of hydrogen production from advanced gasifier syngas streams. Performers included RTI International, The University of Texas at Dallas (UTD) and Worcester Polytechnic Institute (WPI). RTI completed an evaluation of a series of Water Gas Shift and Fischer-Tropsch catalysts, using mixed gas feeds (hydrogen [H₂], carbon monoxide [CO], carbon dioxide [CO₂], water [H₂O]), that have the potential to increase the efficiency of the membrane separators. WPI produced a comprehensive engineering design of advanced H₂-CO₂ Pd-based composite membrane separators within a process intensification framework that reduces the number of unit operations; a substantial decrease in production costs that supports the annual target. Research at UTD was part of an alternate pathway to conduct comprehensive membrane tests and evaluations to prove the feasibility of using inexpensive, non-precious metal based membranes for economical hydrogen production.

The FY10 goal was met. This is supported by Case 3 in the 2001 Mitretek report: (http://www.netl.doe.gov/technologies/hydrogen_clean_fuels/refshelf/pubs/Mitretek%20Report.pdf); and Case 4 in the Noblis report: (<http://www.netl.doe.gov/energy-analyses/refshelf/PubDetails.aspx?Action=View&PubId=317>).

The 2001 report provided the guidelines to establish the cost target of \$0.90/kg. The hydrogen production cost based on the performance of the H₂ membrane obtained from this program was re-baselined and documented in the 2010 report. When the results of the 2010 report were adjusted to put them on the same basis as the 2001 Mitretek baseline i.e. financial and project assumptions and adjusted year dollars, then the result is a hydrogen production cost of \$1.08/kg (i.e. 1.40 – 0.9) when using the H₂ membrane performance data from this program.

Future Plans / Explanation of Shortfalls: Continue development and demonstration of advanced hydrogen separation membranes at increased production levels with actual gasifier product streams for commercial deployment by approximately 2020.

Supporting Documentation: Detailed results of the technology development and membrane tests can be found in the technical reports provided to NETL technology managers.

Associated Performance in Prior Years

FY 2009: Met Complete long term testing of bench scale WGS membrane reactor systems that demonstrate hydrogen production of 30% over the equilibrium limitation while maintaining 95% hydrogen purity to develop more affordable methods to extract commercial grade Hydrogen.

FY 2008:	Met	Develop more affordable methods to extract commercial grade Hydrogen (H ₂) by designing and building a bench scale prototype system that combines multiple gas separation process and meets or exceeds hydrogen separation target of 95% purity.
FY 2007:	Met	Develop industry standards for the design and operation of a scale-up reactor for simultaneous production of additional hydrogen and its separation in accordance with the standards and requirements in the RD&D plan.

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Gasification - Cost**

\$1600/kW capital cost of advanced, coal-based, gasification energy plants (in 2007 dollars).

Performance is measured by validating technology improvements in gasifier feed (oxidizer and/or fuel), gasifier, gas cleanup, air separation and turbine technology. The baseline COE is 9.4¢/kWh.

2010 Results

Commentary: Met Preliminary systems engineering studies coordinated by NETL have shown that when incorporated into the IGCC process flow sheet, technology advancements in the Advanced Power System Program result in 45% thermal efficiency at a capital cost of \$1,600/kWe.

Future Plans / Continue R&D to integrate gasification technology with CO₂ separation, capture and storage into a near-zero atmospheric emission configuration(s) that can ultimately provide electricity with less than a 10

Shortfalls: percent increase in the levelized cost of electricity by 2016. The baseline COE is 9.4¢/kWh.

Supporting Documentation: The preliminary results from the 2010 Coal Performance Status report (formerly PART) being prepared by Noblis and LTI.

Associated Performance in Prior Years

FY 2009: Met \$1760/kW capital cost of advanced, coal-based, gasification energy plants (using the updated capital cost metric reflecting 2007 dollars). Performance is measured by validating technology improvements in gasifier feed systems, gasifier, gas cleanup, air separation and turbine technology.

FY 2008: Met Capital cost of advanced, coal-based, gasification energy plants, in \$/kW, of \$1150/kW by validating technology improvements in gasifier feed (oxidizer and/or fuel), gasifier, gas cleanup and turbine technology to ensure availability of low cost domestic energy.

FY 2007: Met Validate technology improvements in gasifier feed (oxidizer and/or fuel), gasifier, gas cleanup and turbine technology that translate to a system with 42% efficiency at a capital cost of \$1200/kW and progress toward the 2010 goal of an advanced coal-based power system capable of achieving 45-50% efficiency at a capital cost of \$1000/kW or less.

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Gasification - Efficiency**

45% efficiency from advanced, coal-based, gasification energy plants. Efficiency is the percent of fuel energy converted to electricity. Progress is measured by validating technology improvements in gasifier feed (oxidizer and/or fuel), gasifier, gas cleanup, air separation, and turbine technology. The baseline COE is 9.4¢/kWh.

2010 Results

Commentary: Met Preliminary systems engineering studies coordinated by NETL have shown that when incorporated into the IGCC process flow sheet, technology advancements in the Advanced Power System Program result in 45% thermal efficiency at a capital cost of \$1,600/kWe.

Future Plans / Continue R&D to integrate gasification technology with CO₂ separation, capture and storage into a near-zero atmospheric emission configuration(s) that can ultimately provide electricity with less than a 10 percent increase in the levelized cost of electricity by 2016. The baseline COE is 9.4¢/kWh.

Supporting Explanation of Shortfalls: The preliminary results from the 2010 Coal Performance Status report (formerly PART) being prepared by Noblis and LTI. The final report will be issued in the near future.

Associated Performance in Prior Years

FY 2009: Met 44% efficiency from advanced, coal-based, gasification energy plants. Efficiency is the percent of fuel energy converted to electricity. Progress is measured by validating technology improvements in gasifier feed systems, gasifier, gas cleanup, air separation, and turbine technology.

FY 2008: Met Efficiency from advanced, coal-based, gasification energy plants (efficiency is the percent of fuel energy converted to electricity) capable of achieving 43% efficiency by validating technology improvements in gasifier feed (oxidizer and/or fuel), gasifier, gas cleanup and turbine technology to ensure availability of affordable, environmentally responsible domestic energy.

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Innovations for Existing Plants**

Complete bench-scale (1 scfm to 1000 scfm) development of advanced post-combustion and oxy-combustion CO₂ capture technologies are capable of 90% CO₂ capture at no more than a 55% increase in cost-of electricity when modeled at full scale through engineering and systems analyses, compared to a conventional non-capture coal fired power plant.

FE will validate the FY 2009 and FY 2010 Innovations for Existing Plants goals through an independent review of the probability of achieving the technology performance and the probability that the technology will achieve significant commercial deployment at the target technology performance. FE will also establish cost and performance baselines, and provisions for escalating the baseline cost.

2010 Results

Commentary: Met Oxy-combustion CO₂ capture testing was performed at pilot scales by Alstom and Reaction Engineering International (REI) for several coal types during 2010. During a couple of the Alstom test runs, Air Products evaluated the performance of their oxy-combustion CO₂ purification and compression system, which is vital to the eventual commercialization of the technology. A systems analysis developed by NETL OSAP indicates a pathway for the oxy-combustion technologies tested in these experiments along with other advances to surpass the 55% increase in cost of electricity. Additionally, GE Global Research conducted testing and a systems analysis on their advanced post-combustion solvent system that indicates the ability of the solvent system to achieve 90% CO₂ capture at approximately a 55% increase in the cost of electricity. Meeting the annual target provides progress towards the achievement of the FE goal of 90% CO₂ capture with less than a 30% increase in the cost of electricity. Improvements in the technologies tested, identified by these experiments, will be key to the future development of technologies that meet the overall FE goal.

Future Plans / Validate CO₂ capture technology improvements, via systems analyses, that can be extrapolated to 90%
Explanation of capture at a cost of electricity increase of 55% when compared to an equivalent subcritical pulverized coal
Shortfalls: power plant without CO₂ capture.

Supporting Alstom project NT0005290 quarterly reports for FY10 Q1, Q2 and Q3; REI project NT0005288 quarterly
Documentation: reports for FY10 Q1, Q2, Q3; Air Products quarterly reports for FY10 Q2 and 3; GE project NT0005310
quarterly report for FY10 Q2, and NETL OSAP oxy-combustion systems analysis presentation at the 2010
CO₂ Capture Technology Meeting, September 15, 2010, Pittsburgh, PA. Noblis is also working on a report
documenting PART target achievement that may be applicable to the GPRa annual target as well.

Associated Performance in Prior Years

FY 2009: Met Initiate laboratory through pilot-scale development of advanced carbon dioxide (CO₂) capture technologies and continue current research on CO₂ capture technologies applicable to the existing coal-fired power generation fleet that are capable of 90% carbon capture while achieving less than a 65% increase in cost of energy when compared to a conventional non-capture coal-fired power plant.

FY 2008: Met The performance measure for Innovations for Existing Plants in the FY 2009 Budget was: "Program activity will be redirected to the development of technology to reduce CO₂ emissions from pulverized coal (PC) power plants. Annual performance targets

are under development.” The measure subsequently developed is: “Ensure a low-cost option for reducing green house gases and allow continued use of the nation's most abundant fossil resource by validating technology improvements of an advanced power plant with 90% carbon capture that can be extrapolated and translates to an electricity cost increase of 40% when compared to a conventional non-capture power plant.”

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **SECA Fuel Cells - Capital Costs (Stack Modules)**

\$100/kW (2000 dollars) capital cost of solid oxide fuel cell (SOFC) stack modules. Projected stack manufacturing cost is measured by validating technology improvements to the SECA fuel cell stack that reduce the cost and environmental impact of new advanced coal fired plants (Integrated Gasification Combined Cycle [IGCC] plants).

2010 Results

Commentary: Met FCE tested a 16-cell stack at the VPS facilities in Calgary, Alberta, Canada. The stack achieved 467mW/cm² on July 17, 2010. The test results, in conjunction with FCE's Integrated Gasification Fuel Cell (IGFC) system and cost models, were used to establish the fuel cell power block system cost. The estimated fuel cell stack cost is \$85/kW in year 2000 dollars. The SECA program supports the development of advanced fuel cell systems through fuel cell power block research, development, design and manufacturing. This work, validated through stack testing, will reduce the cost and environmental impact of new clean coal fired plants (IGCC plants), enable 99% carbon dioxide (CO₂) capture, reduce water requirements substantially and increase energy security through increased use of domestic energy resources. Achievement of this annual target – fuel cell stack costs of less than \$100/kW - reflects significant progress towards the SECA goal of low-cost, high-efficiency modular SOFC systems.

Future Plans / Focus on increasing the reliability of the SECA fuel cell technology to commercially acceptable levels, while maintaining the power block cost. Initiate design, development and testing of proof-of-concept modules that are building blocks for MW-class IGFC systems.

Explanation of Shortfalls: while maintaining the power block cost. Initiate design, development and testing of proof-of-concept modules that are building blocks for MW-class IGFC systems.

Supporting Documentation: Signed letter from the PI, Dr. Hossein Ghezeli-Ayagh, of the FCE SECA Industry Team project (NT41837) dated September 30, 2010. FCE Topical Report titled "Phase II Baseline SOFC Power Block Factory Cost Estimate", Revision 5, dated September 29, 2010 (contains non-public Protected Data in accordance with the Cooperative Agreement). Completion of this milestone will also be documented in the Q4FY10 Progress Report.

Associated Performance in Prior Years

FY 2009: Met \$165/kW capital cost of solid oxide fuel cell (SOFC) stack modules. Projected stack manufacturing cost is measured by validating technology improvements to the SECA fuel cell stack to reduce the cost and environmental impact of new clean coal fired plants (Integrated Gasification Combined Cycle plants).

FY 2008: Met Capital cost of solid oxide fuel cell (SOFC) stack modules reduced to at least \$225/kW of projected manufacturing costs by validating technology improvements to the SECA fuel cell stack to reduce the cost and environmental impact of new clean coal fired plants (Integrated Gasification Combined Cycle plants).

FY 2007: Met Validate technology improvements to the SECA fuel cell stack that reduce projected stack manufacturing costs to at least \$250/kW.

Office: Fossil Energy

Program: Zero Emissions Coal-Based Electricity and Hydrogen Production

Website: <http://fossil.energy.gov>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **SECA Fuel Cells - Power Density**

300 mW/cm² Economic Power Density of solid oxide fuel cell (SOFC) with specific size and fuel type, SOFC on syngas fuel in full system test to reduce the cost and environmental impact of new advanced coal fired plants (Integrated Gasification Combined Cycle plants).

2010 Results

Commentary: Met FCE tested a 16-cell stack at the VPS facilities in Calgary, Alberta, Canada. The stack achieved 467mW/cm² on July 17, 2010, exceeding the 300mW/cm² annual target. The SECA program supports the development of advanced fuel cell systems through fuel cell power block research, development, design and manufacturing. This work, validated through stack testing, will reduce the cost and environmental impact of new clean coal fired plants, IGCC), enable 99% carbon dioxide (CO₂) capture, reduce water requirements substantially and increase energy security through increased use of domestic energy resources. Achievement of this annual target – fuel cell stack power density in excess of 300mW/cm² - reflects significant progress towards the SECA goal of low-cost, high-efficiency modular SOFC systems.

Future Plans / Focus on increasing the reliability of the SECA fuel cell technology to commercially acceptable levels, while maintaining the power block cost. Initiate design, development and testing of proof-of-concept modules that are building blocks for MW-class IGFC systems.

Supporting Documentation: Signed letter from the PI, Dr. Hossein Ghezeli-Ayagh, of the FCE SECA Industry Team project (NT41837) dated September 30, 2010. FCE Topical Report titled “Phase II Baseline SOFC Power Block Factory Cost Estimate”, Revision 5, dated September 29, 2010 (contains non-public Protected Data in accordance with the Cooperative Agreement). Completion of this milestone will also be documented in the Q4FY10 Progress Report.

Associated Performance in Prior Years

FY 2009: Met 300 mW/cm² Economic Power Density of solid oxide fuel cell (SOFC) with specific size and fuel type, SOFC on syngas fuel in short stack test system to reduce the cost and environmental impact of new clean coal fired plants (Integrated Gasification Combined Cycle plants).

FY 2008: Met Maintaining Economic Power Density of solid oxide fuel cell (SOFC) with increased size by validating technology improvements to at least 250 mW/cm² in cost reduction full system test to reduce the cost and environmental impact of new clean coal fired plants (Integrated Gasification Combined Cycle plants).

Office: Nuclear Energy

Program: National Nuclear Infrastructure

Website: <http://www.nuclear.energy.gov/space/neSpace2a.html>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Facility Operability Index - RAD (Space and Defense)**

To ensure unique nuclear facilities are available to support critical Departmental missions, maintain a facility operability index of 0.9 for key Radiological Facilities Management program facilities.

2010 Results

Commentary: Met For FY 2010, the Space and Defense program achieved an overall Facility Operability Index of greater than 0.9. The program has demonstrated the ability to produce and fuel the General Purpose Heat Source Module using all of the facilities it maintains. This is a critical function in maintaining the national capability to produce long life power supplies for space and national security missions.

Future Plans / Explanation of Shortfalls: This measure will continue to be tracked in FY 2011. Available facilities are crucial for reestablishing capabilities and expertise for the program.

Supporting Documentation: Periodic Performance Reports; Program Manager Performance Certification Memorandum

Office: Nuclear Energy

Program: New Nuclear Generation Technologies

Website: <http://www.nuclear.energy.gov/fuelcycle/neFuelCycle.html>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Fuel Cycle Research and Development**

Demonstrate progress toward the long-term mission to develop options to the current commercial fuel cycle management strategy by establishing long-term strategic plans for the program, identifying gaps in knowledge and uncertainties to resolve, and beginning the path to achieve the program's grand challenge goals.

2010 Results

Commentary: Met In FY 2010, the program made progress in developing long-term strategic plans for the program, identifying gaps in knowledge, and beginning the path to achieve grand challenge goals associated with the nuclear fuel cycle. The program's draft Summary of Accomplishments for FY 2010 report discusses the many research accomplishments in the development of fuel cycle technologies in FY 2010. The program revised their strategic Campaign Implementation Plans to identify the progress required to achieve the long-term mission of the program.

Future Plans / Explanation of Shortfalls: In FY 2011, the program will continue to focus on developing nuclear fuel cycle technologies and reducing the long-term radiological impacts of nuclear fuel wastes.

Supporting Documentation: Monthly program reports and documentation validating specific milestones; Program Manager Performance Certification Memorandum.

Associated Performance in Prior Years

FY 2009: Met Support the development of advanced technologies to close the fuel cycle by performing specific used fuel separations, transmutation fuels and fast reactor research and development activities in support of the Advanced Fuel Cycle Initiative.

FY 2008: Met Create a technology development document on recycling technology options, including their readiness and risks, the state of technology development achieved to date, future research and development, and economic evaluations needed to achieve the GNEP vision.

FY 2007: Met Complete research and development activities, focused on advanced fuel separations technology development and demonstration, to support the Secretary of Energy's determination of the need for a second geologic repository for spent nuclear fuel by FY 2008.

Office: Nuclear Energy

Program: New Nuclear Generation Technologies

Website: <http://www.nuclear.energy.gov/LWRSP/overview.html>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Light Water Reactor Sustainability**

Develop the scientific knowledge to extend existing nuclear plant operating life beyond the current 60 year limit and ensure their long term reliability, productivity, safety, and security by conducting research and development activities in partnership with national laboratories, industry, universities, and international partners.

2010 Results

Commentary: Met Substantial progress was made in establishing the base of scientific knowledge to extend the operating life of existing commercial nuclear power plants. In FY 2010, research and development activities conducted by national laboratories, industry, universities and international partners was expanded. Additional knowledge was gained and documented through various projects.

Future Plans /

Explanation of Progress will continue in FY 2011 with a larger set of R&D activities.

Shortfalls:

Supporting Monthly program reports and documentation validating specific milestones; Program Manager Performance Documentation: Certification Memorandum.

Office: Nuclear Energy

Program: New Nuclear Generation Technologies

Website: <http://www.nuclear.energy.gov/genIV/neGenIV1.html>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Next Generation Nuclear Plant Activities**

Determine a path forward for the design and construction of a next generation nuclear power plant by 2011 by partnering with private industry on the development of NGNP, performing environmental assessment activities, and continuing with the research, analysis, design, and licensing activities to establish the basis for determining whether the project should continue to Phase 2.

2010 Results

Commentary: Met All program milestones were met and deliverables were completed and submitted to the Department for review. The program is positioned to meet all Phase I Energy Policy Act of 2005 deliverables on schedule. The Nuclear Energy Advisory Committee (NEAC) review of NGNP and recommendation to the Secretary of Energy concerning whether NGNP is ready to proceed to Phase II will end in May 2011. The Secretary's decision is scheduled for August 2011.

Future Plans / Progress on NGNP research and development will continue in FY 2011 as the program awaits important Explanation of NGNP milestones. The NEAC review and recommendation is expected in May 2011 and the Secretary of Shortfalls: Energy's decision on proceeding to Phase II is expected in August 2011.

Supporting Monthly program reports and documentation validating specific milestones; Program Manager Performance Documentation: Certification Memorandum.

Associated Performance in Prior Years

FY 2009:	Met	Determine a path forward for the design and construction of an NGNP by 2011 by partnering with private industry on its development, performing environmental assessment activities, and continuing with the research, analysis, design, and licensing - activities needed to identify the preferred and alternative technologies for the reactor system, including examination of fuel and graphite materials.
FY 2008:	Met	Determine a path forward for the design and construction of a next generation nuclear power plant (NGNP) by 2011 by submitting a Next Generation Nuclear Plant (NGNP) licensing strategy to Congress and completing NGNP conceptual design technology selection studies.
FY 2007:	Met	Complete Generation IV Research and Development Activities.

Office: Nuclear Energy

Program: New Nuclear Generation Technologies

Website: <http://www.nuclear.energy.gov/np2010/overview.html>

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Nuclear Power (NP) 2010 Engineering and Licensing Activities**

Enable industry to make a decision to build a new nuclear power plant by 2010 by continuing to support the completion of construction and operating license and design certification efforts.

2010 Results

Commentary: Met Progress was made in FY 2010 on supporting the completion of construction and operating license (COL) and design certification efforts for new nuclear power plants. General Electric-Hitachi has made major progress in their design certification for the Economic Simplified Boiling Water Reactor, and the Nuclear Regulatory Commission has indicated they are on target for design certification rulemaking in mid-2011. Westinghouse also made good progress closing open items on their AP1000 reactor design certification application. Certification remains scheduled for September 2011. NuStart's reference AP1000 COL demonstration project is progressing well with no significant issues identified. The COL is expected to be issued before the end of 2011. This progress along with financial incentives has enabled the industry to build new nuclear power plants. Site preparation activities have begun at four sites. Four engineering, procurement, and construction contracts have been signed; several others are being negotiated. Large equipment orders have been made for a number of units and fabrication of these components and modules have begun.

Future Plans / After eight years, the NP 2010 program is concluding. In the upcoming months, program closeout reports will be completed. These reports will include significant input from program participants to document the program's history and its project performance including lessons learned from various perspectives as well as any suggestions for improvement in the execution of future programs.

Shortfalls: Explanation of Shortfalls: program's history and its project performance including lessons learned from various perspectives as well as any suggestions for improvement in the execution of future programs.

Supporting Documentation: Monthly program reports and documentation validating specific milestones; Program Manager Performance Certification Memorandum.

Associated Performance in Prior Years

FY 2009: Met Enable industry to make a decision to build a new nuclear power plant by 2010 by supporting New Nuclear Plant Licensing Demonstration Projects within the planned scope, schedule, and budget of the program, and by administering the Department's standby support program.

FY 2008: Met Enable industry to make a decision to build a new nuclear power plant by 2010 by supporting New Nuclear Plant Licensing Demonstration Projects and by administering the Department's standby support program.

FY 2007: Met Complete NP 2010 engineering and licensing activities, focusing on the resolution of reactor certification and design issues and the preparation and review of Construction and Operation License (COL) applications, to enable an industry decision in 2010 to build a new nuclear power plant.

Office: Nuclear Energy

Program: New Nuclear Generation Technologies

Website: www.nuclear.energy.gov

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Total NE Administrative Overhead Costs**

Maintain total administrative overhead costs in relation to total R&D program costs of less than 8 percent.

2010 Results

Commentary: Met For FY 2010, the Office of Nuclear Energy maintained a total administrative overhead cost efficiency of 6.20%, in relation to total R&D program costs. Achievement of the annual milestone shows that R&D program management costs are being effectively controlled.

Future Plans / Explanation of Shortfalls: Effectively controlling overhead costs is important to the Office of Nuclear Energy. This measure will continue to be tracked in FY 2011.

Supporting Documentation: Quarterly Measure Calculation; Program Manager Performance Certification Memorandum.

Associated Performance in Prior Years

FY 2009:	Met	Maintain total administrative overhead costs in relation to total R&D program costs of less than 8 percent.
FY 2008:	Met	Maintain total administrative overhead costs in relation to total program costs of less than eight percent.
FY 2007:	Met	Maintain total administrative overhead costs in relation to total program costs less than 8%.

Office: Energy Information Administration

Program: Energy Information Administration

Website: www.eia.gov

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Cost Savings Realized From Surveys**

Actual cost will be less than the baseline adjusted for inflation.

2010 Results

Commentary: Met EIA was able to operate one of its major surveys, the Annual Survey of Domestic Oil and Gas Reserves, in an efficient manner and was able to limit cost increases.

Future Plans /

Explanation of EIA will continue to operate in an efficient manner, and will monitor costs.

Shortfalls:

Supporting Internal tracking. Costs will be computed at the end of the fiscal year by the office(s) responsible for the Documentation: survey(s) and stored by the Quality Assurance Team within EIA.

Associated Performance in Prior Years

FY 2009: Met Cost savings realized from a subset of surveys, released on schedule, without any decrease in accuracy. Target: Actual cost will be less than the baseline adjusted for inflation.

FY 2008: Met Cost savings realized from a subset of surveys, released on schedule, without any decrease in accuracy.

Office: Energy Information Administration

Program: Energy Information Administration

Website: www.eia.gov

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Quality of EIA Information Products**

90 percent or more of customers are satisfied or very satisfied with the quality of EIA information

2010 Results

Commentary: Met EIA believes that the ratings and comments from our customers provide us with important insights into how our information is used, who the customers are, what they are looking for, and areas for future improvements. This feedback helps EIA to continue to provide high-quality and relevant information.

Future Plans /

Explanation of EIA has conducted customer surveys annually for over 10 years, and plans to continue to do so.

Shortfalls:

Supporting EIA conducted the Customer Survey with OMB approval and the results are proof that the survey was Documentation: conducted. The results are stored in the files of the Office of Communications and Outreach in EIA.

Associated Performance in Prior Years

FY 2009:	Met	Quality of EIA Information Products: 90 percent or more of customers are satisfied or very satisfied with the quality of EIA information.
FY 2008:	Met	Quality of EIA Information Products: 90 percent or more of customers are satisfied or very satisfied with the quality of EIA information.
FY 2007:	Met	Complete customer satisfaction survey.

Office: Energy Information Administration

Program: Energy Information Administration

Website: www.eia.gov

Secretarial

Priority Clean, Secure Energy

Supported:

Measure: **Timeliness of EIA Information Products**

Timeliness of EIA Information Products: 95% of selected EIA recurring products meet their release date targets (all product types).

2010 Results

Commentary: Met Many energy markets rely on EIA data being available on schedule and by meeting these needs, EIA helps to promote efficient energy markets and, to a lesser extent, sound policy making and public understanding. Together, these help to promote a diverse supply and delivery of reliable, affordable, and environmentally sound energy, both now and in the future.

Future Plans / Explanation of Shortfalls: EIA is committed to providing our customers with information on schedule, and plans to continue to monitor this measure.

Supporting Documentation: Internal tracking: EIA selected which products to track, established a schedule, and is tracking the actual and scheduled release dates. The Quality Assurance Team within EIA verifies data and calculations and stores the file.

Associated Performance in Prior Years

FY 2009: Met Timeliness of EIA Information Products: 95% of selected EIA recurring products meet their release date targets (all product types).

FY 2008: Met Timeliness of EIA Information Products: 95% of selected EIA recurring products meet their release date targets (all product types).

FY 2007: Met Products meeting release schedules.

Priority 4: National Security

Office: Environmental Management

Program: Environmental Management

Website: <http://www.em.doe.gov/Pages/BudgetPerformance.aspx>

Secretarial

Priority National Security

Supported:

Measure: **EM Efficiency Measure**

Remain within the limits of no greater than a 10% negative cost and schedule variance for the overall cost – weighted mean cost and schedule performance indices for the 80 operating projects and nine line item projects that are baselined and under configuration control.

2010 Results

Commentary: Met The EM program has met its annual efficiency goal since its inception in FY 2006. At the end of FY 2010 the actual CPI was 0.95 and the SPI was 0.95.

Future Plans /
Explanation of
Shortfalls: The Department will continue to strive towards the continued efficiency in its cleanup activities while maintaining the health and safety of its workers and the general public.

Supporting
Documentation: Earned value data reported monthly by sites into IPABS

Associated Performance in Prior Years

FY 2009:	Met	Remain within the limits of no greater than a 10% negative cost and schedule variance for the overall cost – weighted mean cost and schedule performance indices for the 80 operating projects and nine line item projects that are baselined and under configuration control.
FY 2008:	Met	Remain within the limits of no greater than a 10% negative cost and schedule variance for the overall cost - weighted mean cost and schedule performance indices for the 80 operating projects and nine line item projects that are baselined and under configuration control.
FY 2007:	Met	Remain within the limits of no greater than a 10% negative cost and schedule variance for the overall cost - weighted mean cost and schedule performance indices for the 80 operating projects and nine line item projects that are baselined and under configuration control.

Office: Environmental Management

Program: Environmental Management

Website: <http://www.em.doe.gov/Pages/BudgetPerformance.aspx>

Secretarial

Priority National Security

Supported:

Measure: **Enriched Uranium Containers Packaged for Disposition**

Package for disposition a cumulative total of 7,728 enriched uranium containers.

2010 Results

Commentary: Exceeded The Department has met its target.

Future Plans /
Explanation of
Shortfalls: Future work on this measure will include activities for the SRS from additional quantities of enriched uranium being added to the DOE/TVA blend-down agreement.

Supporting
Documentation: Shipping Manifests and Disposal Records.

Associated Performance in Prior Years

FY 2009:	Met	Package for disposition a cumulative total of 7,549 containers of enriched uranium.
FY 2008:	Met	Package for disposition a cumulative total of 7,192 enriched uranium containers. This is an estimated increase of 232 containers over the planned cumulative total of 6,960 enriched uranium containers packaged for disposition at the end of FY 2007.
FY 2007:	Met	Package for disposition a cumulative total of 6,972 enriched uranium containers. This is an estimated increase of 493 containers over the planned cumulative total of 6,479 enriched uranium containers packaged for disposition at the end of FY 2006.

Office: Environmental Management

Program: Environmental Management

Website: <http://www.em.doe.gov/Pages/BudgetPerformance.aspx>

Secretarial

Priority National Security

Supported:

Measure: **High-Level Waste Packaged for Disposition**

Package for disposition a cumulative total of 3,256 containers of high level waste.

2010 Results

Commentary: Exceeded The Department packaged for disposition a cumulative total of 3,260 containers of high level waste. This is 4 containers more than the target of 3,256 containers to be completed by the end FY 2010.

Future Plans / Future work on this measure will include ongoing activities at the Defense Waste Processing Facility at the Savannah River Site. The Office of River Protection is currently designing and constructing the Waste

Shortfalls: Treatment Plant to package Hanford high-level waste for final disposition.

Supporting Documentation: Quality Assurance Inspection Records for waste packaging

Associated Performance in Prior Years

FY 2009: Exceeded Package for disposition a cumulative total of 3,060 containers of high-level waste.

FY 2008: Met Package for disposition a cumulative total of 2,835 containers of high level waste. This is an estimated increase of 186 containers over the planned cumulative total of 2,649 containers of high level waste packaged for disposition at the end of FY 2007.

FY 2007: Met Package for disposition a cumulative total of 2,675 containers of high level waste. This is an estimated increase of 186 containers over the planned cumulative total of 2,489 containers of high level waste packaged for disposition at the end of FY 2006.

Office: Environmental Management

Program: Environmental Management

Website: <http://www.em.doe.gov/Pages/BudgetPerformance.aspx>

Secretarial

Priority National Security

Supported:

Measure: **Nuclear Facilities**

Complete a cumulative total of 99 nuclear facilities.

2010 Results

Commentary: Not Met The Department has completed work at a cumulative total of 94 nuclear facilities versus a target of 99 Nuclear Facilities. In the coming year, the EM program will re-evaluate its near-term targets and priorities. Future work on this measure will include activities dedicated to the decontamination and decommissioning of Nuclear facilities throughout the complex.

Future Plans /
Explanation of
Shortfalls: The Department will re-evaluate its targets and priorities for this metric throughout the EM complex for the coming year.

Supporting
Documentation: Decommissioning Project Final Report. State and federal regulator acceptance of completion report.

Associated Performance in Prior Years

FY 2009: Exceeded Complete a cumulative total of 91 nuclear facilities.

Office: Environmental Management

Program: Environmental Management

Website: <http://www.em.doe.gov/Pages/BudgetPerformance.aspx>

Secretarial

Priority National Security

Supported:

Measure: **Radioactive Facilities**

Complete a cumulative total of 369 radioactive facilities.

2010 Results

Commentary: Met The site has met its target, completing a cumulative total of 369 radioactive facilities.

Future Plans / Explanation of Shortfalls: Future work on this measure will include activities dedicated to the decontamination and decommissioning of radioactive facilities throughout the complex.

Supporting Documentation: Decommissioning Project Final Report. State and federal regulator acceptance of completion report.

Associated Performance in Prior Years

FY 2009: Exceeded Complete a cumulative total of 358 radioactive facilities.

FY 2008: Met Package for disposition a cumulative total of 326 radioactive facilities. This is an estimated increase of 15 radioactive facilities over the cumulative total of 311 radioactive facility completed at the end of FY 2007.

Office: Environmental Management

Program: Environmental Management

Website: <http://www.em.doe.gov/Pages/BudgetPerformance.aspx>

Secretarial

Priority National Security

Supported:

Measure: **Release Site Remediation Completions**

Complete remediation work at a cumulative total of 6,985 release sites.

2010 Results

Commentary: Not Met The Department completed FY 2010 with a cumulative total of 6,979 release sites; behind schedule for 6 remediation completions from its annual target of 6,985 release sites. This is due to delays at the Oak Ridge site for one remediation completion, which is expected in the coming year. The remaining shortfall is due to Idaho National Laboratory. This variance will be resolved as the result of negotiation of the regulatory agreement between INL and the state of Idaho. Future work on this measure will include activities aimed at completing remediation work throughout the complex.

Future Plans / Future work on this measure will include activities aimed at completing remediation work throughout the complex. Shortfalls to the FY 2010 were due to incomplete negotiations with regulators to determine site completion targets.

Supporting Documentation: State and federal regulator acceptance of the Remedial Action Report.

Associated Performance in Prior Years

FY 2009: Not Met Complete remediation work at a cumulative total of 6,831 release sites.

FY 2008: Not Met Complete remediation work at a cumulative total of 6,747 release sites. This is an estimated increase of 206 release sites over the planned cumulative total of 6,541 release site remediation completions at the end of FY 2007.

FY 2007: Met Complete remediation work at a cumulative total of 6,463 release sites. This is an estimated increase of 207 release sites over the planned cumulative total of 6,256 release site remediation completions at the end of FY 2006.

Office: Legacy Management

Program: Legacy Management

Website: <http://www.lm.doe.gov/>

Secretarial

Priority National Security

Supported:

Measure: **Maintain the protectiveness of installed environmental remedies**

Conduct required inspections at 85 sites

2010 Results

Commentary: Exceeded Inspections completed in accord with regulatory requirements and agreements with regulators

Future Plans /

Explanation of Continue inspections to satisfy legal and regulatory requirements

Shortfalls:

Supporting Documentation: Documentation of inspections is maintained in the Grand Junction Office

Associated Performance in Prior Years

FY 2009:	Exceeded	By 2015, demonstrate a reduction in risk at LM sites by employing sound project management, engineering and science-based solutions for long-term surveillance and maintenance. The Target is 82 sites where site inspections or other actions will be performed in accordance with individual plans for all sites to ensure continued protectiveness.
FY 2008:	Met	By 2015, demonstrate a reduction in risk at LM sites by employing sound project management, engineering and science-based solutions for long-term surveillance and maintenance.
FY 2007:	Met	Maintain the protectiveness of installed environmental remedies through inspections and other actions at 100% of sites within LM's responsibility (70 sites for FY 2007).

Office: Legacy Management

Program: Legacy Management

Website: <http://www.lm.doe.gov>

Secretarial

Priority National Security

Supported:

Measure: **Surveillance and Maintenance Cost**

Reduce the cost of performing long-term surveillance and monitoring activities while meeting all regulatory requirements to protect human health and the environment. Reduction is measured in percent from the life-cycle baseline. Goal is a 2% reduction below the baseline for that year.

2010 Results

Commentary: Exceeded The Office of Legacy Management achieved its planned 2% reduction from its baseline for FY 2010.

Future Plans /

Explanation of Continue to develop efficiencies with the target of a 10% reduction by FY 2015.

Shortfalls:

Supporting Documentation: Documentation of cost savings is maintained in the Grand Junction Office.

Associated Performance in Prior Years

FY 2009:	Exceeded	Reduce the cost of performing long-term surveillance and monitoring activities at sites managed by the Department of Energy's Office of Legacy Management (LM) while meeting all regulatory requirements to protect human health and the environment. Reduction is measured in percent from the life-cycle baseline. Goal is a 2% reduction below the baseline for FY 2007-2011, increasing to a 10% reduction by 2015
FY 2008:	Met	Reduce the cost of performing long-term surveillance and monitoring activities while meeting all regulatory requirements to protect human health and the environment. Reduction is measured in percent from the life-cycle baseline. Goal is a 2% reduction below the baseline for that year.
FY 2007:	Met	Reduce the cost of performing required long-term surveillance and maintenance activities by 2% while meeting all regulatory requirements. Base is previous year's costs less inflation rate, costs for additional sites, and one-time actions.

Office: Civilian Radioactive Waste Management

Program: Nuclear Waste Disposal

Website: <http://www.energy.gov/environment/ocrwm.htm>

Secretarial

Priority National Security

Supported:

Measure: **Efficiency Measure**

Overhead rate of 25 percent, per OMB directions.

2010 Results

Commentary: Met Total obligations were \$165.7M and total program direction was \$42.1M. Result was 25.4 percent overhead.

Future Plans /

Explanation of Program has been terminated.

Shortfalls:

Supporting STARS Data. Methodology: 40.5% of labor and benefits. An OMB and RW review of the organization
Documentation: chart had determined that 40.5% of all the Feds worked in overhead functions. Also comprises rental space, information management, telecommunications, and contract support that sustained overhead functions.

Associated Performance in Prior Years

FY 2009: Met Maintain ratio of total administrative overhead costs to total program costs of 25%. The higher percentage was suggested by OMB as a more realistic target. This was due to extreme budget shortfalls in direct activity Budget and Reporting areas.

FY 2008: Not Met Maintain total administrative overhead costs in relation to total program costs of less than 22%.

FY 2007: Met Maintain total administrative overhead costs in relation to total program costs of less than 22%.

Office: Civilian Radioactive Waste Management

Program: Nuclear Waste Disposal

Website: <http://www.energy.gov/environment/ocrwm.htm>

Secretarial

Priority National Security

Supported:

Measure: **Repository Facilities and Infrastructure**

The program will respond to Requests for Additional Information (RAI's) within the manner and timeframe prescribed by the Nuclear Regulatory Commission.

2010 Results

Commentary: Data Not Available RW has records of responding to 581 out of 596 RAIs as of January 2010. However, records of remaining RAI responses not available due to program closure.

Future Plans /

Explanation of Program has been terminated.

Shortfalls:

Supporting Documentation: RAI correspondence summary from RW Program Manager to RW Office of Business Management

Associated Performance in Prior Years

FY 2009: Met The M&O contract has been let and the required statement of work for the new M&O contract that included a section on construction mobilization establishing all of the critical elements necessary to support readying the site for repository construction was part of the contract. Impacts to future goals will be determined by final appropriation.

Office: National Nuclear Security Administration

Program: Office of the Administrator

Website: <http://hq.na.gov/>

Secretarial

Priority National Security

Supported:

Measure: **Federal Administrative Costs**

Maintain the Office of the Administrator Federal administrative costs at a percentage of total Weapons Activities and Defense Nuclear Nonproliferation program costs at less than 6% (Efficiency)

FY 2010 target: 5.9%

2010 Results

Commentary: Exceeded Exceeded the annual target of the NNSA Federal administrative costs as a percentage of total Weapons Activities and Defense Nuclear Nonproliferation program costs at 5.9 percent or less. 4Q results are 5.2 percent. This result is important because it demonstrates a prudent use of valuable resources.

Future Plans /

Explanation of The FY 2011 target remains at 5.9%.

Shortfalls:

Supporting

Documentation:

DOE accounting report; Excel spreadsheet with percent calculations

Associated Performance in Prior Years

FY 2009: Exceeded Maintain the Office of the Administrator Federal administrative costs as a percentage of total Weapons Activities and Defense Nuclear Nonproliferation program costs at less than 6% (Efficiency)

FY 2009 target: 5.9%

Office: National Nuclear Security Administration

Program: Office of the Administrator

Website: <http://hq.na.gov/>

Secretarial

Priority National Security

Supported:

Measure: **Project Management Career Development Program Certifications**

Cumulative percent of active NNSA projects, which are managed by a Federal Project Director, certified at the appropriate level through the Project Management Career Development Program (Long-term Output)

FY 2010 target: 80%

2010 Results

Commentary: Exceeded Exceeded the annual target of 80%. 87% of NNSA's active capital asset projects were managed by an appropriately certified Federal Project Director at the end of the fourth quarter. This result is important because all active NNSA projects managed by a Federal Project Director (FPD) certified to the appropriate Level is required by DOE Order 413.3A.

Future Plans /

Explanation of The FY 2011 target is 85%.

Shortfalls:

Supporting Documentation: NNSA Federal Project Directors List; PMCDP Metrics (4QFY10 Update).pdf

Associated Performance in Prior Years

FY 2009: Exceeded Cumulative percent of active NNSA projects managed by a Federal Project Director, certified at the appropriate level through the Project Management Career Development Program (Long-term Output)
FY 2009 target: 74%

Office: National Nuclear Security Administration

Program: Advanced Simulation and Computing Campaign

Website: http://nnsa.energy.gov/defense_programs/asc.htm

Secretarial

Priority National Security

Supported:

Measure: **ASC Impact on SFI Closure**

The cumulative percentage of Nuclear Weapon Significant Finding Investigations (SFIs) resolved through the use of modern (non-legacy) ASC codes, measured against all codes used for SFI resolution (Long-term Outcome)

FY 2010 target: 60%

2010 Results

Commentary: Met Achieved 100% of the annual target of the cumulative percentage for 60% (increase of 10%) of nuclear weapon SFIs resolved through the use of modern ASC codes. This result is important because it demonstrates the impact of the modern codes for improved assessment and certification of the nuclear weapons stockpile.

Future Plans /

Explanation of The FY 2011 target is 65%.

Shortfalls:

Supporting - Laboratory reports to HQ Program Manager

Documentation: - NA-10 Milestone Reporting Tool (MRT) status reports

Associated Performance in Prior Years

FY 2009:	Met	The cumulative percentage of nuclear weapon Significant Finding Investigations (SFIs) resolved through the use of modern (non-legacy) ASC codes, measured against all codes used for SFI resolution (Long-term Outcome) FY 2009 target: 50%
FY 2008:	Met	The cumulative percentage of Nuclear Weapon Significant Finding Investigations (SFIs) resolved through the use of modern (non-legacy) ASC codes, measured against all codes used for SFI resolution (Long-term Outcome) FY 2008 target: 37%
FY 2007:	Met	The cumulative percentage of Nuclear Weapon Significant Finding Investigations (SFIs) resolved through the use of modern (non-legacy) ASC codes, measured against all codes used for SFI resolution (Long-term Outcome) FY 2007 target: 25%

Office: National Nuclear Security Administration

Program: Advanced Simulation and Computing Campaign

Website: http://nnsa.energy.gov/defense_programs/asc.htm

Secretarial

Priority National Security

Supported:

Measure: **Adoption of ASC Modern Codes**

The cumulative percentage of simulation runs that utilize modern ASC-developed codes on ASC computing platforms, as measured against the total of legacy and ASC codes used for stockpile stewardship activities (Long-term Outcome)

FY 2010 target: 85%

2010 Results

Commentary: Met Achieved 100% of the annual target of the cumulative percentage of 85% (increase of 5%) of simulation runs that utilize modern ASC-developed codes. This result is important because it demonstrates the adoption of the modern codes for improved assessment and certification of the nuclear stockpile.

Future Plans /

Explanation of The target for FY 2011 is 90%.

Shortfalls:

Supporting - Periodic reports to HQ Program Manager from responsible site concerning specific deliverables

Documentation: - NA-10 Milestone Reporting Tool (MRT) status reports

Associated Performance in Prior Years

FY 2009:	Met	The cumulative percentage of simulation runs that utilize modern ASC-developed codes on ASC computing platforms as measured against the total of legacy and ASC codes used for stockpile stewardship activities (Long-term Outcome) FY 2009 target: 80%
FY 2008:	Met	The cumulative percentage of simulation runs that utilize modern ASC-developed codes on ASC computing platforms, as measured against the total of legacy and ASC codes used for stockpile stewardship activities (Long-term Outcome) FY 2008 target: 72%
FY 2007:	Met	The cumulative percentage of simulation runs that utilize modern ASC-developed codes on ASC computing platforms, as measured against the total of legacy and ASC codes used for stockpile activities (Long-term Outcome) FY 2007 target: 63%

Office: National Nuclear Security Administration

Program: Advanced Simulation and Computing Campaign

Website: http://nnsa.energy.gov/defense_programs/asc.htm

Secretarial

Priority National Security

Supported:

Measure: **Code Efficiency**

The cumulative percentage of simulation turnaround time reduced while using modern ASC codes (Efficiency)

FY 2010 target: 15%

2010 Results

Commentary: Exceeded Exceeded the annual target of a cumulative percentage reduction of 15% in simulation turnaround time by achieving a cumulative percentage reduction of 60%. This result is important because it demonstrates the impact of investment in computer science on the efficiency of the modern codes performance.

Future Plans /

Explanation of The goal for this measure was exceeded in FY 2010; therefore there is no target for FY 2011.

Shortfalls:

Supporting - Laboratory reports to HQ Program Manager

Documentation: - NA-10 Milestone Reporting Tool (MRT) status reports

Associated Performance in Prior Years

FY 2009:	Met	The cumulative percentage of simulation turnaround time reduced while using modern ASC codes (Efficiency) FY 2009 target: 26%
FY 2008:	Met	The cumulative percentage of simulation turnaround time reduced while using modern ASC codes (Efficiency) FY 2008 target: 13%
FY 2007:	Met	The cumulative percentage of simulation turnaround time reduced while using modern ASC codes (Efficiency) FY 2007 target: 7%

Office: National Nuclear Security Administration

Program: Advanced Simulation and Computing Campaign

Website: http://nnsa.energy.gov/defense_programs/asc.htm

Secretarial

Priority National Security

Supported:

Measure: **Reduced Reliance on Calibration**

The cumulative percentage reduction in the use of calibration “knobs” to successfully simulate the nuclear weapons performance (Long-term Outcome)

FY 2010 target: 30%

2010 Results

Commentary: Exceeded Exceeded the annual target with a cumulative 33% reduction in the use of calibration “knobs.” This result is important because it continues the maturation of modern codes provided to users to support stockpile certification.

Future Plans /

Explanation of The target for FY 2011 is 35%.

Shortfalls:

Supporting - Laboratory Reports to HQ Program Manager

Documentation: - NA-10 Milestone Reporting Tool (MRT) status reports

Associated Performance in Prior Years

FY 2009:	Met	The cumulative percentage reduction in the use of calibration “knobs” to successfully simulate nuclear weapons performance (Long-term Outcome) FY 2009 target: 25%
FY 2008:	Met	The cumulative percentage reduction in the use of calibration “knobs” to successfully simulate the nuclear weapons performance (Long-term Outcome) FY 2008 target: 16%
FY 2007:	Met	The cumulative percentage reduction in the use of calibration "knobs" to successfully simulate the nuclear weapons performance (Long-term Outcome) FY 2007 target: 8%

Office: National Nuclear Security Administration

Program: Cyber Security

Website: <http://www.nnsa.doe.gov/security.htm>

Secretarial

Priority National Security

Supported:

Measure: **Cyber Certification and Accreditation**

Annual number of NNSA information assets reviewed for certification and accreditation (Efficiency)

FY 2010 target: 40

2010 Results

Commentary: Met Fully achieved the annual target of accrediting NNSA unclassified and classified systems, applications and networks as outlined by NNSA policies. The accreditation packages have been drafted, and have been fully reviewed by all sites. The process has been developed to move to a risk management framework via the current compliance-based process. This result is important because it provided the OCIO with the evidence that NNSA systems, applications and networks have met the certification and accreditation outlined in policy.

Future Plans /

Explanation of The FY 2011 target is 45.

Shortfalls:

Supporting Documentation: Certification and Accreditation Plans

Associated Performance in Prior Years

FY 2009: Met Annual number of NNSA information assets reviewed for certification and accreditation. (Efficiency)
FY 2009 target: 35

FY 2008: Exceeded Annual number of NNSA information assets reviewed for certification and accreditation. (Efficiency)
FY 2008 target: 30

Office: National Nuclear Security Administration

Program: Cyber Security

Website: <http://www.nnsa.doe.gov/security.htm>

Secretarial

Priority National Security

Supported:

Measure: **Cyber Security Reviews**

Annual average percentage of Cyber Security reviews conducted by the Office of Health, Safety and Security (HSS) at NNSA sites that resulted in the rating of “effective” (based on last HSS review at each site over 2 Cyber Security topical areas) (Long-term Outcome)

FY 2010 target: 100%

2010 Results

Commentary: Data Not Available This measure was discontinued for the fiscal year by the NNSA Administrator.

Future Plans /

Explanation of The FY 2011 target is 100%.

Shortfalls:

Supporting Documentation: HSS Final Assessment Report

Associated Performance in Prior Years

FY 2009:	Met	Annual average percentage of Cyber Security reviews conducted by the Office of Health, Safety and Security (HSS) at NNSA sites that resulted in the rating of “effective” (based on last HSS review at each site over 2 Cyber Security topical areas). (Long-term Outcome) FY 2009 target: 100%
FY 2008:	Met	Annual average percentage of Cyber Security reviews conducted by the Office of Health, Safety and Security (HSS) at NNSA sites that resulted in the rating of “effective” (based on the last HSS review at each site over 2 Cyber Security topical areas) (Long-term Output) FY 2008 target: 100%
FY 2007:	Met	Cumulative percentage of Cyber Security reviews conducted by the Office of Independent Oversight and Performance Assurance (OA) at NNSA sites that resulted in the rating of “effective” (based on the last OA review at each site over 2 Cyber Security topical areas) (Long-term Output) FY 2007 target: 57%

Office: National Nuclear Security Administration

Program: Cyber Security

Website: <http://www.nnsa.doe.gov/security.htm>

Secretarial

Priority National Security

Supported:

Measure: **Cyber Security Site Assessment (SAV)**

Annual percentage of planned Cyber Security Site Assessment Visit (SAV) conducted by the Office of the Chief Information Officer (OCIO) Cyber Security Program Manager (CSPM) at NNSA sites that resulted in a rating of "effective" (Annual Output)

FY 2010 target: 100%

2010 Results

Commentary: Not Met Did not achieve the annual target of an OCIO rating of effective on 100% of cyber security assessments conducted at 9 NNSA field sites. This measure had a 6 month moratorium; the assessments began again in May 2010 with 9 completed as of 30 Sep 2010 resulting in a 90% effective rating. This result is important because these assessments provide the OCIO with evidence that each site has implemented cyber security policies and procedures as outlined.

Future Plans / The OCIO plans to complete the final site visit within the first quarter of FY11. The OCIO is not expecting Explanation of the same issue for FY11 since there is not a moratorium on assessments planned. The FY 2011 target Shortfalls: remains at 100%.

Supporting OCIO Site Assessment Visit Report

Documentation: Cyber Security Check List

Associated Performance in Prior Years

FY 2009: Met Annual percentage of Cyber Security Site Assessment Visits (SAV) conducted by the Office of the Chief Information Officer (OCIO) Cyber Security Program Manager (CSPM) at NNSA sites that resulted in the rating of "effective." (Annual Output)
FY 2009 target: 100%

FY 2008: Not Met Cumulative percentage of planned Cyber Security Site Assessment Visit (SAV) conducted by the Office of the Chief Information Officer (OCIO) Cyber Security Program Manager (CSPM) at NNSA sites that resulted in a rating of "effective."
(Long-term Output)
FY 2008 target: 100%

Office: National Nuclear Security Administration

Program: Defense Nuclear Security

Website: <http://www.nnsa.doe.gov/security.htm>

Secretarial

Priority National Security

Supported:

Measure: **Common Procurement System**

Cumulative cost savings achieved by implementing a common procurement system for selected security equipment. (Efficiency)

FY 2010 target: 5%

2010 Results

Commentary: Met Fully achieved the annual target of 5% completion of activities associated with the implementation of a common procurement system. The DNS Security Commodity Team established an Interagency Contracting Procurement Team (ICPT) Agreement with Avon for respirators that will yield a 25 percent savings (over \$150K savings for two NNSA sites in Q4). The Team has established and prioritized a list of security equipment to be standardized and is working toward establishing similar ICPT Agreements that all DOE and NNSA sites may use. The process to identify and standardized equipment and establish strategic sourcing capabilities is completed and working well. This result is important to successfully implement security that will keep the NNSA sites secure.

Future Plans /

Explanation of The FY 2011 target is 10%.

Shortfalls:

Supporting

Documentation: Quarterly Status Updates

Office: National Nuclear Security Administration

Program: Defense Nuclear Security

Website: <http://www.nnsa.doe.gov/security.htm>

Secretarial

Priority National Security

Supported:

Measure: **Elite Forces**

Cumulative percentage of completion towards modernizing the National Nuclear Security Administration's protective forces in accordance with Tactical Response Force (TRF), as known as "Elite Forces," requirements (Long-term Output)

FY 2010 target: 60%

2010 Results

Commentary: Met Achieved the annual target of completing 60% of activities towards modernizing the NNSA's protective forces. Three milestones were scheduled and completed during the fourth quarter. This result is important to successfully implement security improvements that will keep the NNSA sites among the best defended and secure facilities in the world.

Future Plans /

Explanation of The FY 2011 target is 100%.

Shortfalls:

Supporting Documentation: DNS Tactical Response Force (TRF) Implementation Plan

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of completion towards modernizing the National Nuclear Security Administration's protective forces in accordance with Tactical Response Force (TRF), as known as "Elite Forces", requirements. (Long-term Output)
FY 2009 target: 40%

Office: National Nuclear Security Administration

Program: Defense Nuclear Security

Website: <http://www.nnsa.doe.gov/security.htm>

Secretarial

Priority National Security

Supported:

Measure: **Graded Security Protection**

Cumulative percentage of progress, measured in milestones completed towards implementation of all Graded Security Protection (GSP) policy at NNSA sites (Long-term Output)

FY 2010 target: 50%

2010 Results

Commentary: Met Achieved the target of 50% completion of the overall GSP milestones. Four milestones were scheduled and completed during the fourth quarter. This result is important to successfully implement security improvements that will keep the NNSA sites among the best defended and secure facilities in the world.

Future Plans /

Explanation of The FY 2011 target is 100%.

Shortfalls:

Supporting Documentation: DNS GSP Policy Program Management Plan

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of progress, measured in milestones completed, towards implementation of all Graded Security Protection (GSP) Policy at NNSA sites. (Long-term Output)
FY 2009 target: 100%

FY 2008: Met Cumulative percentage of progress, measured in milestones completed towards implementation of all Design Basis Threat (DBT) policies at NNSA sites (Long-term Output)
FY 2008 target: 100%

Office: National Nuclear Security Administration

Program: Defense Nuclear Security

Website: <http://www.nnsa.doe.gov/security.htm>

Secretarial

Priority National Security

Supported:

Measure: **Standardize Procurement Process**

Standardize the procurement process and security equipment, such as vehicles, weapons, ammunition across the National Nuclear Security Administration Defense Nuclear Security complex by 2011 (Annual Output)

FY 2010 target: 100%

2010 Results

Commentary: Met Fully achieved the annual target of 100% completion of activities associated with standardizing the procurement process for security equipment due to progress with ammunition and uniform standardization. NNSA/Defense Nuclear Security (DNS) has entered into a business arrangement with the Department of Defense (DoD) in order to use the DoD ammunition contracts as a mechanism to realize substantial savings through already-negotiated per-unit ammunition pricing. As a result of the pilot for obtaining ammunition from DoD, the DNS Security Commodity Team determined that NNSA will continue to procure ammunition from DoD, but that each site will order via their respective procurement channels. Significant cost savings and quality assurance will be repeatedly realized as a result of this effort. This result is important to successfully implement security that will keep the NNSA sites secure.

Future Plans /

Explanation of This measure of performance was successfully completed in FY 2010.

Shortfalls:

Supporting

Documentation: Quarterly Status Updates

Associated Performance in Prior Years

FY 2009: Exceeded Standardize the procurement process and security equipment, such as vehicles, weapons, ammunition across the National Nuclear Security Administration Defense Nuclear Security complex by 2010. (Annual Output)

FY 2009 target: 50%

Office: National Nuclear Security Administration

Program: Directed Stockpile Work

Website: http://nnsa.energy.gov/defense_programs/The_Stockpile.htm

Secretarial

Priority National Security

Supported:

Measure: **Annual Warheads Certification**

Annual percentage of warheads in the Stockpile that are safe, secure, reliable, and available to the President for deployment (Annual Outcome)

FY 2010 target: 100%

2010 Results

Commentary: Met Achieved the annual target (100%) whereby the nuclear warheads in the active stockpile are assessed thru the Annual Assessment process as being safe, secure, reliable and available to the President for deployment. NA-10 signed out and sent the Cycle 15 Annual Assessment Memorandum to the National Laboratory Directors on January 12, 2010. This included the Annual Stockpile Assessment – Cycle 15 Execution Plan. In accordance with the milestone schedule therein, all deliverables were completed. This result is important because it ensures the overall availability of the nuclear weapons stockpile for the nation's nuclear deterrent.

Future Plans /

Explanation of The target will remain 100% for FY 2011.

Shortfalls:

Supporting Annual Assessment Report: Laboratory-published Warhead Annual Assessment Reports, Annual Documentation: Laboratory Director Annual Assessment Letters, Report on Stockpile Assessment, Annual Certification Memorandum to the President (Secretaries of Defense & Energy); Weapon Reliability Reports (Biannually); Significant Finding Investigation Reports (Quarterly); Weapon Yield Certification Letter; End-of-Year Reconciliation Report

Associated Performance in Prior Years

FY 2009: Met Annual percentage of warheads in the Stockpile that are safe, secure, reliable, and available to the President for deployment. (Annual Outcome)
FY 2010 Target: 100%

FY 2008: Met Annual percentage of warheads in the Stockpile that are safe, secure, reliable, and available to the President for deployment (Annual Outcome)
FY 2008 target: 100%

FY 2007: Met Annual percentage of warheads in the Stockpile that are safe, secure, reliable, and available to the President for deployment (Annual Outcome)
FY 2007 target: 100%

Office: National Nuclear Security Administration

Program: Directed Stockpile Work

Website: http://nnsa.energy.gov/defense_programs/The_Stockpile.htm

Secretarial

Priority National Security

Supported:

Measure: **LEP Production Costs**

Cumulative percent reduction in projected W76 warhead production costs per warhead from established validated baseline, as computed and reported annually by the W76 LEP Cost Control Board (Efficiency)

FY 2010 target: 1%

2010 Results

Commentary: Not Met Largely achieved the cumulative target of 1.0% reduction of projected W76 warhead production cost per warhead from the established baseline, based on current recovery schedule. The result for FY 2010 is a 0.8% reduction of projected warhead cost per warhead. This result is important because the NNSA must demonstrate the ability to achieve cost-effective Life Extension Programs within Defense Programs. This target is behind schedule because of unanticipated cost increases in FY 2007, FY 2008, FY 2009, and FY 2010 (resulting from (1) materials and component technical issues and the resulting design changes and (2) increasing M&O healthcare and compensation costs) that have been passed on to the LEP by the M&O contractors. Because the target was missed in the past three years, cost increases will have to be offset by future efficiencies elsewhere in the W76-1 full production program (2011-2023).

Future Plans / Additional W76-1 LEP costs are anticipated in FY 2011 due to technical issues that surfaced in mid-FY09.
Explanation of To mitigate the effect, cost efficiencies at the production plants are continuing to be identified to reduce the warhead per unit cost over the remaining out-year (12 years) production period. Changes to the delivery schedule because of the above issues and NPR implementation will drive the need to re-baseline the program costs in FY 2011. The target will remain 1.0% for FY 2011.

Shortfalls: Supporting Annual Assessment Report: Laboratory-published Warhead Annual Assessment Reports, Annual Laboratory Director Annual Assessment Letters, Report on Stockpile Assessment, Annual Certification Memorandum to the President (Secretaries of Defense & Energy); Weapon Reliability Reports (Biannually); Significant Finding Investigation Reports (Quarterly); Weapon Yield Certification Letter; End-of-Year Reconciliation Report

Associated Performance in Prior Years

FY 2009: Not Met Cumulative percent reduction in projected W76-1 warhead production costs per warhead from established validated baseline, as computed and reported annually by the W76 LEP Cost Control Board. (Efficiency)
FY 2010 target: 1%

FY 2008: Not Met Cumulative percent reduction in projected W76 warhead production costs per warhead from established validated baseline, as computed and reported annually by the W76 LEP Cost Control Board (Efficiency)
FY 2008 target: 1%

FY 2007: Not Met Cumulative percent reduction in projected W76 warhead production costs per warhead from established validated baseline, as computed and reported annually by the W76 LEP Cost Control Board (Efficiency)
FY 2007 target: 0.5%

Office: National Nuclear Security Administration

Program: Directed Stockpile Work

Website: http://nnsa.energy.gov/defense_programs/The_Stockpile.htm

Secretarial

Priority National Security

Supported:

Measure: **Stockpile Maintenance**

Annual percentage of items supporting Enduring Stockpile Maintenance completed (Annual percentage of prior-year non-completed items completed) (Annual Output)

FY 2010 target: 95% (100%)

2010 Results

Commentary: Exceeded Exceeded the annual target by completing 100% (100% of prior year) of scheduled stockpile maintenance as reported by B&W Pantex from their Integrated Reporting Information System (IRIS). Five repair exams were scheduled and five were completed. Four weapon rebuilds were scheduled and four were completed. Weapon program maintenance repair specifics are classified. Directives for the majority of weapons work are the individual weapon Program Control Documents (PCDs). Pantex's Daily Change Report (DCR) is how the actual completions (by Line Order Number (LON) are reported to the Weapon Information System (WIS). The Integrated Programmatic Scheduling System (IPSS) tracks these actual deliverables (by LON by weapon system); thus providing End-Of-Year status. The Directive for Limited Life Component (LLC) maintenance is the LLC PCD. All LONs, including change requests from the DoD, in support of weapon expiration (WIS/Master Nuclear Schedule (MNS)) and/or DoD maintenance schedules (MNS) were met (100% completed). This result is important because it keeps active nuclear weapons fully operational, if needed by the President.

Future Plans /

Explanation of The FY 2011 target will remain at 95% (100%).

Shortfalls:

Supporting - EOY Rec. Rpt.

Documentation: - Limited Life Component Exchange
- Program Control Doc. (s)
- Quarterly Surveillance Backlog Rpt. (From NA-122)
- Approved Auth. Basis Doc.
- Nuclear Safety RR³/₄20 Working Group Rpt.

Associated Performance in Prior Years

FY 2009:	Met	Annual percentage of items supporting Enduring Stockpile Maintenance completed (Annual percentage of prior-year non-completed items completed). FY 2009 target: 95% (100%)
FY 2008:	Met	Annual percentage of items supporting the Enduring Stockpile Maintenance completed (and Annual percentage of prior-year non-completed items completed) (Annual Output) FY 2008 target: 95% (100%)
FY 2007:	Met	Annual percentage of items supporting Enduring Stockpile Maintenance completed (Annual percentage of prior-year non-completed items completed) (Annual Output) FY 2007 target: 95% (100%)

Office: National Nuclear Security Administration

Program: Directed Stockpile Work

Website: http://nnsa.energy.gov/defense_programs/The_Stockpile.htm

Secretarial

Priority National Security

Supported:

Measure: **W76-1 Life Extension Program (LEP)**

Cumulative percentage of progress in completing Nuclear Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activity. (Long-term Output)

FY 2010 target: 52%

2010 Results

Commentary: Not Met Missed target to achieve the cumulative annual target of 52%. Target achieved was 49%. The program did not meet its FY 2010 performance target for the W76-1 Life Extension Program due to technical issues encountered prior to full-scale production. However, the program has maintained the schedule baselined approximately one year ago and has completed units (16%) above that schedule in FY2010. This result is important because extending the life of the W76-1, a weapon system for Navy submarines, is on a highly success-oriented refurbishment schedule to meet DoD requirements and national security needs.

Future Plans / The program is in the process of rebaselining the cost and schedule as a result of the 2010 Nuclear Posture Review (NPR) and planned revisions to the DoD/DOE Nuclear Weapons Council Requirements and Planning Document (RPD) that will jointly establish the annual quantities and schedule of units to be provided to the Department of Defense. The target will remain at 52% for FY 2011.

Shortfalls:

Supporting - W76-1 LEP PEP
Documentation: - Production and Planning Directive
- W76-1 Program Control Documents
- W76-1 LEP Full-Scale Engineering Development Schedule
- W76-1 LEP Selected Acquisition Report
- NA-10 MRT status reports

Associated Performance in Prior Years

FY 2009:	Met	Cumulative percentage of progress in completing Nuclear Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activity. (Long-term Output) FY 2009 target: 48%
FY 2008:	Met	Cumulative percentage of progress in completing Nuclear Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activity (Long-term Output) FY 2008 target: 44%
FY 2007:	Not Met	Cumulative percentage of progress in completing Nuclear Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activity (Long-term Output) FY 2007 target: 39%

Office: National Nuclear Security Administration

Program: Engineering Campaign

Website: http://www.nnsa.doe.gov/defense_programs/engineering.htm

Secretarial

Priority National Security

Supported:

Measure: **Enhanced Surety**

Cumulative percentage of progress towards an improved initiation system to meet detonation safety requirements for future alterations or modifications to stockpiled weapons, measured by the number of milestones, in the implementation plan, completed (Long-term Output)

FY 2010 target: 41%

2010 Results

Commentary: Met Achieved cumulative target of 41%. This result is important because new components and materials will enable future systems and stockpiled weapons, subjected to alterations or modifications, to better satisfy surety requirements outlined in departmental directives, and provide for a safer and more secure stockpile.

Future Plans /

Explanation of The FY 2011 target is 47%.

Shortfalls:

Supporting - Supporting schedule and milestones in approved program plans

Documentation: - Program reports of specific accomplishment

- Program-specific quarterly review briefings

- Weighted statistical tool used to calculate overall milestone scope accomplishment

- NA-10 MRT status reports

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of progress towards an improved initiation system to meet nuclear detonation safety requirements for future alterations or modifications to stockpiled weapons, measured by the number of milestones, in the implementation plan, completed (Long-term Output).

FY 2009 target: 35%

FY 2008: Met Cumulative percentage of progress towards an improved initiation system to meet detonation safety requirements for future alterations or modifications to stockpiled weapons, measured by the number of milestones, in the implementation plan, completed (Long-term Output)

FY 2008 target: 75%

FY 2007: Met Cumulative percentage of progress towards an improved initiation system to meet detonation safety requirements for future alterations or modifications to stockpiled weapons, measured by the number of milestones, in the implementation plan, completed (Long-term Output)

FY 2007 target: 70%

Office: National Nuclear Security Administration

Program: Engineering Campaign

Website: http://www.nnsa.doe.gov/defense_programs/engineering.htm

Secretarial

Priority National Security

Supported:

Measure: **Enhanced Surveillance**

Cumulative percentage of progress towards completion of aging models and assessments, diagnostics, and tools needed for science-based lifetime predictions of specific weapon components and for transformation to more predictive, stockpile surveillance, measured by the number of milestones, in the implementation plans completed (Long-term Output)

FY 2010 target: 57%

2010 Results

Commentary: Met Achieved cumulative target of 57%. All seven of the Enhanced Surveillance Subprogram milestones were completed by the end of FY10. This result is important because this year's work enables earlier identification of stockpile aging concerns, reduces the uncertainties in the assessment of stockpile health, assists in decisions for stockpile refurbishment, and provides tools for transforming to more predictive means to assess the stockpile.

Future Plans /

Explanation of The FY 2011 target is 62%.

Shortfalls:

Supporting - Supporting schedule and milestones in approved program plans

Documentation: - Program reports of specific accomplishment

- Program-specific quarterly review briefings

- Weighted statistical tool used to calculate overall milestone scope accomplishment

- NA-10 MRT status reports

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of progress towards completion of aging models and assessments, diagnostics, and tools needed for science-based lifetime predictions of specific weapon components and for transformation to more predictive, stockpile surveillance, measured by the number of milestones, in the implementation plan, completed (Long-term Output).

FY 2009 target: 53%

FY 2008: Met Cumulative percentage of progress towards completion of aging models and assessments, diagnostics, and tools needed for science-based lifetime predictions of specific weapon components and for transformation to more predictive stockpile surveillance, measured by the number of milestones, in the implementation plans completed (Long-term Output)

FY 2008 target: 47%

FY 2007: Met Cumulative percentage of aging models, diagnostics, and tools needed for science-based lifetime predictions of specific components and a reduction in system-level stockpile surveillance testing, measured by the number of milestones, in the implementation plans completed (Long-term Output)

FY 2007 target: 40%

Office: National Nuclear Security Administration

Program: Engineering Campaign

Website: http://www.nnsa.doe.gov/defense_programs/engineering.htm

Secretarial

Priority National Security

Supported:

Measure: **Ion Beam Laboratory**

Cumulative percentage of the Ion Beam Laboratory (IBL) project completed (total project cost), while maintaining a Cost Performance Index of 0.9-1.15 (Efficiency)

FY 2010 target: 62%

2010 Results

Commentary: Exceeded Exceeded the cumulative target of 62%. The project is on track and has maintained a cumulative CPI of 1.09. Despite a Baseline Change Approval to increase the scope, the project is ahead of schedule and is within cost. This result is important because a key facility will be provided to support major campaign efforts.

Future Plans / The FY 2011 target is 95% (Note: IBL was re-baselined in FY 2010, resulting in a change to the scheduled completion date of the project to FY 2012. The FY 2011 target was changed from 86%, as reported in the Explanation of Shortfalls: FY 2011 Congressional Budget Request, to 95%, as reported in the FY 2012 OMB Budget Request to accommodate the change in project schedule.)

Supporting - BL Monthly Report

Documentation: - DOE Project Assessment and Reporting System (PARS) reports providing official project status to the DOE Deputy Secretary and NNSA Administrator

Associated Performance in Prior Years

FY 2009: Exceeded Cumulative percentage of the Ion Beam Laboratory (IBL) project completed (total project cost), while maintaining a Cost Performance Index (CPI) of 0.9-1.5.
FY 2009 target: 31%

Office: National Nuclear Security Administration

Program: Engineering Campaign

Website: http://www.nnsa.doe.gov/defense_programs/engineering.htm

Secretarial

Priority National Security

Supported:

Measure: **Nuclear Survivability**

Cumulative percentage of completion of design and qualification tools for meeting requirements for survivability in intense radiation environments needed for future alterations or modifications to replace the existing proof-testing approach that uses significant amounts of highly enriched uranium, measured by the number of milestones in the implementation plan, completed (Long-term Output)

FY 2010 target: 65%

2010 Results

Commentary: Met Achieved cumulative target of 65%. Three of the four subprogram milestones were completed on time; the fourth milestone was completed soon after the end of FY2010, with no impact to FY11 work scope. This result is important because the development of the tools is needed to assess whether the non-nuclear components of weapons in the future stockpile will meet nuclear survivability requirements.

Future Plans /

Explanation of The FY 2011 target is 70%.

Shortfalls:

Supporting - Supporting schedule and milestones in approved program plans

Documentation: - Program reports of specific accomplishment

- Program-specific quarterly review briefings

- Weighted statistical tool used to calculate overall milestone scope accomplishment

- NA-10 MRT status reports

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage completion of design and qualification tools for meeting requirements for survivability in intense radiation environments needed for future alterations or modifications to replace the existing proof-testing approach that uses significant amounts of highly enriched uranium, measured by the number of milestones, in the implementation plan, completed (Long-term Output).
FY 2009 target: 56%

FY 2008: Met Cumulative percentage of completion of design and qualification tools for meeting requirements for survivability in intense radiation environments needed for future alts or mods to replace the existing proof-testing approach that uses significant amounts of highly enriched uranium, measured by the number of milestones in the implementation plan, completed (Long-term Output)
FY 2008 target: 48%

FY 2007: Met Cumulative percentage of completion of design and qualification tools for meeting requirements for survivability in intense radiation environments needed by RRW and any future alts or mods to replace the existing proof-testing approach that uses dangerous amounts of highly radioactive materials, measured by the number of milestones, in the implementation plan, completed (Long-term Output)
FY 2007 target: 40%

Office: National Nuclear Security Administration

Program: Engineering Campaign

Website: http://www.nnsa.doe.gov/defense_programs/engineering.htm

Secretarial

Priority National Security

Supported:

Measure: **Weapon Systems Engineering Assessment Technology**

Cumulative percentage of progress towards system engineering methodology for assessing and predicting the effects of large thermal, mechanical, and combined forces on nuclear weapons for future alterations or modifications, measured by the number of experimental data sets, in the implementation plan, completed (Long-term Output)

FY 2010 target: 61%

2010 Results

Commentary: Met Achieved cumulative target of 61%. Three of the four subprogram milestones were completed on time; the fourth milestone was completed soon after the end of FY2010, with no impact to FY11 work scope. The amount of work scope left incomplete at the end of FY10 is less than 0.5% of the target. This result is important because these data sets will help develop the tools and technologies to validate structural and thermal models used by the Engineering Campaign to support the stockpile and will help the development of improved qualification tools and methodologies for the future stockpile.

Future Plans / Explanation of Shortfalls: Beginning in FY 2011, the Endpoint Target is adjusted from 2017 to 2020 to better align the Weapons Systems Engineering Assessment Technology subprogram with the Engineering Campaign Technology Roadmap. This realignment has contributed to an increase in out-year work scope, which results in a decrease to near-term completion percentages. The FY 2011 target is 60% and is based upon the adjustment to the schedule.

Supporting Documentation: - Supporting schedule and milestones in approved program plans
- Program reports of specific accomplishment
- Program-specific quarterly review briefings
- Weighted statistical tool used to calculate overall milestone scope accomplishment
- NA-10 Milestone MRT status reports

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of progress towards system engineering methodology for assessing and predicting the effects of large thermal, mechanical, and combined forces on nuclear weapons for future alterations or modifications, measured by the number of experimental data sets, in the implementation plan, completed (Long-term Output).
FY 2009 target: 54%

FY 2008: Met Cumulative percentage of progress towards system engineering methodology for assessing and predicting the effects of large thermal, mechanical, and combined forces on nuclear weapons for future alterations or modifications, measured by the number of experimental data sets, in the implementation plan, completed (Long-term Output)
FY 2008 target: 53%

FY 2007: Met Cumulative percentage of progress towards system engineering methodology for assessing and predicting the effects of large thermal, mechanical, and combined forces on nuclear weapons for the RRW and any future alts or mods, measured by the number of experimental data sets, in the implementation plan, completed (Long-term Output)
FY 2007 target: 45%

Office: National Nuclear Security Administration

Program: Facilities and Infrastructure Recapitalization Program

Website: <http://www.nnsa.doe.gov/infrastructure.htm#1>

Secretarial

Priority National Security

Supported:

Measure: **Deferred Maintenance**

Annual dollar value and cumulative percentage of legacy deferred maintenance baseline of \$900 million, funded for elimination by FY 2013 (Long-term Output)

FY 2010 target: \$34.1M (85.5%)

2010 Results

Commentary: Exceeded Exceeded the annual target by funding the elimination of \$65.4M of deferred maintenance with a cumulative result of 89.0 percent (target was \$34.1M/85.5 percent). This result is important because it demonstrates progress in improving nuclear security enterprise facilities conditions by reducing the deferred maintenance backlog.

Future Plans /

Explanation of The FY 2011 target is \$24.7M (88.3%).

Shortfalls:

Supporting Documentation: FIRP Work Authorizations; Site Program Reviews

Associated Performance in Prior Years

FY 2009: Exceeded Deferred Maintenance Reduction: Annual dollar value and cumulative percentage of legacy deferred maintenance baseline of \$900 million; funded for elimination by FY 2013 (Annual Outcome)
FY 2009 target: \$62M (80%)

FY 2008: Exceeded Annual dollar value and cumulative percentage of FY 2003 deferred maintenance baseline of \$900 million, funded for elimination by FY 2013 (Long-term Output)
FY 2008 target: \$80M (64%)

FY 2007: Met Annual dollar value and cumulative percentage of FY 2003 deferred maintenance baseline of \$1.2 billion, funded for elimination by FY 2013 (Long-term Output)
FY 2007 target: \$60M (38%)

Office: National Nuclear Security Administration

Program: Facilities and Infrastructure Recapitalization Program

Website: <http://www.nnsa.doe.gov/infrastructure.htm#1>

Secretarial

Priority National Security

Supported:

Measure: **Execution of Projects**

Execute FIRP projects within approved cost and schedule baselines (including BCPs submitted for approval), such that 90 percent of FIRP projects are on schedule to meet established milestones and are within total estimated costs (TEC). (Efficiency)

FY 2010 target: 90%

2010 Results

Commentary: Exceeded Exceeded the annual target by executing 90% of FIRP projects within approved cost and schedule baselines. For the fourth quarter, (93%) percent of active FIRP projects are green for cost and (92%) percent are green for schedule. This result is important because it demonstrates effective program management with executing multiple projects.

Future Plans /

Explanation of The FY 2011 target will remain at 90%.

Shortfalls:

Supporting Program Summary Reports from NA-52's Baseline Analysis Reporting and Tracking Tool (BARTT);
Documentation: Information Data Warehouse (IDW)

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign

Website: <http://www.nnsa.doe.gov/defense.htm#1>

Secretarial

Priority National Security

Supported:

Measure: **Cost Reduction**

Cumulative percentage of operating cost reduction from 2009, adjusted for inflation, utility costs, and laboratory indirect costs, all ICF facilities combined (Efficiency)

FY 2010 target: 1%

2010 Results

Commentary: Data Not Available Due to the very different ways used by the operating sites to assign costs and savings, it has been found impossible to establish a uniform system of evaluating the savings.

Future Plans /

Explanation of A new efficiency performance measure will be developed to replace the current one.

Shortfalls:

Supporting

Documentation: Detailed documentation available from the NNSA Defense program

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign

Website: <http://www.nnsa.doe.gov/defense.htm#1>

Secretarial

Priority National Security

Supported:

Measure: **Demonstrate Ignition at National Ignition Facility**

Cumulative percentage of progress towards demonstrating ignition (simulating fusion conditions in a nuclear explosion) at the National Ignition Facility (NIF) to increase confidence in modeling nuclear weapons performance (Long-term Outcome)

FY 2010 target: 100%

2010 Results

Commentary: Not Met Did not achieve the cumulative target of 100%, the result for FY 2010 is 97%. Ignition effort has been delayed by one year due to unexpected increases in time required to prepare the NIF for ignition experiments. Four of the six related MRT milestones have been completed; the remaining two have been delayed until FY2011. This result is important because demonstrating ignition will increase confidence in the ability to certify weapons performance through computational models without weapon testing.

Future Plans / Explanation of Shortfalls: The ICF Program Office is establishing a HQs peer review panel to advise on appropriate scientific challenges and path forward. The Program Office is presently assessing the impact vis a vis future plans and is in the process of establishing the new baseline for the execution of the ignition program. Progress has been accomplished in the successful first integrated shot involving a layered cryogenic capsule. The target will remain 100% for FY 2011.

Supporting Documentation: - Prog./Proj. schedule, milestones, monthly repts
- PARS database/status
- JASON Rev. '06
- On-site observation by HQ PM/staff
- Lehman Reviews, '05/06
- NA-10 MRT status repts

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of progress towards demonstrating ignition (simulating fusion conditions in a nuclear explosion) at the National Ignition Facility (NIF) to increase confidence in modeling nuclear weapons performance (Long-term Outcome)
FY 2009 target: 93%

FY 2008: Met Cumulative percentage of progress towards demonstrating ignition (simulating fusion conditions in a nuclear explosion) at the National Ignition Facility (NIF) to increase confidence in modeling weapons performance (Long-term Outcome)
FY 2008 target: 86%

FY 2007: Met Cumulative percentage of progress towards demonstrating ignition (simulating fusion conditions in a nuclear explosion) at the National Ignition Facility (NIF) to increase confidence in modeling weapons performance (Long-term Outcome)
FY 2007 target: 80%

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign

Website: <http://www.nnsa.doe.gov/defense.htm#1>

Secretarial

Priority National Security

Supported:

Measure: **High Particle and Radiation Environment**

Annual percentage of shots/experimental implosions in which the facility and diagnostics meet the minimum requirements for obtaining data in high particle and radiation environments (Annual Output)

FY 2010 target: 30%

2010 Results

Commentary: Met Achieved the cumulative target of 30%. This measure is important because it demonstrates ability of the facility to meet the requirements and to enhance the confidence in the data obtained.

Future Plans /

Explanation of The FY 2011 target is 40%.

Shortfalls:

Supporting - Program schedule and supporting milestones are in program plans

Documentation: - E-mail reports from site facilities supported by experimental logs
- NA-10 Milestone Reporting Tool (MRT) status reports

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign

Website: <http://www.nnsa.doe.gov/defense.htm#1>

Secretarial

Priority National Security

Supported:

Measure: **Key Extreme Experiments**

Cumulative percentage of progress towards achievement of key extreme experimental condition of matter needed for predictive capability for nuclear weapons performance (Long-term Outcome)

FY 2010 target: 35%

2010 Results

Commentary: Met Achieved the cumulative target of 35% progress towards achievement of key extreme experimental conditions of matter needed for predictive capability for nuclear weapons performance. This result is important because it will improve nuclear weapon certification confidence.

Future Plans /

Explanation of The FY 2011 target is 55%.

Shortfalls:

Supporting - Predictive Capability Framework

Documentation: - Milestone Reporting Tool

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign

Website: <http://www.nnsa.doe.gov/defense.htm#1>

Secretarial

Priority National Security

Supported:

Measure: **National Ignition Facility (NIF) Equipment Fabricated**

Cumulative percentage of equipment fabricated to support ignition experiments at National Ignition Facility (NIF) (Long-term Output)

FY 2010 target: 100%

2010 Results

Commentary: Met Achieved the cumulative target of 100% of equipment fabricated to support ignition experiments at the NIF. This result is important because user optics and cryogenic target systems are required for ignition experiments, and ignition diagnostics are required to obtain ignition experimental data for the Stockpile Stewardship Program.

Future Plans / Explanation of Shortfalls: The end-point target for this performance measure is complete. Therefore there is no target established for FY 2011.

Supporting -Prog. sched. and milestones are in program plans

Documentation: -Monthly NIC/program reports

-Lehman Reviews, '05/'06

-NA-10 MRT status reports

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of equipment fabricated to support ignition experiments at NIF (Long-term Output)
FY 2009 target: 95%

FY 2008: Met Cumulative percentage of equipment fabricated to support ignition experiments at National Ignition Facility (NIF) (Long-term Output)
FY 2008 target: 82%

FY 2007: Met Cumulative percentage of equipment fabricated to support ignition experiments at NIF. This result is important because user optics and cryogenic target systems are required for ignition experiments, and ignition diagnostics are required to obtain ignition experimental data for the Stockpile Stewardship Program (Long-term Output)
FY 2007 target: 63%

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign

Website: <http://www.nnsa.doe.gov/defense.htm#1>

Secretarial

Priority National Security

Supported:

Measure: **Nuclear Explosive Package Assessment**

Cumulative percentage of progress in replacing key empirical parameters in the nuclear explosive package assessment with first principles physics models assessed by validation with experiment (Long-term Outcome)

FY 2010 target: 60%

2010 Results

Commentary: Not Met Did not achieve maintaining the cumulative target of 60% progress in replacing key empirical parameters in the nuclear explosive package assessment with first principles physics models assess by validation with experiment. The FY 2010 result was 58%. This result is important because it will improve nuclear weapon certification confidence. This goal was missed because of delays on Jasper, Barolo, and Bacchus. As a result of this goal being missed additional costs are being incurred and further delays to both these and many smaller scale experiments result. The overall state of our knowledge of nuclear weapon materials, and plutonium in particular is now more than 2 years behind where it should be.

Future Plans / Barolo A is planned to be executed the week of November 29. Bacchus B will be completed in second quarter. First Z Pu shot scheduled for November 2010. Scheduled 4 Pu shots on Z total and incorporated incentives into the PEPs and ATIs for LANL, SNL, LLNL, and NStec to complete more experiments safely and within schedule in FY 2010. The target for FY 2011 is 63%.

Supporting - Predictive Capability Framework

Documentation: - Milestone Reporting Tool

- White Paper on Quantification of Margins and Uncertainty Performance Measure

Office: National Nuclear Security Administration

Program: Nuclear Counterterrorism Incident Response

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/emergencyoperationscounterterrorism>

Secretarial

Priority National Security

Supported:

Measure: **Emergency Operations Readiness Index**

Emergency Operations Readiness Index measures the overall organizational readiness to respond to and mitigate radiological or nuclear incidents worldwide. (Efficiency Measure)

FY 2010 target: 91

2010 Results

Commentary: Not Met The Emergency Operations Readiness Index of 91 out of 100 was not achieved. (4Q index of 88). The impact of this result is important because it assesses emergency response readiness and identified weaknesses in required levels of training and personnel depth, which helped program managers identify and fix deficiencies within key elements of the program.

Future Plans / Explanation of Shortfalls: Real-world events and exercises continued to interfere with obtaining required training by our first responders. Required training has been rescheduled to accommodate completion by the end of the calendar year. Deficiencies in required training, mainly in the Render Safe Program, are being addressed as well as hiring of critical positions. Timing of equipment maintenance problems identified during the 4th quarter has been resolved. The FY 2011 annual target will remain constant at 91 out of 100, while enhancements to subprogram measures are implemented.

Supporting Documentation: ARMS Reports; Weekly Meetings; Daily situational reports; Daily Infrastructure reports; ARMS website <https://arms.ora.u.gov/>; After action reports – evaluators; After action reports – controllers; State, local, and federal reports validating our response efforts; Task Orders/Work Authorizations

Associated Performance in Prior Years

FY 2009: Met Emergency Operations Readiness Index measures the overall organizational readiness to respond to and mitigate radiological or nuclear incidents worldwide (This Index is measured from 1 to 100 with higher numbers meaning better readiness--the first three quarters will be expressed as the readiness at those given points in time where as the year end will be expressed as the average readiness for the year's four quarters) (Efficiency)
FY 2009 target: 91

FY 2008: Met Emergency Operations Readiness Index measures the overall organizational readiness to respond to and mitigate radiological or nuclear incidents worldwide. (This Index is measured from 1 to 100 with higher numbers meaning better readiness--the first three quarters will be expressed as the readiness at those given points in time where as the year end will be expressed as the average readiness for the year's four quarters) (Efficiency)
FY 2008 target: 91

FY 2007: Met Emergency Operations Readiness Index measures the overall organizational readiness to respond to and mitigate radiological or nuclear incidents worldwide. (This Index is measured from 1 to 100 with higher numbers meaning better readiness--the first three quarters will be expressed as the readiness at those given points in time where as the year end will be expressed as the average readiness for the year's four quarters) (Efficiency)
FY 2007 target: 91

Office: National Nuclear Security Administration

Program: Readiness Campaign

Website: http://nnsa.energy.gov/defense_programs/asc.htm

Secretarial

Priority National Security

Supported:

Measure: **Critical Capabilities Deployed**

Cumulative number of critical immediate and urgent capabilities deployed to support our Directed Stockpile Work (DSW) customer's nuclear weapon refurbishment needs derived from the Production Readiness Assessment Plan (Long-term Output)

FY 2010 target: 25

2010 Results

Commentary: Met Met the cumulative target of 25 (increase of 1 capability by way of Deployment of Backfill / Crimp Station.) This result is important because it is required to support immediate and urgent nuclear weapon refurbishment needs.

Future Plans /

Explanation of The target is 27 for FY 2011.

Shortfalls:

Supporting -Milestones documented in plans

Documentation: -Site acceptance reports or other appropriate documentation

-Weekly/monthly site status calls w/ FPM

-Submittal of copies of QERs

-Site visits and Program Reviews

-NA-10 MRT status reports

Associated Performance in Prior Years

FY 2009: Exceeded Cumulative number of critical immediate and urgent capabilities deployed to support our DSW customer's nuclear weapon refurbishment needs derived from the Production Readiness Assessment Plan (Long-term Output)

FY 2009 target: 24

FY 2008: Met Cumulative number of critical immediate and urgent capabilities deployed to support our DSW customer's nuclear weapon refurbishment needs derived from the Production Readiness Assessment Plan (Long-term Output)

FY 2008 target: 22

FY 2007: Met Cumulative number of critical immediate and urgent capabilities deployed to support our DSW customer's nuclear weapon refurbishment needs derived from the Production Readiness Assessment Plan (Long-term Output)

FY 2007 target: 20

Office: National Nuclear Security Administration

Program: Readiness Campaign

Website: http://nnsa.energy.gov/defense_programs/asc.htm

Secretarial

Priority National Security

Supported:

Measure: **Percentage of Investment**

Percentage of investment in the Advance Design and Production Technologies (ADAPT), High Explosive and Weapons Operations (HEWO), Nonnuclear Readiness (NNR), and Stockpile Readiness (SR) subprograms in development of capabilities that forecast within three years of production deployment operational cost savings of at least two times the development and deployment cost compared to pre-deployment operations (Efficiency Measure)

FY 2010 target: 2.5%

2010 Results

Commentary: Met Met the target of 2.5%. This result is important because it supports the transformation of the nuclear security enterprise into an agile and more responsive enterprise with lower production and operating costs.

Future Plans /

Explanation of The target is 2.5% for FY 2011.

Shortfalls:

Supporting Documentation: Spreadsheet documenting ADAPT Savings, HEWO Savings, NNR Savings, and SR Savings.

Associated Performance in Prior Years

FY 2009: Exceeded Percentage of investment in the ADAPT, Stockpile Readiness, Nonnuclear Readiness, and High Explosive and Weapons Operations subprograms in development of capabilities that forecast within three years of production deployment operational cost savings of at least two times the development and deployment cost compared to pre-deployment operations. (Efficiency)

FY 2009 target: 2.5%

Office: National Nuclear Security Administration

Program: Readiness Campaign

Website: http://nnsa.energy.gov/defense_programs/asc.htm

Secretarial

Priority National Security

Supported:

Measure: **Tritium Production**

Cumulative number of Tritium-Producing Burnable Absorber Rods (TPBARs) irradiated in Tennessee Valley Authority reactors to provide the capability of collecting new tritium to replace inventory for the nuclear weapons stockpile (Long-term Output)

FY 2010 target: 960

2010 Results

Commentary: Exceeded Exceeded the cumulative target of 960 TPBARs (increase of 240 TPBARs) irradiated in TVA reactors by completing the irradiation of 1,088 TPBARs. This result is important because irradiation of TPBARs is essential for the establishment of an assured domestic source of tritium to meet the continuing needs of the nuclear weapons stockpile.

Future Plans /

Explanation of The target is 1,200 for FY 2011.

Shortfalls:

Supporting -Milestones supporting the performance measure are documented in the Campaign's plans

Documentation: -Site acceptance reports or other appropriate documentation (if classified, cover pages submitted including applicable document record numbers and information on how to obtain a copy of the report)
-Weekly project status calls with the Federal Program Manager
-End of cycle reports submitted by the Tennessee Valley Authority (TVA)
-Quarterly Project Reviews (attended by TVA)
-NA-10 Milestone Reporting Tool (MRT) status reports

Associated Performance in Prior Years

FY 2009: Exceeded Cumulative number of Tritium-Producing Burnable Absorber Rods irradiated in Tennessee Valley Authority reactors to provide the capability of collecting new tritium to replace inventory for the nuclear weapons stockpile (Long-term Output)
FY 2009 target: 960

FY 2008: Met Cumulative number of Tritium-Producing Burnable Absorber Rods (TPBARs) irradiated in Tennessee Valley Authority reactors to provide the capability of collecting new tritium to replace inventory for the nuclear weapons stockpile (Long-term Output)
FY 2008 target: 720

FY 2007: Met Cumulative number of Tritium-Producing Burnable Absorber Rods irradiated in Tennessee Valley Authority reactors to provide the capability of collecting new tritium to replace inventory for the nuclear weapons stockpile (Long-term Output)
FY 2007 target: 480

Office: National Nuclear Security Administration

Program: Readiness in Technical Base and Facilities

Website: http://nnsa.energy.gov/defense_programs/facilities_operations.htm

Secretarial

Priority National Security

Supported:

Measure: **Facility Condition Index (FCI) for Mission Critical Facilities**

Annual NNSA complex-wide aggregate Facility Condition Index (FCI), as measured by deferred maintenance costs per replacement plant value, for all mission-critical facilities and infrastructure (Annual Outcome)

FY 2010 target: 5%

2010 Results

Commentary: Met Achieved the annual target by reducing the aggregate Facility Condition Index (FCI) for all mission critical facilities and infrastructure to 5%. This result is important because it demonstrates progress in improved facilities conditions and increased operational effectiveness and efficiency.

Future Plans /

Explanation of The target remains at 5% for FY 2011.

Shortfalls:

Supporting Milestones supporting the performance measure are documented in the program and site RTBF plans; Ten Year Planning Guidance and Ten Year Site Plans; DOE Facility Information Management System (FIMS) database; NA-10 Milestone Reporting Tool (MRT) status reports

Associated Performance in Prior Years

FY 2009: Met Annual NNSA complex-wide aggregate Facility Condition Index (FCI), as measured by deferred maintenance costs per replacement plant value, for all mission-critical facilities and infrastructure (Annual Outcome)
FY 2009 target: 5%

FY 2008: Exceeded Annual NNSA complex-wide aggregate Facility Condition Index (FCI), as measured by deferred maintenance costs per replacement plant value, for all mission-critical facilities and infrastructure (Annual Outcome)
FY 2008 target: 5%

FY 2007: Met Annual NNSA complex-wide aggregate Facility Condition Index (FCI), as measured by deferred maintenance per replacement plant value, for all mission-essential facilities and infrastructure (the industry standard is below 5%) (Efficiency)
FY 2007 target: 6.8%

Office: National Nuclear Security Administration

Program: Readiness in Technical Base and Facilities

Website: http://nnsa.energy.gov/defense_programs/facilities_operations.htm

Secretarial

Priority National Security

Supported:

Measure: **Facility Condition Index (FCI) for Mission Dependent Not Critical Facilities**

Annual NNSA complex-wide aggregate Facility Index (FCI), as measured by deferred maintenance per replacement plant value, for all mission-dependent, not critical facilities and infrastructure (Annual Outcome)

FY 2010 target: 8.6%

2010 Results

Commentary: Met Achieved the annual target by reducing the aggregate Facility Condition Index (FCI) for all mission dependent, not critical facilities and infrastructure to 8.6%. This result is important because it demonstrates progress in improved facilities conditions and increased operational effectiveness and efficiency.

Future Plans /

Explanation of The target is 8.45% for FY 2011.

Shortfalls:

Supporting - Milestones supporting the performance measure are documented in the program and site plans

Documentation: - Ten Year Planning Guidance and Ten Year Site Plans
- DOE Facility Information Management System (FIMS) database
- NA-10 Milestone Reporting Tool (MRT) status reports

Associated Performance in Prior Years

FY 2009: Met Annually NNSA complex-wide aggregate Facility Condition Index, as measured by deferred maintenance costs per replacement plant value, for all mission-dependent, not critical facilities and infrastructure (Annual Outcome)
FY 2009 target: 8.75%

FY 2008: Met Annual NNSA complex-wide aggregate Facility Condition Index (FCI), as measured by deferred maintenance per replacement plant value, for all mission-dependent, not critical facilities and infrastructure (Annual Outcome)
FY 2008 target: 8.25%

Office: National Nuclear Security Administration

Program: Readiness in Technical Base and Facilities

Website: http://nnsa.energy.gov/defense_programs/facilities_operations.htm

Secretarial

Priority National Security

Supported:

Measure: **Major Construction Projects**

Execute construction projects within approved costs and schedules, as measured by the total percentage of projects with total estimated cost (TEC) greater than \$20 million with a schedule performance index (ratio of budgeted cost of work performed to budgeted cost of work scheduled) and a cost performance index (ratio of budgeted cost of work performed to actual cost of work performed) between 0.9-1.15 (Efficiency)

FY 2010 target: 90%

2010 Results

Commentary: Met Achieved the annual target of 90%. All ten projects (100%) met the criteria. Two of the eight projects exceeded the criteria (indices are greater than the specified band, meaning they are outperforming expectations). The Zone 12 High Pressure Fire Loop at Pantex has a cost performance index of 1.24, higher than the upper limit. The CMRR RLUOB Equipment Installation Project has a schedule performance index of 1.33. This result is important because it demonstrates effective program management over multiple projects and improved efficiencies.

Future Plans /

Explanation of The target remains 90% for FY 2011.

Shortfalls:

Supporting - Baselined schedules and major decision points for projects are in individual project plans
Documentation: - Monthly project progress reports that include Earned Value Management (EVM) data
- DOE Project Assessment and Reporting System (PARS) reports
- NA-10 Milestone Reporting Tool (MRT) status reports

Associated Performance in Prior Years

FY 2009: Not Met Execute construction projects within approved costs and schedules, as measured by the total percentage of projects with total estimated cost (TEC) greater than \$20M with a schedule performance index (ratio of actual work performed to scheduled work) and a cost performance index (ratio of actual cost of work performed to budgeted cost of work) between 0.9-1.15 (Efficiency)
FY 2009 target: 90%

FY 2008: Not Met Execute construction projects within approved costs and schedules, as measured by the total percentage of projects with total estimated cost (TEC) greater than \$20 million with a schedule performance index (ratio of actual cost of work performed to scheduled work) and a cost performance index (ratio of actual cost of work performed to budgeted cost of work) between 0.9-1.15 (Efficiency)
FY 2008 target: 85%

FY 2007: Met Annual percentage of baselined construction projects with total estimated cost (TEC) greater than \$20M with actual schedule performance index (SPI) of 0.9-1.15 and cost performance index (CPI) of 0.9-1.15, as measured against approved baseline definitions (Annual Output)
FY 2007 target: 80%

Office: National Nuclear Security Administration

Program: Readiness in Technical Base and Facilities

Website: http://nnsa.energy.gov/defense_programs/facilities_operations.htm

Secretarial

Priority National Security

Supported:

Measure: **Mission-Essential Facilities**

Enable NNSA missions by providing operational facilities to support nuclear weapon dismantlement, life extension, surveillance, and research and development activities, as measured by percent of scheduled versus planned days mission-critical and mission-dependent facilities are available without missing key deliverables (Annual Outcome)

FY 2010 target: 95%

2010 Results

Commentary: Exceeded Exceeded the annual target of 95% by achieving 97.15% availability in FY 2010. This result is important because mission essential facilities are needed to support critical nuclear weapons stockpile work.

Future Plans /

Explanation of The FY 2011 target remains at 95%.

Shortfalls:

Supporting Milestones supporting the performance measure are documented in the program and site RTBF plans;
Documentation: Quarterly reports from M&O contractors; NA-10 Milestone Reporting Tool (MRT) status reports

Associated Performance in Prior Years

FY 2009:	Met	Enable NNSA missions by providing operational facilities to support nuclear weapon dismantlement, life extension, surveillance, and research and development activities, as measured by the percent of scheduled versus planned days mission-critical and mission-dependent facilities are available without missing key deliverables. (Annual Outcome) FY 2009 target: 95%
FY 2008:	Exceeded	Enable NNSA missions by providing operational facilities to support nuclear weapon dismantlement, life extension, surveillance, and research and development activities, as measured by percent of scheduled versus planned days mission-critical and mission-dependent facilities are available without missing key deliverables (Annual Outcome) FY 2008 target: 95%
FY 2007:	Met	Annual percentage of scheduled days that mission-essential facilities are available (Annual Output) FY 2007 target: 90%

Office: National Nuclear Security Administration

Program: Science Campaign

Website: http://nnsa.energy.gov/defense_programs/science.htm

Secretarial

Priority National Security

Supported:

Measure: **First Principles Physics Models**

Cumulative percentage of progress in replacing key empirical parameters in the nuclear explosive package assessment with first principles physics models assessed by validation with experiment (Long-term Outcome)

FY 2010 target: 60%

2010 Results

Commentary: Not Met Did not achieve maintaining the cumulative target of 60% progress in replacing key empirical parameters in the nuclear explosive package assessment with first principles physics models assess by validation with experiment. The FY 2010 result was 58%. This result is important because it will improve nuclear weapon certification confidence. This goal was missed because of delays on Jasper, Borolo, and Bacchus. As a result of this goal being missed additional costs are being incurred and further delays to both these and many smaller scale experiments result. The overall state of our knowledge of nuclear weapon materials, and plutonium in particular is now more than 2 years behind where it should be.

Future Plans / Explanation of Shortfalls: Barolo A is planned to be executed the week of November 29. Bacchus B will be completed in second quarter. First Z Pu shot scheduled for November 2010. Scheduled 4 Pu shots on Z total and incorporated incentives into the PEPs and ATIs for LANL, SNL, LLNL, and NStec to complete more experiments safely and within schedule in FY 2010. The target is 63% for FY 2011.

Supporting Documentation: - Predictive Capability Framework
- Milestone Reporting Tool
- White Paper on Quantification of Margins and Uncertainty Performance Measure

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of progress in replacing key empirical parameters in the nuclear explosive package assessment with first principles physics models assessed by validation with experiment (Long-term Outcome).
FY 2009 target: 50%

Office: National Nuclear Security Administration

Program: Science Campaign

Website: http://nnsa.energy.gov/defense_programs/science.htm

Secretarial

Priority National Security

Supported:

Measure: **Key Extreme Experimental Conditions**

Cumulative percentage of progress towards achievement of key extreme experimental conditions of matter needed for predictive capability for nuclear weapons performance (Long-term Outcome)

FY 2010 target: 35 percent

2010 Results

Commentary: Met Achieved the cumulative target of 35% progress towards achievement of key extreme experimental conditions of matter needed for predictive capability for nuclear weapons performance. This result is important because it will improve nuclear weapon certification confidence.

Future Plans /

Explanation of The target is 55% for FY 2011.

Shortfalls:

Supporting - Predictive Capability Framework

Documentation: - Milestone Reporting Tool

- White Paper on Extreme Conditions Performance Measure

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of progress towards achievement of key extreme experimental conditions of matter needed for predictive capability for nuclear weapons performance.
FY 2009 target: 25%

Office: National Nuclear Security Administration

Program: Science Campaign

Website: http://nnsa.energy.gov/defense_programs/science.htm

Secretarial

Priority National Security

Supported:

Measure: **Stockpile Stewardship Science**

Annual investment, as measured by total Science Campaign budget, per refereed journal publication or final formal internal report. (Efficiency)

FY 2010 target: \$970K

2010 Results

Commentary: Met Achieved the annual target of annual average cost of \$970K per refereed journal publication or final formal internal report. This result is important because it demonstrates program efficiencies for scientific progress. For FY 2011, the target will decrease to \$940K.

Future Plans /

Explanation of The target is \$940K for FY 2011.

Shortfalls:

Supporting Reports for the measure are provided by LLNL at the end of each Quarter; Data submitted is verified with Documentation: LLNL POC by program staff; Log books supporting each test are available at LLNL for review by program manager/staff; NA-10 Milestone Reporting Tool (MRT) status reports.

Office: National Nuclear Security Administration

Program: Secure Transportation Asset

Website: <http://www.nnsa.energy.gov/securetransportation>

Secretarial

Priority National Security

Supported:

Measure: **Delivery Timeliness**

Annual percentage of Transportation Shipping Requests (TSRs) delivered by the scheduled delivery date (Efficiency)

FY 2010 target: 90 percent

2010 Results

Commentary: Exceeded Exceeded the annual target by completing 99% of shipping requests according to schedule (target was 90%). This result is important because it shows the efficient scheduling and use of organizational resources to meet the various customer requirements in the Nuclear Security Enterprise.

Future Plans / Per OMB approval, the language of the Delivery Timeliness measure was changed to make the measure less restrictive. The revised measure reads, "Annual percentage of shipping requests delivered according to schedule." The annual target remains at 90% in FY 2011.

Shortfalls: None

Supporting Official consolidated report submitted by a federal transportation manager, "On-Time Delivery Quarterly Summary Sheet."

Documentation: Secondary documents that support the results are the Master Planning Schedule and the Quarterly Mission Schedule.

Associated Performance in Prior Years

FY 2009: Met Annual percentage of Transportation Shipping Requests (TSRs) delivered by the scheduled delivery date (Efficiency)
FY 2009 target: Baseline

Office: National Nuclear Security Administration

Program: Secure Transportation Asset

Website: <http://www.nnsa.energy.gov/securetransportation>

Secretarial

Priority National Security

Supported:

Measure: **Safe and Secure Shipments**

Annual percentage of shipments completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material (Annual Outcome)

FY 2010 target: 100%

2010 Results

Commentary: Met Achieved 100% of the annual target by completing 100% of shipments safely and securely. This result is important because it shows that the STA Program is accomplishing its primary mission, especially in light of the increased risks and threats to the Nuclear Security Enterprise.

Future Plans /

Explanation of The target remains at 100% for FY 2011.

Shortfalls:

Supporting Certification from the senior Program Manager for Mission Operations that there are no known internal or Documentation: external reports of any compromise or loss.

Absence of any DOE Occurrence Reporting and Processing System (ORPS) reports related to shipments.

Supporting milestones for the performance measure are documented in the Program's plans and in the NA-10 Milestone Reporting Tool (MRT). Official results are posted and retained in the MRT.

Secondary documents include: DOE/NRC Forms 741, DOE Forms 1540.2, DoD Forms 1911, OST Forms 1540.01/1540.02, and the DOE Nuclear Material Management and Safeguard System.

Associated Performance in Prior Years

FY 2009: Met Annual percentage of shipments completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material (Annual Outcome)
FY 2009 target: 100%

FY 2008: Met Annual percentage of shipments completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material (Annual Outcome)
FY 2008 target: 100%

FY 2007: Met Annual percentage of shipments completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material (Annual Outcome)
FY 2007 target: 100%

Office: National Nuclear Security Administration

Program: Secure Transportation Asset

Website: <http://www.nnsa.energy.gov/securetransportation>

Secretarial

Priority National Security

Supported:

Measure: **Unit Readiness**

Annual percentage of Unit Readiness to perform assigned convoy mission-weeks (Long-term Output)

FY 2010 target: 80%

2010 Results

Commentary: Exceeded Exceeded the annual target by maintaining a readiness rate of 84% (target was 80%). This result is important because the measure shows the efficient management of Agent resources to provide a predictable transportation capability.

Future Plans /

Explanation of The target remains at 80% for FY 2011.

Shortfalls:

Supporting Official consolidated report submitted by a federal manager, "Agent Availability Report."

Documentation: Supporting milestones for the performance measure are documented in the Program's plans and in the NA-10 Milestone Reporting Tool (MRT).

Secondary documents that support the results are consolidated Staffing Reports, Recruitment Status Reports, and Nuclear Explosives Duties Lists.

Associated Performance in Prior Years

FY 2009: Met Annual percentage of Unit Readiness to perform assigned convoy mission-weeks (Long-Term Output)
FY 2009 target: Baseline

Office: National Nuclear Security Administration

Program: Site Stewardship

Website: <http://www.nnsa.doe.gov/infrastructure.htm#1>

Secretarial

Priority National Security

Supported:

Measure: **Environmental Monitoring and Remediation**

Annual percentage of environmental monitoring and remediation deliverables that are required by regulatory agreements to be conducted at NNSA sites under Long Term Stewardship (LTS) that are executed on schedule and in compliance with all acceptance criteria.

FY 2010 target: 95%

2010 Results

Commentary: Met Achieved 100% of the annual target to submit environmental monitoring and remediation deliverables required by the site regulatory agreements to the appropriate state and federal agencies. In FY 2010 no deliverables have been missed. This result is important because it prevents notices of violation, fines, and loss of confidence by the regulators often associated with late and insufficient deliverables.

Future Plans /

Explanation of The target remains at 95% for FY 2011.

Shortfalls:

Supporting RCRA Permits; monthly and annual reports to regulatory agencies; Compliance Monitoring Plans; Field Documentation: Logs; Sampling Paperwork; LTS program plan status reports to the site offices

Associated Performance in Prior Years

FY 2009: Met Annual percentage of environmental monitoring and remediation deliverables that are required by regulatory agreements to be conducted at NNSA sites that are executed on schedule and in compliance with all acceptance criteria (Annual Output)
FY 2009 target: 95%

FY 2008: Exceeded Annual percentage of environmental monitoring and remediation deliverables that are required by regulatory agreements to be conducted at NNSA sites that are executed on schedule and in compliance with all acceptance criteria (Annual Output)
FY 2008 target: 95%

Office: National Nuclear Security Administration

Program: Site Stewardship

Website: <http://hq.na.gov/>

Secretarial

Priority National Security

Supported:

Measure: **NNSA Long Term Stewardship Program**

Cumulative cost savings totaling 12% over six years for the NNSA Long Term Stewardship program demonstrated by comparison of the actual annual costs of performing the Stewardship activities at a site as compared to the budgeted annual costs of performing.

FY 2010 Target: 2 percent

2010 Results

Commentary: Not Met Did not meet the annual target of reducing the costs of performing Long-Term Stewardship activities versus the budgeted annual costs of performing these same activities by 2%. There was no cost savings this year and the program spent .7% more than anticipated due to additional regulatory requirements being imposed. The program is on target to meet the 12% savings over 6 years with a total 3 year savings of 6%.

Future Plans / The program spent more than expected during this year. The program will continue to watch the actual costs spent in future year to meet the 12% goal over 6 years. The program is still on track to meet the goal of 12% over 6 years (FY 2008-2013). The fluctuations in the program savings varies year by year due to inconsistencies in regulatory requirements from year to year. This measure has been deleted for FY 2011. It has been replaced with a new efficiency measure, measuring the performance of the Energy Modernization and Investment Program.

Supporting Documentation: DOE accounting report; Excel spreadsheet with percent calculations

Associated Performance in Prior Years

FY 2009: Met Cumulative cost savings totaling 12% over six years for the NNSA Long Term Stewardship program demonstrated by comparison of the actual annual costs of performing the Stewardship activities at a site as compared to the budgeted annual costs of performing these same activities using Earned Value Management (EVM) principles with a target savings of 2% per year (Efficiency)
FY 2009 target: 2%

FY 2008: Met Cumulative cost savings totaling 10% over five years for the NNSA Long Term Stewardship program demonstrated by comparison of the actual annual costs of performing the Stewardship activities at a site as compared to the budgeted annual costs of performing these same activities using Earned Value Management (EVM) principles with a target savings of 2% per year (Efficiency)
FY 2008 target: 2%

Office: National Nuclear Security Administration

Program: Site Stewardship

Website: <http://hq.na.gov/>

Secretarial

Priority National Security

Supported:

Measure: **Special Nuclear Material Removed**

Cumulative percentage of security category I/II Special Nuclear Material removed from Lawrence Livermore National Laboratory.

FY 2010 target: 80 percent of material removed.

2010 Results

Commentary: Met Achieved the annual target of having prepared 80% of security category I/II material for removal from the Lawrence Livermore National Laboratory. This result is important because it supports NNSA goal of material consolidation, will allow significant security cost reductions at LLNL, and will reduce risk to the public.

Future Plans /

Explanation of The target is 90% for FY 2011.

Shortfalls:

Supporting

Documentation: Monthly status reports and reviews from program.

Office: National Nuclear Security Administration

Program: Elimination of Weapons-Grade Plutonium Production

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Constructing Zheleznogorsk Fossil Plant**

Cumulative percentage of progress towards constructing a fossil plant in Zheleznogorsk, facilitating the shutdown of one weapons-grade plutonium production reactor. (Long-term Output)

FY 2010 target: 98%

2010 Results

Commentary: Not Met Largely achieved the annual target through a cumulative percentage completion of 92% (target was 98%). The annual target was missed because of insufficient manpower to expedite work and recover schedule. Because this target was missed, delivery of hot water to Zheleznogorsk will be delayed by at least three months. This result is important because completion of the fossil fuel plant will replace energy capacity from the last Russian plutonium production reactors allowing it to be shutdown, and the production of weapons-grade plutonium to be eliminated.

Future Plans /
Explanation of
Shortfalls:

The Russian Federation (RF) agreed to utilize the resources of the Mining and Chemical Combine to obtain additional skilled workers to complete the project by the summer of 2011. The FY 2011 target is 100%.

Supporting
Documentation:

Zheleznogorsk Monthly Progress and Cost Performance Report

Associated Performance in Prior Years

FY 2009: Exceeded Cumulative percentage of progress towards constructing a fossil plant in Zheleznogorsk facilitating the shut-down of one weapons-grade plutonium production reactor. (Long-term Output)
FY 2009 target: 70%

FY 2008: Not Met Cumulative percentage of progress towards constructing a fossil plant in Zheleznogorsk, facilitating the shut-down of one weapons-grade plutonium production reactor (Long-term Output)
FY 2008 target: 62.6%

FY 2007: Met Cumulative percentage of progress towards constructing a fossil plant in Zheleznogorsk shutting down one weapons-grade plutonium production reactor (Long-term Output)
FY 2007 target: 33.6%

Office: National Nuclear Security Administration

Program: Elimination of Weapons-Grade Plutonium Production

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Cost Performance Index (CPI) for Zheleznogorsk Fossil Plant**

Annual Costs Performance Index (CPI) for Zheleznogorsk construction as measured by the ratio of budgeted costs of work scheduled to actual costs of work performed. (Efficiency)

FY 2010 target: 1.0

2010 Results

Commentary: Not Met Largely achieved the target by achieving the standard EVMS cost performance index of 0.92 (target was 1.00). The annual target was missed due to currency exchange rate fluctuations, labor escalation costs and inaccurate initial estimates, costs have exceeded original budget estimates. Because this target was missed, the Russian Federation will be liable for cost overruns. This result is important because it is part of the mission need to shut down the last three plutonium production reactors in Russia.

Future Plans / Zheleznogorsk project has transferred the cost risk to the Russians by establishing a cost cap for work in Russia. This measure will not be tracked after FY 2010 because the project is scheduled to be completed in Shortfalls: FY 2011.

Supporting Documentation: Zheleznogorsk Monthly Progress and Cost Performance Report

Associated Performance in Prior Years

FY 2009:	Met	Annual Costs Performance Index (CPI) for Zheleznogorsk construction as measured by the ratio of budgeted costs of work scheduled to actual costs of work performed (Efficiency) FY 2009 target: 1.0
FY 2008:	Met	Annual Costs Performance Index (CPI) for Seversk construction as measured by the ratio of budgeted costs of work performed to actual costs of work performed (Efficiency) FY 2008 target: 1.0
FY 2007:	Met	Annual Cost Performance Index (CPI) for Seversk construction as measured by the ratio of budgeted cost of work performed to actual cost of work performed (Efficiency) FY 2007 target: 1.0

Office: National Nuclear Security Administration

Program: Elimination of Weapons-Grade Plutonium Production

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Russian Weapons-Grade Plutonium Production**

Annual percentage of Russian weapons-grade plutonium production capability eliminated from its 2003 baseline of 1.2 MT/Yr (0.4 MT per reactor per year) (Long-term Outcome)

FY 2010 target: 67 percent

2010 Results

Commentary: Exceeded Exceeded the annual target of 67% reduction in the production of weapons-grade plutonium by completing the remaining reactor in FY 2010. All three reactors were shut down ahead of schedule. Two Seversk reactors were shut down ahead of schedule in April and June 2008; Zheleznogorsk reactor was shut down in April 2010. This result is important because it is part of the mission need to shut down the last three plutonium-production reactors in Russia.

Future Plans /

Explanation of This performance measure was completed in FY 2010; therefore FY 2011 does not have a target.

Shortfalls:

Supporting

Documentation:

Seversk Monthly Reports No. 57 dated May 27, 2008 and No. 59 dated July 21, 2008

Associated Performance in Prior Years

FY 2009: Met Annual percentage of Russian weapons-grade plutonium production capability eliminated from its 2003 baseline of 1.2 MT/yr (0.4 MT per reactor) (Long-term Outcome)
FY 2009 target: 67%

Office: National Nuclear Security Administration

Program: Fissile Materials Disposition

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Mixed Oxide (MOX) Fuel Fabrication Facility**

Cumulative percentage of the design, construction, and cold start-up activities completed for the Mixed Oxide (MOX) Fuel Fabrication Facility. (Long-term Output)

FY 2010 target: 49 percent

2010 Results

Commentary: Not Met Largely achieved the target of completing a cumulative total of 49% of the facility and equipment design, construction, and cold start-up activities for the MOX facility. The project is at 48% completion as of the end of the 4th quarter which results in achieving 98% of the annual target. This goal was largely achieved despite significant challenges transitioning to a new civil/structural subcontractor and equipment vendors struggling with NQA-1 compliance. This result is important because it demonstrates progress toward the Department's goal of disposing of 34 metric tons of surplus U.S. weapons-grade plutonium.

Future Plans / Contractors continue to make improvements on their steel and concrete installations by streamlining
Explanation of construction processes. Corrective actions include assignment of both engineering and quality assurance
Shortfalls: personnel to vendor facilities to ensure clarification of requirements and to assure quality product assembly.
The risk associated with these activities is low and it is expected to make the target up in FY11. The FY 2011 target is 62%.

Supporting Earned Value Management System (EVMS) data from MOX FFF Monthly Status Report - Earned value
Documentation: determined through physical examination, observation, computation, and inspection; as well as original documents such as a signed statement or email verifying target completion.

Associated Performance in Prior Years

FY 2009:	Met	Cumulative percentage of the design, construction, and cold start-up activities completed for the Mixed Oxide (MOX) Fuel Fabrication Facility (Long-term Output) FY 2009 target: 39%
FY 2008:	Met	Cumulative percentage of the design, construction, and cold start-up activities completed for the Mixed Oxide (MOX) Fuel Fabrication Facility (Long-term Output) FY 2008 target: 30%
FY 2007:	Met	Cumulative percentage of the design, construction, and cold start-up activities completed for the Mixed Oxide (MOX) Fuel Fabrication Facility (Long-term Output) FY 2007 target: 24%

Office: National Nuclear Security Administration

Program: Fissile Materials Disposition

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **U.S. Highly Enriched Uranium (HEU) Downblended**

Cumulative amount of surplus U.S. highly enriched uranium (HEU) down-blended or shipped for down-blending (Efficiency)

FY 2010 target: 130MT

2010 Results

Commentary: Exceeded Exceeded the annual cumulative target of down-blending or shipping for down-blending 130 cumulative metric tons of surplus U.S. HEU. The program has down-blended 133 MT of surplus HEU through the end of the year resulting in completing 102% of the cumulative target. This result is important because it is contributing to the Department's goal of disposing of surplus U.S. HEU.

Future Plans /

Explanation of The FY 2011 target is 136 MT.

Shortfalls:

Supporting Documentation: BWXT Y-12 monthly program status documents - Physical examination and inspection as documented in material control and accounting data forms and reports that the site is required to maintain under Special Nuclear Materials handling/shipping requirements; Original documents such as a signed statement or email verifying target completion

Associated Performance in Prior Years

FY 2009: Exceeded Cumulative amount of surplus U.S. highly enriched uranium (HEU) down-blended or shipped for down-blending (Efficiency)
FY 2009 target: 125MT

FY 2008: Exceeded Cumulative amount of surplus U.S. highly enriched uranium (HEU) down-blended or shipped for down-blending (Efficiency)
FY 2008 target: 112MT

FY 2007: Met Cumulative amount of surplus U.S. highly enriched uranium (HEU) down-blended or shipped for down-blending (Efficiency)
FY 2007 target: 103MT

Office: National Nuclear Security Administration

Program: Fissile Materials Disposition

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Waste Solidification Building (WSB)**

Cumulative percentage of the design, construction, and cold start-up activities completed for the Waste Solidification Building. (Long-term Output)

FY 2010 target: 45 percent

2010 Results

Commentary: Exceeded Exceeded the annual target of completing a cumulative percentage total of 45% of the facility and equipment design, construction, and cold start-up activities for the WSB. The project is at 47% completion as of the end of the 4th quarter resulting in achieving 104% of the annual target. This result is important because it demonstrates progress toward the Department's goal of disposing of 34 metric tons of surplus U.S. weapons-grade plutonium.

Future Plans /

Explanation of The FY 2011 target is 65%.

Shortfalls:

Supporting EVMS and cost data from the WSB consolidated monthly status reports - Earned value determined through
Documentation: physical examination, observation, computation, and inspection; as well as Original documents such as a signed statement or email verifying target completion.

Associated Performance in Prior Years

FY 2009: Not Met Cumulative percentage of the design, construction, and cold start-up activities completed for the Waste Solidification Building (WSB) (Long-term Output)
FY 2009 target: 30%

Office: National Nuclear Security Administration

Program: Global Threat Reduction Initiative (GTRI)

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Highly Enriched Uranium (HEU) Reactors Converted or Shutdown**

Cumulative number of HEU reactors converted or verified as shutdown prior to conversion (Long-term Outcome)

FY 2010 target: 71

2010 Results

Commentary: Exceeded Exceeded the annual target of converting or verifying the shutdown of a cumulative 71 reactors; a cumulative total of 72 research reactors have been converted or verified as shutdown. In the first quarter, no new research reactors were verified as shutdown prior to conversion or converted. In the second quarter, three research reactors were verified as shutdown (FS-4 and FS-5 reactors at Bauman Moscow State Technical University in Russia and STRELA reactor in Russia) and one research reactor was converted (Kyoto University Research Reactor in Japan). In the third quarter, one research reactor was shut down (RECH-2 research reactor in Chile). This result is important because to date conversion of these reactors has resulted in HEU avoidance of ~360/kg per year.

Future Plans /

Explanation of The FY 2011 target is 78.

Shortfalls:

Supporting -GTRI Scorecard

Documentation: -Written Notification of conversion
-Conversion Report

Associated Performance in Prior Years

FY 2009: Not Met Cumulative HEU reactors converted or shutdown prior to conversion (Long-term Outcome)
FY 2009 target: 68

FY 2008: Met Cumulative HEU reactors converted or shut down (Long-term Outcome)
FY 2008 target: 62

FY 2007: Met Cumulative HEU reactors converted or verified as shutdown (Long-term Outcome)
FY 2007 target: 53

Office: National Nuclear Security Administration

Program: Global Threat Reduction Initiative (GTRI)

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Nuclear Material Removed**

Cumulative number of kilograms of vulnerable nuclear material (HEU and plutonium) removed or disposed (Efficiency)

FY 2010 target: 2767

2010 Results

Commentary: Exceeded Exceeded the annual target of removing a cumulative total of 2,767 kilograms of HEU and plutonium; a cumulative total of 2,852.8 kilograms have been removed. In the first quarter, an additional 192.2 kilograms of HEU were removed (187 kilograms from Poland and 5.2 kilograms from Libya). In the second quarter, an additional 183.2 kilograms of HEU was removed (137.4 kilograms from Poland, 5 kilograms from Japan, 12.4 kilograms from Israel, 5.3 kilograms from Turkey, 4.9 kilograms from Italy, and 18.2 kilograms from Chile). In the third quarter, an additional 111.4 kilograms of HEU was removed (55.9 kilograms from Ukraine, 43.5 kilograms from Poland, and 12 kilograms from the Czech Republic). In the fourth quarter, an additional 49.4 kilograms of HEU was removed (43.5 kilograms from Poland, 3.7 kilograms from the United Kingdom, and 2.2 kilograms from the US). This result is important because this effort will minimize the amount of weapons-usable material around the world.

Future Plans /

Explanation of The FY 2011 target is 3,297.

Shortfalls:

Supporting -GTRI Scorecard

Documentation: -Notification of removal

-Remove Report

Associated Performance in Prior Years

FY 2009: Exceeded Cumulative number of kilograms of vulnerable nuclear material (HEU and plutonium) removed or disposed (Efficiency)

FY 2009 target: 2,311

FY 2008: Met Cumulative kilograms of nuclear material (HEU and plutonium) removed or disposed (Long-term Outcome)

FY 2008 target: 2,133

FY 2007: Met Cumulative kilograms of nuclear material (HEU and plutonium) removed or disposed (Long-term Outcome)

FY 2007 target: 1,671

Office: National Nuclear Security Administration

Program: Global Threat Reduction Initiative (GTRI)

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Nuclear and Radiological Sites Protected**

Cumulative number of buildings with high priority nuclear and radiological materials secured (Long-term Outcome)

FY 2010 target: 855

2010 Results

Commentary: Exceeded Exceeded the annual target of securing a cumulative total of 855 buildings with high-priority nuclear and radiological materials; a cumulative total of 971 buildings have been secured. In the first quarter, an additional 9 international buildings and 12 domestic buildings were secured. In the second quarter, an additional 18 international buildings and 27 domestic buildings were secured. In the third quarter, an additional 29 international buildings and 19 domestic buildings were secured. In the fourth quarter, an additional 45 international buildings and 107 domestic buildings were secured. This result is important because it reduces the risk posed by nuclear and radioactive materials worldwide that could be used in crude nuclear bombs and radiological dispersal devices.

Future Plans /

Explanation of The FY 2011 target is 1,081.

Shortfalls:

Supporting GTRI Scorecard; Monthly notification of protection; Work team reports; Global Threat Reduction Initiative Documentation: Programmatic Guidelines for Site Prioritization and Protection Implementation

Associated Performance in Prior Years

FY 2009:	Exceeded	Cumulative number of buildings with high priority nuclear and radiological materials secured (Long-term Outcome) FY 2009 target: 694
FY 2008:	Exceeded	Cumulative high priority international radiological sites protected (Long-term Outcome) FY 2008 target: 730
FY 2007:	Met	Cumulative high priority radiological sites protected (Long-term Outcome) FY 2007 target: 590

Office: National Nuclear Security Administration

Program: Global Threat Reduction Initiative (GTRI)

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Radiological Sources Removed**

Cumulative number of excess domestic radiological sources removed or disposed (Long-term Outcome)

FY 2010 target: 25,214

2010 Results

Commentary: Exceeded Exceeded the annual target of removing a cumulative total of 25,214 excess domestic radiological sources; a cumulative total of 26,172 sources have been removed. In the first quarter an additional 1,253 sources were removed. In the second quarter, an additional 579 sources were removed. In the third quarter, an additional 520 sources were removed. In the fourth quarter, an additional 806 sources were removed. This result is important because it minimizes the amount of excess and unwanted radioactive material that could be used in radiological dispersal devices.

Future Plans /

Explanation of The FY 2011 target is 28,000.

Shortfalls:

Supporting -GTRI Scorecard

Documentation: -Monthly notification of removals

-Work team reports

-Radiological recovery life cycle plan

-GTRI website <http://osrp.lanl.gov/>

Associated Performance in Prior Years

FY 2009: Exceeded Cumulative number of excess domestic radiological sources removed or disposed (Long-term Outcome)

FY 2009 target: 22,000

FY 2008: Exceeded Cumulative U.S. radiological sources removed or disposed (Long-term Outcome)

FY 2008 target: 17,500

FY 2007: Met Cumulative U.S. radiological sources removed or disposed (Long-term Outcome)

FY 2007 target: 15,455

Office: National Nuclear Security Administration

Program: International Nuclear Materials Protection and Cooperation

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Highly Enriched Uranium (HEU) Conversion to Low Enriched Uranium (LEU)**

Cumulative metric tons of Highly Enriched Uranium converted to Low-Enriched Uranium (Long-term Outcome)

FY 2010 target: 12.6

2010 Results

Commentary: Met Achieved annual target by blending down a cumulative total of 12.6 metric tons (MTs) of HEU to LEU. This result is important because it prevents the theft/diversion of excess HEU.

Future Plans /

Explanation of The FY 2011 target is 13.5 MT.

Shortfalls:

Supporting -Monthly U.S. monitoring visits to the downblending sites to validate process results

Documentation: -Contract deliverable downblending and monthly status reports

Associated Performance in Prior Years

FY 2009:	Met	Cumulative metric tons of Highly-Enriched Uranium converted to Low- Enriched Uranium (Long-term Outcome) FY 2009 target: 11.7
FY 2008:	Met	Cumulative metric tons of HEU converted to LEU (Long-term Outcome) FY 2008 target: 11.0
FY 2007:	Met	Cumulative metric tons of HEU converted to LEU (Long-term Outcome) FY 2007 target: 9.5

Office: National Nuclear Security Administration

Program: International Nuclear Materials Protection and Cooperation

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Material Protection, Control and Accountability (MPC&A) Upgrades - Buildings**

Cumulative number of buildings containing weapons-usable material with completed MPCA upgrades (Long-term Output)

FY 2010 target: 213

2010 Results

Commentary: Met Fully achieved the target by completing MPC&A upgrades at a cumulative total of 213 buildings, an increase of 3 buildings in FY 2010. This result is important because it prevents the theft/diversion of vulnerable nuclear weapons for use by terrorists.

Future Plans /

Explanation of The FY 2011 target is 218.

Shortfalls:

Supporting -Statements of Work and Contracts for Security Upgrade Construction and System Installation
Documentation: -Progress Reports from Contractors and Russian Sites
-Assurance Visit Reports
-Monthly Reports by Project
-Quarterly Reports by Project
-Annual Close-Out Reports by Project
-Metric Information Management On-line Database

Associated Performance in Prior Years

FY 2009:	Met	Cumulative number of buildings containing weapons usable material with completed MPC&A upgrades (Long-term Output) FY 2009 target: 210
FY 2008:	Met	Cumulative number of buildings containing weapons-usable material with completed MPC&A upgrades (Long-term Output) FY 2008 target: 191
FY 2007:	Met	Cumulative number of buildings with weapons-usable material secured (Long-term Output) FY 2007 target: 190

Office: National Nuclear Security Administration

Program: International Nuclear Materials Protection and Cooperation

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Material Protection, Control, and Accountability (MPC&A) Regulations**

Cumulative number of MPC&A regulations in the development phase for the Russian Federation and FSU countries (Long-term Output)

FY 2010 target: 194

2010 Results

Commentary: Not Met Largely achieved the annual target by placing a cumulative number of 186 MPC&A regulations in the development phase for Russian and other FSU countries. The target was missed because the US Project Team's (USPT) Russian and Belorussian counterparts have experienced significant staffing issues over the past year, causing delays in the pace of deliverables related to regulations development. Because this target was missed, the schedule for placing regulations in the development phase is slightly behind schedule, but a recovery schedule is in place to ensure all delinquent regulations are in the development phase by the end of FY 2011. Therefore, there is no impact to completing the goal.

Future Plans / Explanation of The Project Team has developed a plan, in conjunction with Russia's Rostekhnadzor and Belorussian partners, to ensure that all delinquent regulations are placed in the development phase by Q4 of FY 2011.

Shortfalls: The USPT met with Russia's Rostekhnadzor in October to determine a path forward to ensure the three delinquent regulations are in the development phase by Q2 FY 2011. The USPT held a conference call with the Belorussians in November, followed by a December meeting, to determine steps to ensure delinquent regulations are in the development phase by Q4 FY 2011. The FY 2011 target is 198.

Supporting -Monthly progress reports

Documentation: -Assurance site visits

-Contract deliverables and in-progress reviews

Associated Performance in Prior Years

FY 2009: Met Cumulative number of MPC&A regulations in the development phase for the Russian Federation and FSU countries (Long-term Output)
FY 2009 target: 165

Office: National Nuclear Security Administration

Program: International Nuclear Materials Protection and Cooperation

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Megaports with Host Country Cost Sharing**

Cumulative number of Megaports with host country cost-sharing, resulting in decreased cost to the U.S. program (Estimated cost sharing value) (Efficiency)

FY 2010 target: 12 (\$66M)

2010 Results

Commentary: Not Met Did not fully achieve the cumulative target of 12 Megaports with host country cost-sharing (Estimated cost sharing value). This result is important because these cost sharing agreements result in reduced costs for the U.S. Second Line of Defense Program. The Program fell short of the annual cumulative target as three Megaports have been delayed into FY 2011, thereby lowering the cumulative number of host countries with cost sharing down to 9 for FY 2010, resulting in a cost sharing value of \$43 million. The target was missed because US Project Team's (USPT) Russian and Belorussian counterparts have experienced significant staffing issues over the past year, causing delays in the pace of deliverables related to regulations development. Because this target was missed, the schedule for placing regulations in the development phase is slightly behind schedule, but has little impact on achieving the goal.

Future Plans / Explanation of Shortfalls: The seven delayed sites in Mexico, China, Bangladesh, Djibouti, Kenya, Japan, and Pakistan are all slated to be completed in FY 2011 along with the four currently planned. The FY 2011 target is 14 (\$73M).

Supporting Documentation: Schedules, trip reports, acceptance testing documentation

Associated Performance in Prior Years

FY 2009: Not Met Cumulative number of Megaports with host country cost-sharing, resulting in estimating \$40M less cost to the US Program (Estimated cost sharing value) (Efficiency)

FY 2009 target: 8/\$40M

FY 2008: Not Met Cumulative number of Megaports with host country cost sharing, resulting in decreased costs to the US program (estimated cost sharing value) (Efficiency)

FY 2008 target: 5 (\$24M)

Office: National Nuclear Security Administration

Program: International Nuclear Materials Protection and Cooperation

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Second Line of Defense (SLD) Sites**

Cumulative number of Second Line of Defense (SLD) sites with nuclear detection equipment installed. (Cumulative number of Megaports completed) (Long-term Output)

FY 2010 target: 404 (41)

2010 Results

Commentary: Not Met Slightly below annual target by achieving installations of radiation detection equipment at a cumulative total of 399 sites (including 34 Megaports). This result is important because it provides host governments with the technical means to detect, deter and interdict illicit trafficking of nuclear and other radioactive materials. The Program fell short of the annual cumulative target by seven Megaports. The Core program completed 57 sites, which exceeded its target of 55 sites. Because the target was not met, the program will accelerate implementation of construction at port sites and plans to complete all ports by the end of FY 2011.

Future Plans / Explanation of Shortfalls: The seven delayed sites in Mexico, China, Bangladesh, Djibouti, Kenya, Japan, and Pakistan are all scheduled to be completed in FY 2011, along with the four additional sites currently planned to be completed in FY 2011. The FY 2011 target is 463 (45).

Supporting Documentation: Schedules, trip reports, acceptance testing documentation

Associated Performance in Prior Years

FY 2009: Exceeded Cumulative number of Second Line of Defense (SLD) sites with nuclear detection equipment installed (Cumulative number of Megaports completed) (Long-term Output)

FY 2009 target: 312 (28)

FY 2008: Exceeded Cumulative number of Second Line of Defense (SLD) sites with nuclear detection equipment installed (Cumulative number of Megaports completed) (Long-term Output)

FY 2008 target: 224 (23)

FY 2007: Not Met Cumulative number of Second Line of Defense (SLD) sites with nuclear detection equipment installed (Cumulative number of Megaports completed) (Long-term Output)

FY 2007 target: 173 (12)

Office: National Nuclear Security Administration

Program: Nonproliferation and International Security

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Elimination of Russian Highly Enriched Uranium (HEU)**

Annual number of special monitoring visits completed to the four Russian processing facilities that downblend highly enriched uranium (HEU) to low-enriched uranium to monitor and confirm the permanent elimination of 30 metric tons of Russian HEU from the Russian weapons stockpile under the HEU Purchase Agreement (Annual Output)

FY 2010 target: 24

2010 Results

Commentary: Met Achieved 100% of the annual target by completing 24 special monitoring visits to the four Russian uranium-processing facilities subject to the 1993 Highly Enriched Uranium (HEU) Purchase Agreement. This result is important because confidence-building monitoring activities conducted in Russia provide assurance that the Russian Federation is eliminating excess weapons-usable material, thereby adhering to its nonproliferation obligations under the HEU Purchase Agreement.

Future Plans /

Explanation of The FY 2011 target remains 24.

Shortfalls:

Supporting Sandia National Laboratories database records and original input documents

Documentation: Physical examination of processing facilities

International Nuclear Export Control program database records and original input documents

Associated Performance in Prior Years

FY 2009: Met Annual number of special monitoring visits completed to the four Russian processing facilities that downblend highly enriched uranium (HEU) to low-enriched uranium to monitor and confirm the permanent elimination of 30 metric tons of Russian HEU from the Russian weapons stockpile under the HEU Purchase Agreement. (Annual Output)

FY 2009 target: 24

Office: National Nuclear Security Administration

Program: Nonproliferation and International Security

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Global Initiatives to Prevent Proliferation (GIPP) Non-USG Project Funding**

Cumulative percentage of non-USG (private sector and foreign government) project funding contributions obtained relative to cumulative USG GIPP funding contributions (Efficiency)

FY 2010 target: 82 percent

2010 Results

Commentary: Met Achieved the cumulative target of 82% project funding contributions obtained relative to cumulative USG GIPP funding contributions. This result is important because it maximizes non-USG funding sources to prevent the migration of weapons of mass destruction scientists and personnel to terrorist organizations and states of concern.

Future Plans /

Explanation of The FY 2011 is 85%.

Shortfalls:

Supporting -Data in project management database (entered by National Labs)

Documentation: -Annual USIC survey of members

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of non-USG (private sector and foreign government) project funding contributions obtained relative to cumulative USG GIPP funding contributions (Efficiency)
FY 2009 target: 81%

FY 2008: Exceeded Cumulative percentage of non-USG (private sector and foreign government) project funding contributions obtained relative to cumulative USG GIPP funding contributions (Efficiency)
FY 2008 target: 78%

FY 2007: Met Cumulative percentage of non-USG (private sector and foreign government) project funding contributions obtained relative to cumulative USG GIPP funding contributions (Efficiency)
FY 2007 target: 75%

Office: National Nuclear Security Administration

Program: Nonproliferation and International Security

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Nuclear Export Control Program**

Cumulative number of countries where International Nonproliferation Export Control program is engaged that have export control systems that meet critical requirements (Long-term Outcome)

FY 2010 target: 11

2010 Results

Commentary: Exceeded Exceeded the cumulative target of 11 countries having export control systems that meet critical requirements. To date, 21 countries have export control systems that meet critical requirements. This result is important because it demonstrates the number of countries that, through engagement by INECP (1) have control lists consistent with the WMD regimes; (2) conduct outreach to producers and trans-shippers of WMD-related commodities; (3) engage in the sharing of information between technical experts, license reviewers, and front-line enforcers; and (4) have customized WMD Commodity Identification Training materials and technical guides.

Future Plans /

Explanation of The target is 22 in FY 2011.

Shortfalls:

Supporting International Nuclear Export Control program database records and original input documents

Documentation: Sandia National Laboratories database records and original input documents

Associated Performance in Prior Years

FY 2009: Met Cumulative number of countries where International Nuclear Export Control program is engaged that have export control systems that meet critical requirements (Long-term Outcome)
FY 2009 target: 9

Office: National Nuclear Security Administration

Program: Nonproliferation and International Security

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Russian Weapons-Usable Highly Enriched Uranium (HEU) Eliminated**

Cumulative metric tons of Russian weapons-usable HEU that U.S. experts have confirmed as permanently eliminated from the Russian stockpile under the HEU Purchase Agreement (Long-term Outcome)

FY 2010 target: 402

2010 Results

Commentary: Exceeded Exceeded the cumulative target of 402 metric tons (MT) by confirming the elimination of additional HEU in FY10 resulting in a cumulative total of 403 MT. This result is important because it provides assurance that weapons-grade material is being eliminated from Russia's stockpile and is no longer available for use in the nuclear weapons program.

Future Plans /

Explanation of The cumulative target is 432 MT in FY 2011, in support of the long term target of 500 MT by 2013.

Shortfalls:

Supporting -Status Report on U.S.-Russian Megatons to Megawatts Program (www.usec.com)

Documentation: -Russian HEU to LEU Contract Summary of Shipments, Amounts, Value, Payments, and Schedule (provided by USEC)

-Russian HEU to LEU Contract Summary based on Fiscal Year (provided by SAIC)

-Monitoring visit trip reports, process declarations, and mass flow reports

Associated Performance in Prior Years

FY 2009: Exceeded Cumulative metric tons of Russian weapons-usable HEU that U.S. experts have confirmed as permanently eliminated from the Russian stockpile under the HEU Purchase Agreement (Long-term Outcome)

FY 2009 target: 372

FY 2008: Exceeded Cumulative metric tons of Russian weapons-usable HEU that U.S. experts have confirmed as permanently eliminated from the Russian stockpile under the HEU Purchase Agreement (Long-term Outcome)

FY 2008 target: 342

FY 2007: Met Cumulative metric tons of Russian weapons-usable HEU that U.S. experts have confirmed as permanently eliminated from the Russian stockpile under the HEU Purchase Agreement (Long-term Outcome)

FY 2007: 312

Office: National Nuclear Security Administration

Program: Nonproliferation and International Security

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Safeguards Systems**

Annual number of safeguards systems deployed and used in international regimes and other countries that address an identified safeguards deficiency (Annual Output)

FY 2010 target: 4

2010 Results

Commentary: Exceeded Exceeded the cumulative target of 4 safeguards systems deployed (by deploying a total of 10) and used in international regimes and other countries. To date, 19 safeguards systems have been deployed and used in international regimes and other countries. This result is important because it allows international regimes and countries to properly account for and control nuclear materials to prevent use in illicit activities.

Future Plans /

Explanation of The FY 2011 target is 5.

Shortfalls:

Supporting Shipping Records, Technical reports produced as a result of the technology being transferred and Monthly Documentation: Reports (generated for each of the countries with which INECP works.)

Associated Performance in Prior Years

FY 2009: Met Annual number of safeguards systems deployed and used in international regimes and other countries that address an identified safeguards deficiency (Annual Output)
FY 2009 target: 3

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Independent Merit Review**

Cumulative percentage of active research projects for which an independent R and D merit review of the project's scientific quality and mission relevance has been completed during the second year of effort (and again within each subsequent three-year period for those projects found to be of merit) (Efficiency)

FY 2010 target: 100 percent

2010 Results

Commentary: Met Achieved the cumulative percentage target of 100% of active research projects receiving independent merit reviews. This result is important because it verifies scientific quality and mission relevance of each research project.

Future Plans /

Explanation of The FY 2011 target remains at 100%.

Shortfalls:

Supporting - Quarterly reports

Documentation: - Annual independent review status reports

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of active research projects for which an independent R&D merit review of the project's scientific quality and mission relevance has been completed during the second year of effort (and again within each subsequent three year period for those projects found to be of merit) (Efficiency)
FY 2009 target: 100%

FY 2008: Met Cumulative percentage of active research projects for which an independent R&D merit review of the project's scientific quality and mission relevance has been completed during the second year of effort (and again within each subsequent three year period for those projects found to be of merit) (Efficiency)
FY 2008 target: 100%

FY 2007: Met Cumulative percentage of active research projects for which an independent R&D merit assessment of the project's scientific quality and mission relevance has been completed during the second year of effort (and again within each subsequent three year period for those projects found to be of merit) (Efficiency)
FY 2007 target: 100%

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Merit Reviewed Journals/Forums**

Annual number of articles published in merit reviewed professional journals/forums representing leadership in advancing science and technology knowledge (Annual Output)

FY 2010 target: 200

2010 Results

Commentary: Exceeded Exceeded the annual target of 200 merit-reviewed publications by achieving 273. This result is important because it demonstrates the program is a leader in advancing nonproliferation science and technology knowledge.

Future Plans /

Explanation of The FY 2011 target remains at 200.

Shortfalls:

Supporting -Quarterly reports/papers

Documentation: -Annual peer-review publications
-Other fora reports

Associated Performance in Prior Years

FY 2009: Exceeded Annual number of articles published in merit reviewed professional journals/forums representing leadership in advancing science and technology knowledge (Annual Output)
FY 2009 target: 200

FY 2008: Exceeded Annual number of articles published in merit reviewed professional journals/forums representing leadership in advancing science and technology knowledge (Annual Output)
FY 2008 target: 200

FY 2007: Met Annual number of articles published in merit reviewed professional journals/ forums representing leadership in advancing science and technology knowledge (Annual Output)
FY 2007 target: 200

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Plutonium Production Detection**

Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Plutonium Production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R and D Requirements Document") (Long-term Outcome)

FY 2010 target: 50 percent

2010 Results

Commentary: Met Achieved the annual target of 50% cumulative percentage of progress towards demonstrating the next generation of technologies to detect plutonium production activities. This result is important because it increases the U.S. capability to detect clandestine nuclear weapons production activities.

Future Plans /

Explanation of The FY 2011 target is 65%.

Shortfalls:

Supporting -Program Plan/Roadmap document

Documentation: -Memorandum for Record (unclassified, located in R and D, certified by ADA)

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Plutonium Production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document") (Long-term Outcome)
FY 2009 target: 30%

FY 2008: Met Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Plutonium Production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document") (Long-term Outcome)
FY 2008 target: 25%

FY 2007: Met Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Plutonium production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document") (Long-term Outcome)
FY 2007 target: 20%

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Research and Development Detonation Detection**

Annual index that summarizes the status of all NNSA nuclear detonation detection R and D deliveries that improve the nation's ability to detect nuclear explosions (Annual Output)

FY 2010 target: 90 percent

2010 Results

Commentary: Met Achieved the annual index target of 90% of Nuclear Detonation Detection (NDD) R&D deliveries. This result is important because it tracks timeliness for delivery of NDD products within customer timelines/schedules, and identifies potential impacts on the nation's ability to detect nuclear detonations.

Future Plans /

Explanation of The FY 2011 target remains at 90%.

Shortfalls:

Supporting -Quarterly reports

Documentation: -Final delivery transmittal letters to user agencies for satellite payloads ('Consent to Ship' letters)
-Integrated Research Product Releases

Associated Performance in Prior Years

FY 2009: Met Annual index that summarizes the status of all NNSA nuclear detonation detection R&D deliveries that improve the nation's ability to detect nuclear explosions (Annual Output)
FY 2009 target: 90%

FY 2008: Met Annual index that summarizes the status of all NNSA nuclear detonation detection R&D deliveries that improve the nation's ability to detect nuclear explosions (Annual Output)
FY 2008 target: 90%

FY 2007: Met Cumulative progress towards nuclear Detonation Detection (NDD) deliveries (Annual Output)
FY 2007 target: 90%

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Special Nuclear Material Detection**

Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Special Nuclear Material movement. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R and D Requirements Document") (Long-term Outcome)

FY 2010 target: 60 percent

2010 Results

Commentary: Met Achieved the annual target of 60% cumulative percentage of progress towards demonstrating the next generation of technologies to detect Special Nuclear Material movement. This result is important because it improves U.S. capability to detect the illicit transport and diversion of special nuclear material (SNM).

Future Plans /

Explanation of The FY 2011 target is 80%.

Shortfalls:

Supporting -Program Plan/Roadmap document

Documentation: -Memorandum for Record (unclassified, located in R and D, certified by ADA)

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Special Nuclear Material movement. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document") (Long-term Outcome)
FY 2009 target: 33%

FY 2008: Met Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Special Nuclear Material movement. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document") (Long-term Outcome)
FY 2008 target: 27%

FY 2007: Met Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Special Nuclear Material movement. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document") (Long-term Outcome)
FY 2007 target: 20%

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development

Website: <http://www.nnsa.energy.gov/aboutus/ourprograms/nonproliferation>

Secretarial

Priority National Security

Supported:

Measure: **Uranium-235 Production Detection**

Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Uranium-235 production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R and D Requirements Document") (Long-term Outcome)

FY 2010 target: 30 percent

2010 Results

Commentary: Met Achieved the annual target of 30% cumulative percentage of progress towards demonstrating the next generation of technologies to detect uranium production activities. This result is important because it increases the U.S. capability to detect clandestine nuclear weapons production activities.

Future Plans /
Explanation of The FY 2011 target is 50%.

Shortfalls:

Supporting
Documentation: Program Plan/Roadmap document

Associated Performance in Prior Years

FY 2009: Met Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Uranium-235 Production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document") (Long-term Outcome)
FY 2009 target: 25%

FY 2008: Met Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Uranium-235 Production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document") (Long-term Outcome)
FY 2008 target: 20%

FY 2007: Met Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Uranium-235 production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document") (Long-term Outcome)
FY 2007 target: 15%

Office: National Nuclear Security Administration

Program: Naval Reactors

Website: <http://www.nnsa.doe.gov/navalreactors.htm>

Secretarial

Priority National Security

Supported:

Measure: **A1B Reactor Plant Design**

Cumulative percentage of completion on the next-generation aircraft carrier reactor plant design.
FY 2010 target: 91%

2010 Results

Commentary: Met Fully met the target of 91% cumulative percentage of completion on the next-generation aircraft carrier reactor plant design. This result is important because it provides the Navy with next-generation aircraft carrier propulsion plant technology that increases core energy, provides nearly three times the electric plant generating capability and will require half of the reactor department sailor's needed as compared to today's CVNs.

Future Plans /

Explanation of The FY 2011 target is 94%.

Shortfalls:

Supporting CVN 21 Propulsion Plant Planning Estimate and Actual Reporting
Documentation:

Associated Performance in Prior Years

FY 2009:	Met	Cumulative percentage of completion on the next-generation aircraft carrier reactor plant design (Long-term Outcome) FY 2009 target: 88%
FY 2008:	Met	Cumulative percentage of completion on the next-generation aircraft carrier reactor plant design (Long-term Outcome) FY 2008 target: 85%
FY 2007:	Met	Cumulative percentage of completion on the next-generation aircraft carrier reactor plant design (Long-term Outcome) FY 2007 target: 80%

Office: National Nuclear Security Administration

Program: Naval Reactors

Website: <http://www.nnsa.doe.gov/navalreactors.htm>

Secretarial

Priority National Security

Supported:

Measure: **Fleet Reactor Plant Operations**

Cumulative miles steamed, in millions, of safe, reliable, militarily effective nuclear propulsion plant operation supporting National security requirements.

FY 2010 target: 144

2010 Results

Commentary: Exceeded Exceeded target of 144 million cumulative miles steamed, of safe, reliable, militarily effective nuclear propulsion plant operation supporting National security requirements by completing 144,982,625 miles safely steamed. This result is important because it measures the safety and reliability of operating nuclear propulsion plants.

Future Plans /

Explanation of The FY 2011 target is 146 million.

Shortfalls:

Supporting
Documentation: Commissioned Ship Operating Reports

Associated Performance in Prior Years

FY 2009:	Met	Cumulative miles steamed, in millions, of safe, reliable, militarily effective nuclear propulsion plant operation supporting National security requirements (Long-term Outcome) FY 2009 target: 142
FY 2008:	Met	Cumulative miles steamed, in millions, of safe, reliable, militarily effective nuclear propulsion plant operation supporting National security requirements (Long-term Outcome) FY 2008 target: 140
FY 2007:	Met	Cumulative miles steamed, in millions, of safe, reliable, militarily effective nuclear propulsion plant operation supporting National security requirements (Long-term Outcome) FY 2007 target: 138

Office: National Nuclear Security Administration

Program: Naval Reactors

Website: <http://www.nnsa.doe.gov/navalreactors.htm>

Secretarial

Priority National Security

Supported:

Measure: **Naval Reactors Facility Condition Index (FCI)**

Annual Naval Reactors complex-wide aggregate Facility Condition Index, as measured by deferred maintenance per replacement plant value for all program facilities and infrastructure.

FY 2010 target: 4%

2010 Results

Commentary: Met Fully met the target of 4% Annual Naval Reactors complex-wide aggregate Facility Condition Index, as measured by deferred maintenance per replacement plant value for all program facilities and infrastructure. This result is important because it assesses the operational condition of program facilities to ensure program infrastructure is maintained in order to accomplish mission activities in the safest, most reliable, most effective, and most efficient manner.

Future Plans /

Explanation of The FY 2011 target remains at 4%.

Shortfalls:

Supporting Documentation: Deferred maintenance and plant replacement value reported in FIMS

Associated Performance in Prior Years

FY 2009: Met Annual Naval Reactors complex-wide aggregate Facility Condition Index (FCI), as measured by deferred maintenance per replacement plant value for all program facilities and infrastructure (Annual Output)
FY 2009 target: 4%

FY 2008: Exceeded Annual Naval Reactors complex-wide aggregate Facility Condition Index, as measured by deferred maintenance per replacement plant value for all program facilities and infrastructure (Annual Output)
FY 2008 target: 5%

FY 2007: Met Annual Naval Reactors complex-wide aggregate Facility Condition Index, as measured by deferred maintenance per replacement plant value for all program facilities and infrastructure (Annual Output)
FY 2007 target: 5%

Office: National Nuclear Security Administration

Program: Naval Reactors

Website: <http://www.nnsa.doe.gov/navalreactors.htm>

Secretarial

Priority National Security

Supported:

Measure: **Program Operations**

Annual percentage of program operations that have no adverse impact on human health or the quality of the environment.

FY 2010 target: 100%

2010 Results

Commentary: Met Fully achieved the annual target of ensuring that 100 percent of program operations have no adverse impact on human health or the quality of the environment. The performance of the program in the areas of environmental, safety, and health is rated satisfactory based on continuing assessments performed in these areas. This result is important because it assesses human health and environmental risks associated with program operations.

Future Plans /

Explanation of The FY 2011 target remains at 100%.

Shortfalls:

Supporting
Documentation: Annual Monitoring Report

Associated Performance in Prior Years

FY 2009:	Met	Annual percentage of program operations that have no adverse impact on human health or the quality of the environment (Annual Outcome) FY 2009 target: 100%
FY 2008:	Met	Annual percentage of program operations that have no adverse impact on human health or the quality of the environment (Annual Outcome) FY 2008 target: 100%
FY 2007:	Met	Annual percentage of program operations that have no adverse impact on human health or the quality of the environment (Annual Outcome) FY 2007 target: 100%

Office: National Nuclear Security Administration

Program: Naval Reactors

Website: <http://www.nnsa.doe.gov/navalreactors.htm>

Secretarial

Priority National Security

Supported:

Measure: **Utilization of Test Reactor Plants**

Annual utilization factor for operation of test reactor plants.

FY 2010 target: 90%

2010 Results

Commentary: Exceeded Exceeded the FY 2010 target of achieving a utilization rate of 90%. The cumulative utilization rate for fiscal year 2010 is 94.7%. This result is important because it represents a cost-effective way of training Naval nuclear plant operators.

Future Plans /

Explanation of The FY 2011 target remains at 90%.

Shortfalls:

Supporting
Documentation: Prototype Annual Activity Schedule and Actual Reporting

Associated Performance in Prior Years

FY 2009: Exceeded Annual utilization factor for operation of test reactor plants (Efficiency)
FY 2009 target: 90%

FY 2008: Exceeded Annual utilization factor for operation of test reactor plants (Efficiency)
FY 2008 target: 90%

FY 2007: Met Annual utilization factor for operation of test reactor plants (Efficiency)
FY 2007 target: 90%

Recovery Act Projects

Office: Advanced Research Projects Agency - Energy (ARPA-E)

Project: ARPA-E

Website: <http://arpa-e.energy.gov>

Outcome **ARPA-E**

Expected by End Issue Funding Opportunity Announcements that will focus on enhancing the economic and energy security of the United States through the development of energy technologies and ensure that the United States maintains a technological lead in developing and deploying advanced energy technologies' that will focus on transformational energy technology projects.

FY 2010 Target

Issue FOA that will focus on transformational energy technology projects

2010 Results

Commentary: Met ARPA-E met the ARRA target in FY10 by announcing Funding Opportunity Announcements (FOAs) which resulted in 121 projects focusing on transformational energy technology.

Future Plans: ARPA-E plans to conduct workshops to discuss potential advanced energy technology areas that may result in ARPA-E focusing energy resources on.

Supporting FOA announced in FY09 and FY10: DE-FOA-0000065, DE-FOA-0000206, DE-FOA-0000207, DE-FOA-Documentation: 0000208, DE-FOA-0000288, DE-FOA-0000289, and DE-FOA-0000290.

Associated Performance in Prior Years

FY 2009: Met Issue FOA that will focus on transformational energy technology projects.

Office: Electricity Delivery and Energy Reliability

Project: Enhancing State and Local Governments Energy Assurance

Website: www.oe.energy.gov/recovery/1288.htm

Outcome S - Enhancing State and Local Government Energy Assurance

Expected by End 2010 The program will support a one-time effort to establish the framework and set the momentum for States and local governments to have well-developed energy assurance and resiliency plans they can rely on during emergencies.

Funds will be used to create in-house expertise at the State and local level on Smart Grid applications and vulnerabilities, critical infrastructure interdependencies, cyber security, energy infrastructure and supply systems, energy data analysis, and communications. Funding will be provided to State and local governments and to national associations that represent State and local governments.

FY 2010 Target

Award State grants. Review, select, and award city grants. Monitor and report progress for all awardees.

2010 Results

Commentary: Met All state grants were awarded. All city grants were reviewed; selections and awards were made accordingly. Grant progress has been monitored and reported on a quarterly basis.

Future Plans: All state and local recipients will initiate a draft plan to minimize impact from, and duration of energy supply disruptions.

Supporting Documentation: FOA, NETL reports, including selection lists, award lists, signed agreements, data uploaded to Corporate Planning System (CPS) and reporting data from Recovery.gov.

Associated Performance in Prior Years

FY 2009: Met Post Federal Opportunity Announcements (FOAs) for State formula grants and City competitive grants. Review State applications and select state awardees.

Office: Electricity Delivery and Energy Reliability

Project: Interconnection Transmission Planning and Analysis

Website: www.oe.energy.gov/our_organization/1313.htm

Outcome S - Interconnection Transmission Planning and Analysis

Expected by End 2010 The Recovery Act directs \$80 million to conduct a resource assessment (of renewable energy zones, supplies of renewable energy, and transmission capacity and analysis of future demand and transmission requirements. The objective is to facilitate the development or strengthening of capabilities in each of the three interconnections serving the lower 48 states of the United States, to prepare analyses of transmission requirements under a broad range of alternative futures and develop long-term interconnection-wide transmission expansion plans. The interconnections are the Western Interconnection, the Eastern Interconnection, and the Texas Interconnection.

FY 2010 Target

Complete grant proposal reviews. Select and award contracts. Monitor and report progress for all awardees.

2010 Results

Commentary: Met Grant proposal reviews were completed. Selections were made and contracts were awarded accordingly. Grant progress has been monitored and reported on a quarterly basis.

Future Plans: Recipients will complete studies and white-papers to facilitate further development and refinement of the interconnection-wide modeling inputs, including reliability and transmission 10-year plans.

Supporting Documentation: FOA, NETL reports, including selection lists, award lists, signed agreements, data uploaded to Corporate Planning System (CPS) and reporting data from Recovery.gov.

Associated Performance in Prior Years

FY 2009: Met Develop and post Federal Opportunity Announcement (FOA), respond to questions, start grant proposal reviews.

Office: Electricity Delivery and Energy Reliability

Project: Interoperability Standards and Framework (EISA 1305)

Website: www.nist.gov/smartgrid/

Outcome S - Interoperability Standards and Framework

Expected by End 2010 The \$10 million in funding for this work will support the development and implementation of interoperable standards and framework to ensure effective and consistent application of Smart Grid technologies throughout their development and implementation. The Recovery Act directs this funding to implement EISA section 1305, which designates the National Institute of Standards and Technology (NIST) with primary responsibility to coordinate the interoperability standards and framework development.

FY 2010 Target

Standards panel maintains roadmap and directs standards efforts; begin work on test and certification framework.

2010 Results

Commentary: Met Standards panel has maintained and guided the efforts of the program. Work has been initiated on the test and certification framework.

Future Plans: For performance tracking and future plans related to the development of interoperability standards, see the National Institute of Standards and Technology Smart Grid Interoperability Standards Web page, <http://www.nist.gov/smartgrid/index.cfm>.

Supporting Documentation: Press releases, meeting minutes and workshop reports documenting progress, roadmap, framework documents.

Associated Performance in Prior Years

FY 2009: Met Sign Interagency Agreement with NIST; create a standards roadmap to list relevant standards, prioritize gaps, and identify new work; and engage relevant stakeholders through workshops and by identifying a standards panel.

Office: Electricity Delivery and Energy Reliability

Project: Smart Grid Investment Grant Program (EISA 1306)

Website: www.oe.energy.gov/recovery/1264.htm

Outcome S - Smart Grid Investment Grant Program (EISA 1306)

Expected by End 2010 \$3.4 billion is currently targeted for a competitive, merit-based matching grant program to stimulate investments by electric utilities and other entities for the deployment of Smart Grid technology.

FY 2010 Target

Award first round of grants; receive, review, select, and award second round of grants or cancel second round. Monitor & report grant progress.

2010 Results

Commentary: Met All grants were awarded; Second round of grants were cancelled. Grant progress has been monitored and reported on a quarterly basis.

Future Plans: All Smart Grid Investment Grant Recovery Act reporting requirements will be satisfied on schedule. Projects will be monitored on an ongoing basis.

Supporting Documentation: FOA and amendments, applications received, grant review documentation, selection lists, award lists, signed agreements, invoices, grantee progress reports, reporting data from Recovery.gov.

Associated Performance in Prior Years

FY 2009: Met Develop and post draft Notice of Intent (NOI) and final Federal Opportunity Announcement (FOA); receive initial round of grant applications; and complete first round of reviews and selections.

Office: Electricity Delivery and Energy Reliability

Project: Smart Grid Regional and Energy Storage Demonstration Project (EISA 1304)

Website: www.oe.energy.gov/recovery/1255.htm

Outcome S - Smart Grid Regional and Energy Storage Demonstration Project (EISA 1304)

Expected by End 2010 \$700 million is currently targeted to fund competitively awarded financial assistance projects for 1) regionally unique Smart Grid demonstration projects, 2) phasor measurement system demonstration and testing for a wide area, real time measurement and control network, 3) electrical energy storage demonstration and development projects and 4) demonstration and development projects for Smart Grid technologies.

FY 2010 Target

Select and award all grants. Monitor & report grant progress.

2010 Results

Commentary: Met All grants were selected and awarded. Grant progress has been monitored and reported on a quarterly basis.

Future Plans: All Smart Grid Demonstration Recovery Act reporting requirements will be satisfied on schedule. Projects will be monitored on an ongoing basis.

Supporting Documentation: FOA, NETL reports, including selection lists, award lists, signed agreements, data uploaded to Corporate Planning System (CPS) and reporting data from Recovery.gov.

Associated Performance in Prior Years

FY 2009: Met Develop and post draft Federal Opportunity Announcement (FOA) and final FOA; receive grant applications; and begin reviews.

Office: Electricity Delivery and Energy Reliability

Project: State Assistance on Electricity Policies

Website: www.energy.gov/news2009/7791.htm

Outcome S - State Assistance on Electricity Policies

Expected by End 2010 The State Assistance on Electricity Policies is a program put forth to eliminate the roadblocks and delay that will occur by state public utility commissions in their state-law required review and approval of any Recovery Act funding involving their jurisdictional electric utilities. A total of \$50M will support this activity.

Of the \$50M, \$46M will be used by states and their Public Utility Commissions (PUCs) to hire staff to facilitate timely review of the expected large number of time-sensitive requests to approve electric utility expenditures undertaken as part of the Recovery Act. The remaining \$4M will increase level of DOE's technical assistance to the Public Utility Commissions through an award to the National Association of Regulatory Utility Commissioners (NARUC).

FY 2010 Target

Complete selection and awards, and monitor & report progress.

2010 Results

Commentary: Met All grants were selected and awarded. Grant progress has been monitored and reported on a quarterly basis.

Future Plans: Recipients will reach and sustain 80% of total PUC hiring plan.

Supporting Documentation: FOA, NETL reports, including selection lists, award lists, signed agreements, data uploaded to Corporate Planning System (CPS) and reporting data from Recovery.gov.

Associated Performance in Prior Years

FY 2009: Met Post Federal Opportunity Announcement (FOA), receive applications and complete reviews.

Office: Electricity Delivery and Energy Reliability

Project: Workforce Development

Website: www.oe.energy.gov/recovery/1308.htm

Outcome S- Workforce Training for the Electric Power Sector

Expected by End 2010 \$100 million will support the training of a workforce to support a national, clean-energy smart grid. The focus will be to train workers such as linemen, installers and other trades and technicians in the electric power industry and develop energy curricula at the community college level. The initiative will also provide additional resources to support existing workforce development organizations.

FY 2010 Target

Receive grant applications. Review, select and award grants. Monitor and report progress for all awardees.

2010 Results

Commentary: Met All grant applications were received. All grants were reviewed; selections and awards were made accordingly. Grant progress has been monitored and reported on a quarterly basis.

Future Plans: The project planning process will be completed, and OE will hold a Workforce Development workshop.

Supporting Documentation: FOA, NETL reports, including selection lists, award lists, and signed agreements, NETL reports including data uploaded to Corporate Planning System (CPS), and reporting data from Recovery.gov.

Associated Performance in Prior Years

FY 2009: Not Met Create and finalize strategy for project and develop and post Federal Opportunity Announcement (FOA). Receive applications.

Office: Energy Efficiency and Renewable Energy

Project: Biomass

Website: <http://www1.eere.energy.gov/biomass>

Outcome S - Commercial Scale Biorefinery Projects

Expected by End 2010 Mitigate cost escalation barriers to two of the integrated biorefinery demonstration projects. The success of which will encourage commercialization of a 2nd generation biofuels industry leading to green jobs, energy independence and helping to mitigate climate change.

FY 2010 Target

Two or more phase 2 contracts awarded, resulting in the initiation of the construction period for the awarded biorefineries.

2010 Results

Commentary: Not Met One commercial scale biorefinery was selected and awarded funds to construct a commercial scale cellulosic biorefinery. Site preparation work was initiated.

Explanation of Shortfalls: A signed financial assistance award to this commercial scale biorefinery is available at the Golden Field Office. The public press release was issued December 4, 2009 and can be found at: www.eere.energy.gov/biomass/news_detail.html?news_id=15660.

Supporting Documentation: Funds were shifted between funding areas, leaving only enough funds to award one project. This cannot be remedied without additional funds.

Associated Performance in Prior Years

FY 2009: Not Met One Phase 2 award negotiated and contracted with increased funding ceilings as appropriate for existing efforts.

Office: Energy Efficiency and Renewable Energy

Project: Biomass

Website: <http://www1.eere.energy.gov/biomass>

Outcome S - Fundamental Research in Key Program Areas

Expected by End 2010 Demonstrate the feasibility of cost-competitive infrastructure compatible advanced biofuels

FY 2010 Target

One algal biofuels consortium and one advanced fungible biofuels consortium are selected, announced and awarded; LBNL integrated PDU construction begun

2010 Results

Commentary: Met One algal biofuels consortium and one advanced fungible biofuels consortium was selected, announced and awarded; LBNL integrated PDU construction began.

Supporting Documentation: Signed award letters for the consortia are available at Golden Field Office. The public press release is was issued on January 10, 2010 and can be found at <http://www.energy.gov/news2009/8519.htm>). Additionally, a signed lease subcontract between the University and the Landlord for the LBNL PDU, and other substantiating information can be provided if/as requested. Initial press release can be found at <http://www.energy.gov/news/8809.htm>.

Associated Performance in Prior Years

FY 2009: Met Funds obligated and awarded through advanced biofuels solicitation; statements of work and estimates for the LBNL and GLBRC finalized.

Office: Energy Efficiency and Renewable Energy

Project: Biomass

Website: <http://www1.eere.energy.gov/biomass>

Outcome **S - Investigation of intermediate ethanol blends, optimization of E-85 engines, and development of transportation infrastructure**
Expected by End

2010 Collect sufficient data on the effects of intermediate ethanol blends on vehicles and engines to help EPA make a sound and defensible decision regarding use of these fuels in the market.

FY 2010 Target

Collect and analyze data on the effects of intermediate ethanol blends on 24 vehicles. Select and award projects to support outreach and refueling infrastructure and increase use of renewable fuels in the marketplace.

2010 Results

Commentary: Not Met Data on the effects of intermediate ethanol blends were collected, analyzed and shared with EPA on over 24 vehicle models and over 50 vehicles. Eight refueling infrastructure projects were selected and of those, three withdrew during negotiations such that five awards were made. No outreach projects were selected.

Future Plans / Explanation of Shortfalls: Based on the results of the intermediate ethanol blends data, EPA took action on the E15 waiver request regarding the use of E-15 in early October 2010. If those test results support E15, then EPA will also propose a labeling rule at that time on fuel dispensing equipment.

Supporting Documentation: Signed financial assistance agreements for the 5 refueling infrastructure projects are available at the Golden Field Office. A press release was issued January 13, 2010 and can be found at www.eere.energy.gov/biomass/news_detail.html?news_id=15733

Associated Performance in Prior Years

FY 2009: Met Competitive solicitation for outreach and refueling infrastructure issued to support refueling components (e.g., dispensers, underground storage tanks, piping) to increase use of renewable fuels in the marketplace.

Office: Energy Efficiency and Renewable Energy

Project: Biomass

Website: <http://www1.eere.energy.gov/biomass>

Outcome **S- Modify Integrated Biorefinery Solicitation Program for Pilot and Demonstration Scale**
Expected by End **Biorefineries**

2010 Up to 19 integrated biorefinery demonstration projects awarded that initiate and encourage commercialization of a 2nd generation biofuels industry leading to green jobs, energy independence and helping to mitigate climate change.

FY 2010 Target

Funds obligated through budget period Phase 1 or Phase 2 awards to projects selected from this FOA.

2010 Results

Commentary: Met \$509 million in Recovery Act funds were obligated to 18 biorefinery projects. Conditions have been released on \$126 million in funds for those projects to date.

Supporting Signed financial assistance awards to 18 biorefinery partners are available at the Golden Field Office. The Documentation: public press release was issued December 4, 2009 and can be found at: www.eere.energy.gov/biomass/news_detail.html?news_id=15660.

Associated Performance in Prior Years

FY 2009: Met Merit review completed for proposed projects.

Office: Energy Efficiency and Renewable Energy

Project: Building Technologies

Website: <http://www1.eere.energy.gov/buildings>

Outcome S - Advanced Building Systems

Expected by End 2010 Complete three R&D projects on multiple building components, controls and systems that have the potential for a 70 percent energy reduction in new and existing buildings.

FY 2010 Target

Award full solicitation amounts by mid-year and initiate all selected projects. Complete three R&D projects on multiple building components, controls and systems. Receive early deliverables on projects that will remain active through FY12.

2010 Results

Commentary: Not Met Forty-five selections were announced on 6/17/2010. Forty-three awards were made in Q3 and Q4 FY10. One selection declined award and 1 was deemed not capable of achieving the proposed project's objectives and goals.

Future Plans: Projects will be managed according to their negotiated Project Management Plans

Supporting Documentation: Award documents are available by request. The public press release was issued June 17, 2010 and can be found at <http://www.energy.gov/news/9152.htm>.

Associated Performance in Prior Years

FY 2009: Met Release and close of FOA and lab call, subsequent review and selection of projects.

Office: Energy Efficiency and Renewable Energy

Project: Building Technologies

Website: <http://www1.eere.energy.gov/buildings>

Outcome S - Buildings and Appliance Market Transformation -Commercial Building Training

Expected by End ENERGY STAR: Develop standards for new product classes such as renewable energy and smart
2010 appliances. Develop additional tiers for the most energy-efficient products

Appliance Standards: Accelerate the development of four appliance test procedures, begin work on six additional procedures to be completed in FY 2011; establish a rigorous verification program

Building Energy Codes: Deploy code compliance tools and products for use at the state and local level

Commercial Building Specialist Training: Complete DOE curricula and certification procedures for building systems and equipment specialists and make available as train the trainer sessions through partnerships with education institutions nationwide.

FY 2010 Target

- ENERGY STAR: Develop standards for new product classes such as renewable energy and smart appliances. Develop additional tiers for the most energy efficient products
- Appliance Standards: Accelerate the development of four appliance test procedures, begin work on six additional procedures to be completed in FY 2011, establish a rigorous verification program.
- Building Energy Codes: Deploy code compliance tools and products for use at the state and local level.
- Commercial Building Specialist Training: Complete DOE curricula and certification procedures for building systems and equipment specialists and make available as train the trainer sessions through partnerships with education institutions nationwide.

2010 Results

Commentary: Not Met Develop draft certification, enforcement and verification enhancements for Appliance Standards

Future Plans / Appliance Standards:

Explanation of ENERGY STAR® Verification and Enforcement Pilot Program (NETL Site Support Award on
Shortfalls: 12/15/2009): Complete remaining Stage I testing or approximately 89 individual units; Complete as many Stage II tests as practical prior to expiration of funds (estimated to be 12/31/2010).
Accelerate Test Procedures: NETL Site Support Contractor will accelerate efforts on this activity, working with BTP to coordinate test-procedure prioritization/acceleration with BTP's strategic planning exercise (MYPP - currently underway) and with BTP's ongoing standards prioritization/acceleration process. Actual test procedures will be accelerated upon BTP confirmation of prioritization.
Round Robin Testing: Complete testing identified in matrix by 9/30/2011.
Verification and Enforcement Testing Process Development: Issue draft process document by 10/31/2010.
Verification and Enforcement Testing: Continue to perform testing as required until activity expiration on 9/30/2010. Independent Laboratory Accreditation Program: Issue draft program document by 12/31/2010.
Training Curricula: Selections announced on 6/22/2010; 13 awards and negotiations made in FY10 Q4 with project completions in FY12 Q4; Kickoff meeting held on 10/4/2010

Supporting Appliance Standards: Test reports, approved test procedures Commercial Building Specialist Training:
Documentation: Award documents

Associated Performance in Prior Years

FY 2009: Met Commercial Building training FOA Posted
Commercial Building training Technical Review Complete

Office: Energy Efficiency and Renewable Energy

Project: Building Technologies

Website: <http://www1.eere.energy.gov/buildings>

Outcome **S - National Accounts Acceleration in Support of the Commercial Buildings Initiative**

Expected by End Partner with National Accounts to complete case studies for 20 projects to improve the energy efficiency of commercial buildings.

FY 2010 Target

Begin 10 projects entailing exemplary energy performance in new buildings and existing buildings achieved through National Account partnerships.

2010 Results

Commentary: Met Criteria were established to replicate the Commercial Building Partnerships (CBP) via private sector technical teams. 8 projects were selected to move forward with the program along with 8 technical expert teams.

Future Plans: Projects will be managed according to their negotiated Project Management Plans

Supporting Documentation: Award documents are available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Not Met Expand program to five national laboratories and announce competitive solicitations through the national laboratories for National Accounts' design team partners

Office: Energy Efficiency and Renewable Energy

Project: Building Technologies

Website: <http://www1.eere.energy.gov/buildings>

Outcome **S - Residential Buildings (Building America, Builders' Challenge, and Existing Home Expected by End Retrofits)**

2010 Community Retrofits: Complete 15 energy efficient Municipal and Subdivision retrofit projects and 6 Deep Energy Savings retrofit projects.

Technical Support: Complete 10 reports documenting research and support. Complete 10 trainings, develop 1 train-the-trainer course, and revise 1 home energy retrofit standard

Builders Challenge: Achieve an additional 1.5 percent market share by September 2010 by working with 750 builder partners who build homes 30 percent more energy efficient than code. (Baseline 0.5 percent)

Outreach: Launch targeted consumer education and outreach campaign.

FY 2010 Target

"Community Retrofits: Complete 15 energy efficient Municipal and Subdivision retrofit projects and 6 40%+ Energy Savings retrofit projects.

Technical Support: Complete 10 reports documenting research and support. Complete 10 trainings, develop 1 train-the-trainer course, and revise 1 home energy retrofit standard.

Builders Challenge: Achieve an additional 1.5 percent market share by September 2010 by working with 750 builder partners who build homes 30 percent more energy efficient than code.

Outreach: Launch targeted consumer education and outreach campaign."

2010 Results

Commentary: Met Issued RFP and selected winning proposals. The winning proposals have been announced via DOE press release. Completed an airsealing and attic insulation guidelines report. Completed Beta version of national measures database.

Future Plans: Continue work on 2nd year targets. Project plan for consumer education and outreach campaign was completed on 10/8/2010. Continue work on remaining contractor guideline reports documenting retrofit best practices.

Supporting Public press release was issued June 20, 2010, and can be found at <http://www.energy.gov/news/9237.htm>,
Documentation: Airsealing and Attic Insulation Guidelines report and Database of Residential Energy Efficiency Measures report are available by request.

Associated Performance in Prior Years

FY 2009: Not Met • FOA Posted and Closed
• Preliminary Review Complete

Office: Energy Efficiency and Renewable Energy

Project: Building Technologies

Website: <http://www1.eere.energy.gov/buildings>

Outcome S - Solid State Lighting

Expected by End 2010 Increase the efficacy of state-of-the-art SSL to 113 lm/W of white light from a laboratory LED module by FY10.

FY 2010 Target

Increase the efficacy of state-of-the-art SSL to 113 lm/W of white light from a laboratory LED module by FY10. Complete Final Report on Manufacturer Workshop and Lighting Professional National Workshop.

2010 Results

Commentary: Not Met No projects were selected that address this criterion. Funding Opportunity Announcements (FOA) were issued that address technology gaps and targets identified in coordination with industry. However, as a result of a competitive process, no projects were selected to address module development.

Future Plans / Explanation of Shortfalls: No projects were selected which address this specific metric. This particular metric was suggested in development of the Solid State Lighting (SSL) project operating plan and prior to issuance of SSL FOAs.

SSL roadmapping activities in coordination with industry has developed numerous prioritized technology gaps and related targets. The resulting SSL FOAs addressed many of these gaps competitively. Resulting selections from the FOAs address vital aspects of SSL, as identified in the roadmapping documents. However, no selected projects directly address LED modules.

Additionally, SSL projects have been awarded for only 6 months (approximately) and do not have sufficient time under them to have completed 2 year targets.

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Met Complete release of all FOAs

Office: Energy Efficiency and Renewable Energy

Project: Appliance Rebates

Website: <http://www.energysavers.gov/financial/70020.html>

Outcome S - Appliance Rebate Programs

Expected by End 2010 All funds are obligated to states and territories opting to participate and program results are tracked by total number of ENERGY STAR appliances sold as a percentage of total number of rebates issued.

FY 2010 Target

Obligate 100 percent of allocations and document program results, such as number of ENERGY STAR appliances sold as a percentage of total number of rebates issued.

2010 Results

Commentary: Not Met As of October 4, 2010, 65 percent of obligated funds had been drawn down. In addition measures are in place for tracking program results, including number of rebates by appliance type, and energy, monetary and carbon savings. Actual results will be based on state reporting once programs conclude.

Future Plans / Short Term: Conducting heating campaign for states with remaining funds plus reaching out to associated heating equipment contractors in order to promote remaining rebate dollars in cold weather states.

Explanation of Shortfalls: Future: Conduct an in depth evaluation of the program as it relates to the American consumer and the energy and water savings impact on U.S. households.

Supporting Obligations information available in Quarterly Progress Reports and SF-425 Funding Reports. In addition, Documentation: final results and methodology will be provided in a final program report following the conclusion of state programs.

Associated Performance in Prior Years

FY 2009: Met Issue Funding Opportunity Announcement (FOA), receive Notices of Intents (NOI) from all states and territories, review submitted applications, and obligate 10 percent of funds to states and territories requesting funds.

Office: Energy Efficiency and Renewable Energy

Project: Facilities and Infrastructure

Website: <http://www.usbiomassboard.gov>

Outcome S - Integrated Biorefinery Research Expansion

Expected by End IBRF II construction complete and R&D capability operational and contributing to DOE Biomass 2010 Program goals

FY 2010 Target

Initiate and complete construction, receive and install equipment, and complete commissioning

2010 Results

Commentary: Not Met External Independent Review completed and construction subcontract signed. Construction underway.

Future Plans: Maintain Acquisition Executive approved cost, scope, and schedule baselines through construction using Earned Value Management System measurements to tolerances specified in DOE Order 413.3A.

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Not Met Modify subcontract, complete design, procure long lead equipment, and approve baseline

Office: Energy Efficiency and Renewable Energy

Project: Facilities and Infrastructure

Website: <http://www.usbiomassboard.gov>

Outcome S - NWTC Upgrades

Expected by End Complete electrical distribution system upgrade. Complete design of dynamometer upgrades and 2010 begin to procure upgrade equipment.

FY 2010 Target

Begin 2.5MW to 5.0MW dynamometer upgrade at the National Wind Technology Center facility. Complete the electrical distribution upgrade for connection of two utility-scale turbines to the grid.

2010 Results

Commentary: Data Not Available Results unknown.

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Not Met Initiate acquisition strategy. Award design contracts for electrical system upgrade and dynamometer upgrades.

Office: Energy Efficiency and Renewable Energy

Project: Facilities and Infrastructure

Website: <http://www1.eere.energy.gov/solar>

Outcome S - Renewable Energy and Supporting Site Infrastructure

Expected by End 2010 F2(a): Photovoltaic power production systems installed and commissioned; STM site security system installed and operational; complete enhanced ADA access and parking and pedestrian circulation projects.

F2(b):RSF II construction complete and building fully occupied

FY 2010 Target

F2(a): Complete all renewable power projects, site security, safety, and access projects, and equipment acquisitions.

F2(b): Approve cost, scope, and schedule baselines and complete construction and commissioning

2010 Results

Commentary: Not Met F2(a): Project acquisition plans developed and implemented for these projects allowing subcontracts to be awarded to purchase equipment or start projects.

F2(b):External Independent Review completed and construction subcontract signed. Construction underway.

Future Plans: Maintain acquisition executive-approved cost, scope, and schedule baselines through construction using Earned Value Management System measurements to tolerances specified in DOE Order 413.3A.

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Not Met F2(a): Complete design of photovoltaic power production systems; design STM site security system; and design enhanced ADA access and parking and pedestrian circulation projects.

F2(b): Modify subcontract and complete design.

Office: Energy Efficiency and Renewable Energy

Project: Federal Energy Management Program

Website: <http://www1.eere.energy.gov/femp>

Outcome S - Energy, Water & Emissions Reporting and Tracking System

Expected by End 2010 Develop comprehensive GHG planning tools and resources to support Federal agencies as they focus attention on mitigating climate change consequences from energy use.
Provide training to 15 agencies on GHG reduction strategies and technical assistance to least two Federal campuses.
Deploy a publicly-accessible information resource and agency planning tool that illustrates progress toward Agency goals in the areas of energy and water conservation, renewable power generation, and others.

FY 2010 Target

- Develop and begin implementation of a GHG protocol for calculating and reporting agency GHG emissions, a road map to a climate-neutral Federal government, and a plan guide for development and implementation of a climate neutral campus.
- Develop web-based sustainability assessment tool for use by all agencies.
- Migrate historical Federal energy use database to new, more robust platform.
- Deploy Web-based public access interface for EISA covered facility project data and historical energy use, costs, and square footage data by agency, along with appropriate FEMP program data functions.

2010 Results

Commentary: Met FEMP hosted workshops and had individual meetings with Federal agencies to implement their GHG protocols. FEMP also deployed their technical assistance project module.

Supporting FEMP tools, resources, and information about technical assistance is available at:

Documentation: http://www1.eere.energy.gov/femp/program/greenhousegases_resources.html

Associated Performance in Prior Years

FY 2009: Met Launch the FEMP GHG website, and develop a web-based sustainability assessment tool.
Deploy Beta test version of project tracking tool for agency use in complying with EISA sect. 432

Office: Energy Efficiency and Renewable Energy

Project: Federal Energy Management Program

Website: <http://www1.eere.energy.gov/femp>

Outcome S - Enhance and Accelerate FEMP Service Functions to the Federal Government

Expected by End 2010 Complete 60 technical assistance projects at Federal agencies which could lead to savings of 1.6 trillion annual BTUs. Technical assistance may include technical and business assistance for energy efficiency, renewable energy, water, and green building projects, and other compliance audits.

FY 2010 Target

Complete cumulative 60 technical assistance projects at Federal agencies which could lead to savings of 1.6 trillion annual BTUs.

2010 Results

Commentary: Met 93 technical assistance projects at Federal agencies were completed, which could lead to savings of over 1.6 trillion annual BTUs.

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Met Complete selection of 45 technical assistance projects for Federal agencies. Complete associated NEPA reviews.

Office: Energy Efficiency and Renewable Energy

Project: Geothermal Technology

Website: <http://www1.eere.energy.gov/geothermal>

Outcome S - EGS Technology R&D

Expected by End 2010 Identify the most promising downhole tools that tolerate temperatures up to 300oC and depths up to 10,000 meters.

FY 2010 Target

FOA closes. Merit review of FOA#09-GO99018 applications

2010 Results

Commentary: Not Met EGS R&D tool development awards are in the initial design stage with lab scale and field testing to begin in summer FY 11. At that time, the most promising downhole tool will be identified.

Future Plans: The tools necessary to achieve 17 kg/sec production rate from an EGS well will be determined after stimulation and post-stimulation analysis - summer of 2011.

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Met Close FOA #09-GO99018 and conduct merit review and rank proposals; fund critical R&D through lab call

Office: Energy Efficiency and Renewable Energy

Project: Geothermal Technology

Website: <http://www1.eere.energy.gov/geothermal>

Outcome S - Geothermal Demonstrations

Expected by End 2010 Demonstrate reservoir creation that achieves a flow rate of 17 kg/s

FY 2010 Target

Complete awards for all projects and demonstrate reservoir creation that achieves a flow rate of 17 kg/s

2010 Results

Commentary: Not Met Met - Completed all awards. Not Met - demonstrate reservoir creation that achieves a flow rate of 17 kg/s. Environmental Assessments are being performed and or have been completed, seismic hazard reports are being written or have been completed, and target wells are being analyzed and or drilled. Scheduled date for milestone completion is summer FY 11.

Future Plans: Future plans include the stimulation of geothermal reservoirs in the summer of 2011 to demonstrate reservoir creation that achieves a flow rate of 17 kg/s.

Supporting Documentation: Signed award documents available by request.

Associated Performance in Prior Years

FY 2009: Met Select multiple projects at varied geographic and geologic locations

Office: Energy Efficiency and Renewable Energy

Project: Geothermal Technology

Website: <http://www1.eere.energy.gov/geothermal>

Outcome S - Ground Source Heat Pumps

Expected by End 5 to 10 commercial-scale GHP demonstration projects under contract, 5 to 10 data gathering
2010 phase complete for research studies, 1 national certification and accreditation program in place.
These demonstration projects will retrofit/incorporate a minimum of 50 tons of heating and cooling capacity.

FY 2010 Target

Hardware demonstration projects – Awardees have signed contracts with construction vendors. Project designs should incorporate/retrofit a minimum of 50 tons of GHP heating and cooling capacity, individually per system or in the aggregate, for multiple systems.

Data Analysis – Data gathering phase complete. Includes independent, statistically valid data on the costs and benefits of GHPs utilized in a representative sample of building applications (e.g. residential, commercial, government, schools and universities), age, and utility service type (compare between electric and natural gas systems) and generating fuel mix (to calculate emissions offsets). The data gathering sample should be representative of major system loop designs and sizes, climate zones, and ground conditions, all which may have an impact on installation cost and feasibility.

Certification – Establish National certification and accreditation program technical committee. Establish timetable for completion of standard.

2010 Results

Commentary: Not Met Met - Several hardware demonstration projects have signed contracts with construction vendors. Not Met - Data gathering is ongoing and not yet complete for Data Analysis projects. Met - Certification - Establish National certification and accreditation program technical committee. Establish timetable for completion of standard.

Supporting Signed award documents, quotes and contracts from vendors and quarterly report documentation available
Documentation: by request.

Associated Performance in Prior Years

FY 2009: Met Complete the Merit Review Committee process.

Office: Energy Efficiency and Renewable Energy

Project: Geothermal Technology
Industry Coupled Exploratory Drilling

Website: <http://www1.eere.energy.gov/geothermal>

Outcome S - Validation of Innovative Exploration Technologies

Expected by End 2010 Validation of one new, innovative exploration technology or method by utilizing it to locate a geothermal resource.

FY 2010 Target

Collect geophysical along with other site characterization data and technology performance data from one explored field.

2010 Results

Commentary: Met One recipient has compiled all field data, passed the stage gate, and will begin drilling a well in October 2010.

Supporting Phase I report and signed Stage Gate report with recommendation to proceed to Phase II drilling available
Documentation: by request.

Associated Performance in Prior Years

FY 2009: Met Make selections and begin making awards on exploratory projects (20 to 40)

Office: Energy Efficiency and Renewable Energy

Project: Geothermal Technology

Website: <http://www1.eere.energy.gov/geothermal>

Outcome S- National Geothermal Data System, Resource Assessment and Classification System

Expected by End 2010

- Complete NGDS prototype
- USGS publish revised Geothermal Resource Assessment Circular
- Begin population of NGDS

FY 2010 Target

Resource Classification – USGS completes preliminary classification of nationwide EGS resources.

2010 Results

Commentary: Not Met Due to a late start on the funding, USGS is in the initial stages of collecting data for the Resource Assessment Circular.

Explanation of Recovery Act funds were de-obligated from the U.S. Geological Survey Interagency Agreement with DOE.
Shortfalls: This activity is now being pursued with regular year appropriations.

Supporting
Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Not Met National Geothermal Data System: Begin beta testing desktop software to access NGDS.

Office: Energy Efficiency and Renewable Energy

Project: Industrial Technologies

Website: <http://www1.eere.energy.gov/industry>

Outcome **S - Advanced Materials RD&D in Support of EERE Needs to Advance Clean Energy**

Expected by End **Technologies & Energy-Intensive Process R&D**

2010 Research, development and deployment that could result in decrease in industrial energy intensity and carbon emissions and increase in jobs by the accelerated implementation of eight advanced materials and process technologies in the manufacturing sector.

Develop processes for manufacturing of nanocomposite materials and accelerate implementation of advanced materials and processes in the manufacturing sector.

FY 2010 Target

50% of Advanced Materials technologies translated to industrial partner's manufacturing facilities for evaluation.

2010 Results

Commentary: Met Initiated 33 RD&D projects to develop advanced materials and process technologies, of which 17 have identified commercial partner or end user to help develop and evaluate these technological and facilitate implementation in the manufacturing sector. This target of implementing 8 materials and process technologies has been met.

Supporting All projects under this project submitted quarterly reports as supporting documentation that allows for Documentation: project oversight, tracking, and mitigation.

Associated Performance in Prior Years

FY 2009: Met Award 90 percent of nanomanufacturing and Energy-Intensive Process R&D projects. Advanced Materials equipment needs established and orders placed. Award four research, development and deployment grants. Subcontracts, RFPs, and equipment orders are in place.

Office: Energy Efficiency and Renewable Energy

Project: Industrial Technologies

Website: <http://www1.eere.energy.gov/industry>

Outcome **S - Combined Heat and Power (CHP), District Energy Systems, Waste Heat Recovery**

Expected by End **Implementation and Deployment of Efficient Industrial Equipment**

2010 Full scale verification will be accomplished for 20 percent of the projects. Systems will be started up and initial data taken to ensure all process are operational for 40 percent of the projects.

FY 2010 Target

Full scale verification will be accomplished for 20 percent of the projects. System shakedown testing will be accomplished for 20 percent of the projects.

2010 Results

Commentary: Met Three (3) of the nine (9) projects have completed installation and shakedown for a portion of the planned project portfolio for 33% (exceeding 20%). As well, three (3) of nine (9) projects or 33% of projects have started up with initial data taken.

Supporting Documentation: Signed award letters and supporting documentation available by request.

Associated Performance in Prior Years

FY 2009: Met Issue funding Opportunity Announcement, review proposals, select meritorious projects, and initiate awards.

Office: Energy Efficiency and Renewable Energy

Project: Industrial Technologies

Website: <http://www1.eere.energy.gov/industry>

Outcome S - Improved Energy Efficiency for Information and Communication Technology

Expected by End 2010 Complete 20 percent of the Concept Definition studies and 20 percent of the installation of initial demonstration projects to accelerate energy efficiency technology improvement.

FY 2010 Target

Complete 20 percent of concept definition studies and 20 percent installation of the initial demonstration technology for ICT.

2010 Results

Commentary: Met This project has two concept definitions studies and each is over 25% complete, exceeding the 20% target. This project has four demonstration projects and one is complete, meeting the 20% target. The overall target has been met.

Supporting Documentation: Recipient submitted Quarterly Progress reports for the two concept definition studies and four demonstration projects.

Associated Performance in Prior Years

FY 2009: Met Complete review of applications

Office: Energy Efficiency and Renewable Energy

Project: Industrial Technologies

Website: <http://www1.eere.energy.gov/industry>

Outcome S - Industrial Assessment Centers and Plant Best Practices

Expected by End 2010 Full implementation of enhanced IAC and Best Practices (Save Energy Now) activities supported by Recovery Act funds resulting in energy efficiency projects that are expected to lead to energy and carbon savings in U.S. industry.

FY 2010 Target

Track progress of IAC and Best Practices (Save Energy Now) Recovery Act funds resulting in energy efficiency projects that save energy in U.S. industry. Complete 60 percent of the small, mid-sized and large facility plant assessments through state and regional partnerships and the IAC assessments. Provide specialized technical assistance and project implementation support to 10 to 20 facilities through state, regional and national efforts.

2010 Results

Commentary: Not Met This project provided 10 - 20 plant technical assistance and project implementation support activities through state, regional and national efforts, meeting the sub-goal. However, the project fell short of meeting the goal of completing 60 percent of the small, mid-sized, and large facility plant assessments through state and regional partnerships and the IAC assessments. The delay was due to many of the project awardees' experiencing start-up issues and needed time to issue subcontracts.

Explanation of Shortfalls: The project fell short of meeting the goal of completing 60% of the facility plant assessments through due to many of the project awardees' experiencing start-up issues and needed time to issue subcontracts.

Supporting Documentation: Assessment reports collected in IAC and other databases; invoices and payments made to technical assistance providers; quarterly reports and metrics reporting documents. All award documents are also on file.

Associated Performance in Prior Years

FY 2009: Not Met Approve all new work plans for state and regional partnerships utilizing recovery act funds. Obligate funds for the state and regional partnerships.

Office: Energy Efficiency and Renewable Energy

Project: Solar Energy

Website: <http://www1.eere.energy.gov/solar>

Outcome S - Concentrating Solar Power

Expected by End Complete major upgrades to Concentrating Solar Power test facilities at the National Laboratories
2010 to ready facilities to support testing of advanced technologies

FY 2010 Target

Complete major facility upgrades and equipment purchases

2010 Results

Commentary: Not Met Project implementation was delayed due to required NEPA review.

Explanation of Title II design is now underway for most major project elements. The project is being re-baselined to

Shortfalls: reflect more current information on schedule and projected costing.

Supporting NEPA documentation on file with the Albuquerque site operations office. Procurement documentation on
Documentation: file at Sandia and NREL. Title I design on file at Sandia.

Associated Performance in Prior Years

FY 2009: Not Met Complete selection of facility upgrade projects and begin Solar Two
decommissioning

Office: Energy Efficiency and Renewable Energy

Project: Solar Energy

Website: <http://www1.eere.energy.gov/solar>

Outcome S - High-Penetration Solar Deployment

Expected by End Enhance domestic manufacturing of advanced inverters/controllers with 3 or more companies into
2010 pilot production phase.

Award and begin 5 to 10 projects to address market barriers inhibiting widespread solar adoption.

FY 2010 Target

Complete installations of integrated PV/inverter and PV/energy storage systems and begin field
data monitoring

Work underway for all Solar Market Transformation projects

2010 Results

Commentary: Met All 25 Solar Market Transformation projects were underway by or before June 1,
2010.

Supporting Award documents and quarterly progress reports are on file at the DOE Golden Field Office. Progress
Documentation: reports on file at NREL.

Associated Performance in Prior Years

FY 2009: Not Met Complete selection of awards for all sub activities.

Office: Energy Efficiency and Renewable Energy

Project: Solar Energy

Website: <http://www1.eere.energy.gov/solar>

Outcome S - PV Systems Development

Expected by End 2010 Complete Stage Gate review for incubator and supply projects to help domestic production capacity and enhance the manufacturing base; identify at least one innovative next-generation photovoltaics concept that could be transitioned to prototype cells and/or processes by 2015

FY 2010 Target

Verification of progress towards goals (3 MW or greater annual pilot production capacity by 2011 for incubators, market readiness in 2011-2015 for supply chain technologies, and readiness for transition to prototype cells and/or processes by 2015 for national laboratory innovative next-generation photovoltaics concepts)

2010 Results

Commentary: Met 4 Incubators projects are underway and are on track for reaching their targets, including 3 MW or greater production capacity, in 2011. Multiple Supply Chain projects are on track for market readiness in the 2011-2015 timeframe. Four next-generation photovoltaics projects were initiated and show promise for being transitioned to prototype by 2015.

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Not Met Complete selections of Supply Chain, Incubator/Pre-Incubator and national laboratory project Awards

Office: Energy Efficiency and Renewable Energy

Project: Vehicle Technologies

Website: <http://www1.eere.energy.gov/vehiclesandfuels>

Outcome S - Battery Manufacturing

Expected by End 2010 By September 30, 2010, the Electric Drive Vehicle Battery And Component Manufacturing facility projects have completed all design reviews and initiated construction activities for those for which DOE has completed NEPA review. Up to 35 contract awards are anticipated

FY 2010 Target

By September 30, 2010, the Electric Drive Vehicle Battery And Component Manufacturing facility projects have completed all design reviews and initiated construction activities for those for which DOE has completed NEPA review, and total expenditures have reached \$200 million. Up to 35 contract awards are anticipated.

2010 Results

Commentary: Met Thirty (30) projects were awarded under this program. Eighteen (18) of the projects involve facility construction activities. All “facility” construction projects have completed design reviews and initiated construction activities in accordance with project schedules. Total project expenditures have surpassed \$310M

Supporting Documentation: Award documents and supporting reports are on file at NETL.

Associated Performance in Prior Years

FY 2009: Met By September 30, 2009, announced selections for award for the Electric Drive Vehicle Battery And Component Manufacturing solicitation.

Office: Energy Efficiency and Renewable Energy

Project: Vehicle Technologies

Website: <http://www1.eere.energy.gov/vehiclesandfuels>

Outcome S - Clean Cities AFV Grant Program

Expected by End 2010 Deploy 25 percent of light, medium and heavy duty alternative fuel and advanced technology vehicles (estimated at 7,000-10,000)*; 25 percent of infrastructure deployment initiated.

FY 2010 Target

Deploy vehicles at 25 percent level and initiate 25 percent of infrastructure deployment.

2010 Results

Commentary: Met Twenty-four (24) of the 25 awards have ordered vehicles and/or initiated infrastructure development. Currently over 26% of the planned vehicles have been ordered and over 13% of the fueling infrastructure has been initiated, which exceeds the FY 2010 4th Quarter performance goal of 25% and 10%.

Supporting Documentation: Award documents and supporting reports are on file at NETL.

Associated Performance in Prior Years

FY 2009: Met Negotiate awards and plan for obligation of funds for grants for deployment of alternative fuel and advanced technology vehicles and infrastructure. Establish timelines for various projects.

Office: Energy Efficiency and Renewable Energy

Project: Vehicle Technologies

Website: <http://www1.eere.energy.gov/vehiclesandfuels>

Outcome S - Commercial Vehicle Integration (SuperTruck) and Advanced Combustion Engine R&D

Expected by End 2010: Awardees have completed initial truck design to increase freight efficiency by 50 percent and have validated the design with modeling. Complete engine designs to meet fuel economy goals for light-duty vehicles.

FY 2010 Target

By September 30, 2010, awardees have completed initial truck design to increase freight efficiency by 50 percent over 2009 models and have validated the design with modeling. Complete engine designs to meet fuel economy goals for light-duty vehicles.

2010 Results

Commentary: Not Met The original plan called for selection announcements in the 1st quarter of FY10; however announcements were not completed until January 11th, 2010. As well, awards were planned for 2nd quarter FY10, but were completed during the 3rd Quarter. The aforementioned schedule delays as well as small recipient project delays associated with project ramp up have created a rolling schedule delay across the projects. However, the recipients have initiated and are continuing analytical and modeling assessments of potential technologies with initial engine and truck designs anticipated for completion by 3rd Quarter of FY 2011.

Future Plans: The recipients have initiated and are continuing analytical and modeling assessments of potential technologies with initial engine and truck designs anticipated for completion by 3rd Quarter of FY 2011.

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Met By August 1, 2009, complete DNFA for Automotive X Prize.
By September 30, 2009, close solicitation for passenger and commercial vehicle efficiency improvement.

Office: Energy Efficiency and Renewable Energy

Project: Vehicle Technologies

Website: <http://www1.eere.energy.gov/vehiclesandfuels>

Outcome S - Lab Call for Facilities and Equipment

Expected by End 2010 Bring 3-5 new R&D facilities and equipment online to support the Buildings, Vehicle Technologies and other programs.

FY 2010 Target

All facilities are under construction.

2010 Results

Commentary: Not Met Construction/Renovations have commenced at two facilities (as of 9/30/10).

Future Plans: Construction will begin in 2011 for the remainder of facilities.
Maintain acquisition executive-approved cost, scope, and schedule baselines through construction using Earned Value Management System measurements to tolerances specified in DOE Order 413.3A.

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Not Met National Laboratory solicitation and initial awards related to new R&D facilities and equipment.

Office: Energy Efficiency and Renewable Energy

Project: Vehicle Technologies

Website: <http://www1.eere.energy.gov/vehiclesandfuels>

Outcome S - Transportation Electrification

Expected by End 2010 Complete initial Advanced Electric Drive Technology deployments and infrastructure installations for 75 percent of awards.

FY 2010 Target

September 2010: begin electric drive technology deployment.

2010 Results

Commentary: Met Four (4) of the eight (8) projects related to technology deployments and infrastructure installations have begun. The remaining four projects have not started deployments or installations primarily due to a change from the original award schedule. The original plan was for awards to be completed in the 4th Quarter of FY09. Two awards were completed at that time. The remaining six (6) awards were completed between the 1st and 3rd quarter of FY10. These late awards translated to delays in vehicle and infrastructure deployment.

Supporting

Documentation: Award documents and supporting reports are on file at NETL.

Associated Performance in Prior Years

FY 2009: Met By September 30, 2009 grant selections are completed and negotiations for awards are underway.

Office: Energy Efficiency and Renewable Energy

Project: Water Power

Website: <http://www1.eere.energy.gov/windandhydro>

Outcome S - Hydroelectric Facility Modernization Program

Expected by End 2010 Within two years, all demonstration projects will have successfully proceeded through required pre-operational licensing stages and modernization construction will be underway. Furthermore, 50 percent of the will have fully implemented modification upgrades and will be producing additional hydroelectricity and demonstrating advanced technologies.

FY 2010 Target

Generate at least 50 GWh of new hydroelectricity from advanced technology demonstrations.

2010 Results

Commentary: Not Met Within in 2-years of award date, all projects are expected to be generating power. Awards have only been underway for 9 months.

Future Plans /

Explanation of All awardees are progressing on aggressive schedules

Shortfalls:

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Met Release and review competitive solicitation and selection process for industry-led projects.

Office: Energy Efficiency and Renewable Energy

Project: Weatherization and Intergovernmental
Integrated Deployment

Website: <http://www1.eere.energy.gov/wip>

Outcome S - Community Renewable Energy Deployment

Expected by End 2010 Create up to 500 new jobs, achieve up to 60 million kWh annually in electricity generation from renewable energy sources, and reduce greenhouse gas emissions by 50,000 tons annually.

FY 2010 Target

Implementation Projects awarded for one to four integrated community renewable plans. Implementation plans developed, initiate permitting and environmental review for proposed projects, construction initiated on projects that meet permitting and federal/state/local environmental review.

2010 Results

Commentary: Not Met Projects are on track to meet Second Year Performance Target but have not entered into the second year of the project. Projects are either in various stages of NEPA compliance or other environmental review and permitting stages.

Future Plans: Plan to keep NEPA and other design, engineering and environmental work moving forward and on schedule.

Supporting

Documentation: Detailed documentation available from Office of Energy Efficiency and Renewable Energy.

Associated Performance in Prior Years

FY 2009: Met Funding Opportunity Announcement issued and proposals in review for selection

Office: Energy Efficiency and Renewable Energy

Project: Weatherization and Intergovernmental

Website: <http://www1.eere.energy.gov/wip>

Outcome S - Enabling Fuel Cell Market Transformation

Expected by End 2010 Deliver 200 to 400 fuel cells in fork-lift fleets, telecommunication backup power applications, and combined heat and power fuel cell systems by September 30, 2010.

FY 2010 Target

Install 55 to 120 fuel cells in forklift fleets, telecommunications backup power applications, and combined heat and power fuel cell systems by September 30, 2010.

2010 Results

Commentary: Met Exceeded target by more than 90%. 206 lift trucks and 24 telecommunication backup power units have been installed, bringing the total installed fuel cell count to 230.

Supporting Documentation: 2010 Q3/2010 Q4 Quarterly Reports for these recipients available by request.

Associated Performance in Prior Years

FY 2009: Met Negotiate grants for new project partners and award at least 80% of grants.

Office: Energy Efficiency and Renewable Energy

Project: Weatherization and Intergovernmental

Website: <http://www1.eere.energy.gov/wip>

Outcome S - Energy Efficiency and Conservation Block Grants

Expected by End 2010 Obligate all Energy Efficiency and Conservation Block Grants funds to states, local governments, and Indian tribes. Complete application review and calculate program outcomes based on aggregated projected savings from grantee applications. Release Funding Opportunity Announcements, and obligate approximately 5 percent of funds to states, local governments and Indian Tribes.

FY 2010 Target

Complete obligation of funds and monitor grantee performance. Calculate program outcomes based on aggregated projected savings from grantee applications.

2010 Results

Commentary: Met 100% of Energy Efficiency and Conservation Block Grants (EECBG) formula obligations made—\$2,709.3 M of \$2,709.3 M total (net of \$4.7M Did Not Apply awards), all application reviews completed. EECBG Desktop and Onsite reviews in progress. Program outcome estimates developed by EECBG team.

Supporting Documentation: Obligations information available in: Assistance Agreements, STARS, FederalReporting.gov & PAGE information system. Projected savings: supporting data available in PAGE information system.

Associated Performance in Prior Years

FY 2009: Met Release Funding Opportunity Announcements, and obligate approximately 5 percent of funds to states, local governments and Indian Tribes.

Office: Energy Efficiency and Renewable Energy

Project: Weatherization and Intergovernmental

Website: <http://www1.eere.energy.gov/wip>

Outcome S - State Energy Program

Expected by End Award Recovery Act funds and track progress of state and territory use of State Energy Program
2010 Recovery Act funds resulting in energy efficiency projects that are expected to lead to energy savings, and greenhouse gas reductions.

FY 2010 Target

Award 100 percent of Recovery Act funds and track progress of state and territory use of State Energy Program Recovery funds resulting in energy efficiency projects that are expected to lead to energy savings.

2010 Results

Commentary: Met 100% of SEP Recovery Act funds awarded. Progress and estimated impacts tracked through recipient reporting and grant monitoring.

Supporting Awards information available in: Assistance Agreements, STARS, FederalReporting.gov & PAGE
Documentation: information system. Projected savings: supporting data available in PAGE information system.

Associated Performance in Prior Years

FY 2009: Met Review all state plans submitted prior to July 1, 2009 and obligate 20 percent of allocated funds contingent upon the states' cooperation in resolving issues, including NEPA, raised during plan review.

Office: Energy Efficiency and Renewable Energy

Project: Weatherization and Intergovernmental

Website: <http://www1.eere.energy.gov/wip>

Outcome S - Weatherization Assistance Program

Expected by End Weatherize a minimum of 210,000 low-income homes by 9/30/2010.
2010

FY 2010 Target

Weatherize a minimum of an additional 197,500 low-income homes bringing a cumulative total with Recovery Act funds to a minimum of 210,000 homes.

2010 Results

Commentary: Met 207,920 homes weatherized in FY10

Supporting Supporting data available in PAGE information system.
Documentation:

Associated Performance in Prior Years

FY 2009: Not Met Weatherize a minimum of 12,500 low-income homes and up to 45,000 homes.

Office: Energy Efficiency and Renewable Energy

Project: Wind Energy

Website: <http://www1.eere.energy.gov/windandhydro>

Outcome **S - Large Wind Turbine Blade Testing Facility**

Expected by End Complete subsurface construction of the facility
2010

FY 2010 Target

Two to three Wind University Consortium established.

2010 Results

Commentary: Not Met Project has been under construction for 12 months. "Substantial Completion" is scheduled for Feb 2011, with Final completion scheduled for April 2011.

Future Plans / Explanation of Shortfalls: No significant shortfalls have impacted the timeline of this project. Future plans include an official commissioning ceremony in Q2 FY11

Supporting Documentation: When commissioning and completion are scheduled and finalized, such documents will be available. A memo noting as such is can be made available upon request

Associated Performance in Prior Years

FY 2009: Met Q4 2009 Award a grant/cooperative agreement to MA

Office: Energy Efficiency and Renewable Energy

Project: Wind Energy
DOE Wind University R&D Consortium

Website: <http://www1.eere.energy.gov/windandhydro>

Outcome **S - Wind Energy Consortia between Institutions of Higher Learning and Industry**

Expected by End Establish two to three Wind University Consortia and initiate turbine construction in at least
2010 one Consortium.

FY 2010 Target

Two to three Wind University Consortium established.

2010 Results

Commentary: Met Three University Awards were made in January 2010. Projects are well underway with two turbine purchase agreements in place with two of them. All Awardees have significant industry and stakeholder participation and have established curricula for advancing wind energy education

Explanation of Shortfalls: Environmental issues and other complications delayed turbine acquisition in two cases. Significant efforts were made by both awardees overcome these obstacles and achieve the goals outlined in their project proposals.

Supporting Documentation: Award documents available by request.

Associated Performance in Prior Years

FY 2009: Met Complete evaluation of Wind University Consortium grants applications.

Office: Energy Efficiency and Renewable Energy

Project: Wind Energy

Website: <http://www1.eere.energy.gov/windandhydro>

Outcome S - Wind Energy Technology R&D and Testing

Expected by End 3.6 cents/kWh modeled cost of wind power in land-based Class 4 winds.
2010

FY 2010 Target

Assess progress of projects toward reducing the cost of energy, such as 3.6 cents/kWh in land-based Class 4 winds

2010 Results

Commentary: Not Met Cost of energy model cannot accurately be assessed at this time. The 27 awardees are in the 10th month (of 2 years) of their awards. Upon project completion, cost of energy modeling will be re-evaluated

Future Plans: Cost model applicability to be completed upon project completion.

Supporting
Documentation: None

Associated Performance in Prior Years

FY 2009: Not Met Award grants

Office: Energy Efficiency and Renewable Energy

Project: Wind Energy

Website: <http://www1.eere.energy.gov/windandhydro>

Outcome S - Wind Turbine Drivetrain Testing Facility

Expected by End The Critical Design Review of a new dynamometer facility capable of testing wind turbine
2010 drivetrains of up to 15 MW is complete and construction is ready to commence.

FY 2010 Target

Award grants for project implementation and facility construction. Critical Design Review completed. Pre-construction activities completed. NEPA review completed.

2010 Results

Commentary: Met Grants have been awarded for both equipment and building design and construction. Critical Design Review occurred on Oct. 27, 2010. Pre-construction activities have been completed, as well as the NEPA Review

Future Plans: Awardees are moving forward rapidly to assure the timely completion of project milestones.

Supporting
Documentation: Signed Finding of No Significant Impact and contract agreements are available by request.

Associated Performance in Prior Years

FY 2009: Met FOA completed and selection committee chairman report issued.

Office: Environmental Management

Project: ANL Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome Argonne National Laboratory (ANL)

Expected by End 2010 This Recovery Act Project supports the mission of DOE and the Office of Environmental Management (EM) to reduce risks and costs by accelerating completion of new scope accepted from the Office of Science: deactivation and decommissioning (D&D) of two excess contaminated facilities and completing waste and material cleanouts in a safe and cost effective manner. Disposition of irradiated fuel specimens and other wastes and materials from the Alpha Gamma Hot Cell Facility (AGHCF), a Category 2 excess nuclear facility, and the disposition of transuranic wastes from other excess nuclear facilities will be accelerated by approximately eight years, compared to EM's previous estimated ability to accept new scope in FY 2017.

FY 2010 Target

TRU-RH Dispositioned = 10 cubic meters

2010 Results

Commentary: Not Met Achieved 7.8 m³ of 10 m³ RH-TRU Dispositioned.

Supporting Documentation: The EM Integrated Planning, Accountability, and Budgeting System (IPABS)

Associated Performance in Prior Years

FY 2009: Not Met Initiate and complete baselining activities for projects and establish milestones for treatment of specific wastes/volumes

Office: Environmental Management

Project: BNL Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome Brookhaven National Laboratory

Expected by End 2010 This project will clean-up a variety of radiological contaminated facilities and structures, all a result of non-defense nuclear studies and projects performed at Brookhaven National Laboratory (BNL).

FY 2010 Target

Facility Square Footage De-Inventoried = 625 sq. ft.

2010 Results

Commentary: Not Met 0 of 625 sq. ft. facility square footage de-inventoried.

Supporting Documentation: The EM Integrated Planning, Accountability, and Budgeting System (IPABS)

Associated Performance in Prior Years

FY 2009: Met During FY09, it is anticipated that the following events will occur: start removal of the A/B Waste Lines and FHWMF Soils, complete the removal of 840yds³ of the FHWMF Soils, and complete the Graphite Pile Removal Preparation.

Office: Environmental Management

Project: ETEC Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome Energy Technology Engineering Center

Expected by End 2010 There are two sub-projects that will be completed with Recovery Act funds at the Energy Technology Engineering Center: 1) a Congressionally mandated Area IV-wide radiological characterization and survey (Rad Survey); and 2) supplemental funding of the ongoing investigation and remediation of soil and groundwater contamination.

FY 2010 Target

Low-Level Waste/Mixed Low-Level Waste Disposed = 10 cubic meters

2010 Results

Commentary: Not Met 0 m³ of 10 m³ low-level waste/mixed low-level waste disposed.

Supporting Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Not Met Rad Survey plans and contracting confirmed. Final RFI begun for Groups 1A and 10.

Office: Environmental Management

Project: Hanford Central Plateau D&D Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome Hanford Central Plateau D&D

Expected by End 2010 This American Recovery and Reinvestment Act (Recovery Act) Project supports the mission of DOE and the Office of Environmental Management (EM) by 1) Completing deactivation and decommissioning (D&D) of facilities that provide no further value to reduce long-term liabilities and maximize resources for cleanup, 2) Remediating sources of soil and ground water contamination with radioactive and hazardous constituents, and 3) Reconfiguring/relocating/replacing systems impacted by D&D that are required to support remaining site operations in a safe and cost effective manner to reduce risk.

FY 2010 Target

Industrial Facility Completions = 14

2010 Results

Commentary: Exceeded Achieved 27 of 14 industrial facility completions.

Supporting Documentation: The EM Integrated Planning, Accountability, and Budgeting System (IPABS)
EM Monthly Program Reviews

Associated Performance in Prior Years

FY 2009: Not Met Initiate procurement activities to D&D Central Plateau facilities necessary to complete disposition of 3 facilities by end of first year period

Office: Environmental Management

Project: Hanford Central Plateau Soil and Groundwater Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome **Hanford Central Plateau Soil and Groundwater**

Expected by End This American Recovery and Reinvestment Act (Recovery Act) Project supports the mission of
2010 DOE and the Office of Environmental Management (EM) by 1) Completing construction of the final remedy - Pump and Treatment Facilities and Bioremediation deployment for groundwater operable units located in the 100 and 300 areas, and 2) Completion of characterization to determine the extent of contamination in the operable units.

FY 2010 Target

Groundwater Wells Installed = 184

2010 Results

Commentary: Exceeded Achieved 268 of 184 groundwater wells installations.

Supporting The EM Integrated Planning, Accountability, and Budgeting System (IPABS)EM Monthly Program
Documentation: Reviews

Associated Performance in Prior Years

FY 2009: Not Met Initiate procurement activities to Groundwater Remediation.

Office: Environmental Management

Project: Hanford River Corridor D&D Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome **Hanford River Corridor D&D**

Expected by End This American Recovery and Reinvestment Act (Recovery Act) Project supports the mission of
2010 DOE and the Office of Environmental Management (EM) by 1) Completing deactivation and decommissioning (D&D) of facilities that provide no further value to reduce long-term liabilities and maximize resources for cleanup, 2) Remediating sources of soil and ground water contamination with radioactive and hazardous constituents, and 3) Reconfiguring/relocating/replacing systems impacted by D&D that are required to support remaining site operations in a safe and cost effective manner to reduce risk.

FY 2010 Target

Remediation Complete (Release Sites) = 21

2010 Results

Commentary: Not Met Achieved 5 of 17 remediations complete (release sites).

Explanation of Completion of waste sites has been resequenced, reducing the number completed in FY 2010. (Projected
Shortfalls: reduced from 21 to 17, and approved by EM change control process)

Supporting The EM Integrated Planning, Accountability, and Budgeting System (IPABS)
Documentation: EM Monthly Program Reviews

Associated Performance in Prior Years

FY 2009: Not Met Initiate procurement activities for River Corridor Remediation.

Office: Environmental Management

Project: Hanford River Corridor Soil and Groundwater Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Hanford River Corridor Soil and Groundwater

Expected by End 2010 This American Recovery and Reinvestment Act (Recovery Act) Project supports the mission of DOE and the Office of Environmental Management (EM) by remediating the Burial Ground 618-10 Trench in accordance to the site's 300-FF-2 Record of Decision. Waste that is exhumed from the trench will be transported, characterized, packaged or repackaged and properly disposed. The burial ground contains radioactive and hazardous constituents which are a risk to the Columbia River and is located near an operating nuclear power plant and the City of Richland. By remediating this waste site a reduction in overall risk to the worker, public and environment will be realized sooner versus later. Potential out-year savings include accelerating field remediation originally scheduled to take place by 2015 to be completed during FY 2009-2011 through utilization of Recovery Act funds.

FY 2010 Target

Project Percent Complete = 35.9

2010 Results

Commentary: Exceeded Achieved 40.6 percent complete versus target of 35.9%.

Supporting IPABS

Documentation: EM Monthly Program Reviews

Associated Performance in Prior Years

FY 2009: Exceeded Initiate procurement activities for River Corridor Soil and Groundwater.

Office: Environmental Management

Project: Hanford TRU Waste Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Hanford TRU Waste

Expected by End 2010 Disposition 643 cubic meters of Contact-Handled Transuranic (CH TRU) waste

FY 2010 Target

CH TRU Waste Processed (Certification Ready) = 400 cubic meters

2010 Results

Commentary: Not Met Achieved 340 of 400 CH TRU Waste Processed (Certification Ready).

Supporting IPABS

Documentation:

Associated Performance in Prior Years

FY 2009: Exceeded Retrieve 250m³ of CH TRU waste

Office: Environmental Management

Project: INL Soil and Groundwater Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome **S - INL Buried Waste**

Expected by End Exhume 0 acres of buried waste
2010

FY 2010 Target

Acres of Buried Waste Exhumed = 0.14

2010 Results

Commentary: Exceeded Achieved .36 of .14 Acres of Buried Waste Exhumed.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Data Not Complete exhumation of 0.05 acres or targeted waste
Available

Office: Environmental Management

Project: INL Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome **S - INL Deactivation and Decommissioning (D&D)**

Expected by End Complete demolition of 12 industrial facilities
2010

FY 2010 Target

Industrial Facility Completions = 11

2010 Results

Commentary: Met Achieved 10 of 11 Industrial Facility Completions (greater than 90% of target).

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Met Reduce the EM building footprint by eliminating 8,855 sq. ft. of facilities.

Office: Environmental Management

Project: INL TRU Waste Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - INL TRU Waste

Expected by End 2010 This Recovery Act project supports the mission of the Department of Energy (DOE) Office of Environmental Management (EM) by 1) treating remote handled (RH) transuranic (TRU) waste recently transferred from the Office of Nuclear Energy to EM and shipping to WIPP, 2) retrieving and treating Transuranic Storage Area – Retrieval Area (TSA-RE) waste, 3) receiving and treating contact handled (CH) TRU from multiple small sites, and 3) dispositioning legacy mixed low level waste (MLLW). Permanent disposition of radioactive solid waste is one portion of the long-term mission at Idaho National Laboratory.

FY 2010 Target

RH TRU Waste Dispositioned = 0.0 cubic meters

2010 Results

Commentary: Met Achieved 0.0 of 0.0 RH TRU Waste Dispositioned.

Supporting Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Exceeded Ship offsite 400m3 of CH-MLLW

Office: Environmental Management

Project: LANL Defense D&D Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - LANL Defense D&D

Expected by End 2010 In addition to deactivation and demolition (D&D) of several buildings, this project includes removal of thousands of feet of below ground process contaminated waste lines which have the potential to contain radioactive, hazardous, mixed transuranic (TRU) and Toxic Substance Control Act (TSCA) wastes. This action would address the majority of the acid waste lines at Technical Area (TA)-21 and allow easy access to remove or mitigate any contamination beneath or adjacent to the major suite of buildings along the spine of TA-21.

FY 2010 Target

Radioactive Facility Completions = 10

2010 Results

Commentary: Not Met Achieved 8 of 10 radioactive facility completions.

Supporting Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Not Met Remove hazardous waste from TA-21-210

Office: Environmental Management

Project: LANL Defense Soil and Groundwater Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - LANL Defense Soil and Groundwater Recovery Act Project

Expected by End 2010 This effort will remove approximately 25,000 CY of contaminated soils and restore the site to residential standards.

FY 2010 Target

Number of Groundwater Wells Installed = 16

2010 Results

Commentary: Met Achieved 15 of 16 Groundwater Wells Installations (greater than 90% of target).

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Not Met Completion of all engineering design, long lead time procurement items, and mobilization.

Office: Environmental Management

Project: LANL Non-Defense Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - LANL Non-Defense

Expected by End 2010 DP Site Tritium Systems Test and Assembly (TSTA) facility was used for polonium, actinide and tritium research and production, and for the civilian fusion reactor program. The facility has approximately 16,000 square feet of space. Recovery Act funding will be used for deactivation and decommissioning (D&D) of the main TSTA building, and 4 ancillary structures, in addition to the removal/disposal of several hundred feet of process contaminated waste lines and any associated soil contamination. This allows for more cost effective Consent Order investigations and cleanup Milestone as required by the State of New Mexico Environmental Department (NMED).

FY 2010 Target

Radioactive Facility Completions = 5

2010 Results

Commentary: Met Achieved 5 of 5 Radioactive Facility Completions.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Not Met Complete removal of hazardous waste & equipment in TSTA

Office: Environmental Management

Project: Moab Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Moab, Utah

Expected by End 2010 The scope of the Moab Uranium Mill Tailings Remedial Action (UMTRA) Project is to relocate 16 million tons of uranium mill tailings at the former uranium-ore processing facility near Moab, Utah, by rail to an engineered disposal cell 30 miles north at Crescent Junction, Utah. The current base project is scheduled for completion in 2028, this accelerated Recovery Act work scope reduces the project completion date by 3 years to 2025.

FY 2010 Target

Mill Tailings Disposed = 1,221,089 Short Tons

2010 Results

Commentary: Exceeded Achieved 1,292,236 Short Tons of 1,221,089 Short Tons Mill Tailings Disposed.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Exceeded Dispose of an additional (over base program) 97,000 tons of tailings

Office: Environmental Management

Project: Mound Operable Unit 1 Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Mound Operable Unit 1

Expected by End 2010 As part of the Mound Base Cleanup Program approximately 282 acres of the 306 acre site have been remediated and made ready for transfer to the Miamisburg Mound Community Improvement Corporation (MMCIC) with 126 acres remaining to be transferred. A total of 104 acres are awaiting finalization of a Comprehensive Environmental Response, Compensation and Liability Act Record of Decision, and 19 acres are awaiting completion of the current OU-1 contract. The final 4 acres will be remediated to support transfer of the balance of the site to the MMCIC upon completion of this ARRA project.

FY 2010 Target

D and D Debris and Remediated Soil Disposed = 17,064 cubic meters

2010 Results

Commentary: Exceeded Achieved 19,314 m³ of 17,064 m³ D and D Debris and Remediated Soil Disposed.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Met Complete the planning and mobilization effort for the cleanup of OU-1.

Office: Environmental Management

Project: NTS Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Nevada Test Site (NTS)

Expected by End 2010 The Environmental Management objective on the Nevada Test Site includes assessing the degree of contamination of support facilities, soils, and groundwater resulting from the historic nuclear weapons testing program, and performing corrective actions required by federal and state regulations. The goal is to implement appropriate corrective actions and establish institutional controls to ensure the protection of human health and the environment. Recovery Act funding of this project will accelerate remediation of soil up to five years, drilling activities one year, and demolition of several excess facilities up to five years.

FY 2010 Target

D and D Debris and Remediated Soil Disposed = 3,664 cubic meters

2010 Results

Commentary: Exceeded Achieved 5,976 m³ of 3,664 m³ of D and D Debris and Remediated Soil Disposed.

Supporting Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Exceeded Complete initial funds distribution
Complete drilling of first accelerated groundwater well

Office: Environmental Management

Project: Oak Ridge Defense ORNL D&D Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Oak Ridge Defense ORNL D&D

Expected by End 2010 This Recovery Act project supports the mission of the Department of Energy (DOE) Office of Environmental Management (EM) by demolishing surplus contaminated facilities and remediating contaminated soil at the Oak Ridge National Laboratory (ORNL).

FY 2010 Target

Facility Square Footage Demolished = 24,400 sq. ft.

2010 Results

Commentary: Met Achieved 24,400 sq. ft. of 24,400 sq. ft. Facility Square Footage Demolished.

Supporting Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Data Not Available Baselined targets not approved until early FY10

Office: Environmental Management

Project: Oak Ridge Defense TRU Waste Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Oak Ridge Defense TRU Waste

Expected by End 2010 This Recovery Act project supports the mission of the Department of Energy (DOE) Office of Environmental Management (EM) by adding additional CH TRU Debris waste and RH TRU Debris waste processing capability at the Oak Ridge Transuranic Waste Processing Center (TWPC). The waste is processed so that it meets the waste acceptance criteria at the Waste Isolation Pilot Plant (WIPP). The Carlsbad Field Office Central Characterization Project then certifies and ships the waste to WIPP. Processing and disposition of TRU waste is one portion of the long-term cleanup mission at the Oak Ridge Site.

FY 2010 Target

CH TRU Waste Dispositioned = 395 cubic meters

2010 Results

Commentary: Exceeded Achieved 403 m3 of 395 m3 of CH TRU Waste Dispositioned.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Met Hire and train a second shift of Transuranic Waste Processing shift operators.

Office: Environmental Management

Project: Oak Ridge Defense Y-12 D&D Recovery Act Project

Website:

Outcome S - Oak Ridge Defense Y-12 Decontamination & Demolition (D&D)

Expected by End 2010 This Recovery Act project will render the highest risk excess facility at Y-12 (Alpha-5) ready for decontamination & demolition (D&D) by removing all legacy material; remediate the most significant source of mercury contamination to surface water at Y-12; and demolish five dilapidated, contaminated buildings.

FY 2010 Target

Facility Square Footage Demolished = 15,043 square feet

2010 Results

Commentary: Met Achieved 15,043 sq. ft. of 15,043 sq. ft. Facility Square Footage Demolished

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Met By the end of FY 2009 initiate procurement actions and/or mobilize work force to:

- Remove and dispose legacy materials.
- Decrease footprint.
- Remove and dispose scrap.
- Expand the sanitary landfill Expand EMWFM disposal facility.
- Remediate the Y-12 storm sewers in the West End Mercury Area.

Office: Environmental Management

Project: Oak Ridge Non-Defense Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Oak Ridge Non-Defense

Expected by End 2010 This Recovery Act project supports the mission of the Department of Energy (DOE) Office of Environmental Management (EM) by demolishing surplus contaminated facilities and remediating contaminated soil at the Oak Ridge National Laboratory (ORNL).

FY 2010 Target

Facility Square Footage Demolished = 35,064 square feet

2010 Results

Commentary: Met Achieved 35,064 sq. ft. of 35,064 sq. ft. of Facility Square Footage Demolished.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Not Met By the end of FY 2009 initiate procurement actions and/or mobilize work force to execute the work scope of this Recovery Act Project.

Office: Environmental Management

Project: Oak Ridge UE D&D Funded Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Oak Ridge UE Decontamination and Decommissioning (D&D)

Expected by End 2010 This Recovery Act project supports the mission of the Department of Energy (DOE) Office of Environmental Management (EM) by preparing the K-27 Uranium Enrichment Facility for demolition. The K-27 Building consists of nine building units occupying a 383,000 square foot "footprint" with over 1.1 million square feet of total floor area. This work includes removal, segmentation, and mining of all high risk equipment and piping; abatement of hazardous material as necessary for removal of high risk components; and the management and disposition of wastes generated from the project, such that the Contractor can make and DOE approve a Criticality Incredible Determination.

FY 2010 Target

Project Percent Complete = 25.8

2010 Results

Commentary: Exceeded Achieved 29.9 of 25.8 Project Percent Complete.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Not Met By the end of FY 2009: Initiate procurement actions and/or mobilize work force. As the project baseline is developed, earned value management measures will be developed to monitor progress

Office: Environmental Management

Project: ORP Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Office of River Protection (ORP)

Expected by End 2010 ORP is responsible for managing the radioactive mixed waste stored in 177 underground tanks located within 7 miles of the Columbia River. Of these tanks, 149 have a single steel liner inside the concrete tanks and are decades beyond their design life. Many of these tanks have leaked and some of the waste has reached the groundwater, threatening the Columbia River. It is important that the radioactive waste be removed, treated, and stored or disposed of in a more secure location before additional leaks occur and prior to tanks and infrastructure deteriorating to the point where cost and schedule for cleanup become prohibitive. The waste must be safely stored until it is retrieved. Monitoring, surveillance, and maintenance activities are performed to validate safe storage conditions and tank integrity and to maintain the tank farms infrastructure so that it can be used for future waste retrieval and transfer activities.

FY 2010 Target

Project Percent Complete = 47.2

2010 Results

Commentary: Exceeded Achieved 47.8 of 47.2 Project Percent Complete.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Exceeded Project planning on Recovery Act projects; Recovery Act resource mobilization; initiate project design work; initiate procurement activities for tank/ tank farm equipment upgrades

Office: Environmental Management
Project: Paducah Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Paducah Project

Expected by End 2010 The Energy Policy Act of 1992 assigned the Secretary of the Department of Energy (DOE) the responsibility to decontaminate and decommission (D&D) the uranium enrichment gaseous diffusion plants. This project accelerates the D&D and remediation responsibilities of the Environmental Management Program from FY2033 to FY2019.

Investment in this project will accelerate the complete demolition of three facilities at the Paducah Gaseous Diffusion Plant, two large chemical processing facilities and one contaminated metals smelting facility.

FY 2010 Target

Project Percent Complete = 59.6

2010 Results

Commentary: Exceeded Achieved 64.8 of 59.6 Project Percent Complete.

Supporting Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Met C-340 Complex and C-746-A East End Smelter: NEPA CX Approval

Office: Environmental Management

Project: Portsmouth Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Portsmouth Project

Expected by End 2010 Investment in this Recovery Act Project will accelerate the complete demolition of three surplus building complexes (12 individual buildings) at the Portsmouth Gaseous Diffusion Plant, remediation of 65 acres of contaminated soil, and disposition of excess uranium material. This will create or preserve jobs for the available existing skilled workforce to immediately execute this project.

FY 2010 Target

Facility Square Footage Demolished = 288,489 square feet

2010 Results

Commentary: Not Met Cumulative negative variance due to delays in approval of EE/CA and subsequent downstream demolition, disposition and soil remediation activities as well as impacts due to unplanned additional activities awaiting an approved recycle and reuse strategy. The cumulative positive variance is due to early initiation of required approval documents as well as acceleration of the cooling tower D&D activities. Achieved 109,089 sq. ft. of 288,489 sq. ft. Facility Square Footage Demolished.

Supporting Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Exceeded Repackage/Disposition 1 lot of excess uranium materials

Office: Environmental Management

Project: SPRU Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - SPRU Project

Expected by End 2010 The purpose of this Recovery Act project is to remove radioactively-contaminated soils from the 15-acre North Field Area, a part of the SPRU Disposition Project, located at the Knolls Atomic Power Laboratory (KAPL) in Niskayuna, New York. Recovery Act funding will also be used to decontaminate and decommission two 1950's-era nuclear facilities. KAPL is a Naval Reactors (NR) facility.

The contamination in the North Field is surface soil contamination (primarily cesium-137, at levels up to 476 picocuries per gram) resulting from the historic storage and handling of waste drums from the original, 1950's-era SPRU project.

FY 2010 Target

D and D Debris and Remediated Soil Disposed = 13,253 cubic meters

2010 Results

Commentary: Met Achieved 11,634 m³ of 13,253 m³ D and D Debris and Remediated Soil Disposed.

Supporting Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Met Issue requisite task order modifications and updates to CERCLA documentation to enable North Field and Building D&D to proceed in FY 2010.

Office: Environmental Management

Project: SRS Liquid Waste Operations

Website:

Outcome **S - SRS Liquid Waste Operations**

Expected by End TBD
2010

FY 2010 Target

Project Percent Complete = 46.1

2010 Results

Commentary: Exceeded Achieved 46.4 of 46.1 Project Percent Complete.

Supporting
Documentation: IPABS

Office: Environmental Management

Project: SRS D&D M & D Areas Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome **S - Savannah River Site D&D M & D Areas**

Expected by End 2010 This American Recovery and Reinvestment Act Project supports the mission of the Department of Energy (DOE) and the Office of Environmental Management (EM) by 1) completing deactivation and decommissioning (D&D) of facilities that provide no further value to reduce long-term liabilities and maximize resources for cleanup, 2) remediating sources of soil and ground water contamination with radioactive and hazardous constituents and 3) reconfiguring/relocating/replacing systems impacted by D&D that are required to support remaining site operations in a safe and cost effective manner to reduce risk.

FY 2010 Target

Site Remediation/Footprint Reduction = 25,292 acres

2010 Results

Commentary: Exceeded Achieved 25,929 acres of 25,292 acres Site Remediation/Footprint Reduction.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Not Met Initiate procurement activities to remediate M area soils.

Office: Environmental Management

Project: SRS D&D P & R Areas Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Savannah River Site D&D P & R Areas

Expected by End 2010 This American Recovery and Reinvestment Act Project supports the mission of the Department of Energy (DOE) and the Office of Environmental Management (EM) by 1) completing deactivation and decommissioning (D&D) of facilities that provide no further value to reduce long-term liabilities and maximize resources for cleanup, 2) remediating sources of soil and ground water contamination with radioactive and hazardous constituents and 3) reconfiguring/relocating/replacing systems impacted by D&D that are required to support remaining site operations in a safe and cost effective manner to reduce risk.

FY 2010 Target

Project Percent Complete = 43.5

2010 Results

Commentary: Exceeded Achieved 46.9 of 43.5 Project Percent Complete.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Not Met Initiate procurement activities to D&D P reactor facilities.

Office: Environmental Management

Project: SRS D&D, Soil & Groundwater Activities Site-wide Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Savannah River Site D&D, Soil & Groundwater Activities Site-Wide

Expected by End 2010 This American Recovery and Reinvestment Act (Recovery Act) Project supports the mission of the Department of Energy (DOE) and the Office of Environmental Management (EM) by 1) deactivating and decommissioning (D&D) facilities that provide no further value to reduce long-term liabilities and maximize resources for cleanup, 2) remediating sources of soil and ground water contamination with radioactive and hazardous constituents and 3) reconfiguring/relocating/replacing systems impacted by D&D that are required to support remaining site operations in a safe and cost effective manner to reduce risk.

FY 2010 Target

Number of Groundwater Wells Installed = 53

2010 Results

Commentary: Not Met Achieved 43 of 53 Groundwater Well Installations.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Not Met Demolish 293-F Stack and Initiate the D&D-BIO and deactivation plan that will support the elimination of more than 90 percent of the plutonium-238 source from 235-F

Office: Environmental Management

Project: SRS TRU & Solid Waste Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Savannah River Site TRU & Solid Waste

Expected by End 2010 This American Recovery and Reinvestment Act (Recovery Act) Project supports the mission of the Department of Energy (DOE) and the Office of Environmental Management (EM) by transporting and disposing of legacy transuranic (TRU) wastes in a safe and cost effective manner to reduce risk.

By the end of fiscal year 2011, the project will reduce the solid waste footprint by 75%, including characterization and/or off-site disposal of the legacy TRU waste, and reconfigure/relocate/replace impacted systems that are required to support remaining site operations. This Recovery Act Project accelerates work that is scheduled in the Savannah River Site (SRS) existing baseline.

FY 2010 Target

CH TRU Waste Dispositioned = 519 cubic meters

2010 Results

Commentary: Exceeded Achieved 585 m3 of 519 m3 CH TRU waste dispositioned

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Not Met Complete retrievable legacy Contact Handled (CH)-TRU drum program by dispositioning 2,200 TRU waste drums

Office: Environmental Management

Project: SLAC Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - Stanford Linear Accelerator Center (SLAC)

Expected by End 2010 The Environmental Management Program has the responsibility to cleanup the accessible legacy contamination at the SLAC National Accelerator Laboratory located at Stanford University (SU) in Menlo Park, California. This will allow DOE to meet ongoing obligations as defined in the DOE lease agreement with SU, comply with the California Regional Water Quality Control Board site cleanup requirement Order and achieve project completion. This Recovery Act project will accelerate the completion of this cleanup by one year with an estimated savings of approximately two million dollars.

FY 2010 Target

Project Percent Complete = 51.0

2010 Results

Commentary: Exceeded Achieved 54 of 51 Project Percent Complete.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Exceeded In the first year the following Recovery Act work scope will accomplished:
Commence West SLAC Operable Unit Remedial Investigation Field Work,
commence removal actions.

Office: Environmental Management

Project: Title X Uranium/Thorium Reimbursement Program

Website: <http://www.em.doe.gov/Pages/EMHome.aspx>

Outcome S - Title X Uranium/Thorium Reimbursement Program

Expected by End Under Title X of the Energy Policy Act of 1992, the Federal Government has a legislated
2010 financial liability for the environmental cleanup of uranium and thorium processing sites that sold their product to the Federal Government during the Cold War Era (1942-1992). DOE meets this obligation by reimbursing Nuclear Regulatory Commission licensees of certain uranium and thorium processing sites for the portion of their cleanup costs attributable to these uranium and thorium production and sales.

FY 2010 Target

Project Percent Completion = 13.4

2010 Results

Commentary: Met Project Percent Completion = 13.4

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Met Make the annual payment to licensees in the third quarter (FY 2009 payments to total \$31.87 M)

Office: Environmental Management

Project: West Valley Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - West Valley Project

Expected by End American Recovery and Reinvestment Act (Recovery Act) funding will be used to help complete
2010 the final two requirements of the WVDP Act (Decontaminate and Decommission Facilities, and Dispose of Low-Level and Transuranic Waste).

FY 2010 Target

D and D Debris and Remediated Soil Disposed = 0 cubic meters

2010 Results

Commentary: Met 0 m³ of 0 m³ D and D Debris and Remediated Soil Disposed.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Exceeded Process Approx. 1200 m³ of Waste
Process Approx. 18,000 gallons of Main Plant Liquids

Office: Environmental Management

Project: WIPP Recovery Act Project

Website: <http://www.em.doe.gov/emrecovery/EMRecovery.aspx>

Outcome S - WIPP Recovery Act Project

Expected by End 2010 The Carlsbad Field Office (CBFO) manages the National Transuranic Program and the Waste Isolation Pilot Plant (WIPP) to directly support the completion of the safe cleanup of the environmental legacy of nuclear weapons development and government-sponsored nuclear energy research, specifically defense-generated transuranic waste.

FY 2010 Target

CH TRU Waste Certified for Final Disposal = 1,883.7 cubic meters

2010 Results

Commentary: Not Met Achieved 941.7 m3 of 1,883.7 m3 CH TRU Waste Certified for Final Disposal.

Supporting
Documentation: IPABS

Associated Performance in Prior Years

FY 2009: Exceeded The Carlsbad Field Office did not establish targets or milestones in the Project Operating Plan (POP). A significant amount of work was completed but they cannot be compared to established targets.

Office: Fossil Energy

Project: Carbon Capture and Storage

Website: <http://www.fossil.energy.gov>

Outcome **Carbon Capture and Storage**

Expected by End 2010 Initiate FutureGen detailed design, including long-lead equipment (e.g.s., energy conversion plant, sequestration system, balance of power and final design report).

FY 2010 Target

Initiate FutureGen detailed design, including long-lead equipment (e.g.s., energy conversion plant, sequestration system, balance of power and final design report).

2010 Results

Commentary: Data Not Available Results unknown.

Future Plans: Both the Ameren and Alliance projects are multi-year efforts and structured with four separate Phases separated by decision points. These Phases correlate with Phase I – Project Definition, Pre-FEED; Phase II – FEED, NEPA, Permitting; Phase III – Detailed Engineering, Procurement, Construction, Commissioning and Startup; and Phase IV – Test Period. Assuming that the Recipients desire to continue their projects into subsequent Phases these projects will likely continue – Ameren thru Dec., 2018 and the Alliance thru 12/2020.

Supporting Documentation: Detailed documentation available from the Office of Fossil Energy.

Associated Performance in Prior Years

FY 2009: Complete preliminary engineering design, including equipment package solicitations, power plant design, sequestration system design, and balance of plant design.

Office: Fossil Energy

Project: Expand and Extend Clean Coal Power Initiative Round III

Website: <http://www.fossil.energy.gov>

Outcome Clean Coal Power Initiative III

Expected by End 2010 Significantly expand opportunities to demonstrate CCS at commercial-scale in geologic formations to demonstrate technologies that capture and store carbon dioxide emissions for coal-fired power generation systems

FY 2010 Target

Begin Project Definition Phase (award Cooperative Agreement)

2010 Results

Commentary: Met The Project Definition Phases were initiated for four projects selected under the Clean Coal Power Initiative Round III: American Electric Power Service Corporation, NRG Energy, Summit Texas Clean Energy LLC, and Hydrogen Energy California LLC. All four projects were funded using ARRA funds. This activity supports FE's Goals by significantly expanding opportunities to demonstrate Carbon Capture & Storage (CCS) at commercial-scale in geologic formations.

Future Plans: Starting in FY11 the Stimulus CCPI-III metric will be combined with the base budget CCPI metric.

Supporting Documentation: Cooperative Agreements for projects are located in the official procurement file.

Associated Performance in Prior Years

FY 2009: Met Begin Project Definition Phase (award cooperative agreement). This is the first step needed to reach our goal in demonstrating technologies that capture and store carbon dioxide emissions for coal-fired power generation systems.

Office: Fossil Energy

Project: Geologic Sequestration Site Characterization

Website: <http://www.fossil.energy.gov>

Outcome Geologic Sequestration Site Characterization

Expected by End 2010 Identified 10 high priority sites through initial characterization that have the potential for development as storage site for commercial CCS facilities.

FY 2010 Target

Award a minimum of ten projects to characterize potential storage sites for commercial CCS facilities.

2010 Results

Commentary: Met Ten projects that will characterize ten “high potential” storage sites for commercial CCS facilities were awarded on December 1, 2009. Each of the projects selected represents a significant storage opportunity in the region with adequate seals that could be developed commercially in the future. The projects will augment existing data sets through coordination with the National Carbon Sequestration Database and Geographic Information System (NATCARB). These projects will also develop best practices for site selection and characterization. Ultimately, the projects will increase the understanding of the potential for these formations to safely and permanently store CO₂. The projects support FE goals by increasing scientific understanding about the potential of promising geologic formations to safely and permanently store carbon dioxide from industrial sources.

Future Plans: The projects will continue to develop comprehensive data sets of formation characteristics (porosity, permeability, injectivity, reservoir architecture, cap rock integrity, etc.) to determine the potential of various geologic storage sites in their respective regions. The scientific knowledge and best practices acquired from the site characterization projects will support future plans to work with industry for eventual deployment and commercialization in the future. The projects also support the FE goals of helping reduce U.S. greenhouse gas emissions, developing and deploying near-zero emission coal technologies and making the U.S. a leader in mitigating climate change.

Supporting Documentation: Emails from contracting officers and STRIPES requisitions.

Documentation: A DOE Fossil Energy Techline was issued on September 16, 2009 titled “DOE Research Projects to Examine Promising Geologic Formations for CO₂ Storage.” See: http://www.fossil.energy.gov/news/techlines/2009/09065-DOE_Awards_Site_Characterization_P.html

Associated Performance in Prior Years

FY 2009: Met Award a minimum of ten projects to characterize potential storage sites for commercial CCS facilities.

Office: Fossil Energy

Project: Geologic Sequestration Training and Research Grant Program

Website: <http://www.fossil.energy.gov>

Outcome Geologic Sequestration Training and Research Grants

Expected by End 2010 Initially train 100 people (including students beginning trained at universities, colleges, and university research institutions) that will provide the skills required for implementing and deploying Carbon Capture and Storage technologies.

FY 2010 Target

Educational Program instituted with participants identified and training started that will lead to developing a new generation of geologists, scientist and engineers.

2010 Results

Commentary: Met Each of the seven Regional Training Centers has identified target audiences for the workshops and developed short courses in an effort to create a skilled workforce for the carbon capture and storage (CCS) industry. The institutes have established that the training programs will be comprised of experts having world class technology transfer, training, and expertise on the subject of CCS. The institutes have also developed training curriculums for the first set of workshops and short courses and have established that the trainers will deliver them efficiently through an established technology transfer network with online capabilities and a communications program. By identifying potential participants, completing training schedules, and developing training curriculums the institutes have demonstrated that they have instituted sequestration technology training programs to prepare geologists, engineers, scientists, information specialists, regulators, and other professionals with the training required to participate in the growing sequestration industry, supporting FE's goal. By identifying potential participants, completing training schedules, and developing training curriculums the institutes have demonstrated that they have instituted sequestration technology training programs to prepare geologists, engineers, scientists, information specialists, regulators, and other professionals with the training required to participate in the growing sequestration industry, supporting FE's goal.

Future Plans: The regional training centers will continue to facilitate transfer of knowledge and technologies that are required for site development, operations, and monitoring of commercial CCS projects. Benefits achieved from the training centers will help to create a skilled workforce for the CCS industry and foster the public understanding required to advance the United States in its energy security and its leadership position with regard to climate change mitigation technology. Effective transfer of knowledge and technology to the workforce will yield reduced costs, improved industry efficiency, increased CO2 storage, accelerated implementation of CO2 projects and enhanced environmental compliance for the CCS industry for 2012 and beyond.

Supporting Documentation: Quarterly progress reports submitted by the seven regional technology training centers. The majority of the regional technology training centers have also set up websites that highlight their programs. The websites provide information on sequestration training opportunities, research outreach, and education at the centers

Associated Performance in Prior Years

FY 2009: Met Institute educational program with participants identified and training started that will eventually provide the skills required for implementing Carbon Capture and Storage technologies.

Office: Fossil Energy

Project: Industrial Carbon Capture and Storage Applications

Website: <http://www.fossil.energy.gov>

Outcome Industrial Carbon Capture and Storage Applications

Expected by End 2010 Begin construction of First Large-Scale Industrial CCS Projects. This is necessary to demonstrate the capacity for capturing, transporting and injecting large volumes of CO₂ from commercial and industrial sources.

FY 2010 Target

Finalize preliminary design and award Phase 2 Projects.

2010 Results

Commentary: Met For the three ICCS projects selected for Phase 2 awards, namely, Air Products and Chemicals Inc. (APCI), Archer Daniels Midland Company (ADM), and Leucadia Lake Charles CCS (Leucadia), the Phase 1 activities including Preliminary Design have been completed. For all three projects, Cooperative Agreements were modified in June 2010 to add additional Phase 2 funding and to extend the performance period through September 2015. Furthermore, as of September 28, 2010, Phase 2 definitizations and corresponding Cooperative Agreement modifications have been completed for all three ICCS projects. The activity has helped meet FE goals by allowing three ICCS projects proceed to Phase 2.

Future Plans: Air Products completed their Firm Bid estimation process in the 1st qtr of FY2011. APCI targets completion of their EA and receipt of a FONSI in the 3rd qtr FY2011 and will then begin construction in the 4th qtr of FY 2011.

Leucadia is currently conducting the FEED portion of the CCS project. Also ongoing is the privately-funded FEED for the balance of the (estimated) \$1.7B gasification plant. At the end of FY2011, they are scheduled to make a go/no-go decision to proceed with the detailed design and construction phase of the overall project, a milestone that coincides with the Government decision on whether to proceed with funding of Phase 2b of the CCS portion of the project.

ADM is currently pursuing NEPA EA and design. In the 3rd Qtr FY 2011 ADM plans to make a go/no decision about proceeding to the sub-phase 2b construction. If ADM and DOE decide to proceed to construction, it will begin the 4th qtr FY2011

Supporting Phase 1 topical reports (3) including Preliminary Design.

Documentation: Cooperative Agreement modifications for all three projects indicating that the phase 2 awards are on file.

Associated Performance in Prior Years

FY 2009: Met Finalize preliminary design and receive renewal applications. This process is necessary to demonstrate the capacity for capturing, transporting and injecting large volumes of CO₂ from commercial and industrial sources.

Office: Loan Programs

Project: Credit Subsidy

Website: <http://www.lgprogram.energy.gov>

Outcome S - Credit Subsidy Program Section 1705

Expected by End Commitment of 15% of the \$2.435B appropriated subsidy for Section 1705
2010

FY 2010 Target

Commitment of 15% of the \$2.435B appropriated subsidy for Section 1705

2010 Results

Commentary: Not Met Department closed almost \$800 million in loan guarantees obligating 2% of the \$2.435 billion in appropriated subsidy for the Section 1705 program.

Future Plans: Based on the current project pipeline, DOE is on track to fully obligate the \$2.435B subsidy budget by end of FY 2011.

Supporting Documentation: Press releases based on official loan guarantee documentation.

Associated Performance in Prior Years

FY 2009: Not Met Complete commitment of 5% of credit subsidy budget of \$3.935 billion (\$197 million).

Office: Office of Science

Project: Fellowships/Career Awards

Website: <http://www.science.doe.gov>

Outcome **Energy Sciences Fellowships and Early Career Research Program**

Expected by End Create graduate fellowships and early career research awards to stimulate research careers in 2010 energy, environmental, and climate change sciences.

FY 2010 Target

All fellowships have been created and filled, and grants associated with the early career awards have been put into place.

2010 Results

Commentary: Met Annual target met. Created graduate fellowships and early career research awards.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Key documents include 10 CFR 605, the Funding Opportunity Announcements, the applications; the Documentation: spreadsheet listing the confirmed review panel members, the written reviews; the selection statements; the declination letters; and the award documents.

Associated Performance in Prior Years

FY 2009: Not Met Complete all activities necessary to allow fellowship and early career review panels to begin during Q1 FY10.

Office: Office of Science

Project: Infrastructure

Website: <http://www.science.doe.gov>

Outcome General Plant Project funding across all SC laboratories

Expected by End 2010 Two of the 18 GPP efforts have been completed and the remaining 16 will be under construction

FY 2010 Target

Two of the 18 GPP efforts have been completed and the remaining 16 are under construction. The projects that will be completed are: Ames Infrastructure Upgrades and LBNL Upgrade of Building 62.

2010 Results

Commentary: Met Annual target met. The Ames Infrastructure Upgrades and LBNL Upgrade of Building 62 projects are complete. The remaining projects are all under construction.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Performance will be tracked and validated in accordance with Project Management Plans developed at the Documentation: site level and through milestone updates provided to the SLI program.

Associated Performance in Prior Years

FY 2009: Met Begin construction on six of the 18 GPP efforts by 9/30/2009. Those started will include: ANL 13.2 kv Switch Upgrade; ANL 480 Volt Switchgear Upgrade; BNL Building Roof Replacements; BNL Mechanical-Electrical Upgrades; LBNL Building 6 Air Handling Equipment Upgrades; and, PNNL Infrastructure Upgrades.

Office: Office of Science

Project: Infrastructure

Website: <http://www.science.doe.gov>

Outcome **Infrastructure Improvements for Innovative Confinement Concepts (ICC) Experiments**

Expected by End Competitively select ICC projects and obligate funding.

2010

FY 2010 Target

ICC projects established.

2010 Results

Commentary: Met Annual target met. Competitively selected ICC projects and obligated funding.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Verification and validation data for Infrastructure Improvements for ICC Experiments will be available and Documentation: archived in the Office of Fusion Energy Sciences Program files.

Associated Performance in Prior Years

FY 2009: Not Met Competitively select ICC projects and obligate funding.

Office: Office of Science

Project: Infrastructure

Website: <http://www.science.doe.gov>

Outcome OSTI Technology Infrastructure

Expected by End 2010 By January 2012, the project intends to add an additional 17.47 hours per month to current average availability, which annually equates to greater than 2 million user transactions, 336,000 full text downloads, and 147,000 searches for scientific and technical information.

By the end of FY 2010 the project will have achieved an increase of approximately 8.75 hours per month to average availability, which annually equates to greater than 1 million user transactions, 168,000 full text downloads, and 73,500 searches for scientific and technical information.

FY 2010 Target

OSTI can support requests from STI dissemination products in the event of a disruption of service in the main internet pathway. This involves having a Hot-site location selected and redundant internet pathway in place and operational. The implementation of fail-over capabilities for the redundant internet pathway is completed and all relevant technical and security documentation has been updated and approved.

2010 Results

Commentary: Met Second Year Performance Target Met
- Hot site location selected.
- Redundant internet pathway in place.
- Fail-over capabilities for the redundant pathway are complete.
- Technical and security-related documentation updated and approved.

Future Plans: Two-year outcome-oriented performance measure completed/closed. The average availability of OSTI web products has been improved from a pre-FY 2010 average downtime of 15.5 hours per month to a FY 2010 to date average of 3.7 hours per month. This improvement equates to an average increase of 11.8 hours per month. These numbers include full outages, partial outages, and schedule maintenance activities. OSTI is on track to achieve the project's ultimate goal of an additional 17.47 hours per month to average availability by January 2012.

Supporting Standard line management processes will be used to document progress and the review of results. All Documentation: reports are maintained in the files of OSTI.

Associated Performance in Prior Years

FY 2009: Not Met OSTI can support requests from STI dissemination products in the event of a disruption of service in the main internet pathway. This involves having a redundant internet pathway in place and operational. Work in support of the second year performance target has also started with the hot-site procured and initially provisioned.

Office: Office of Science

Project: Infrastructure

Website: <http://www.science.doe.gov>

Outcome **SLI Construction**

Expected by End 2010 Completion of East Tangent Tank Removal from the Bevatron device at Lawrence Berkeley National Laboratory.

Begin construction (CD-3) on the Modernization of Laboratory Facilities project

Establish performance baselines (CD-2) and begin construction (CD-3) on Recovery Act scope for the Seismic Safety – Phase II and the Interdisciplinary Science Building projects

FY 2010 Target

Completion of East Tangent Tank Removal from the Bevatron device at Lawrence Berkeley National Laboratory.

Achieve CD-3B, Approve Start of Balance of Construction, on the Modernization of Laboratory Facilities project

Achieve CD-2, Approve Performance Baseline, and CD-3A, Approve Start of Construction of Recovery Act scope on the Interdisciplinary Science Building project

Achieve CD-3A, Approve Start of Construction for Building 74 Modernization, on the Seismic Safety – Phase II project

2010 Results

Commentary: Met Annual target met.
(1) Removal of the East Tangent Tank and its appurtenances and surrounding structures have been completed.
(2) CD-3B approval for the Modernization Laboratory Facilities project was achieved on 8/14/2009.
(3) Seismic Safety - Phase II project: CD-2 and CD-3A approval 8/21/2009.
(4) Interdisciplinary Science CD-2 approved 03/01/2010. CD-3A (long lead) approval 09/24/2009 and CD-3B (construction) approval 6/24/2010.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Data is tracked in the PARS database, where data is updated monthly. Program Managers will conduct routine conference calls with the project teams to track stimulus fund obligations and costed amounts, as well as progress toward schedule milestones.

Associated Performance in Prior Years

FY 2009: Met Achieve CD-3A - Approve Start of Early Construction and Long-Lead Procurements on the Modernization of Laboratory Facilities project

Achieve CD-2A – Approve Performance Baseline for Recovery Act scope of the Seismic Safety – Phase II project

Office: Office of Science

Project: Small Business Research

Website: <http://www.science.doe.gov>

Outcome **Small Business Innovation Research (SBIR) and Small Business Technology Transfer**

Expected by End **Research (STTR) Programs**

2010 By September 30, 2010, about 125 Phase I and 75 Phase II grant awards, and five Supplemental follow-on awards made to U.S. small businesses totaling \$95.76M.

FY 2010 Target

By September 18, 2010, fully fund approximately 57 Phase I (EERE) grants totaling \$8.55M.

Fully fund approximately 28 Phase II (EERE) awards with Recovery Act funding totaling \$28.39M in the following EERE research areas: 1) advanced building air conditioning and refrigeration, thermal load shifting, and cool roofs; 2) water usage in electric power production; 3) power plant cooling; 4) advanced gas turbines and materials; 5) sensors, controls, and wireless networks; 6) advanced water power technology development; 7) smart controllers for smart grid applications; 8) advanced solar technologies; 9) advanced industrial technologies development; and 10) advanced manufacturing processes.

By September 18, 2010 fully fund approximately 17 Phase II (SC) awards with Recovery Act funding totaling \$17.7M in support of the non-EERE basic and applied research and development programs of the DOE.

2010 Results

Commentary: Not Met Target not met:

- 122 of 124 SBIR/STTR Phase I grant selections were awarded; the remaining two proposals were withdrawn by the small business concerns during grant negotiations.
- Project funding for 58 Phase II (EE, FE, NE, OE) projects was obligated by 9/30/2010. However only 18 of the 58 projects have been fully funded; the remaining 40 projects were conditionally awarded.
- 17 Phase II (SC) Phase II ARRA SBIR/STTR grants were awarded by September 18, 2010.

Future Plans: Action Plan: Continue to review and fully award the remaining 40 Phase II (EE, FE, NE, OE) projects by the end of Q1FY11.

Supporting ASCR will use standard line management practices already employed for the management and oversight of Documentation: this program. The SBIR/STTR program management will continue to work closely with the Department's many administrative and financial entities to ensure that its current internal and Recovery Act-established controls are met.

Associated Performance in Prior Years

FY 2009: Not Met By September 30, 2009, fully fund six Phase II Supplemental awards totaling \$1M. By September 30, 2009, Post Phase I (EERE) SBIR/STTR Funding Opportunity Announcement.

Office: Office of Science

Project: Advanced Scientific Computing Research

Website: <http://www.science.doe.gov>

Outcome Advanced Computer Architectures

Expected by End 2010 By September 30, 2010, complete programmatic review of preliminary reports detailing architectural features and performance levels for a system that will meet the needs of at least one science application that requires extreme scale computing while using energy efficiently.

FY 2010 Target

By September 30, 2010, complete initial definition of architectural features and performance levels for a system that will meet the needs of at least one science application that requires extreme scale computing while using energy efficiency.

2010 Results

Commentary: Met Annual target met. Completed programmatic review of preliminary reports detailing architectural features and performance levels.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Research plans will be validated by ASCR via external peer review. Progress against established plans will be evaluated by periodic ASCR performance reviews and external performance reviews. These reviews provide an opportunity to verify and validate performance. Quarterly, semiannual, and annual reviews consistent with specific program management plans are held to ensure technical progress, cost and schedule adherence, and responsiveness to program requirements. Final project results will be published via peer reviewed journals and/or presented to the Advanced Scientific Computing Advisory Committee.

Associated Performance in Prior Years

FY 2009: Not Met By September 30, 2009, complete distribution of all Recovery Act funds for Advanced Computer Architectures from headquarters into M&O contracts and financial assistance actions.

Office: Office of Science

Project: Advanced Scientific Computing Research

Website: <http://www.science.doe.gov>

Outcome **Advanced Networking Initiative**

Expected by End 2010 Demonstrate progress toward a two- to ten-fold improvement in throughput over the 10Gbps currently available in the commercial market place via a programmatic review of interim test results provided by LBNL

FY 2010 Target

Install and operate ANI testbed and conduct advanced networking research on the ANI test bed as documented through a schedule of test bed research activities maintained by LBNL.

2010 Results

Commentary: Met Annual target met. Demonstrated progress toward a two- to ten-fold improvement in throughput over the 10Gbps currently available in the commercial market place.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Research plans will be validated by ASCR via external peer review. Progress against established plans will be evaluated by periodic ASCR performance reviews and external performance reviews. These reviews provide an opportunity to verify and validate performance. Quarterly, semiannual, and annual reviews consistent with specific program management plans are held to ensure technical progress, cost and schedule adherence, and responsiveness to program requirements. Final project results will be published via peer reviewed journals and/or presented to the Advanced Scientific Computing Advisory Committee.

Associated Performance in Prior Years

FY 2009: Not Met Conduct ASCR programmatic review of the design architecture for a nation-wide demonstration network prototype presented by LBNL and posted on ASCR website.

Office: Office of Science

Project: Advanced Scientific Computing Research

Website: <http://www.science.doe.gov>

Outcome **Computational Partnerships (SciDAC-e)**

Expected by End 2010 Deliver computational capability to at least one EFRC. (In which “computational capability” might be development of a new science application code, a visualization of a massive scientific dataset or scaling an existing code from a desktop to massively parallel computing resources at the ASCR leadership computing facilities. Success will be measured by expert review.)

Publish, in the open literature, results of applied math research focused on smart grid capabilities. Success will be measured by expert review.

FY 2010 Target

Expert review determines contributions from SciDAC-e to the goals of the EFRCs to be either “very good” or “excellent”

2010 Results

Commentary: Not Met Target not met. The SciDAC-e awards were made very late in FY10 and a review would not have been useful at this time given that work has just begun.

Future Plans: ASCAC will be charged at their March meeting to organize a joint review with BESAC and a review report will be expected at the August 2011 ASCAC meeting.

Supporting Documentation: Research plans will be validated by ASCR via external peer review. Progress against established plans will be evaluated by periodic ASCR performance reviews and external performance reviews. These reviews provide an opportunity to verify and validate performance. Quarterly, semiannual, and annual reviews consistent with specific program management plans are held to ensure technical progress, cost and schedule adherence, and responsiveness to program requirements. Final project results will be published via peer reviewed journals and/or presented to the Advanced Scientific Computing Advisory Committee.

Associated Performance in Prior Years

FY 2009: Not Met Establish seven research grants or cooperative agreements to develop mathematical techniques and algorithms to enable smart grids.

Office: Office of Science

Project: Advanced Scientific Computing Research

Website: <http://www.science.doe.gov>

Outcome Leadership Computing Upgrade

Expected by End Upgrade Leadership Computing resources at Oak Ridge National Laboratory from 1.3 petaflops 2010 to 2.0 petaflops to increase the capability available to the scientific community.

FY 2010 Target

Complete acceptance test for quad-core to six-core upgrade of Cray XT5 at Oak Ridge

2010 Results

Commentary: Met Annual target met. Upgraded Leadership Computing resources at Oak Ridge National Laboratory from 1.3 petaflops to 2.0 petaflops to increase the capability available to the scientific community.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Research plans will be validated by ASCR via external peer review. Progress against established plans will be evaluated by periodic ASCR performance reviews and external performance reviews. These reviews provide an opportunity to verify and validate performance. Quarterly, semiannual, and annual reviews consistent with specific program management plans will be held to ensure technical progress, cost and schedule adherence, and responsiveness to program requirements. Final project results will be documented in ACSR operational review of the Oak Ridge Leadership Computing Facility.

Associated Performance in Prior Years

FY 2009: Met By September 30, 2009, complete distribution of all Recovery Act funds for Leadership Computing Upgrade from headquarters into M&O contracts.

Office: Office of Science

Project: Advanced Scientific Computing Research

Website: <http://www.science.doe.gov>

Outcome Magellan Distributed Computing and Data Initiative

Expected by End By September 30, 2010, at least one application domain will make integrated use of computing 2010 resources at LBNL and ANL.

FY 2010 Target

By September 30, 2010, conduct programmatic review of report documenting integrated use of two testbed locations by at least one scientific application domain.

2010 Results

Commentary: Met Annual target met. At least one application domain made integrated use of computing resources at LBNL and ANL.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Research plans will be validated by ASCR via external peer review. Progress against established plans will be evaluated by periodic ASCR performance reviews and external performance reviews. These reviews provide an opportunity to verify and validate performance. Quarterly, semiannual, and annual reviews consistent with specific program management plans are held to ensure technical progress, cost and schedule adherence, and responsiveness to program requirements. Final project results will be published via peer reviewed journals and/or presented to the Advanced Scientific Computing Advisory Committee.

Associated Performance in Prior Years

FY 2009: Met By September 30, 2009, conduct expert review site specific research demonstration topics submitted by ANL and LBNL

Office: Office of Science

Project: Basic Energy Science

Website: <http://www.science.doe.gov>

Outcome **Advanced Light Source (ALS) User Support Building (USB)**

Expected by End User Support Building (USB) ready for operations.
2010

FY 2010 Target

Complete the USB construction ready for operations.

2010 Results

Commentary: Met USB ready for operations.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Copies of the monthly Project Progress Reports reside in the Office of Basic Energy Sciences, Division of Scientific User Facilities.

Associated Performance in Prior Years

FY 2009: Met Re-plan project and revise current construction contract to reflect three month schedule acceleration.

Office: Office of Science

Project: Basic Energy Science

Website: <http://www.science.doe.gov>

Outcome **Energy Frontier Research Collaborations**

Expected by End 2010 Establish and begin operation of the 16 EFRCs that were funded under the Recovery Act.

FY 2010 Target

All universities awarded one of the 16 EFRCs grants have their centers fully operational.

2010 Results

Commentary: Met Annual target met. Established and began operation of the 16 EFRCs that were funded under the Recovery Act.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: The issuance of the EFRC awards will be verified by the completion of the financial assistance process as recorded on DOE F 4600.1, Notice of Financial Assistance Award. Data validating the award will be stored in the Office of Science Information Management System (EWM). In addition, hardcopy information pertinent to the grant issuance will be stored by the DOE Chicago Office and by the Office of Basic Energy Sciences.

Associated Performance in Prior Years

FY 2009: Met Select recipients for all 16 grants.

Office: Office of Science

Project: Basic Energy Science

Website: <http://www.science.doe.gov>

Outcome **Linac Coherent Light Source (LCLS) Ultrafast Science Instruments (LUCI) MIE**

Expected by End 2010 Revised: Accelerate the schedule of LCLS Ultrafast Science Instruments (LUSI) to enable earlier use of three functional science instruments in the LCLS scientific program by August, 2011, one year ahead of schedule. The three science instruments are: the X-ray Pump Probe (XPP), Coherent X-ray Imaging (CXI), and the X-ray Correlation Spectroscopy (XCS)

Original: The LCLS Ultrafast Science Instruments (LUSI) project is accelerated by one year (rescheduled completion by the end of FY 2011).

FY 2010 Target

Execute accelerated schedule to design, procure and fabricate the instruments for use in the LCLS science program. Complete placement of ~\$14.2M of purchase orders (cumulative) by the end of FY 2010.

2010 Results

Commentary: Met Annual target met. Accelerated the schedule of LCLS Ultrafast Science Instruments (LUSI) to enable earlier use of three functional science instruments in the LCLS scientific program by August, 2011.

Future Plans: Two-year outcome-oriented performance measure completed/close.

Supporting Documentation: Copies of the monthly Project Progress Reports reside in the Office of Basic Energy Sciences, Division of Scientific User Facilities.

Associated Performance in Prior Years

FY 2009: Met Revise current work plan to accelerate activities schedule by one year.

Office: Office of Science

Project: Basic Energy Science

Website: <http://www.science.doe.gov>

Outcome **Nanoscale Science Research Centers**

Expected by End 2010 Equipment installed and in operation.

FY 2010 Target

Final costing of funds complete and equipment is in operation

2010 Results

Commentary: Met Annual target achieved. Equipment installed and in operation.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Copies of the quarterly progress reports from the NSRCs reside in the Office of Basic Energy Sciences, Division of Scientific User Facilities.

Associated Performance in Prior Years

FY 2009: Met Selection of equipment and obligation of funds

Office: Office of Science

Project: Basic Energy Science

Website: <http://www.science.doe.gov>

Outcome **National Synchrotron Light Source (NSLS) II**

Expected by End 2010 Laboratory Office Building 4 civil construction activities completed by January 2012, 15 months ahead of original baseline schedule and within cost targets as required by BES Annual Performance Results and Targets in the Congressional Budget.

FY 2010 Target

Civil construction activities completed on time according to the revised schedule.

2010 Results

Commentary: Met Annual target met. Lab Building 4 civil construction activities completed by January 2012, 15 months ahead of original baseline schedule and within cost targets.

Future Plans: Two-year outcome-oriented performance measure completed/close.

Supporting Documentation: Copies of the monthly Project Progress Reports reside in the Office of Basic Energy Sciences, Division of Scientific User Facilities.

Associated Performance in Prior Years

FY 2009: Met Revise civil construction baseline schedule and begin procurements of NSLS-II conventional construction work.

Office: Office of Science

Project: Basic Energy Science
Light Source Improvements

Website: <http://www.science.doe.gov>

Outcome **Synchrotron Radiation Light Sources**

Expected by End Upgrades and advanced instruments such as detectors and magnets are procured to further the 2010 Light Source scientific program.

FY 2010 Target

Instrument specs are completed and procurement actions proceed as expected.

2010 Results

Commentary: Met Annual target met. Upgrades and advanced instruments such as detectors and magnets procured to further the Light Source scientific program.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Copies of the quarterly progress reports from the Light Sources reside in the Office of Basic Energy Sciences, Division of Scientific User Facilities.

Associated Performance in Prior Years

FY 2009: Met Select the equipment and obligate the Recovery Act funds.

Office: Office of Science

Project: Biological and Environmental Research

Website: <http://www.science.doe.gov>

Outcome **ARM Climate Research Facility Initiative (ACRF)**

Expected by End 2010 Field a new instrument suite to the ARM Climate Research Facility which will provide improved three-dimensional properties of clouds, enhanced aerosol measurement, and enhanced surface flux data.

FY 2010 Target

85% of new ACRF instruments procured and available for use by climate change researchers.

2010 Results

Commentary: Met Annual target met. Fielded a new instrument suite to the ARM Climate Research Facility which will provide improved three-dimensional properties of clouds, enhanced aerosol measurement, and enhanced surface flux data.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: In addition to required weekly reporting, PNNL will submit a letter to the BER program manager and the Pacific Northwest Site Office certifying the completion of each quarterly milestone. Letters will be submitted within two weeks of successful completion and will identify the specific completion date. This documentation will be filed as part of the official project documentation and as part of verification and validation for this project. More generally, all reports discussed under this notation will be archived in BER by the BER Program Manager.

Associated Performance in Prior Years

FY 2009: Met Revise current instrument planning document for acquisition of instrument package.

Office: Office of Science

Project: Biological and Environmental Research
Bioenergy Research Center Capital Equipment

Website: <http://www.science.doe.gov>

Outcome **Bioenergy Research Center Infrastructure**

Expected by End 2010 The Joint BioEnergy Institute (JBEI) greenhouses and the Great Lakes Bioenergy Research Center (GLBRC) SS-NMR are in testing phase and at least 85% of the rest of the BRC equipment (including at the BioEnergy Science Center (BESC)) is on site and costed.

{NOTE: Equipment purchases are described in the BRC Project Execution Plan for each of the BRCs. The SS-NMR refers to a Solution State 700 MHz Nuclear Magnetic Resonance Unit. The LIMS refers to the Laboratory Information Management System. The HR-NMR refers to an upgrade to an existing 500 MHz NMR to provide High Resolution – Magic Angle Spinning. Group 1, Group 2, and Group 3 equipment are described in the BESC Project Execution Plan. }

FY 2010 Target

The JBEI greenhouses and the GLBRC SS-NMR are in testing phase and at least 85% of the rest of the equipment for all three BRCs has been costed.

2010 Results

Commentary: Not Met Annual target not met. The SS-NMR for GLBRC is in operation and approximately 95% of the rest of the equipment for all three BRCs has been costed; however, the greenhouses for JBEI are not yet in the testing phase.

Future Plans: The delay in the JBEI greenhouses occurred because of difficulties in establishing a site license for installing the greenhouses at UC Davis, and there was only one bidder for building and installing the greenhouses. A contract is now in place that projects the JBEI greenhouses will be received and installed in December 2010 and in operation by the end of January 2011.

Supporting Documentation: In addition to required weekly reporting, LBNL, ORNL and the University of Wisconsin will submit letters to the BER program manager and the appropriate DOE Site Office certifying the completion of each quarterly milestone contained in Table 6, as applicable to their institution. Letters will be submitted within two weeks of successful completion and will identify the specific completion date. This documentation will be filed as part of the official project documentation and as part of verification and validation for this project. More generally, all reports discussed under this notation will be archived in BER by the BER Program Manager.

Associated Performance in Prior Years

FY 2009: Met The GLBRC has contracts in place for the LIMS software and associated computer equipment.

Office: Office of Science

Project: Biological and Environmental Research

Website: <http://www.science.doe.gov>

Outcome **Environmental Molecular Sciences Laboratory**

Expected by End Procure 25 new instrument capabilities for the EMSL for the benefit of the scientific user
2010 community.

FY 2010 Target

90% instruments accepted.

2010 Results

Commentary: Met Annual target met. Procured 25 new instrument capabilities for the EMSL for the benefit of the scientific user community.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting PNNL will submit a letter to the BER program manager and the Pacific Northwest Site Office certifying the
Documentation: completion of each quarterly milestone. Letters will be submitted within two weeks of successful completion and will identify the specific completion date. This documentation will be filed as part of the official project documentation and as part of verification and validation for this project. More generally, all reports discussed under this notation will be archived in BER by the BER Program Manager.

Associated Performance in Prior Years

FY 2009: Met 60% contracts in place for all instruments.

Office: Office of Science

Project: Biological and Environmental Research

Website: <http://www.science.doe.gov>

Outcome **Integrated Assessment Research Program**

Expected by End New integrated assessment research computational resource brought on-line with multiple models
2010 and key underlying data made accessible to the research community.

FY 2010 Target

100% of equipment delivered, installed, configured, tested, and made operational.

2010 Results

Commentary: Met Annual target met. New integrated assessment research computational resource brought on-line with multiple models and key underlying data made accessible to the research community.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting In addition to required weekly reporting, PNNL will submit a letter to the BER Program Manager and the
Documentation: Pacific Northwest Site Office certifying the completion of each quarterly milestone. Letters will be submitted within two weeks of successful completion and will identify the specific completion date. This documentation will be filed as part of the official project documentation and as part of verification and validation for this project. More generally, all reports discussed under this notation will be archived in BER by the BER Program Manager.

Associated Performance in Prior Years

FY 2009: Met CFO releases recovery act funds

Office: Office of Science

Project: Biological and Environmental Research

Website: <http://www.science.doe.gov>

Outcome **Joint Genome Institute Infrastructure**

Expected by End Computer equipment will be in operation. Reagents will be available. New sequencing machine
2010 will be in acceptance phase. (NOTE: Equipment purchases are described in the JGI Project Execution Plan. Phase 1 and Phase 2 computer equipment refer to computer-related purchases to accommodate increased sequencing throughput data.)

FY 2010 Target

All computer equipment (except the sequencing machine) is in operation. Reagents are on site and available. The sequence machine is in acceptance phase.

2010 Results

Commentary: Met Annual target met. Computer equipment in operation. Reagents available. New sequencing machine in acceptance phase.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting LBNL will submit a letter to the BER program manager and the Berkeley Site Office certifying the
Documentation: completion of each quarterly milestone. Letters will be submitted within two weeks of successful completion and will identify the specific completion date. This documentation will be filed as part of the official project documentation and as part of verification and validation for this project. More generally, all reports discussed under this notation will be archived in BER by the BER Program Manager.

Associated Performance in Prior Years

FY 2009: Met Specifications and Requests for Quotes have been prepared for all Phase 1 computer equipment.

Office: Office of Science

Project: Biological and Environmental Research
Knowledgebase R&D

Website: <http://www.science.doe.gov>

Outcome **Systems Biology Knowledgebase**

Expected by End Data storage arrays and servers accepted or in acceptance phase, prototype Knowledgebase
2010 software tested, and conceptual design document for the full Knowledgebase delivered.

FY 2010 Target

All data storage arrays and servers accepted or in acceptance phase, all scientific and software meetings held and the conceptual design document outlining the scope, cost and schedule of the full Knowledgebase delivered.

2010 Results

Commentary: Met Annual target met. Data storage arrays and servers accepted or in acceptance phase, prototype Knowledgebase software tested, and conceptual design document for the full Knowledgebase delivered.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: A letter to be submitted to the BER program manager by the contractor, ORNL, will certify the completion of each major milestone. Letters will be submitted within two weeks of successful completion identifying the actual completion date. This documentation will be filed as part of the official project documentation and as part of verification and validation for this project. More generally, all reports discussed under this notation will be archived in BER by the BER Program Manager.

Associated Performance in Prior Years

FY 2009: Met All prototype software collaborations with the ASCR Magellan program in place.

Office: Office of Science

Project: Fusion Energy Sciences

Website: <http://www.science.doe.gov>

Outcome Alcator C-Mod Facility Upgrades (MIT)

Expected by End 2010 Complete planned facility and diagnostic upgrades to enhance the research capabilities and productivity of subsequent Alcator C-Mod National Tokamak Facility operations

FY 2010 Target

Complete planned facility and diagnostic upgrades:

- procurement of high power microwave tubes for current drive and current density profile control.
- design, production and installation of advanced ICRF radio frequency antenna aimed at optimized heating and flow drive.
- upgrades to the divertor diagnostic set for improved monitoring of metallic impurity sources rate.

2010 Results

Commentary: Not Met Target not met. The first and third elements of the target have been completed. The second element was delayed while work on a higher priority lower hybrid launcher effort was completed in order to meet operating schedule requirements. The production completion of the advanced ICRF antenna is now Q1FY11 and the installation of the antenna will occur in Q2FY11 for use in the FY11 research campaign.

Future Plans / Explanation of Shortfalls: The manufacture and installation of an advanced radiofrequency antenna was been delayed while work on the lower hybrid launcher effort was completed in order to meet operating schedule requirements. The advanced antenna is now planned to be installed during Q2FY11 for use in the FY11 research campaign.

Supporting Documentation: The verification and validation information is available at:

<http://www.science.doe.gov/ofes/performancetargets.shtml>.

Associated Performance in Prior Years

FY 2009: Not Met Complete designs of polarimeter diagnostic upgrades and place procurement orders for materials and parts for facility upgrades (three high power microwave sources, Ion Cyclotron Radio Frequency (ICRF) power amplifier tubes and divertor spectrometer diagnostic).

Office: Office of Science

Project: Fusion Energy Sciences

Website: <http://www.science.doe.gov>

Outcome **DIII-D Facility Upgrades**

Expected by End Complete the design and procurement activity for the facility upgrades to edge diagnostics, core
2010 diagnostics, auxiliary heating power supply, and electron cyclotron heating system.

FY 2010 Target

Procure upgrades for edge diagnostics, core diagnostics, auxiliary heating power supply, and electron cyclotron heating system

2010 Results

Commentary: Not Met Target not met. Procurements for one of the edge diagnostics (laser induced fluorescence/LIF) and a component of the auxiliary heating system power supply were not completed.

Future Plans / Procurements for one of the edge diagnostics (laser induced fluorescence/LIF) and a component of the
Explanation of auxiliary heating system power supply are delayed until FY11. The delay of these procurements will not
Shortfalls: have a significant impact on the planned research program. The LIF system will still be able to undergo bench testing in FY11 with installation on DIII-D scheduled for FY12. The auxiliary heating system power supply should be ready to support gyrotron operations in FY12 as scheduled.

Supporting Verification and validation data for the DIII-D Facility Upgrade will be posted at:
Documentation: <http://www.science.doe.gov/ofes/performancetargets.shtml>

Associated Performance in Prior Years

FY 2009: Not Met Complete conceptual design of upgrades to edge diagnostics, core diagnostics, auxiliary heating power supply, and elements of the electron cyclotron heating system

Office: Office of Science

Project: Fusion Energy Sciences

Website: <http://www.science.doe.gov>

Outcome **Enhanced operation of Major Fusion Facilities**

Expected by End Addition of 5 weeks of facility operation for each facility over the two-year period
2010

FY 2010 Target

Increase run time on DIII-D by 3 weeks, and Alcator C-Mod by 5 weeks, to allow a wider range of plasma science experiments.

2010 Results

Commentary: Met Annual target met. Addition of 5 weeks of facility operation for each facility over the two-year period.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting The verification and validation information is available at:
Documentation: <http://www.science.doe.gov/ofes/performancetargets.shtml>.

Associated Performance in Prior Years

FY 2009: Met Operate DIII-D for an additional 2 weeks and NSTX for an additional 5 weeks.

Office: Office of Science

Project: Fusion Energy Sciences

Website: <http://www.science.doe.gov>

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Outcome **High Energy Density Laboratory Plasma - Matter in Extreme Conditions (MEC)**

Expected by End **Instrument Project**

2010 Achieve approval of DOE 413.3A Critical Decisions (CD)-0 (Mission Need), CD-1 (Approval of Alternative Selection and Cost Range), and begin preparation for CD-2/3 (CD-2 is Approval of Performance Baseline, and CD-3 is Approval of Start of Construction). The Critical Decision milestones described will be achieved within 10% of the schedule.

FY 2010 Target

Achieve Approval of Critical Decision 1 and begin preparation for Critical Decision 2/3. CD-2 is Approval of Performance Baseline, and CD-3 is Approval of Start of Construction.

2010 Results

Commentary: Met Annual target met. Achieved all approvals within 10% of the schedule.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Verification and validation data for this project will be available and archived in the Program Office files.

Associated Performance in Prior Years

FY 2009: Met Achieve Approval of Critical Decision 0

Office: Office of Science

Project: Fusion Energy Sciences

Website: <http://www.science.doe.gov>

Secretarial

Priority Science, Discovery, and Innovation

Supported:

Outcome **High Energy Density Laboratory Plasma – NDCX-II (Neutralized Drift Compression Experiment)**
Expected by End **Experiment)**

2010 Complete detailed engineering design. Complete equipment procurement for accelerator components, conventional facility equipment, and power supplies and control system

FY 2010 Target

Complete first article inspection of induction cell. Continue equipment procurement for accelerator components, conventional facility equipment, and power supplies and control system. Begin preparation for installation.

2010 Results

Commentary: Not Met Target not met. Neither detailed engineering design nor measure's stated equipment procurements have been completed.

Future Plans / Explanation of Shortfalls: Detailed engineering design and equipment procurement is expected to be completed by end of December 2010.

Supporting Documentation: Verification and validation data for this project will be available and archived in the Program Office files.

Associated Performance in Prior Years

FY 2009: Met Complete detailed engineering design and begin equipment procurement

Office: Office of Science

Project: Fusion Energy Sciences

Website: <http://www.science.doe.gov>

Outcome **Infrastructure Improvements for General Plasma Science User Facilities**

Expected by End 2010 Prepare solicitation, review proposals, competitively select projects, and obligate funding.

FY 2010 Target

Review proposals, make selections, and obligate funding

2010 Results

Commentary: Met Annual target met. Prepared solicitation, reviewed proposals, competitively selected projects, and obligated funding.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Verification and validation data will be available and archived in the Office of Fusion Energy Sciences Program files

Associated Performance in Prior Years

FY 2009: None

Office: Office of Science

Project: Fusion Energy Sciences

Website: <http://www.science.doe.gov>

Outcome **NSTX Facility Upgrades**

Expected by End 2010 Complete the design, procurement of components, and fabrication of facility and diagnostic upgrades and commence commissioning of the diagnostic upgrades.

FY 2010 Target

Complete the design of diagnostic and facility upgrades and the procurement of key components and begin fabrication of the upgrades.

2010 Results

Commentary: Not Met Measure not met. All elements except the start of diagnostic commissioning have been completed and bench tests of some diagnostics have begun.

Future Plans /

Explanation of Shortfalls: The diagnostic commissioning is now planned to begin by March 2011.

Shortfalls:

Supporting Documentation: The verification and validation information is available at:

<http://www.science.doe.gov/ofes/performancetargets.shtml>.

Associated Performance in Prior Years

FY 2009: Not Met Complete conceptual design of diagnostic and facility upgrades.

Office: Office of Science

Project: Fusion Energy Sciences

Website: <http://www.science.doe.gov>

Outcome **Plasma Science Centers**

Expected by End 2010 Establish and begin operation of two new Plasma Science Centers (PSCs).

FY 2010 Target

Complete establishment and begin operation of two PSCs

2010 Results

Commentary: Met Annual target met. Established and began operation of two new Plasma Science Centers (PSCs).

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Verification and validation data for the MIT PSC and UCSD PSC will be available and archived in the Program Office files.

Associated Performance in Prior Years

FY 2009: Met Complete cooperative agreement selection and award process.

Office: Office of Science

Project: Fusion Energy Sciences

Website: <http://www.science.doe.gov>

Outcome **Princeton Plasma Physics Laboratory (PPPL) General Plant Projects (GPP)**

Expected by End 2010 Revised: Award architect and engineering (A&E) and design/build contracts. Begin construction of 300kW diesel generator installation/housing project and PLT/PBX switchyard demolition and disposition efforts.

Award architect and engineering (A&E), and construction contracts. Vendors complete construction of 90% of ordered equipment and deliver equipment to the laboratory. Equipment will be receipt inspected and stored on site. (NOTE: installation of equipment will occur during breaks in experimental research operations.)

FY 2010 Target

Award architect and engineering (A&E) and design/build contracts. Begin construction of 300kW diesel generator installation/housing project and PLT/PBX switchyard demolition and disposition efforts.

2010 Results

Commentary: Met Annual target met. Two-year outcome-oriented performance measure completed/closed.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Verification and validation data for this project will be available and archived in the Program Office files.

Associated Performance in Prior Years

FY 2009: Not Met Develop specific requirement packages and issue requests for proposals (RFPs) for equipment construction contracts.

Office: Office of Science

Project: High Energy Physics

Website: <http://www.science.doe.gov>

Outcome **Advanced Plasma Acceleration Facility MIE**

Expected by End 2010 Achieve CD-3, Approve start of Construction, for both the BELLA and FACET projects.

FY 2010 Target

Achieve CD-3, Approve start of Construction, for both the BELLA and FACET projects.

2010 Results

Commentary: Met Annual target met. Achieved CD-3, Approve start of Construction, for both the BELLA and FACET projects.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Milestones will be documented in the Project Execution Plan, which is approved at CD-2. Progress will be Documentation: reported monthly in PARS.

Associated Performance in Prior Years

FY 2009: Met Complete Conceptual Design and obtain CD-1, Approve Alternative Selection and Cost Range, for both Projects

Office: Office of Science

Project: High Energy Physics

Website: <http://www.science.doe.gov>

Outcome **Advanced technology R&D augmentation**

Expected by End 2010 All projects pass merit review and funds are obligated toward these activities.

FY 2010 Target

Award grants/contracts and funds are obligated for work to begin.

2010 Results

Commentary: Met Annual target met. All projects passed merit review and funds were obligated toward these activities.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Grants will be recorded in the DOE Standard Accounting and Reporting System (STARS) accounting Documentation: system. Funding to Management and Operations (M&O) contractors will be done through approved financial plans.

Associated Performance in Prior Years

FY 2009: Met Complete merit review of submitted proposals.

Office: Office of Science

Project: High Energy Physics

Website: <http://www.science.doe.gov>

Outcome **Fermilab GPP augmentation**

Expected by End Award contracts for six General Plant Projects (GPP) at Fermilab.
2010

FY 2010 Target

Award contracts for six General Plant Projects (GPP) at Fermilab

2010 Results

Commentary: Met Annual target met. Awarded contracts for six General Plant Projects (GPP) at Fermilab.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: The Quarterly Construction Project Status Report submitted from Fermilab to Fermi Site Office

Associated Performance in Prior Years

FY 2009: Not Met Solicit bids for six projects.

Office: Office of Science

Project: High Energy Physics

Website: <http://www.science.doe.gov>

Outcome **Long Baseline Neutrino Experiment**

Expected by End Complete all requirements for CD-1 review.
2010

FY 2010 Target

LBNE CD-0 Approved by the Acquisition Executive

2010 Results

Commentary: Met Annual target met. Completed all requirements for CD-1 review.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Project falls under O413.3A and status will tracked in Project Assessment and Reporting System (PARS) after CD-0.

Associated Performance in Prior Years

FY 2009: Not Met Achieve CD-0 (Mission Need) approval.

Office: Office of Science

Project: High Energy Physics

Website: <http://www.science.doe.gov>

Outcome **Neutrinos at the Main Injector Off-Axis Neutrino Appearance (NOvA) MIE**

Expected by End Establish adjusted construction approach such that far detector building will be completed in FY 2010 2011 instead of FY 2012.

FY 2010 Target

Progress of project proceeds per the adjusted schedule.

2010 Results

Commentary: Met Annual target met. Established adjusted construction approach such that far detector building will be completed in FY 2011 instead of FY 2012.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting All NOvA Project level 1 and level 2 milestones are documented in the Project Execution Plan, which is Documentation: maintained by the Federal Project Director and a copy is stored in the Office of High Energy Physics Progress will be reported monthly in PARS.

Associated Performance in Prior Years

FY 2009: Met Office of Project Assessment will conduct a review for approval of CD-3B for the entire NOvA Project.

Office: Office of Science

Project: High Energy Physics

Website: <http://www.science.doe.gov>

Outcome **Research and Infrastructure augmentation at universities in the HEP program**

Expected by End Award 30 to 50 grants to universities for the purpose of obtaining state of the art equipment 2010 needed to carry out particle physics research.

FY 2010 Target

All grants awarded.

2010 Results

Commentary: Met Annual target met. Awarded 30 to 50 grants to universities for the purpose of obtaining state of the art equipment needed to carry out particle physics research.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting The official repository for Recovery Act grant funding will be the DOE STARS Accounting System. In Documentation: addition, the Office of Science will track this data in its internal grants and contracts system.

Associated Performance in Prior Years

FY 2009: Met Complete merit review of proposals that have already been received.

Office: Office of Science

Project: High Energy Physics

Website: <http://www.science.doe.gov>

Outcome **Superconducting Radio Frequency (SRF) R&D**

Expected by End 2010 All orders for required equipment are placed.

FY 2010 Target

Complete placement of remaining orders for required equipment.

2010 Results

Commentary: Not Met Target not met. Awaiting CD-3 (begin construction) approval prior to placing final equipment order.

Future Plans / Explanation of Shortfalls: Expect a one-month delay while awaiting CD-3 (begin construction) approval. Anticipate all orders will be in place by end of Q1FY11.

Supporting Documentation: All project status reports will be archived in HEP HQ office files.

Associated Performance in Prior Years

FY 2009: Met Identify and begin ordering required equipment.

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome **Advance funding of 12 GeV Upgrade**

Expected by End Award at least 9 additional subcontracts for the 12 GeV Continuous Electron Beam Accelerator 2010 Facility (CEBAF) Upgrade project.

FY 2010 Target

Award all remaining subcontracts

2010 Results

Commentary: Met Annual target met. Awarded at least 9 additional subcontracts for the 12 GeV Continuous Electron Beam Accelerator Facility (CEBAF) Upgrade project.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Quarterly and monthly reports will be required from the project team to monitor performance. All

Documentation: documentation of project performance will be maintained by TJNAF.

Associated Performance in Prior Years

FY 2009: Met Award at least 3 subcontracts

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome **Enhanced Accelerator Improvement Project (AIP) funding at NP user facilities**

Expected by End 2010 Initiate eight high priority accelerator improvement projects at five national laboratories to enhance research opportunities:

- ANL - Replacement of First Booster Cryostat Module & Liquid Helium Upgrade
- ANL - New RFQ Accelerator Section for PII Linac
- BNL - Stochastic Cooling Plane
- BNL - Electron Lenses
- LBNL - 88-Inch HV Injection upgrade
- LBNL - RF Amplifier Upgrade
- ORNL - Refurbish ORIC (70 yr old motor generator) & tandem accelerator
- TJNAF - 11 GeV Separator for the JLab Upgrade

FY 2010 Target

Continue progress toward completion of projects

2010 Results

Commentary: Met Annual target met. Initiated eight high priority accelerator improvement projects at five national laboratories to enhance research opportunities.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Quarterly reports will be required from the project teams to monitor performance. All documentation of project performance will be maintained by the M&O contractors.

Associated Performance in Prior Years

FY 2009: Met Initiate action on all eight AIP projects

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome **Enhanced utilization of Isotope facilities**

Expected by End 2010 Produce critical isotopes in short supply per production schedule; purchase stable isotopes; initiate six facility upgrades and complete two of those.

FY 2010 Target

Initiate production of isotopes per production schedule, receive stable isotopes, initiate three facility upgrades and complete two facility upgrades.

2010 Results

Commentary: Met Target met.
- Production of isotopes per production schedule was initiated
- Stable isotopes were all received
- Four facility upgrades were initiated (LANL - Window Refurbishment, Manipulators Replacement, and Hot Cell Electrical System; and ORNL - PaR Remote Handling System Replacement)
- Two facility upgrades were completed (BNL ICP Mass Spectrometer and ORNL Remote Target Fabrication Refurbishment).

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: The project will be assessed through weekly reports from the facility points of contact on progress made towards established milestones, frequent discussions with federal program managers in the Office of Nuclear Physics, and quarterly reports. The facilities will be reviewed with panels of expert peers on an annual basis. All reports are maintained in the files of the Office of Nuclear Physics.

Associated Performance in Prior Years

FY 2009: Met Develop production schedule for research radioisotopes; initiate purchase of stable isotopes; and initiate action on three facility upgrades.

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome **Fundamental Neutron Physics Beamline (FNPB) MIE at SNS**

Expected by End Complete utilities and HVAC for the FNPB External Experimental Building which will house the
2010 experiment to measure the electric dipole moment of the neutron, within 10% of planned cost and schedule identified in project plan.

FY 2010 Target

Complete Utilities and HVAC tasks for FNPB External Experimental Building within 10% of planned cost and schedule identified in project plan.

2010 Results

Commentary: Met Annual target met.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Quarterly and monthly reports will be required from the project team to monitor performance. All
Documentation: documentation of project performance will be maintained by ORNL.

Associated Performance in Prior Years

FY 2009: Met Start Utilities and HVAC tasks for the FNPB External Experimental Building.

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome **Lattice Quantum ChromoDynamics II Computing Initiative**

Expected by End Procure, deploy and operate, at a minimum, 45 Teraflop cluster computing equipment for studies
2010 of LQCD (sustained LQCD inverter heterogeneous system performance)

FY 2010 Target

Execute purchase order for remaining computing equipment, and begin operations of all resources

2010 Results

Commentary: Met Annual target met.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting The project performance will be assessed with frequent discussions with federal program managers in the
Documentation: Office of Nuclear Physics. Quarterly reports will be provided by the Principal Investigators reporting progress towards established goals.

Associated Performance in Prior Years

FY 2009: Met Execute the initial purchase order for computing and disk equipment

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome Nuclear Data Program Initiative

Expected by End 2010 Hire new staff for the NNDC and begin new code framework and XENDL data format.

FY 2010 Target

Complete hiring actions and complete 1st beta-release of code framework and XENDL data format

2010 Results

Commentary: Not Met Annual target not met.

1. LLNL hired a flex-term employee who began work on 9/21/2010. However the post-doc will begin work on 10/5/2010 after defending her thesis.

2. The 1st beta-release was delayed. However the code to translate cross-section data to and from the ENDF format, the code to translate outgoing neutron and charged particle data to and from ENDF, and the code to process this data for transport codes is complete. LLNL is documenting the code and format specifications for release at the CSEWG/USNDP meeting during the first week of November 2010.

Future Plans /
Explanation of
Shortfalls:

Although the annual was not met, the two-year outcome-oriented performance measure has been completed and closed.

Supporting
Documentation:

The project performance will be assessed through weekly reports from three laboratories on progress made towards established milestones, through presentations of the National Nuclear Data Program to the Office of Nuclear Physics on an annual basis on the technical progress of the program, and through frequent discussions with federal program managers in the Office of Nuclear Physics. Weekly reports will be maintained in the electronic files of the SC Office of Budget; the annual program briefing presentations will be maintained in the electronic files of the Office of Nuclear Physics.

Associated Performance in Prior Years

FY 2009: Met Initiate hiring actions at ANL, LBNL and LLNL

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome **Nuclear Science Workforce**

Expected by End 2010 Competitively select and award high quality research grants or contracts to researchers who are pursuing nuclear physics research that can contribute to the applied areas.

FY 2010 Target

Complete grant actions for proposals selected at universities or industries

2010 Results

Commentary: Met Annual target met. However, in March 2010 it was decided to fund the grant award using base appropriations rather than RA funds. RA funds were obligated to a national lab (LBNL) supporting this effort instead of a university.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Documentation: Standard line management processes will be used to document the review and results for DOE laboratories, and for university grants, which use the selection statement and supporting documents, or the declination memo and supporting materials. All reports are maintained in the files of the Office of Nuclear Physics.

Associated Performance in Prior Years

FY 2009: Met Select proposals for award through competitive peer review.

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome **PHENIX Forward Vertex Detector MIE full funding (RHIC at BNL)**

Expected by End Recovery Act funded activities (Backplane, Cage, ROC/FEM, Ancillary System and their testing
2010 and assembly) support maintaining the overall PHENIX Forward Vertex MIE project within 10%
of approved cost and schedule baseline.

FY 2010 Target

Initiate procurements for remaining two PHENIX Forward Vertex MIE components supported with Recovery Act funding, and initiate testing and assembly of components.

2010 Results

Commentary: Met Annual target met.

Future Plans: Two-year outcome-oriented performance measure completed/closed.

Supporting Quarterly and monthly reports will be required from the project team to monitor performance. All
Documentation: documentation of project performance will be maintained by BNL.

Associated Performance in Prior Years

FY 2009: Met Initiate procurements for two of the PHENIX Forward Vertex MIE project components supported with Recovery Act funding.

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome **PHENIX Silicon Vertex MIE full funding (RHIC at BNL)**

Expected by End Revised: Recovery Act funded activities (Silicon sensor and registration equipment, Data 2010 collection modules) support completion of the overall PHENIX Silicon Vertex MIE by the end of FY 2010 within 10% of approved cost and schedule baseline.

Recovery Act funded activities (data acquisition crates, data collection modules, mechanical design work for VTX mechanical structure, and installation fixtures and external cooling system) support completion of the overall PHENIX Silicon Vertex MIE by the end of FY 2010 within 10% of approved cost and schedule baseline.

FY 2010 Target

Receive all PHENIX Silicon Vertex MIE project components supported with Recovery Act funding.

2010 Results

Commentary: Not Met The Data Collection Modules (DCMs) are being delivered in a series of batches. Final delivery is projected to be in November 2010.

Future Plans / The overall MIE project is not considered complete until receipt of all the DCMs. The DCMs are being Explanation of delivered in batches, with the last batch scheduled for Nov 2010. At that time the CPI/SPI for the overall Shortfalls: PHENIX Silicon Vertex MIE will be determined.

Supporting Quarterly and monthly reports will be required from the project team to monitor performance. All Documentation: documentation of project performance will be maintained by BNL.

Associated Performance in Prior Years

FY 2009: Met Initiate one order for one PHENIX Silicon Vertex MIE project component supported with Recovery Act funding

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome R&D on Alternative Isotope Production Techniques

Expected by End Competitively fund high quality R&D for new or improved methods to produce stable and 2010 radioisotopes for the Nation's needs

FY 2010 Target

R&D projects proceed according to plan

2010 Results

Commentary: Not Met Target not met. One of the 4 R&D projects is not proceeding according to plan. A project at ORNL has experienced procurement delays that have put it at moderate risk of not completing all of the originally stated proposal goals for which funding was awarded. Action Plan: ORNL management has changed the Principal Investigator, revised the approach and changed the schedule to accommodate delayed procurements, and changed the budget profile to match these revisions. Regular monthly teleconferences with HQ and ORNL management have been established, and revised milestones for the remainder of the project are being developed for the next quarterly report. At this time, the delays and issues are not expected to impact the deliverables negotiated at the outset of the award.

Future Plans / Explanation of Shortfalls: Although the annual target was not met, the two-year outcome-oriented performance measure has been completed/closed.

Supporting Documentation: The project performance will be assessed through frequent discussions with federal program managers in the Office of Nuclear Physics. Quarterly reports will be provided by the Principal Investigators reporting progress towards established goals. At the conclusion of the project the Principal Investigators will be required to submit final reports for evaluation and acceptance by the program managers.

Associated Performance in Prior Years

FY 2009: Met Select proposals for award through competitive peer review.

Office: Office of Science

Project: Nuclear Physics

Website: <http://www.science.doe.gov>

Outcome TJNAF Infrastructure Investments

Expected by End 2010 Complete five TJNAF GPP infrastructure projects: Experimental Staging Facility; Expand General Purpose Building (GPB); End Station Refrigerator Building and Utilities; Test Lab Service Transformer Upgrade; and Roads and Parking Improvements (partially funded by Recovery Act)

FY 2010 Target

Complete infrastructure GPP projects

2010 Results

Commentary: Not Met Target not met.

Complete:

- Experimental Staging Facility
- Expand General Purpose Building (GPB)
- Roads and Parking Improvements

Not Complete (due to unusually cold and wet weather during the winter months):

- End Station Refrigerator Building and Utilities (1 month delay projected).
- Test Lab Service Transformer Upgrade (new substation and switchgear and transformer feeders in place and in use. Metering installation underway. Overall project completion may be a couple of months late due to meter installation).

Future Plans /

Explanation of Shortfalls: Complete the remaining 2 GPP projects by end of Q2FY11.

Supporting

Documentation: All documentation of project performance will be maintained by TJNAF.

Associated Performance in Prior Years

FY 2009: Met Award three subcontracts for GPP infrastructure projects

FY 2009 UNMET PERFORMANCE TARGETS

Program	Activity	Description of FY 2009 Performance Measure/ Target	Status
Science: Base Measures			
Nuclear Physics	ATLAS - HRIBF Detectors	Achieve at least 80% of the integrated delivered beam used effectively for all experiments run at each of the Argonne Tandem Linac Accelerator System (ATLAS) and the Holifield Radioactive Ion Beam (HRIBF) facilities measured as a percentage of the scheduled delivered beam considered effective for each facility	Target was continued with a revised goal based on appropriated funding for FY 2010
Nuclear Physics	CEBAF Detector	Achieve at least 80% of the integrated delivered beam used effectively for experimental research in each of Halls A, B and C at the Continuous Electron Beam Accelerator Facility (CEBAF) measured as a percentage of the scheduled delivered beam considered effective for each Hall	Target was continued with a revised goal based on appropriated funding for FY 2010
Nuclear Physics	RHIC Heavy-Ion Collisions	Achieve at least 80% of the projected integrated proton-proton collision luminosity sampled by each of the PHENIX and STAR experiments at the Relativistic Heavy Ion Collider, where the projected values take into account anticipated collider performance and detector data-taking efficiencies	Target was continued with a revised goal based on appropriated funding for FY 2010
Science: Recovery Measures			
High Energy Physics	Fermilab GPP augmentation	Solicit bids for six projects	Met FY 2009 target by end of FY 2010
High Energy Physics	Long Baseline Neutrino Experiment	Achieve CD-0 (mission need) approval	Met FY 2009 target by end of FY 2010
Advanced Scientific Computing Research	Advanced Networking Initiative	Conduct ASCR programmatic review of the design architecture for a nationwide demonstration network prototype presented by LBNL and posted on ASCR website	Met FY 2009 target by end of FY 2010

Advanced Scientific Computing Research	Advanced Computer Architectures	By September 30, 2009, complete distribution of all Recovery Act funds for Advanced Computer Architectures from headquarters into M&O contracts and financial assistance actions	Met FY 2009 target by end of FY 2010
Advanced Scientific Computing Research	Computational Partnerships (SciDAC-e)	Establish seven research grants or cooperative agreements to develop mathematical techniques and algorithms to enable smart grids	Met FY 2009 target by end of FY 2010
Fusion Energy Sciences	Alcator C-Mod Facility Upgrades (MIT)	Complete designs of polarimeter diagnostic upgrades and place procurement orders for materials and parts for facility upgrades (three high power microwave sources, Ion Cyclotron Radio Frequency (ICRF) power amplifier tubes and divertor spectrometer diagnostic)	Met FY 2009 target by end of FY 2010
Fusion Energy Sciences	DIII-D Facility Upgrades	Complete conceptual design of upgrades to edge diagnostics, core diagnostics, auxiliary heating power supply, and elements of the electron cyclotron heating system	Met FY 2009 target by end of FY 2010
Fusion Energy Sciences	Infrastructure Improvements for Innovative Confinement Concepts (ICC) Experiments	Competitively select ICC projects and obligate funding	Met FY 2009 target by end of FY 2010
Fusion Energy Sciences	NSTX Facility Upgrades	Complete conceptual design of diagnostic and facility upgrades	Met FY 2009 target by end of FY 2010
Fusion Energy Sciences	Princeton Plasma Physics Laboratory General Plant Projects	Develop specific requirement packages and issue requests for proposals for equipment construction contracts	Met FY 2009 target by end of FY 2010
Science	OSTI Technology Infrastructure	OSTI can support requests from STI dissemination products in the event of a disruption of service in the main internet pathway; this involves having a redundant internet pathway in place and operational; work in support of the second year performance target has also started with the hot-site procured and initially provisioned	Met FY 2009 target by end of FY 2010

Science	Small Business Innovation Research (SBIR) and Small Business Technology Transfer Research (STTR) Programs	By September 30, 2009, fully fund six Phase II Supplemental awards totaling \$1M; by September 30, 2009, post Phase I (EERE) SBIR/STTR Funding Opportunity Announcement	Met FY 2009 target by end of FY 2010
Science	Energy Sciences Fellowships and Early Career Research Program	Complete all activities necessary to allow fellowship and early career review panels to begin during Q1 FY 2010	Met FY 2009 target by end of FY 2010
Energy Efficiency and Renewable Energy: Base Measures			
Weatherization and Intergovernmental	Weatherization Assistance Program	95,949 low-income family homes weatherized annually with DOE funds (based on appropriation amount of \$450 million)	Met FY 2009 target by end of FY 2010
Biomass and Biorefinery Systems R&D	Utilization of Platforms R&D	Approve engineering design of one additional commercial scale biorefineries (2 in total) including orders for long lead items, vendor packages, and structural steel; result of this will ultimately be to complete construction by 2011	Met FY 2009 target by end of FY 2010
Solar Energy	Concentrated Solar Power	Modeled levelized cost of power from large-scale concentrating solar power plants in the range of \$0.11-\$0.13/kWh from completed R&D	Met FY 2009 target by end of FY 2010
Wind Energy	Low Wind Speed Technology	3.9 cents per kilowatthour modeled cost of wind power in land-based Class 4 wind speed areas (i.e., 13 mph annual average wind speed at 33 feet above ground); 9.15 cents per kWh modeled cost of wind power in Class 6 wind speed areas (i.e., 15 mph annual average wind speed at 33 feet above ground) for shallow offshore systems	Target was continued with a revised goal based on appropriated funding for FY 2010
Wind Energy	Technology Acceptance	27 States with at least 100 megawatts of wind power capacity installed, and 4 States with over 1,000 megawatts wind power capacity installed	Target was continued with a revised goal based on appropriated funding for FY 2010
Vehicle Technology	Hybrid Electric Systems/ Technology Validation	Verify under real world conditions (through demonstrations and modeling) hydrogen infrastructure technologies with a cost of \$3.00 per gasoline gallon equivalent (based on high volume production)	Met FY 2009 target by end of FY 2010

Vehicle Technology	Hybrid Electric Systems (Energy Storage)	Reduce modeled production cost of high-power, 25-kilowatt passenger vehicle lithium-ion battery to \$550 (storage batteries are a key cost and performance component for hybrid electric vehicles, which offer improved fuel economy)	Met FY 2009 target by end of FY 2010
Energy Efficiency and Renewable Energy: Recovery Measures			
Biomass and Biorefinery Systems R&D	Commercial Scale Biorefinery Projects	One Phase 2 award negotiated and contracted with increased funding ceilings as appropriate for existing efforts	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Solar Energy	Concentrating Solar Power	Complete selection of facility upgrade projects and begin Solar Two decommissioning	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Solar Energy	PV Systems Development	Complete selections of Supply Chain, Incubator/Pre-Incubator and national laboratory project awards	Met FY 2009 target by end of FY 2010
Solar Energy	High-Penetration Solar Deployment	Complete selection of awards for all sub activities	Met FY 2009 target by end of FY 2010
Wind Energy	Wind Energy Technology R&D and Testing	Award grants	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Geothermal Technology	National Geothermal Data System - Resource Assessment and Classification System	Begin beta testing desktop software to access National Geothermal Data System	Measure deleted
Vehicle Technology	Lab Call for Facilities and Equipment	National Laboratory solicitation issued and initial awards related to new R&D facilities and equipment made	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Building Technology	Residential Buildings (Building America, Builders' Challenge, and Existing Home Retrofits)	FOA Posted and Closed and Preliminary Review Complete	Measure deleted

Building Technology	National Accounts Acceleration in Support of the Commercial Buildings Initiative	Expand program to five national laboratories and announce competitive solicitations through the national laboratories for National Accounts' design team partners	Met FY 2009 target by end of FY 2010
Industrial Technologies	Industrial Assessment Centers and Plant Best Practices	Approve all new work plans for state and regional partnerships utilizing Recovery Act funds; obligate funds for the state and regional partnerships	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Facilities and Infrastructure	Integrated Biorefinery Research Expansion	Modify subcontract, complete design, procure long lead equipment, and approve baseline	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Facilities and Infrastructure	Renewable Energy and Supporting Site Infrastructure	Complete design of photovoltaic power production systems; design STM site security system; and design enhanced ADA access and parking and pedestrian circulation projects; modify subcontract and complete design	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Facilities and Infrastructure	NWTC Upgrades	Initiate acquisition strategy; award design contracts for electrical system upgrade and dynamometer upgrades	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
National Nuclear Security Administration			
Directed Stockpile Work	LEP Production Costs	Cumulative percent reduction in projected W76-1 warhead production costs per warhead from established validated baseline, as computed and reported annually by the W76 LEP Cost Control Board (efficiency measure)	Target not met in FY 2010; behind schedule because of unanticipated cost increases in FY 2007, FY 2008, FY 2009, and FY 2010 (resulting from (1) materials and component technical issues and the resulting design changes and (2) increasing M&O healthcare and compensation costs) that have been passed on to the LEP by the M&O contractors; because the target was missed in the past 3 years, cost increases will have to be offset by future efficiencies elsewhere in the W76-1 full production program (2011-2023)

Readiness in Technical Base and Facilities	Major Construction Projects	Execute construction projects within approved costs and schedules, as measured by the total percentage of projects with total estimated cost greater than \$20 million with a schedule performance index (ratio of actual work performed to scheduled work) and a cost performance index (ratio of actual cost of work performed to budgeted cost of work) between 0.9-1.15 (efficiency measure)	Met FY 2009 target by end of FY 2010; all 10 construction projects executed within the criteria established for approved costs and schedules
International Nuclear Materials Protection and Cooperation	Megaports with Host Country Cost Sharing	Cumulative number of Megaports with host country cost-sharing, resulting in less cost to the U.S. program (estimated cost sharing value) (efficiency measure); FY 2009 target: 8/\$40 million	Met FY 2009 target by end of FY 2010; FY 2009 cumulative target of 8 Megaports with host country cost-sharing (estimated cost sharing value) was completed in FY 2010
Fissile Materials Disposition	Waste Solidification Building	Cumulative percentage of the design, construction, and cold start-up activities completed for the Waste Solidification Building (long-term output measure); FY 2009 target: 30%	Met FY 2009 target by end of FY 2010; annual result for FY 2010 is 47% completion of the WSB facility, exceeding the target of 45%
Electricity Delivery and Energy Reliability: Base Measures			
Electricity Delivery and Energy Reliability	Operations and Analysis/Permitting, Siting, and Analysis	Complete DOE's Second Study of National Electric Transmission Congestion	Met FY 2009 target by end of FY 2010
Electricity Delivery and Energy Reliability: Recovery Measures			
Electricity Delivery and Energy Reliability	Workforce Training for Electric Power Sector	Create and finalize strategy for project and develop and post Federal Opportunity Announcement (FOA); receive applications	Met FY 2009 target by end of FY 2010; FOA could not be released until OMB had completed its review, which occurred in October 2009 (target was for FOA release by September 2009)
Environmental Management: Base Measures			
Environmental Management	Release Site Remediation Completions	Complete remediation work at a cumulative total of 6,831 release sites	Target not met in FY 2010; negotiations with regulators to determine site completion targets will be resolved in FY 2011

Environmental Management: Recovery Measures			
Environmental Management	Argonne National Laboratory	Initiate and complete baselining activities for projects and establish milestones for treatment of specific wastes/volumes	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Environmental Management	Hanford Central Plateau D&D	Initiate procurement activities for demolition and disposition of Central Plateau facilities necessary to complete disposition of 3 facilities by end of first year period	Met FY 2009 target by end of FY 2010
Environmental Management	Hanford Central Plateau Soil and Groundwater	Initiate procurement activities for groundwater remediation	Met FY 2009 target by end of FY 2010
Environmental Management	Hanford River Corridor	Demolition and disposition	Baselined targets not approved until early FY 2010
Environmental Management	INL Buried Waste	Complete exhumation of 0.05 acres or targeted waste	Met FY 2009 target by end of FY 2010
Environmental Management	LANL Defense D&D	Reduce the EM building footprint by eliminating 8,855 square feet of facilities	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Environmental Management	LANL Defense Soil and Groundwater Recovery Act Project	Completion of all engineering design, long lead time procurement items, and mobilization	Met FY 2009 target by end of FY 2010
Environmental Management	LANL Non-Defense	Complete removal of hazardous waste and equipment in TSTA	Met FY 2009 target by end of FY 2010
Environmental Management	Oak Ridge Defense ORNL	Demolition and disposition	Baselined targets not approved until early FY 2010
Environmental Management	Oak Ridge Non-Defense	By the end of FY 2009 initiate procurement actions and/or mobilize work force to execute the work scope of this Recovery Act Project.	Met FY 2009 target by end of FY 2010
Environmental Management	Oak Ridge UE Decontamination and Decommissioning (D&D)	By the end of FY 2009 Initiate procurement actions and/or mobilize work forceAs the project baseline is developed, earned value management measures will be developed to monitor progress	Met FY 2009 target by end of FY 2010
Environmental Management	Savannah River Site D&D M & D Areas	Initiate procurement activities to remediate M area soils	Met FY 2009 target by end of FY 2010

Environmental Management	Savannah River Site D&D P & R Areas	Initiate procurement activities to D&D P reactor facilities	Met FY 2009 target by end of FY 2010
Environmental Management	Savannah River Site D&D, Soil and Groundwater Activities Site-Wide	Demolish 293-F Stack and Initiate the D&D-BIO and deactivation plan that will support the elimination of more than 90 percent of the plutonium-238 source from 235-F	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Environmental Management	Savannah River Site TRU and Solid Waste	Complete retrievable legacy Contact Handled (CH)-TRU drum program by dispositioning 2,200 TRU waste drums	Met FY 2009 target by end of FY 2010
Environmental Management	Energy Technology Engineering Center	Rad Survey plans and contracting confirmed; final RFI begun for Groups 1A and 10	Target not met/closed; with the completion of the Recovery Act program, the remaining scope for this project will be reevaluated
Loan Programs: Recovery Measures			
Loan Program	Credit Subsidy Program, Section 1705	Complete commitment of 5% of credit subsidy budget of \$3.935 billion (\$197 million)	Target not met/closed; based on current conditional commitments we have utilized 24-28% of credit subsidy; based on our current project pipeline, we forecast that we will utilize the full \$2.435 billion by end of FY 2011