



U.S. DEPARTMENT OF ENERGY ANNUAL PERFORMANCE REPORT



FISCAL YEAR 2007

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Introduction

The Department of Energy is pleased to present its Annual Performance Report (APR) which outlines the Department's performance in FY 2007 against the goals that were set out in the President's proposed 2007 budget. The metrics 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. Since these metrics were created before final Congressional allocations, in some cases, the actual appropriation levels did not meet the Department's request and may have affected the program's ability to meet the proposed performance level.

This report meets the requirements of the Government Performance and Results Act (GPRA) and the Office of Management and Budget's (OMB) requirements to report its performance annually under OMB Circular A-11. The presentation of this report differs from previous APRs because the Department is participating in the FY 2007 Pilot Program for Alternative Approaches to Performance Accountability Reporting (PAR Pilot). The goal of the pilot is to improve the quality and transparency of performance and financial reporting. The PAR Pilot gives the Department an alternative platform for presenting our performance information. In addition to making the reports easier to read, the report includes more detailed data and web links to assist the reader in finding additional information.

The PAR Pilot will be published in three reporting components.

- The Agency Financial Report (AFR) was published, distributed, and placed on the DOE website (www.cfo.doe.gov/cf1-2/2007parpilot.htm) on November 15, 2007. The AFR contains all of the required financial statements, accompanying notes, independent auditor's report, Inspector General management challenges, and the Management Discussion and Analysis (MD&A), which includes an analysis of the financial statements, management controls and compliance information, as well as a high-level discussion of Departmental performance as it relates to DOE's major priorities.
- The Annual Performance Report (APR) focuses on detailed performance information including performance targets associated with the Department's budget activities. The report discusses performance results including narrative descriptions of results by performance measure and references to supporting documentation, a clear, concise statement on high-level program challenges and benefits, and the status of all FY 2006 Unmet Measures. This report will be available on the Department of Energy's website, www.Energy.gov, on February 4, 2008.
- The Highlights Report summarizes the Department's financial results and performance information. This report is a concise and readable document summarizing key results from the AFR and APR. It addresses both the successes and challenges for the Department. This report is available on DOE's website as of February 1, 2008 and is web-linked to more comprehensive, publicly available information at www.ExpectMore.gov.

In FY 2007, the Department had two sets of performance measures. One set was used in the Congressional budget justification and was tracked quarterly through the Department's Joule system. A second set was tracked, in conjunction with OMB, through the Program Assessment Rating Tool (PART) process. The APR contains both sets of measures:

- The "FY 2007 Performance Measures" section in the report contains the details associated with those measures used as part of the budget justification
- The "PART Program FY 2007 Summary Table" provides links to the detailed assessment and specific performance measures tracked in PART.

The Department improved the quality of its performance measures in FY 2007. Thirty percent of the Department's FY 2008 performance measures were evaluated against a standard set of criteria. This analysis identified the Department's need to develop performance measures that were more outcome focused and trendable. The Department used the results of this analysis to improve the quality of 34 of its FY 2008 performance measures. In addition, DOE and OMB worked together to align performance measures in the budget and PART. The two sets of measures assessed similar areas of program performance, but were not identical. DOE has resolved this by making the measures in PART and the 2009 budget documents match.

In general, the Department was able to meet 80 percent of the FY 2007 targets it established for the Program Assessment and Rating Tool measures and 93 percent for the budget justification measures.

DOE Strategic Themes, Strategic Goals, and Supporting Offices

The Department of Energy Strategic Plan has five (5) Strategic Themes, sixteen (16) Strategic Goals, and twenty-two (22) Supporting Offices.

DOE Strategic Themes, Goals and Supporting Programs

| Strategic Themes | Strategic Goals | Supporting Offices |
|-------------------------------------|---|--|
| Energy Security | <ul style="list-style-type: none"> • Energy Diversity • Environmental Impacts of Energy • Energy Infrastructure • Energy Productivity | <ul style="list-style-type: none"> • Nuclear Energy • Fossil Energy • Energy Efficiency and Renewable Energy • Electricity Delivery and Energy Reliability |
| Nuclear Security | <ul style="list-style-type: none"> • Nuclear Deterrent • Weapons of Mass Destruction • Nuclear Propulsion Plants | <ul style="list-style-type: none"> • National Nuclear Security Administration |
| Scientific Discovery and Innovation | <ul style="list-style-type: none"> • Scientific Breakthroughs • Foundations of Science • Research Integration | <ul style="list-style-type: none"> • Science |
| Environmental Responsibility | <ul style="list-style-type: none"> • Environmental Cleanup • Managing the Legacy | <ul style="list-style-type: none"> • Environmental Management • Legacy Management • Civilian Radioactive Waste |
| Management Excellence | <ul style="list-style-type: none"> • Integrated Management • Human Capital • Infrastructure • Resources | <ul style="list-style-type: none"> • Chief Information Officer • Chief Financial Officer • Intelligence and Counterintelligence • General Counsel • Congressional and Intergovernmental Affairs • Human Capital Management • Health, Safety and Security • Economic Impact and Diversity • Inspector General • Hearing and Appeals • Management • Public Affairs • Policy and International Affairs |

Performance Summary Scorecard

| STRATEGIC THEMES (90% & ABOVE) | PROGRAM COSTS ¹ | | GPRA UNIT PERFORMANCE GOALS (90% & ABOVE TO GET TO GREEN) | FY 2007 Budgetary Expenditures Incurred ² | GREEN | YELLOW | RED | |
|--|----------------------------|---------|--|---|---------|--------|-----|---|
| | FY 2007 | FY 2006 | | | | | | |
| 1. Energy Security | \$6,552 | \$6,825 | 1.1.1 Hydrogen/Fuel Cell Technologies | G | \$36 | 7 | 0 | 0 |
| | | | 1.1.2 Vehicles Technologies | G | \$173 | 5 | 0 | 0 |
| | | | 1.1.3 Solar Energy | G | \$315 | 4 | 0 | 0 |
| | | | 1.1.4 Wind Energy | G | \$27 | 3 | 1 | 0 |
| | | | 1.1.5 Geothermal Technology | G | \$9 | 2 | 0 | 0 |
| | | | 1.1.6 Biomass and Biorefinery Systems R&D | G | \$87 | 5 | 0 | 0 |
| | | | 1.1.7 DEMP/FEMP | G | \$15 | 2 | 0 | 0 |
| | | | 1.1.9 Natural Gas Technology | G | \$28 | 1 | 0 | 0 |
| | | | 1.1.11 Petroleum Reserves | G | \$218 | 2 | 0 | 0 |
| | | | 1.1.12 Energy Information Administration | G | \$90 | 2 | 0 | 0 |
| | | | 1.2.8 Near-Zero Atmospheric Emissions Coal-Based Electricity & Hydrogen Production | G | \$334 | 8 | 0 | 0 |
| | | | 1.2.14 Develop New Nuclear Generation Technologies | G | \$276 | 5 | 0 | 0 |
| | | | 1.2.15 Maintain and Enhance National Nuclear Infrastructure | G | \$201 | 3 | 0 | 0 |
| | | | 1.3.16 Electric Transmission and Distribution | G | \$138 | 5 | 0 | 0 |
| | | | 1.3.17 Western Area Power Administration | G | \$702 | 3 | 0 | 0 |
| | | | 1.3.18 Bonneville Power Administration | G | \$2,768 | 3 | 0 | 0 |
| | | | 1.3.19 Industrial Technologies | G | \$47 | 3 | 0 | 0 |
| | | | 1.3.23 Southeastern Power Administration | G | \$70 | 2 | 0 | 0 |
| | | | 1.3.24 Southwestern Power Administration | G | \$41 | 5 | 0 | 0 |
| | | | 1.4.20 Building Technologies | G | \$78 | 5 | 1 | 0 |
| 1.4.21 Weatherization | G | \$280 | 2 | 0 | 0 | | | |
| 1.4.22 State Energy Programs | G | \$62 | 2 | 0 | 0 | | | |
| | | | Total | | \$5,995 | 79 | 2 | 0 |
| 2. Nuclear Security ³ | \$9,200 | \$8,831 | 2.0.25 Office of the Administrator | G | 0 | 0 | 1 | 0 |
| | | | 2.1.26 Directed Stockpile Work | G | \$1,374 | 3 | 0 | 2 |
| | | | 2.1.27 Science Campaign | G | \$277 | 6 | 0 | 0 |
| | | | 2.1.28 Engineering Campaign | G | \$207 | 5 | 0 | 0 |
| | | | 2.1.29 Inertial Confinement Fusion Ignition and High Yield Campaign | G | \$539 | 4 | 0 | 1 |
| | | | 2.1.30 Advanced Simulation and Computing Campaign | G | \$557 | 5 | 0 | 0 |
| | | | 2.1.31 Pit Manufacturing and Certification Campaign | G | \$234 | 4 | 0 | 0 |
| | | | 2.1.32 Readiness Campaign | G | \$257 | 4 | 0 | 0 |
| | | | 2.1.33 Readiness in Technical Base and Facilities | G | \$1,623 | 4 | 0 | 0 |
| | | | 2.1.34 Secure Transportation Asset | G | \$202 | 3 | 2 | 0 |
| | | | 2.1.35 Nuclear Weapons Incident Response | G | \$62 | 1 | 0 | 0 |
| | | | 2.1.36 Facilities and Infrastructure Recapitalization Program | G | \$139 | 3 | 0 | 0 |
| | | | 2.1.37 Safeguards and Security | G | \$736 | 3 | 0 | 0 |
| | | | 2.2.39 Non Proliferation and Verification R&D | G | \$288 | 6 | 0 | 0 |
| | | | 2.2.40 Elimination of Weapons-Grade Plutonium Production | G | \$225 | 3 | 0 | 0 |
| | | | 2.2.41 Nonproliferation and International Security | G | \$205 | 5 | 0 | 0 |
| | | | 2.2.42 International Nuclear Materials Protection, & Cooperation | G | \$416 | 3 | 1 | 0 |
| | | | 2.2.43 Fissile Materials Disposition | G | \$389 | 3 | 0 | 0 |
| 2.2.44 Global Threat Reduction Initiative (GTRI) | G | \$8 | 4 | 0 | 1 | | | |
| 2.3.45 Naval Reactors | G | \$790 | 6 | 0 | 0 | | | |
| | | | Total | | \$8,528 | 75 | 4 | 4 |
| 3. Scientific Discovery and Innovation | \$4,004 | \$3,734 | 3.1/2.46 High Energy Physics | Y | \$724 | 4 | 0 | 1 |
| | | | 3.1/2.47 Nuclear Physics | G | \$406 | 4 | 0 | 0 |
| | | | 3.1/2.48 Biological and Environmental Research | Y | \$519 | 6 | 0 | 1 |
| | | | 3.1/2.49 Fusion Energy | R | \$292 | 3 | 0 | 1 |
| | | | 3.1/2.50 Basic Energy Sciences | R | \$1,234 | 3 | 0 | 1 |
| | | | 3.1/2.51 Advance Scientific Computing Research | G | \$251 | 2 | 0 | 0 |
| | | | 3.3.52 Research Integration | G | \$0 | 1 | 0 | 0 |
| | | | Total | | \$3,426 | 23 | 0 | 4 |
| 4. Environmental Responsibility | \$5,918 | \$6,069 | 4.1.53 Environmental Management | G | \$6,607 | 5 | 1 | 0 |
| | | | 4.2.54 Nuclear Waste Disposal | G | \$566 | 3 | 0 | 1 |
| | | | 4.2.55 Legacy Management | G | \$58 | 2 | 0 | 0 |
| | | | Total | | \$7,231 | 10 | 1 | 1 |
| 5. Management Excellence | \$690 | \$653 | 5.0.1 Chief Information Officer | | | | | |
| | | | 5.0.2 Congressional and Intergovernmental Affairs | | | | | |
| | | | 5.0.3 Office of Management | | | | | |
| | | | 5.0.4 Office of Hearing and Appeals | | | | | |
| | | | 5.0.5 Economic Diversity | | | | | |
| | | | 5.0.6 Health, Safety and Security | | | | | |
| | | | 5.0.7 Policy and International Affairs | | | | | |
| | | | 5.0.8 Inspector General | | | | | |
| | | | 5.0.9 Human Capital Management | | | | | |
| | | | 5.0.10 Public Affairs | | | | | |
| | | | 5.0.11 General Counsel | | | | | |
| | | | 5.0.12 Office of the Chief Financial Officer | | | | | |

¹ Program Costs are taken from the Department Consolidated Statements of net cost.

² 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.

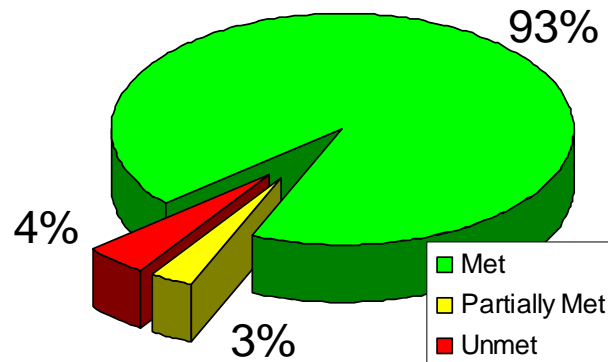
³ NNSA Department level measures require 90% or more of their targets performing on track before acquiring "green" status in Joule; NNSA Program level targets must meet 100% to acquire "green" status.

Note1: In 2007, the Department made a decision for consistency to change the scoring for Joule for both the targets and total programs to Green (90%-100%), Yellow (80%-89%), and Red (79% and below). In order to be transparent, we are noting that in 2006 and prior years, the scoring for Joule targets and programs was as follows: Program goals were scored greater than 90% (green), 80%-89% (yellow), and 79% and below (red); Joule targets were scored 100% (green), 80%-99% (yellow), and 79% and below (red).




Note2: All dollars are in millions.

Note3: Management Excellence programs are not GPRA Units

Overall, the Department met 93 percent of its performance targets based on its GRPA unit program performance measures. The unmet targets will be tracked in FY 2008 and reported in that year annual performance report.



Refer to Note 1 in the table above for FY 2007 green, yellow, and red scoring definitions. For FY 2006, the scoring is summarized in the following table:

| Organizational Goals | Program Goals and Annual Targets | |
|----------------------------|----------------------------------|---|
| ≥ 90% Met | 100% Met |  |
| ≥ 80% Met; < 90% Met | ≥ 80% Met; < 100% Met |  |
| < 80% Met; or Undetermined | < 80% Met; or Undetermined |  |

Program Assessment Rating Tool (PART)

Program assessment is conducted by OMB through use of its Program Assessment Rating Tool (PART). PART grew out of the Administration's desire to assess and improve program performance so the Federal Government can achieve greater results. It provides Federal agencies with a disciplined tool for assessing program planning, management, and performance against quantitative, outcome-oriented goals. It is a tool to inform and assist management on funding and management decisions aimed at making the program more effective.

PART results revealed that a majority of the Department's assessed programs periodically initiated independent evaluations to gauge program effectiveness and to support program improvements. Departmental programs and activities were also reviewed and audited on an on-going basis by the Department's Office of Inspector General (www.ig.doe.gov/reports.htm) and the Government Accountability Office (www.gao.gov/index.html).

DOE uses PART recommendations to make important programmatic changes to improve the effectiveness of its programs. For example, DOE and OMB establish PART improvement plans to improve program results. In addition, DOE has incorporated PART results into several internal evaluation processes including annual program reviews, the internal budget process, and SES performance evaluations. Specific programs have improved planning and management based on PART reviews includes the following examples:

- The Hydrogen Technology program is developing guidance which specifies a consistent framework for analyzing the benefits and costs of research and development investments and uses this information to guide budget decisions.
- The Engineering Campaign is improving the coordination of activities across multiple National Nuclear Security Administration (NNSA) programs aimed at nuclear weapons activities.
- The Bonneville Power Administration (BPA) is improving its management of capital project costs and capital investment assessments while helping to ensure long-term availability of needed capital funds.

The following table summarizes the end-of-FY 2007 status for the 56 Departmental programs which have completed a PART assessment. For each of the PART assessments, the table provides an overall rating of effectiveness as determined by the PART assessment, as well as the number of program measures that met the FY 2007 targets, the number of measures that did not meet FY 2007 targets, the number of measures with unknown FY 2007 status, and number of measures without an FY 2007 target. Unknown status indicates the actual FY 2007 performance has not yet been reported at the time this report was published. The "Performance Measure Details" section of this report lists each DOE program measure along with a link to the corresponding PART.

DOE is pleased with its FY 2007 PART results: the Department met 80 percent of its measures with targets in FY 2007, while 12 percent of its measures with targets were unmet and 8 percent

of its measures with targets were unknown due to the unavailability of data at the time of reporting. It is anticipated that the majority of the measures in the unknown status column will be met once final data is available for reporting. PART assists DOE in its continuing commitment to assess and improve program performance so the Federal Government can achieve better results.

This year, DOE and OMB worked together to align performance measures in the budget and PART. Prior to this process, the two sets of measures assessed similar areas of program performance, but were not identical. DOE resolved this by establishing one set of measures for PART and the 2009 budget.

The following table also contains links to www.ExpectMore.gov pages where detailed explanations of each PART program's performance measures, assessment scores, and improvement plans are updated bi-annually. This website provides the public with similar information regarding the performance and management for all Federal agency PART programs.

PART Program FY 2007 Summary Table

| Program Name | Rating | Number of measures met in FY07 | Number of measures unmet in FY07 | Number of measures with-unknown status in FY07 | Link to detailed assessment, including specific performance measures |
|--|----------------------|--------------------------------|----------------------------------|--|---|
| Advanced Fuel Cycle Initiative | Moderately Effective | 1 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000072.2003.html |
| Advanced Scientific Computing Research | Moderately Effective | 2 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000074.2003.html |
| National Nuclear Security Administration: Advanced Simulation and Computing (ASCI) | Effective | 4 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000076.2007.html |
| Basic Energy Sciences | Effective | 4 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000078.2003.html |
| Biological and Environmental Research | Effective | 4 | 1 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000080.2003.html |
| Bonneville Power Administration | Moderately Effective | 3 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000082.2002.html |
| Building Technologies | Adequate | 8 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000084.2003.html |
| Coal Energy Technology | Adequate | 2 | 0 | 3 | http://www.whitehouse.gov/omb/expectmore/detail/10000086.2005.html |
| National Nuclear Security Administration: Facilities and Infrastructure Recapitalization Program | Moderately Effective | 2 | 1 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000088.2002.html |
| Fusion Energy Sciences | Moderately Effective | 1 | 1 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000096.2003.html |
| Generation IV Nuclear Energy Systems Initiative | Moderately Effective | 1 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000100.2003.html |
| Geothermal Technology | Moderately Effective | 0 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000102.2003.html |
| High Energy Physics | Moderately Effective | 4 | 1 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000104.2003.html |
| Hydrogen Technology | Adequate | 0 | 2 | 1 | http://www.whitehouse.gov/omb/expectmore/detail/10000106.2007.html |
| National Nuclear Security Administration: International Nuclear Materials Protection and Cooperation | Effective | 3 | 1 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000108.2007.html |

| Program Name | Rating | Number of measures met in FY07 | Number of measures unmet in FY07 | Number of measures with-unknown status in FY07 | Link to detailed assessment, including specific performance measures |
|---|----------------------|---------------------------------------|---|---|---|
| Nuclear Physics | Effective | 3 | 1 | 4 | http://www.whitehouse.gov/omb/expectmore/detail/10000114.2003.html |
| Nuclear Power 2010 | Adequate | 2 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000116.2003.html |
| Oil Technology | Ineffective | 0 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000118.2003.html |
| Solar Energy | Moderately Effective | 3 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000120.2003.html |
| Southeastern Power Administration | Moderately Effective | 4 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000122.2002.html |
| Southwestern Power Administration | Moderately Effective | 7 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000124.2002.html |
| National Nuclear Security Administration: Safeguards and Security | Moderately Effective | 2 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000126.2004.html |
| Weatherization Assistance | Moderately Effective | 2 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000128.2003.html |
| Western Area Power Administration | Moderately Effective | 3 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000130.2002.html |
| Wind Energy | Moderately Effective | 3 | 2 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10000216.2003.html |
| National Nuclear Security Administration: Elimination of Weapons-Grade Plutonium Production Program | Effective | 3 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10001044.2005.html |
| High-Temperature Superconducting (HTS) Research and Development | Moderately Effective | 0 | 0 | 2 | http://www.whitehouse.gov/omb/expectmore/detail/10001045.2003.html |
| National Nuclear Security Administration: Inertial Confinement Fusion Ignition and High Yield Campaign (ICF) Campaign | Moderately Effective | 4 | 0 | 1 | http://www.whitehouse.gov/omb/expectmore/detail/10001046.2003.html |

| Program Name | Rating | Number of measures met in FY07 | Number of measures unmet in FY07 | Number of measures with-unknown status in FY07 | Link to detailed assessment, including specific performance measures |
|---|--------------------------|--------------------------------|----------------------------------|--|---|
| National Nuclear Security Administration: Readiness in Technical Base and Facilities | Moderately Effective | 3 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10001047.2007.html |
| Strategic Petroleum Reserve | Effective | 0 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10001048.2003.html |
| Civilian Radioactive Waste Management Program: Yucca Mountain Project | Adequate | 4 | 2 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10001049.2007.html |
| Environmental Management | Adequate | 11 | 6 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10001176.2003.html |
| Natural Gas Technology | Ineffective | 0 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10001183.2003.html |
| National Nuclear Security Administration: Directed Stockpile Work (DSW) | Moderately Effective | 3 | 2 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10002126.2004.html |
| Energy Information Administration | Results Not Demonstrated | 3 | 1 | 2 | http://www.whitehouse.gov/omb/expectmore/detail/10002128.2004.html |
| National Nuclear Infrastructure | Results Not Demonstrated | 3 | 2 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10002130.2004.html |
| National Nuclear Security Administration: Nonproliferation and International Security | Effective | 3 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10002132.2004.html |
| National Nuclear Security Administration: Secure Transportation Asset (STA) | Moderately Effective | 3 | 2 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10002134.2004.html |
| State Energy Programs | Results Not Demonstrated | 0 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10002136.2004.html |
| Vehicle Technologies | Moderately Effective | 4 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10002138.2004.html |
| National Nuclear Security Administration: Engineering Campaign | Moderately Effective | 5 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003236.2006.html |

| Program Name | Rating | Number of measures met in FY07 | Number of measures unmet in FY07 | Number of measures with-unknown status in FY07 | Link to detailed assessment, including specific performance measures |
|--|--------------------------|---------------------------------------|---|---|---|
| National Nuclear Security Administration: Pit Manufacturing and Certification Campaign | Effective | 4 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003237.2006.html |
| National Nuclear Security Administration: Fissile Materials Disposition Program | Moderately Effective | 3 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003238.2006.html |
| National Nuclear Security Administration: Global Threat Reduction Initiative Program | Effective | 4 | 1 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003239.2006.html |
| National Nuclear Security Administration: Nuclear Weapons Incident Response Program | Moderately Effective | 1 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003240.2006.html |
| Electric System Research and Development | Moderately Effective | 3 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003241.2006.html |
| Biomass and Biorefinery Systems | Adequate | 3 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003400.2005.html |
| Federal Energy Management Program | Moderately Effective | 1 | 0 | 2 | http://www.whitehouse.gov/omb/expectmore/detail/10003401.2005.html |
| Industrial Technologies Program | Adequate | 3 | 0 | 1 | http://www.whitehouse.gov/omb/expectmore/detail/10003402.2005.html |
| University Nuclear Education Programs | Results Not Demonstrated | 0 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003403.2005.html |
| National Nuclear Security Administration: Naval Reactors | Effective | 6 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003404.2005.html |
| National Nuclear Security Administration: Science Campaign | Moderately Effective | 8 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003405.2005.html |

| Program Name | Rating | Number of measures met in FY07 | Number of measures unmet in FY07 | Number of measures with-unknown status in FY07 | Link to detailed assessment, including specific performance measures |
|--|----------------------|---------------------------------------|---|---|---|
| National Nuclear Security Administration: Readiness Campaign | Effective | 4 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003406.2005.html |
| National Nuclear Security Administration: Global Initiatives for Proliferation Prevention | Effective | 2 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003407.2005.html |
| National Nuclear Security Administration: Nonproliferation and Verification Research and Development | Moderately Effective | 6 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10003408.2005.html |
| Environmental and Post-Retirement Liabilities | Moderately Effective | 3 | 0 | 0 | http://www.whitehouse.gov/omb/expectmore/detail/10009032.2007.html |
| | | | | | |
| Total | | 168 | 26 | 16 | |

President's Management Agenda

In 2001, the President unveiled the President's Management Agenda (PMA) and challenged the Federal Government to become more efficient, effective, results-oriented and accountable. Over the past six years, the PMA has become the primary framework by which the Department has implemented changes to support the President's management goals. The PMA reflects the President's ongoing commitment to achieve immediate and measurable results that matter to the American people.

Each agency is held accountable for its performance in carrying out the PMA through quarterly scorecards issued by OMB. Agencies are scored green, yellow, or red on their status in achieving overall goals or long-term criteria, as well as their progress in implementing improvement plans. The Department is scored on six PMA initiatives: five government-wide areas and one agency-specific area. The Department and OMB consider progress made over the previous year and created a plan for the upcoming year's PMA-related activities. The plan is used by the Department to guide further management reforms and by OMB as the baseline for assessing the Department's quarterly performance. Further information on OMB's management of the PMA may be found at <http://www.ExpectMore.gov>.



The President's charge to Federal agencies is to make sure all our green and yellow accomplishments convert to greater government effectiveness for FY 2007, FY 2008 and beyond.

Further information on OMB's management of the PMA may be found at <http://www.ExpectMore.gov>.

FY 2007 saw continuing accomplishments in some of the six PMA areas. Key achievements include:

Strategic Management of Human Capital – The Department continues to make significant progress in its management of human capital. Specifically, the Department is closing skill and competency gaps in mission critical occupations, ensuring its performance management programs meet the objectives of the President's Management Agenda, and reduce the under-representation of minorities in its workforce. The Department uses a variety of methods to identify and assess skills and competencies needed for positions responsible for important mission-related work. The expansion of the assessments (to include individual field and site offices) will allow for analysis at both the organizational and corporate levels. This will be instrumental in setting goals for hiring and training over the next several years. It is a Departmental goal to have performance management programs that: establish results-oriented individual performance expectations linked to agency mission, goals and outcomes; evaluate results; establish organization and individual accountability; differentiate between the level of performance; and require program evaluation.

Competitive Sourcing – The Department has studied 1,228 Federal and over 1,400 contractor positions since FY 2002 as part of nine competitive sourcing studies. Because of the competitions completed to date, the Department expects to save taxpayers \$538 million over a five- to seven-year period. The Department also received recognition as one of the first High

Performing Organizations in the Federal government by OMB for the Office of Legacy Management.

The Department went from green to red because of the scheduled studies being cancelled for business reasons and the Department has not identified any additional studies for FY 2007-2008. Congress did not appropriate funds for the competitive sourcing office in FY 2008, so DOE anticipates that the office will close at the end of this year.

| | Status | | | | | Progress in Implementation | | | | |
|--|---------------|----------------------|-----------------|---------|-------------------|----------------------------|----------------------|-----------------|---------|-------------------|
| | Human Capital | Competitive Sourcing | Financial Perf. | E-Gov't | Perf. Improvement | Human Capital | Competitive Sourcing | Financial Perf. | E-Gov't | Perf. Improvement |
| 1 st Quarter (as of Dec 31, 2006) | G | G | R | Y | G | G | Y | G | G | Y |
| 2 nd Quarter (as of March 31, 2007) | G | G | R | Y | G | Y | Y | G | G | Y |
| 3 rd Quarter (as of June 30, 2007) | G | R | R | Y | G | Y | R | G | G | Y |
| 4 th Quarter (as of Sept 30, 2007) | G | R | R | Y | G | R | R | G | Y | Y |

Green (G): Implementation is proceeding according to plan
Yellow (Y): Some slippage or other issue(s) requiring adjustment
Red (R) Initiative in serious jeopardy absent significant management intervention
www.results.gov

Improved Financial Performance – The Department’s fiscal year 2007 financial statements were reviewed by independent auditors and received an unqualified “clean” opinion. This is the best possible opinion and an upgrade from the qualified balance sheet only opinion issued in fiscal year 2006. No material weaknesses were identified in internal controls and the auditors concluded the Department had corrected the material weaknesses identified last year regarding controls over the reporting of undelivered orders. The Department also completed an evaluation of its financial management system and found it to be in general conformance with governmental financial system requirements and identified no material non-conformances. To consistently improve the availability and reliability of financial data, the Department continues its aggressive effort to build and improve an integrated business management system—I-MANAGE. The initial components of this system (a data warehouse and a finance/accounting system) were successfully deployed in January and April 2005, respectively. To ensure Departmental stakeholders are provided the most accurate and timely financial information, the I-MANAGE Data Warehouse improved report timeliness and accuracy by increasing its data update cycle of Federal financial data from monthly to daily. To improve financial performance and project management, the Department enhanced the use of Earned Value Management (EVM) techniques, which objectively tracks the physical accomplishment of work and provides early warning of performance problems. Projects with a certified EVM system are far more likely to stay within planned cost and schedule. The Department instituted a certification process for its contractors’ EVM systems that will improve the definition of project scope, prevent uncontrolled changes in project scope, communicate objective progress to stakeholders, and keep project teams focused on achieving progress.

To improve management of real property data and maintain the accuracy of all 20,000 real property assets, the Department established a framework of internal controls based on application of OMB Circular A-123, "Management's Responsibility for Internal Control."

Expanded Electronic Government – In the last four years, the Department has made tremendous progress in e-Government. The Department has improved information technology management by reenergizing the Information Technology (IT) Council, which is responsible for reviewing IT investment business cases, overseeing project performance, and ensuring the remediation of poorly performing projects. We have also developed a comprehensive IT project managers' certification program to ensure vigorous project management. Policy and procedures for earned value management of IT projects have been documented and implemented to reduce risk and improve project performance. By establishing an Enterprise Architecture, which aligns to the Federal Enterprise Architecture, we have ensured all Department IT investments follow our Modernization Roadmap. We have supported the reduction of redundant processes government-wide by participating in 21 of the President's 27 e-Government initiatives including E-Authentication, and the 8 of the 9 Lines of Business established by the Office of Management and Budget. In addition, we identified 15 candidates to leverage e-Government opportunities within the Department and have initiated or completed 13 of the 15 with the remaining two scheduled for implementation within the next two years.

We have taken significant steps to improve the current state of Cyber Security within our IT enterprise. The first step in this effort involved developing a plan, *The Department of Energy Revitalization of Cyber Security Plan*, for the restructuring of the Department's Cyber Security Management Program. This plan has complete support of the Department's Senior Management (Under Secretary-level) and was signed by the Deputy Secretary on March 6, 2006. The plan calls for the Chief Information Officer (CIO) and the Department's Senior Management to lead and implement a comprehensive cyber security program to address long-standing, systemic weaknesses in protecting our information and information systems. The plan identifies both short-term and long-term goals that are specifically targeted to create a more consistent, Department-wide approach to cyber security management. Progress has been ongoing since the plan was authored.

Budget and Performance Integration – The Department implemented a new Strategic Plan. This plan provides a roadmap to address the energy, environmental, scientific and nuclear security challenges facing our country. The heart of the plan is founded on innovation through science-driven development of new technologies. The Strategic Plan supports Budget and Performance Integration (BPI) by focusing on outcomes, reflecting spending priorities and demonstrating to the American people the Department's commitment to using taxpayer's dollars wisely.

In FY 2007, the Department undertook an initiative to strengthen its internal control processes over actions related to performance measurement reporting. This initiative included developing a training program to assist the program offices in developing internal control processes for quarterly performance measure results. Guidance was also issued to the program offices to help them explain their current system of documentation, verification, and certification by management on performance measure results being reported at the Corporate-level. In addition, a performance measure change control process was implemented that requires program offices to

obtain approval from the Chief Financial Officer's (CFO) office prior to changing performance measures between FY budget submissions and final appropriations.

The current controls over documentation to support performance results were reissued in FY 2007. This guidance required program offices to identify the supporting documentation which would be used to validate the performance results when the measure is initially submitted into the performance measurement tracking system. The CFO's office also performed random samples of documentation verification against 2nd quarter performance results to provide management with reasonable assurance that this control was working effectively.

The Department and OMB have worked collaboratively to complete a Program Assessment Rating Tool (PART) review for 51 of the Department's 56 programs (91 percent). Since 2002, the Department's average PART score has steadily improved from *Adequate to Moderately Effective*. The Department is also leading the government in the number of *Effective and Moderately Effective* programs. PART has become an important tool in helping the Department evaluate its programs to ensure they continue to achieve results.

In FY 2007, the Department improved the quality of its performance measures. This was accomplished by evaluating 30 percent of the Department's FY 2008 performance measures against a standard set of criteria. This analysis identified the Department's need to develop more outcome focused and trendable performance measures. The Department used the results of this analysis to improve the quality of 34 of its FY 2008 performance measures.

Federal Real Property Asset Management (Agency-Specific) – The Department owns and maintains a real property portfolio with a replacement value of about \$77 billion. This portfolio includes the National Laboratories, 20,000 buildings, and 3.1 million acres of land. Effective real property management is critical to the efficient acquisition, maintenance, operation, and disposition of assets entrusted to the Department. The Department issued the Asset Management Plan providing the guidelines and principles for managing its real property portfolio. This year, the Department prepared an implementation document (the "Three Year Rolling Timeline") outlining specific activities meant to achieve the goals of the Asset Management Plan. The Department continues to improve its Facility Information Management System and satisfied the Federal Real Property Council's (FRPC) goal of 100 percent reporting of all data elements. Further, the Department implemented a statistical validation program to ensure the integrity of the real property data and better support real property decision-making. Since FY 2002, the Department has disposed of over nine million square feet of excess real property and continues to dispose of unneeded assets.

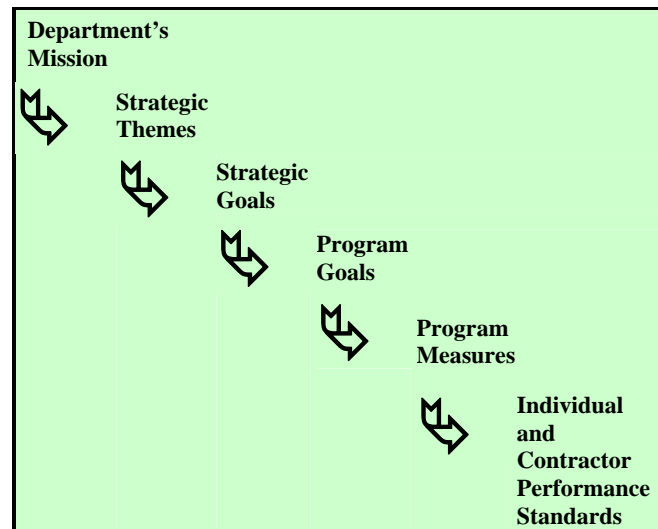
Performance Background

The Department of Energy's performance programs are designed to achieve well-defined outcome goals that support the strategic goals of the Department's Strategic Plan (www.energy.gov/about/strategicplan.htm). Those strategic goals are organized around the five Departmental strategic themes: Energy Security, Nuclear Security, Scientific Discovery and Innovation, Environmental Responsibility, and Management Excellence.

Performance Framework

The Department uses a performance framework approach in developing program performance metrics to ensure that we are measuring the right data to inform our program managers, senior leaders, and stakeholders on the progress being made toward our strategic and program goals. The performance framework is a hierarchical relationship from the DOE mission to individual performance standards. During performance planning, high-level goals direct the scope of the supporting performance elements and progress against these goals is indicated by actual performance at the lower levels. These elements are described below.

- The **Mission** of the Department of Energy is “*Discovering the Solutions to Power and Secure America’s Future*”
- To accomplish the mission, DOE focuses on five supporting **Strategic Themes**.
- To support these five themes, DOE has developed 16 **Strategic Goals** that specify objectives that, if achieved, will result in accomplishing the mission. The majority of DOE’s strategic goals are written as energy and security improvements and maintaining associated quality products and services.
- Budgeted programs are developed to turn these strategic goals into reality. The Department has 52 programs each with a clearly defined **Program Goal**.
- It is these programs on which the budgets are developed and annual **Performance Measures** are created. The performance measures are the outputs and outcomes that each program must achieve to reach the program’s goals.
- The performance framework continues into the **Individual Standards**. Performance standards that link to specific performance measures ensure that individuals are accountable for achieving results.



Performance Validation and Verification

The Department employs certifications, periodic reviews, and audits to validate and verify its performance. The end-of-year reporting process includes certifications by program element heads that confirm reported results are accurate. For quality and completeness, the Department internally reviews these results while the Department's independent auditors evaluate key internal controls related to performance reporting. The program offices, the National Laboratories, and the Department's contractor work force maintain source data substantiating performance target results. Due to the size and diversity of the Department's portfolio, validation and verification are also supported by the following activities:

Budget Preparation Analysis: Performance targets submitted at each phase of budget development are reviewed to ensure that they contribute effectively to the achievement of program and Departmental goals and to ensure they are aligned to the Department's strategic themes and goals.

Internal Controls: Internal controls are used to strengthen the Department's validation and verification of performance results. The Department provides quarterly training to employees to assist them in formulating quality performance measures that meet internal control standards.

Performance Measures Details

For FY 2007, DOE tracked 203 corporate performance measures that provide detailed information and assessment of our progress for the Department's 52 program goals. Understanding the annual progress made toward outcome-oriented, multi-year program goals is a key indicator of whether the Department is, in turn, making progress toward its sixteen strategic goals. The performance measures are organized by the DOE strategic themes and then by strategic goal.

Each performance measure detail includes:

- Program Office
- Program
- Strategic Goal(s) Supported
- Measure Name and Description
- Commentary on the FY 2007 Results
- Future Plans and Explanation of Shortfalls
- Supporting Documentation
- Associated Performance in Prior Years (FY 2004 through FY 2006)
- Program's PART rating and web link
- Program Office web link

FY 2007 Performance Measures

THEME 1 – ENERGY SECURITY

Office: Energy Efficiency & Renewable Energy

Program: Hydrogen (1.1.1)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Hydrogen Production and Delivery Research and Development: Renewable
Measure: Complete lab-scale electrolyzer, test to determine whether it achieves 64% energy efficiency and evaluate systems capability to meet \$5.50/gge hydrogen cost target, untaxed at the station, and with large equipment production volumes [e.g., 500 units/year]. (1.1.1.1)

2007 Results

Commentary: **G** The Hydrogen Program achieved an electrolyzer efficiency of 64% for hydrogen production, meeting the target for FY 2007 and achieving a projected cost of \$4.77 per gallon gasoline equivalent. This is an important step towards the production of hydrogen from renewables, to help reduce greenhouse gases, improve environmental quality and increase our Nation's energy security.

Future Plans /
Explanation of
Shortfalls: The Hydrogen Program will continue applied research and development in FY 2008, in the critical area of hydrogen production, including distributed reforming of renewable liquids. This will help ensure the successful development of hydrogen production options in the long term to achieve EPACT goals and increase our Nation's energy security while improving environmental quality and reducing greenhouse gases.

Supporting
Documentation: Documentation is in the form of the 2007 Annual report from Giner Electrochemical Systems (GES), GES quarterly report, and GES Preliminary Test Report submitted by NREL.

Associated Performance in Prior Years

| | | |
|----------|----------|---|
| FY 2006: | N/A | Due to Congressionally Directed Activities, there was little activity in FY 2006. Target was delayed until FY 2007 |
| FY 2005: | G | Model cost of hydrogen produced from renewable sources and assess versus the 2010 target of \$2.85/gge, untaxed at the station at 5,000 psi. |
| FY 2004: | G | Complete research for biomass syngas reforming catalysts to improve durability and reduce cost toward achieving 5,000 psi hydrogen produced for \$5.70/gallon gasoline equivalent (untaxed, modeled cost) at the station by 2005. |

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000106.2007.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Hydrogen (1.1.1)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Hydrogen Production and Delivery Research and Development: Non-Renewable
Measure: Complete preliminary lab scale tests to identify technologies that produce 5,000 psi hydrogen from natural gas for \$2.50/gge, untaxed at the station and with large equipment production volumes [e.g., 500 units/year]. (1.1.1.2)

2007 Results

Commentary: **G** DOE-funded researchers completed preliminary lab scale tests for three technologies capable of producing 5,000 psi hydrogen from natural gas. Based on preliminary analysis, the modeled costs for hydrogen (untaxed, at the station, with large equipment production volumes) is approaching \$2.50/gge, the 2010 cost goal. The technologies tested include: 1) fluidized bed membrane reactor (BOC); 2) short-contact partial oxidation reactor (GEGR); and 3) steam methane reformer (H2Gen). This work identifies technology pathways for further research to meet the 2010 cost goal and will ultimately help reduce dependence on imported oil and increase our Nation's energy security.

Future Plans /
Explanation of
Shortfalls: The Hydrogen Program is on track toward enabling the availability of hydrogen from distributed natural gas reforming. Future R&D will focus on reforming of biofuels and on electrolysis for hydrogen production from renewable energy. Work on novel reforming systems and development of separation membranes for biofuels will indirectly contribute to further reducing the cost of hydrogen from natural gas. This will allow hydrogen to be available for early market opportunities and pave the way towards achieving EPACT goals and increasing our Nation's energy security.

Supporting
Documentation: Quarterly Report from: 1) BOC, 2) GE Global Research, and 3) H2 Gen Innovations Inc.

Associated Performance in Prior Years

FY 2006: **G** Complete the development of a laboratory scale distributed natural gas-to-hydrogen production and dispensing system that can produce 5,000 psi hydrogen for \$3.00/gge.

FY 2005: **G** Complete the research for a distributed natural gas-to-hydrogen production and dispensing system that can produce 5,000 psi hydrogen for \$3.00/gge (untaxed and without co-producing electricity) at the station in 2006.

FY 2004: **G** Complete research for natural gas-to-hydrogen production and dispensing component development and fabrication towards achieving 5,000 psi hydrogen for \$3.00/gge (untaxed and without co-production of electricity) at the station in 2006.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000106.2007.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Hydrogen (1.1.1)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Hydrogen Storage Research and Development: Materials-Based

Measure: Complete baseline on-board storage systems analyses, down select materials, and evaluate against 2007 targets of 1.5 kWh/kg (4.5% by weight) and 1.2 kWh/L. (1.1.1.3)

2007 Results

Commentary: **G** The Hydrogen Program completed a baseline analysis of new storage technologies, projecting a system capacity of 3% hydrogen by weight; a significant increase compared to the 2004 baseline of 1.7% by weight and an important step towards achieving a 300 mile driving range without compromising vehicle space or performance. Hydrogen storage is considered one of the most technically challenging barriers to the widespread commercialization of hydrogen vehicles that will help reduce greenhouse gases, improve environmental quality and increase our Nation's energy security.

Future Plans /
Explanation of
Shortfalls: Vehicular hydrogen storage continues to be a critical technology barrier and the Hydrogen Program will ramp up R&D to achieve the challenging DOE/FreedomCAR and Fuel Partnership targets. This will enable hydrogen vehicles to be competitive with gasoline vehicles, helping to achieve widespread market penetration and increase our Nation's energy security while improving environmental quality and reducing greenhouse gases. In FY 2008, the program will develop chemical hydrogen storage regeneration methods at laboratory scale that are capable of achieving at least 40 percent energy efficiency.

Supporting
Documentation: Argonne National Lab report, September, 2007; the 2007 Annual Merit Review and Peer Evaluation presentation; and communications from Hydrogen Storage Centers of Excellence.

Associated Performance in Prior Years

FY 2006: **G** Complete fabrication and testing of a sub-scale prototype materials-based storage system to demonstrate projected system capacity of 2.5 wt. percent (0.8 kWh/kg); evaluate progress toward the 2007 target of 4.5 wt. percent (1.5 kWh/kg).

FY 2005: **G** Identify materials with the potential to meet 2010 targets of 2.0 kWh/kg (6 wt percent), 1.5 kWh/L, at \$4/kWh.

FY 2004: **G** Complete draft of standard test protocol and construction of test facility for solid-state hydrogen storage materials in support of the targets of 1.2 kWh/L and 4.5 wt. percent and the 2010 targets of 2.0kWh/kg (6 wt. percent), 1.5 kWh/L at \$4/kWh.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000106.2007.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Hydrogen (1.1.1)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Hydrogen - Technology Validation

Measure: 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. (1.1.1.4)

2007 Results

Commentary: **G** The validation of more than 75 hydrogen powered vehicles and 14 refueling stations is an important step toward the demonstration of commercially viable hydrogen fuel cell technology and provides important feedback to DOE's R&D program. 6,300 vehicle refueling events were analyzed from the Learning Demonstration activity. In 23% of the cases, the fueling rate exceeded 1 kg/minute, which demonstrates that it is possible even with the current generation of fueling equipment to pump 5 kg of hydrogen at 5,000 psi within five minutes. This target for refueling time is one step towards meeting consumer expectations and ultimately enabling the market penetration required to reduce greenhouse gases, improve environmental quality and increase our Nation's energy.

Future Plans /
Explanation of
Shortfalls: Future plans include validation of driving range and vehicle performance to ensure that technologies are on track to become commercially viable. By 2010, a refueling time of under 3 minutes is planned for the Learning Demonstrations. These are key steps in bridging the Hydrogen Program's R&D activities to market success, to help improve environmental quality, and increase our Nation's energy security.

Supporting
Documentation: Learning Demonstration Progress report September 2007.

Associated Performance in Prior Years

FY 2006: **G** Complete installation and 1,000 hours of testing of a refueling station; determine system performance, fuel quality and availability; and demonstrate the ability to produce 5,000 psi hydrogen from natural gas for a projected cost of \$3.00 per gallon gasoline equivalent, untaxed at the station, assuming commercial deployment with large equipment production volumes (e.g., 100 units/year) by 2009.

FY 2005: **G** Complete validation of an energy station that can produce 5,000 psi hydrogen from natural gas for \$3.60 per gallon gasoline equivalent (including co-production of electricity) untaxed at the station with mature equipment production volumes (e.g., 100 units/year).

FY 2004: **G** Identify and complete feasibility and system design of an isothermal compressor to be incorporated in hydrogen refueling stations to produce hydrogen at \$3.00/gge by 2009.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000106.2007.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Hydrogen (1.1.1)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Measure: **Transportation Fuel Cell Systems and Fuel Cell Stack Component Research and Development**
DOE-sponsored laboratory scale research will reduce the modeled technology cost to \$90/kW for a hydrogen-fueled 80kW fuel cell power system. (1.1.1.5)

2007 Results

Commentary: **G** Preliminary analysis shows that the modeled cost of a hydrogen-fueled 80 kW fuel cell system was reduced, meeting the 2007 target of \$90/kW. The Hydrogen program is well on its way to achieving a fuels cell system that is cost-competitive with today's gasoline internal combustion engine to enable the widespread commercialization of hydrogen-powered vehicles and help reduce greenhouse gases, improve environmental quality and increase our Nation's energy security.

Future Plans /
Explanation of
Shortfalls: The Hydrogen program is on track towards achieving the FY 2008 target of \$70/kW and 2010 target of \$45/kW. This cost reduction is critical to the ultimate cost competitiveness of hydrogen powered vehicles and will help improve environmental quality and increase our Nation's energy security.

Supporting
Documentation: TIAX LLC, "2007 System Cost Update".

Associated Performance in Prior Years

FY 2006: **G** DOE-sponsored laboratory scale research will reduce the modeled technology cost to \$110/kW for a hydrogen-fueled 80 kW fuel cell power system.

FY 2005: **G** DOE-sponsored research will reduce technology cost to \$125/kW for a hydrogen-fueled 50kW fuel cell power system.

FY 2004: **G** Achieve \$200/kW for a hydrogen-fueled 50 kW fuel cell power system.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000106.2007.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Hydrogen (1.1.1)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Measure: **Distributed Energy Fuel Cell Systems and Fuel Processor Research and Development**
DOE-sponsored research will improve electrical efficiency to 34% at full power for a natural gas or propane fueled 5-250 kW stationary fuel cell power system verified by a prototype (5-50 kW system). (1.1.1.6)

2007 Results

Commentary: **G** The Hydrogen Program achieved a fuel cell efficiency of 34% for a stationary fuel cell system meeting the 2007 target. This achievement will help enable early market fuel cell opportunities and contributes to the Department's energy efficiency goals and increase our Nation's energy security.

Future Plans /
Explanation of
Shortfalls: Stationary fuel cells and early market opportunities will continue to be a key component of the Hydrogen Program's activities. Future work will include fuel cells for portable power as well as distributed generation to help contribute to the Department's energy efficiency goals and increase the Nation's energy security.

Supporting
Documentation: Project status report UTC Power, October 4, 2007.

Associated Performance in Prior Years

FY 2006: N/A Due to Congressionally Directed Activities, there was no activity in this area in FY 2006

FY 2005: **G** Achieve 32 percent efficiency at full power for a natural gas or propane fueled 5-250 kW stationary fuel cell system.

FY 2004: **G** Achieve 31 percent efficiency at full power for a natural gas or propane fueled 5-250 kW stationary fuel cell system.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000106.2007.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Hydrogen (1.1.1)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

EERE Operational Efficiency Measure

Measure: Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%. (1.1.1.7)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans /
Explanation of
Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control, such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting
Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: **G** Maintained total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12 percent.

FY 2005: **G** Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the Hydrogen/Fuel Cell Program FY 2004 end of year adjusted uncosted baseline (\$29,283K) until the target range is met.

FY 2004: **G** Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2004 relative to the program uncosted baseline (2003) until the target range is met.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000106.2007.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Petroleum Reserves (1.1.11)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Measure: **Sustained (90 day) Drawdown Rate**
Achieve maximum sustained (90 day) drawdown rate of 4.4 MMB/Day. (1.1.11.1)

2007 Results

Commentary: **G** 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
Shortfalls: Legislation authorizing SPR expansion to 1.5 billion barrels was introduced in May 2007. Activities to expand the Reserve to 1.5 billion barrels will increase the maximum drawdown capability from 4.4 million to more than 6 million barrels per day.

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

Associated Performance in Prior Years

FY 2006: **G** Achieve maximum sustained (90 day) drawdown rate of 4.4 MMB.

FY 2005: **G** Achieve maximum sustained (90 day) drawdown rate of 4.4 MMB.

FY 2004: **G** Achieve maximum sustained (90 day) drawdown rate of 4.4 MMB.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001048.2003.html>
<http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Petroleum Reserves (1.1.11)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Measure: **Operating Cost**
Achieve operating cost per barrel of capacity of \$0.203. (1.1.11.2)

2007 Results

Commentary: **G** 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 \$0.188. 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.

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

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

Associated Performance in Prior Years

FY 2006: **G** Achieve operating cost per barrel of capacity of \$0.204. (EXCEEDED GOAL: End of year operating costs were \$0.186)

FY 2005: **G** Achieve operating cost per barrel of capacity of \$0.207.

FY 2004: **G** Achieve operating cost per barrel of capacity of \$0.207.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001048.2003.html>
<http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Energy Information Administration

Program: Energy Information Administration (1.1.12)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Measure: **Product Release Schedules**
Products meeting release schedules. (1.1.12.1)

2007 Results

Commentary: **G** Many energy markets rely on EIA data being available on schedule. In 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 with a goal of 95% for FY 2008.

Supporting
Documentation: Internal tracking: EIA selected which products to track, established scheduled release dates, and tracks the actual and scheduled release dates in the Publications Schedule file. The Statistics and Methods Group within EIA verifies data and calculations and stores the final file.

Associated Performance in Prior Years

FY 2006: **G** Timeliness of EIA Information Products: 90 percent of selected EIA recurring products meet their release date targets (all product types). Results: In FY 2006, 94 percent of products met their release date targets.

FY 2005: **G** Timeliness of EIA Information Products: 85 percent of EIA recurring products meet their release date targets. Results: In FY 2005, 91 percent of products met their release date targets.

FY 2004: **G** Increase the number of unique monthly users of EIA's Web site by at least 20 percent per year through 2005 from a FY 1997 baseline of 37,000 monthly users. Results: In FY 2004 EIA had an increase of over 2 million users of EIA's Web site.

Additional Information

PART: Results Not Demonstrated <http://www.whitehouse.gov/omb/expectmore/summary/10002128.2004.html>

Program Office: <http://www.eia.doe.gov/>

FY 2007 Performance Measures

Office: Energy Information Administration

Program: Energy Information Administration (1.1.12)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Measure: **Customer Satisfaction Survey**
Complete customer satisfaction survey. (1.1.12.2)

2007 Results

Commentary: **G** 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
Shortfalls: EIA has conducted customer surveys annually for over 12 years, and plans to continue.

Supporting
Documentation: The survey results are proof that the survey was conducted. EIA conducted the Customer Survey with OMB approval and the results are stored in the files of the National Energy Information Center office in EIA, Washington, DC.

Associated Performance in Prior Years

FY 2006: **G** Quality of EIA Information Products: 90 percent or more of customers are satisfied or very satisfied with the quality of EIA information. Results: In FY 2006, 93 percent of customers were satisfied or very satisfied with the quality.

FY 2005: **G** Quality of EIA Information Products: 90 percent or more of customers rate them-selves in customer surveys as satisfied or very satisfied with the quality of EIA information. Results: In FY 2005, 90 percent of customers were satisfied or very satisfied with the quality.

FY 2004: **G** Conduct informational briefings for high-level energy policymakers in the Administration and Congress to provide timely information and analyses on topical energy issues and situations. Results: In FY 2004, EIA provided 78 information briefings for high-level policymakers.

Additional Information

PART: Results Not Demonstrated <http://www.whitehouse.gov/omb/expectmore/summary/10002128.2004.html>

Program Office: <http://www.eia.doe.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Vehicles Technology (1.1.2)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Hybrid and Electric Propulsion/Advanced Power Electronics

Measure: 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%. (1.1.2.1)

2007 Results

Commentary: **G** Test results for the new motor built in 2007 showed 1.3 kW/kg, 3.9 kW/L, and a cost of \$9/kW. This milestone is a stepping stone to the 2010 FreedomCAR and 2010 hybrid electric systems progress goal of achieving an Electric Propulsion System with a 15 year life capable of delivering at least 55 kW for 18 seconds and 30 kW continuous at a systems cost of \$12/kW peak. That level of performance and cost will enable broad penetration of hybrid technologies into the automotive market, resulting in significant improvements in fuel economy and greenhouse gas emissions.

Future Plans /
Explanation of
Shortfalls: Future work will continue to focus on meeting performance targets for the electric motor and other components that make up a hybrid electric propulsion system. In FY 2008, the planned target will be to use the improved motor design in a combined motor/inverter with a specific power of 1.0 kW/kg, a power density of 2.0 kW/L, and a cost for the combined unit of \$14/kW peak. (The power density and specific power targets are less than what was achieved for the motor alone because adding the inverter components adds weight and volume to the combined unit without changing the peak power rating.)

Supporting
Documentation: ORNL September 2007 technical report; FY 2007 APEEM annual report.

Associated Performance in Prior Years

| | | |
|----------|-----|-----|
| FY 2006: | N/A | N/A |
| FY 2005: | N/A | N/A |
| FY 2004: | N/A | N/A |

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002138.2004.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Vehicles Technology (1.1.2)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Advanced Combustion Engine Research and Development

Measure: In the laboratory, demonstrate passenger vehicle combustion engines with a 42% brake thermal efficiency. (1.1.2.2)

2007 Results

Commentary: **G** The program has been making steady, incremental progress on engine efficiency. In FY 2007 the efficiency of developmental engines improved from 41% to 42%. This achievement is an interim milestone in the path for achieving and demonstrating the 2010 DOE FreedomCAR goals of 45% combustion efficiency with Tier 2 Bin 5 emissions in light-duty engines. Compared to the FY 2002 baseline of 30% efficient gasoline engines, this will allow passenger vehicles to use clean diesel engines that offer a 50% improvement in fuel economy while simultaneously meeting stringent EPA emissions requirements for 2010.

Future Plans /
Explanation of
Shortfalls: The next efficiency target will be 43% in FY 2008, which is an interim milestone in the path for achieving and demonstrating the 2010 DOE FreedomCAR progress goals of 45% combustion efficiency with Tier 2 Bin 5 emissions in light-duty engines. The long range path is being developed at ORNL through combining computer thermodynamic analysis and experiments in low temperature combustion, waste heat utilization, and thermal management. A considerable departure from the 42% engine configuration will likely be needed for the next levels of efficiency.

Supporting
Documentation: ORNL technical report, September 2007.

Associated Performance in Prior Years

FY 2006: **G** Achieve 41 percent brake thermal efficiency for light vehicle combustion engines and 50 percent brake thermal efficiency, while meeting EPA 2010 emission standards (0.2 g/hp-hr NO_x), for heavy vehicle combustion engines.

FY 2005: **G** Light vehicle combustion engines will reach 39 percent brake thermal efficiency and commercial heavy-duty vehicle combustion engines will be greater than 45 percent efficient while meeting EPA 2007 emission standards (1.2 g/hp-hr NO_x).

FY 2004: **G** Complete Light Truck activity with 35 percent fuel efficiency improvement over a gasoline powered light truck and Tier 2 emissions levels (0.07g/mile NO_x). Demonstrate 45 percent thermal efficiency for heavy-duty commercial vehicle diesel engines while meeting EPA 2007 emission standards (1.2g/hp-hr NO_x).

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002138.2004.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Vehicles Technology (1.1.2)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Lightweight Materials Technology

Measure: Develop technologies which, if implemented in high volume, could reduce the weight of body and chassis components by 10%. (1.1.2.3)

2007 Results

Commentary:

G

The “Future Generation Passenger Compartment” developed innovative designs for the components of a passenger compartment (seats, paneling, dashboard, passive safety systems, etc.), taking advantage of new materials such as high-strength steel and carbon-fiber wherever possible, that could reduce the weight of a passenger compartment by as much as 30%. When combined with the previously-developed technologies to reduce weight in other areas of a car, the 2007 passenger-compartment work will allow the weight of a body and chassis system as a whole to be reduced by at least 10%, which is an interim step toward achieving the FreedomCAR 2010 progress goal of simultaneous attainment of a 50% reduction in the weight of vehicle structures and subsystems, affordability, and the use of recyclable/renewable materials.

Future Plans /
Explanation of
Shortfalls:

The target in FY 2008 will be to identify or develop technologies that would allow a 25% reduction in body and chassis weight, which will further improve the fuel economy of passenger vehicles.

Supporting
Documentation:

Auto/Steel Partnership FY 2007 mid year report and Automotive Lightweighting Materials FY 2006 Progress Report.

Associated Performance in Prior Years

FY 2006: **R** Complete R&D on technologies, which, if implemented in high volume, could reduce the projected (i.e., modeled) bulk cost of automotive-grade carbon fiber to less than \$3.00/pound.

FY 2005: **G** Complete R&D on technologies, which, if implemented in high volume, could reduce the price of automotive-grade carbon fiber to less than \$4.50/pound.

FY 2004: **G** Complete R&D on technologies which, if implemented in high volume, could reduce the price of automotive-grade carbon fiber to less than \$5/pound.

Additional Information

PART: Moderately
Effective

<http://www.whitehouse.gov/omb/expectmore/summary/10002138.2004.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Vehicles Technology (1.1.2)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Hybrid Electric Systems (Energy Storage)

Measure: Reduce high power, 25 kW, passenger vehicle, lithium ion battery cost to \$700 per battery system. (1.1.2.4)

2007 Results

Commentary: **G** R&D activity in FY 2007 reduced the projected cost of a 25 kW lithium-ion battery pack from \$750 at the end of FY 2006 to \$700 at the end of FY 2007. This accomplishment is an interim milestone in the path for achieving and demonstrating the 2010 DOE FreedomCAR goal of a \$500, 25 kilowatt lithium ion battery for power assist hybrid applications. Reducing battery costs to that level will enable broad penetration of hybrid technologies into the automotive market, resulting in significant improvements in fuel economy and greenhouse gas emissions.

Future Plans /
Explanation of
Shortfalls: Future work is focused on reducing the battery module hardware and assembly costs, while optimizing the materials and processing steps required in fabricating the battery cells. Additional battery development activities to increase the safety of lithium ion batteries and enhance their performance at low temperatures (below 0 degrees celsius) will also continue. In addition, development of high power lithium ion batteries based on lower cost materials such as iron and manganese will continue. The target cost for FY 2008 will be \$625 per battery system.

Supporting
Documentation: Johnson Controls-Saft Advanced Power Solutions (JCS) technical presentation, September 2007 Quarterly Progress Review.

Associated Performance in Prior Years

FY 2006: **G** Reduce the projected cost at high volume of a high power, 25 kW, light vehicle, lithium ion battery to \$750 per battery system.

FY 2005: **G** Reduce high-power, 25 kW, light vehicle, lithium ion battery cost to \$900 per battery system.

FY 2004: **G** Reduce high-power 25 kW light vehicle estimated lithium ion battery cost to \$1,000 per battery system.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002138.2004.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Vehicles Technology (1.1.2)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Vehicles - Operational Efficiency Measure

Measure: Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%. (1.1.2.5)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans / Explanation of Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control, such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: **G** 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.

FY 2005: **Y** Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2005 relative to the program uncosted baseline (2006) until the target range is met.

FY 2004: **G** Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2004 relative to the program uncosted baseline (2005) until the target range is met.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002138.2004.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Solar Energy (1.1.3)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Photovoltaic (PV) Energy Systems - Crystalline Silicon

Measure: 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. (1.1.3.1)

2007 Results

Commentary: **G** Cross-cutting research focused on semiconductor material, device and processing issues had positive results, with a testing and validation of over 19% conversion efficiency for a SunPower solar panel. This work supports the President's Solar America Initiative which will reduce the cost of power from PV modules to less than \$.10/kWh by 2015.

Future Plans /
Explanation of
Shortfalls: Research into the conversion efficiency of U.S.-made, commercial crystalline silicon PV modules will continue through the Technology Pathway Partnerships project. The efficiency reached by SunPower is already > 19% and they will work to reduce their production costs.

Supporting
Documentation: Sunpower Product specification sheet (Document #001-12906) for 315 Solar Panel.

Associated Performance in Prior Years

FY 2006: **G** Verify, using standard laboratory measurements, a conversion efficiency of 13.8 percent of U.S.-made, commercial crystalline silicon PV modules. Production cost of such modules is expected to be \$1.90 per Watt.

FY 2005: **G** Verify, using standard laboratory measurements, a conversion efficiency of 13.5 percent of U.S.-made, commercial crystalline silicon PV modules. Production cost of such modules is expected to be \$1.95 per Watt.

FY 2004: **G** Verify, with standard laboratory measurements, U.S.-made commercial production crystalline silicon PV modules with 12.5 percent conversion efficiency.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000120.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Solar Energy (1.1.3)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Photovoltaic Energy Systems - Thin-Film

Measure: Develop thin-film PV modules with an 11.8% conversion efficiency that are capable of commercial production in the U.S. (1.1.3.2)

2007 Results

Commentary: **G** The thin film PV module 11.8% conversion efficiency was independently verified by NREL staff at the Outdoor Test Facilities in Golden, CO. Improving the efficiencies of PV module technology will improve the levelized cost of energy, thus improving the potential of Solar power to meet the program's goal of \$0.05-0\$.10/kWh by 2015.

Future Plans /
Explanation of
Shortfalls: The university solicitations will allow the research to continue and improve the rate of efficiency to 13%.

Supporting
Documentation: NREL Technical Report on Shell Solar CdS/CU(In,Ga)(S,Se) module test results September 14, 2007.

Associated Performance in Prior Years

FY 2006: **G** Develop thin-film PV modules with an 11.2 percent conversion efficiency that are capable of commercial production in the U.S.

FY 2005: **G** Develop thin-film PV modules with an 11.0 percent conversion efficiency that are capable of commercial production in the U.S.

FY 2004: **G** Verify, with standard laboratory measurements, U.S.-made commercial production thin-film PV modules with 10 percent conversion efficiency.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000120.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Solar Energy (1.1.3)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Concentrated Solar Power (CSP)

Measure: 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. (1.1.3.3)

2007 Results

Commentary: **G** Initial plant performance data provided to NREL indicates that the plant is meeting the performance projections with a projected annual efficiency of 13.2% for the reference plant, which support the cost of energy goals. Improving the efficiencies of CSP trough collectors and receivers will improve the levelized cost of energy, thus improving the potential of Solar power to meet the program's goal of \$0.05-0\$.10/kWh by 2015.

Future Plans /
Explanation of
Shortfalls: The FY 2008 Joule target for annual efficiency based on the reference plant is 13.5%. Efficiency gains are expected to due increased alignment accuracy of next generation trough concentrators.

Supporting
Documentation: NREL Technical report on Excelergy, September 2007.

Associated Performance in Prior Years

FY 2006: **G** Conduct advanced research on trough collectors and receivers that will lead to a reduction in the modeled cost of energy from CSP troughs to \$0.12-\$0.14/kWh.
FY 2005: N/A
FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000120.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Solar Energy (1.1.3)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Solar - Operational Efficiency Measure

Measure: Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%. (1.1.3.4)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans /
Explanation of
Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting
Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: **G** 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.

FY 2005: **G** Contributed proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline (\$19,342K) until the target range is met.

FY 2004: **G** Contributed proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2004 relative to the program uncosted baseline (in 2003) until the target range is met.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000120.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Wind Energy (1.1.4)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Measure: **Wind - Technology Acceptance**
20 States with over 100 MW wind installed. (1.1.4.1)

2007 Results

Commentary: **Y** The Wind Program's Technology Acceptance activities to help prime the market to accept wind in increasing amounts supported 16 States installing at least 100 MW of wind by the end of FY 2007 (September 2007). However, with the rush to install new wind turbines, this target was actually exceeded by Calendar Year 2007 (December 2007). The activities help stakeholders and officials within States understand wind energy technologies and how wind can be integrated into their state energy systems will in turn reduce institutional and regulatory barriers, helping wind to contribute in a competitive wholesale electric market.

Future Plans /
Explanation of
Shortfalls: The Program aims to focus increased attention on priority States that do not have Renewable Portfolio Standards (RPS) but are expected to reach 100 MW; regional wind institutes to build technical expertise and local knowledge by region; and siting issues, including radar, public perception, and environmental issues, to boost acceptance of wind. The program expects there to be 25 States with over 100 MW by the end of FY 2008. The Technology Acceptance key activity is increasingly focusing on regional approaches to building the technical and institutional capacity to overcome barriers to the acceptance of wind in States and regions.

Supporting
Documentation: January 2008 and October 2007 NREL technical updates.

Associated Performance in Prior Years

FY 2006: **Y** 19 States with over 100 MW wind installed.

FY 2005: **Y** 32 States with over 20 MW installed; 15 States with over 100 MW installed.

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000216.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Wind Energy (1.1.4)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Wind - Low Wind Speed Technologies (LWST)

Measure: 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. (1.1.4.2)

2007 Results

Commentary: **G** DOE activities resulted in a wind cost of energy calculation of 3.8 cents, well ahead of the 4.1 cent target. The offshore wind targets for shallow (9.25 cents/kWh) and transitional wind (11.93 cents/kWh), which were met, are due to benefits realized from synergies with land-based technologies. R&D and technical studies undertaken under the Low Wind Speed and Supporting Research and Testing key activities have direct impact on the cost and performance of components, which in turn directly lead to reduced cost of energy of wind systems for both land-based and offshore applications.

Future Plans /
Explanation of
Shortfalls: Cooperative Research & Development Agreements (CRADAs) will be used increasingly to focus on cost, performance, and reliability improvement for land-based wind turbines with a 2008 cost of energy target of 4.0 cents/kWh. Offshore wind technology is primarily based on Sea-con studies until FY 2009 (when a go/no-go decision will be made about whether to initiate a full research program into offshore wind technologies) with a 2008 cost of energy target of 9.2 cents/kWh for shallow offshore systems.

Supporting
Documentation: September 2007 and October 2007 NREL technical reports.

Associated Performance in Prior Years

FY 2006: **G** Wind - LWST - COE Target: 4.2 cents per kWh in onshore Class 4 winds; 9.3 cents per kWh for offshore systems in Class 6 winds.

FY 2005: **G** Complete fabrication and begin testing advanced variable speed power converter. Test first advanced blade, incorporating improved materials and manufacturing techniques. Field test the first full-scale Low Wind Speed Technology prototype turbine. This contributes to the Annual LWST COE Target: 4.3 cents per kWh in Class 4 winds.

FY 2004: **G** Complete testing of prototypes of first advanced low wind speed technology components, and complete detailed design under first public-private partnership project for full system low wind speed turbine development.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000216.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Wind Energy (1.1.4)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Measure: **Wind - Distributed Wind Technology (DWT)**
COE of 10 – 15 cents/kWh in Class 3 winds. (1.1.4.3)

2007 Results

Commentary: **G** The work conducted in FY 2007 for Distributed Wind Technology which reached a cost of electricity of 9.9-10.7 cents/kWh, represented the completion of a 5 year effort to bring down the cost of electricity for residential and commercial size turbines based on cost of electricity. This will support the goal of expanding the market for distributed wind technologies five-fold from where it existed in 2007.

Future Plans /
Explanation of
Shortfalls: The program aims to continue working on distributed wind through a mix of R&D, testing, and outreach to enable wind turbines to serve the customer side of the meter in increasing amounts. FY 2008 target is for 500 new units of distributed wind turbines deployed in the market.

Supporting
Documentation: September 2007 NREL technical update and September 2007 report , "2007 Distributed Wind Technology (DWT) Annual Turbine Technology Update (ATTU) Letter Report" by Princeton Energy Research International (PERI) .

Associated Performance in Prior Years

FY 2006: **G** COE Target: 11-16 cents per kWh in Class 3 winds.

FY 2005: **G** Complete prototype testing of 1.8 kW Small Wind Turbine, finishing the International Electrotechnical Commission suite of tests for acoustics, power, durability, and safety. This contributes to the Annual DWT COE Target: 12-18 cents per kWh in Class 3 winds.

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000216.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Wind Energy (1.1.4)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Wind - Operational Efficiency Measure

Measure: Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%. (1.1.4.4)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans /
Explanation of
Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting
Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: **G** 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.

FY 2005: **G** Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline (\$18,371K) until the target range is met.

FY 2004: **G** Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2004 relative to the program uncosted baseline (in 2003) until the target range is met.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000216.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Geothermal Energy (1.1.5)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Geothermal

Measure: Geothermal - Complete an interim report on EGS technology evaluation, and report on completion of program activities and projects funded in FY 2006. (1.1.5.1)

2007 Results

Commentary: **G** The program completed an interim report on Enhanced Geothermal Systems (EGS) technology evaluation as well as a report on completed activities in the Geothermal Program. The completed EGS technology evaluation will assist the program to identify the technology base that will enable U.S. industry to commercialize EGS and develop geothermal resources to their full potential.

Future Plans /
Explanation of
Shortfalls: In FY 2008, the program will conclude the Enhanced Geothermal Systems technology evaluation and produce a roadmap to EGS commercialization based on finding of the evaluation.

Supporting
Documentation: NREL report "Technology Evaluation of Enhanced Geothermal Systems" August 2007.

Associated Performance in Prior Years

FY 2006: **G** Develop an Electronic Repository which makes digitized copies of all Geothermal Technology Program Research Development and Deployment Technical Reports available via the internet, while demonstrating reduction in cost of power for flash systems to 4.9 cents/kWh from 5.3 cents/kWh in 2005 and reducing cost of binary to 8.2 cents/kWh from 8.5 in 2005 based on modeled analysis.

FY 2005: **G** Field test a fully integrated Diagnostics-While-Drilling (DWD) advanced drilling system in a high-temperature geothermal well, verifying control of drilling operations in real time, thereby reducing costs. If successful, DWD will reduce drilling costs by one half of the total cost reduction target for drilling.

FY 2004: **R** Create an Enhanced Geothermal System (EGS) with an industry partner and test associated technology needed to operate and monitor the system.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000102.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Geothermal Energy (1.1.5)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Geothermal - Operational Efficiency Measure

Measure: Geothermal - Operational Efficiency Measure - 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. (1.1.5.2)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans / Explanation of Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: **G** 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.

FY 2005: **G** Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline (\$21,644K) until the target is met.

FY 2004: **R** Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2004 relative to the program uncosted baseline (in 2003) until the target range is met.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000102.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Biomass and Biorefinery Systems R&D (1.1.6)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Biomass - Biomass Feedstock Platform

Measure: 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. (1.1.6.1)

2007 Results

Commentary: **G** Idaho National Laboratory (INL) laboratory and field studies of wet biomass storage/preprocessing system configurations led to the selection of three wet system design concepts that could potentially be scaled to achieve DOE program goals for feedstock cost of \$35/dry ton (in 2002 dollars). These cost improvements will develop cost-competitive biomass resources in support of the Advanced Energy Initiative and Twenty in Ten goals.

Future Plans /
Explanation of
Shortfalls: Additional research and analysis on Feedstock Core R&D will continue to reduce logistics costs (including harvesting, storage, preprocessing, and transportation) to \$0.37/gallon in 2012 and \$0.33/gallon in 2017. Also, work will validate a sufficient, high-quality feedstock supply of 130 million dry tons/year (MDT/yr) by 2012 and 250 MDT/yr by 2017. These activities support the AEI and Twenty in Ten goals.

Supporting
Documentation: Idaho National Laboratory Report. (September 2007).

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10003400.2005.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Biomass and Biorefinery Systems R&D (1.1.6)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Measure: **Biomass - Utilization of Platform Outputs** 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). (1.1.6.2)

2007 Results

Commentary: **G** DOE selected six projects in February 2007 for commercial demonstrations of production of cellulosic biofuels. Two of the selected projects (the Liberty Project lead by Poet Industries in Emmetsburg, Iowa and the Hugoton, Kansas mill lead by Abengoa Bioenergy of Kansas) provided a level III engineering design package with process flow diagrams and mass and energy balances. Section 932 of the Energy Policy Act of 2005 requires DOE to fund projects for commercial demonstrations of production of cellulosic biofuels. The target of completing the documentation and designs is a necessary step in construction of the industrial-scale facility.

Future Plans /
Explanation of
Shortfalls: Using commercial scale biorefinery and 10% industrial scale biorefinery performance validate the assumptions used in the modeled nth plant economics of \$1.33-\$1.85 per gal ethanol production cost (2007 basis equivalent).

Supporting
Documentation: Abengoa Bioenergy of Kansas & Poet Project Liberty, LLC. Report. (September 2007).

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: **G** Demonstrated clean syngas production in three thermochemical conversion systems.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10003400.2005.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Biomass and Biorefinery Systems R&D (1.1.6)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Biomass - Platforms Research and Development - Sugars

Measure: 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. (1.1.6.3)

2007 Results

Commentary: **G** Integrated tests of dilute acid pretreatment combined with ammonia conditioning followed by enzymatic hydrolysis and fermentation with existing organisms provided a modeled cost that met the Joule target of \$0.125 per pound sugars. The results of this study are consistent with meeting the performance metrics needed to achieve a sugars cost of \$0.064 per pound by 2012. Prices are reported in 2002 dollars.

Future Plans /
Explanation of
Shortfalls: In FY 2008 the program will achieve a modeled cost target 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 dollars). Reduced sugar costs will reduce cellulosic ethanol costs, leading to increased adoption of ethanol and reduced consumption of petroleum.

Supporting
Documentation: National Renewable Energy Laboratory Report. (September 2007).

Associated Performance in Prior Years

FY 2006: **G** Complete laboratory and economic assessment of 2 different feedstocks, identifying operating conditions that link pretreatment with enzymes that could be scaled-up and have the potential of achieving the goal of \$0.125 per pound sugar by 2007.

FY 2005: **G** Completed a technical and economic evaluation of integrated biomass to fuels systems to validate the sugar cost of \$0.135 per pound and syngas cost of \$6.13 per million Btu.

FY 2004: N/A

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10003400.2005.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Biomass and Biorefinery Systems R&D (1.1.6)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Biomass - Platforms Research and Development - Syngas

Measure: 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). (1.1.6.4)

2007 Results

Commentary: **G** NREL researchers demonstrated improved catalyst performance and prepared a process design analysis that shows the effective cost of producing synthesis gas is \$6.77 / MBtu (equivalent electricity cost of 6.47 cents/kWh), lower than the target of \$7.15 / MBtu. Improvements in both heavy tars and benzene conversion in addition to better sulfur tolerance of the catalysts are the primary reasons for the demonstrated lower syngas cost number. Syngas cost of \$7.15/MBtu in 2007 (equivalent electricity cost of 6.83 cents/kWh) or less are needed in order to achieve the long-term goal of cost effective energy conversion and commercial production.

Future Plans /
Explanation of
Shortfalls: Research and development and analysis will continue on synthesis gas cleanup to facilitate cost effective production of biofuels. The performance goal for the conversion platforms is to reduce the processing cost of converting cellulosic feedstocks to ethanol to \$0.82/gallon by 2012 and \$0.60/gallon by 2017.

Supporting
Documentation: Report, "Demonstrate Conversion of 50% of non-methane (C2+ higher) hydrocarbons that result in a syngas cost of \$7.15/MBtu", October 2007.

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10003400.2005.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Biomass and Biorefinery Systems R&D (1.1.6)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Biomass - Operational Efficiency Measure

Measure: Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%. (1.1.6.5)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans / Explanation of Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: **G** 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.

FY 2005: **G** Contributed proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the Biomass & Biomass Refinery Systems Program FY 2004 end of year adjusted uncosted baseline (\$62,235K) until the target range is met.

FY 2004: **R** Contributed proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2004 relative to the program uncosted baseline (in 2003) until the target range is met.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10003400.2005.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Natural Gas Technology (1.1.9)

Strategic Goal(s)
Supported: Goal 1.1 Energy Diversity

Conduct a Drilling and Logging Program

Measure: Conduct a drilling and logging program over one or more sites in the Gulf of Mexico GOM) or Alaska that are projected to contain high-saturation hydrate accumulations within sandstone reservoirs. (1.1.9.1)

2007 Results

Commentary:

G

The program successfully completed drilling and logging of the Mt. Elbert stratigraphic test well at Milne Point (North Slope) Alaska from February 3 through 18, 2007. This effort proved the validity of pre-drill seismically-based predictions of gas hydrate occurrence and reservoir quality, and proved the capability of the Modular Formation Dynamics Tester (MDT) tool to collect critical pressure and fluid flow data from a hydrate-bearing reservoir, which can be used to calculate reservoir permeability. Collectively, FY 2007 accomplishments have provided a significant advancement to our ability to characterize hydrates and predict the productive capability of a reservoir in permafrost environments, as well as helped to direct future drilling and coring expeditions in the GOM.

Future Plans /
Explanation of
Shortfalls:

The program plans to develop and validate remote sensing technologies to detect and characterize methane hydrate occurrences. These technologies will be used to help determine whether gas hydrate accumulations exist in sufficient quantity and quality to ultimately become a significant energy supply source.

Supporting
Documentation:

Data analysis results for project number NT41332 are included in the file "Merit Review Presentation - Numerical Modeling (9-07)" under the files tab in ProMis.

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Inadequate <http://www.whitehouse.gov/omb/expectmore/summary/10001183.2003.html>
<http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Near-Zero Atmospheric Emissions Coal Based Electricity & Hydrogen Production (1.2.8)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Gasification

Measure: 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. (1.2.8.2)

2007 Results

Commentary: **G** Technology improvements in advanced power systems show that the advanced power systems program achieved 42% thermal efficiency at a capital cost of \$1,150/kWe, without incorporation of advancements in gas turbine technology. The gas turbine developments will further reduce capital cost and improve thermal efficiency, ultimately leading to the achievement of the 2010 performance goal of advanced coal-based power system capable of achieving 45-50% efficiency at a capital cost of \$1000/KW (2003 Dollars) or less.

Future Plans /
Explanation of
Shortfalls: Advanced IGCC - DOE is working to ensure the availability of low cost domestic energy through technology improvements in gas cleanup, air separation, gasifier, and turbine technology that translate to a system with improved efficiency (2010 goal is 45% efficiency) at a capital cost of \$1150/kw (2003 dollars).

Supporting
Documentation: The completion was September 2007, and is documented in the General Electric (GE) Phase I technical progress reports (contract # 42643).

Associated Performance in Prior Years

FY 2006: **G** Began construction and testing of advanced gas separation technologies. The Gasification Technologies program moved gas separation, including ceramic membrane, hydrogen separation, CO₂ hydrate formation and ceramic membrane air separation, closer to commercialization, eventually leading to capital cost reductions of \$60-\$80 per kW from the baseline of \$1200/kW (in constant 2003 dollars) for IGCC systems and efficiency improvements of >1 efficiency points.

FY 2005: **G** Began construction of slipstream test units, test planning, and testing of advanced gas cleanup concepts using real coal-derived synthesis gas. In FY 2005, the Gasification Technologies program moved ultra-clean cleanup, including economical and efficient sulfur removal and/or multi-contaminant cleanup, a significant step closer to commercialization, eventually leading to capital cost reductions of \$60-\$80 kW and efficiency improvements of >1 efficiency points and the turbine technology area of Advanced Power showed progress towards the contribution of 2-3 percentage points improvement in combined cycle turbine efficiency.

FY 2004: **R** Completed Ion Transport Membrane designs with target oxygen production of 95% purity. Completed at least 250 hours of high efficiency desulfurization process units operating with coal-derived synthesis gas. Initiated testing on advanced hydrogen separation membranes in simulated coal gasification product streams and completed design of a hydrate pilot-scale slipstream test unit. Advanced hydrogen separation technologies target eventual sequestering of CO₂ with a less than 10% increase in electricity cost. Performed modeling, facility modifications, and conducted pilot-scale tests for identifying technology opportunities to increase reliability, improved performance and increased feed flexibility of advanced gasifiers.

FY 2007 Performance Measures

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000086.2005.html>

Program Office: <http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Near-Zero Atmospheric Emissions Coal Based Electricity & Hydrogen Production (1.2.8)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Measure: **Mercury Control** - Complete field tests of technologies deployable at 75% of conventional cost (50-75% removal). (1.2.8.1)

2007 Results

Commentary: **G** Annual Accomplishment Met: Field testing of both standard and chemically treated activated carbon sorbents was conducted on power plants with varying equipment configurations. Based on ten (10) field tests, initial economic analyses indicate that activated carbon injection is deployable at 75% of the conventional cost of removing 70 - 90% of mercury in the flue gas.

Future Plans /
Explanation of
Shortfalls: Innovations for Existing Plants – Promulgation of the Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR) provided the private sector with the incentive to develop the technologies required to reduce their pollutant emissions. Therefore, the government role in the development of these technologies has shifted to the private sector. As a result, the Innovation for Existing Plants subprogram is terminated in FY 2008.

Supporting
Documentation: The presentation given by Frontier Geosciences, titled “Characterization of Coal Utilization By-products From Mercury Field Control Testing” at the 2007 Air Quality conference documents the completion. Additional support can be found in Fossil Energy’s FY 2007 Performance Status Report.

Associated Performance in Prior Years

FY 2006: **G** Conducted initial pilot scale slipstream field test of at least one technology capable of 90% mercury removal.

FY 2005: **G** Developed field performance and cost data for emission control technologies and established baseline for emissions transport from coal-fired boilers in support of proposed mercury and air quality regulations.

FY 2004: **G** Completed bench- and pilot-scale testing of five novel mercury control concepts capable of achieving >90% mercury capture by 2010 and initiated seven new projects under second phase of field testing of mercury control technology capable of achieving 50-70% mercury capture.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000086.2005.html>

Program Office: <http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Near-Zero Atmospheric Emissions Coal Based Electricity & Hydrogen Production (1.2.8)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Advanced Capture and Sequestration from Power Plants and Other Energy Plants

Validate technology improvements of an advanced power plant with carbon capture
Measure: 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. (1.2.8.3)

2007 Results

Commentary: **G** Annual Target Met: Testing was performed to evaluate the performance and further develop process information for several key carbon capture technologies. The Research Triangle Institute's (RTI) dry sorbent process was integrated with the EPA's coal- and natural gas-fired combustor to conduct testing of the process system and sorbent material using actual flue gas. The testing indicated that DOE technology improvements were able to achieve 90% carbon capture at a cost of electricity increase of less than 20%.

Future Plans /
Explanation of
Shortfalls: The Fossil Energy program is working to develop low cost options for reducing green house gases while using the Nation's most abundant fossil resource through the use of technology improvements of an advanced power plant with carbon capture. The Carbon Sequestration subprogram, by 2012, will develop technologies to separate, capture, transport, and sequester carbon using either direct or indirect systems that result in less than 10% increase in the cost of electricity.

Supporting
Documentation: The technical progress of meeting the FY2007 is documented through multiple technical progress reports. Additional support can be found in the Fossil Energy FY 2007 Performance Status Report.

Associated Performance in Prior Years

FY 2006: **G** Performed pilot-scale testing and also laboratory testing of different CO₂ capture technologies to lead to significant improvement in cost and performance, and initiated field sequestration activities within the Regional Partnerships, including selecting and awarding seven Phase II Regional Carbon Sequestration Partnerships that will begin to evaluate regional infrastructure and technologies to permanently sequester greenhouse gas emissions through small scale validations tests.

FY 2005: **G** Completed at least two pilot scale tests on emerging advanced capture technologies related to oxyfuel, sorbents, membranes or hydrates.

FY 2004: **G** Designed and tested multiple concepts for efficient, low-cost, advanced CO₂ separation and capture including on oxy-fuel combustion, membranes, and hydrates for CO₂ separation. Conducted field activities that evaluate sequestration opportunities in depleted oil reservoirs and saline aquifers. Collaboratively explored with the National Academy of Sciences novel and revolutionary means of storing greenhouse gases. This portfolio of over 22 projects targets reducing the cost of carbon dioxide separation and capture by 75% by 2012 compared to year 2000 systems.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000086.2005.html>

Program Office: <http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Near-Zero Atmospheric Emissions Coal Based Electricity & Hydrogen Production (1.2.8)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Solid State Energy Conversion Alliance (SECA) System Design

Measure: Validate technology improvements to the SECA fuel cell stack that reduce projected stack manufacturing costs to at least \$250/kW. (1.2.8.4)

2007 Results

Commentary: **G** Annual Target Met: Tests indicate technology improvements to the SECA fuel cell stack reduced the projected stack manufacturing costs to \$245/kW. This cost reduction surpassed the target of \$250/kW. Lower costs to the SECA fuel cell stack plays a significant role in the reduction of cost of Solid Oxide Fuel Cell (SOFC) modules, which is important in meeting the 2010 goal to produce modules having a capital cost of \$400/kW.

Future Plans /
Explanation of
Shortfalls: Fuel Cells – Fossil Energy will continue to work to reduce the cost and environmental impact of new clean coal fired plants and will validate technology improvements to the SECA fuel cell stack manufacturing costs. By 2010, produce SOFC modules having a capital cost of \$400/kW and by 2015, demonstrate MW-class fuel cell/turbine hybrids, using aggregated SOFC modules adaptable to coal and having a capital cost of \$400/kW.

Supporting
Documentation: This is documented in the Delphi Corporation report to DOE titled "41246 SECA Cost Report Stack Supplement Public R_07_31_07." This is also supported by an independent cost estimate prepared by J. Thijssen.

Associated Performance in Prior Years

FY 2006: **G** Four SECA industry teams completed phase I prototype validation demonstrating SECA phase I efficiency and cost goals. Incorporate seal and interconnect concepts into fuel cell stacks and perform initial tests.

FY 2005: **G** Began prototype validation of technical requirements for low cost SECA fuel cell systems. Tested prototype capable of achieving SECA cost reductions and efficiency Phase I goals. Under the SECA Core Program, validate one new sealing concept; 20% improvement in metallic interconnect performance relative to FY 2004; and 20% sulfur tolerance relative to FY 2004. These validations will aid SECA industry teams in achieving cost reduction and energy efficiency goals.

FY 2004: **G** Relative to FY 2003 baseline of 145mWatt/cm² power density @800C, demonstrated a 20% improvement in fuel cell stack power density for Solid State Energy Conversion Alliance (SECA) system design. Relative to FY 2003 baselines of 900 for cathode performance and 174 for interconnect performance in area specific resistance units of mohms-cm² @750C, completed 20% improvements in cathode performance and in the service life of electrical interconnects and transfer technology advances to the SECA industry teams to facilitate systems cost reduction and efficiency goals of \$400/kW and 40-60 percent. Annual stakeholder workshops and semi-annual peer reviews will communicate progress and define future R&D requirements.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000086.2005.html>

Program Office: <http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Near-Zero Atmospheric Emissions Coal Based Electricity & Hydrogen Production (1.2.8)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Hydrogen from Coal Program

Measure: 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. (1.2.8.5)

2007 Results

Commentary: **G** Annual Accomplishment Met: Laboratory scale testing of three different membrane materials was successfully conducted during FY 2007. The tests were conducted by Media and Process Technology, Inc., Eltron Research and Development, Inc. and Argonne National Laboratory. The tests demonstrated that the membrane materials being developed under the Hydrogen from Coal Program can successfully separate hydrogen from coal derived syngas.

Future Plans /
Explanation of
Shortfalls: Hydrogen – Fossil Energy will continue to work to develop more affordable methods to extract commercial grade Hydrogen 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.

Supporting
Documentation: An external draft has been posted on the DOE/NETL website on September 20, 2007. The report is publicly available through the following internet link:
http://www.netl.doe.gov/technologies/hydrogen_clean_fuels/refshelf/pubs/External_H2_from_Coal_RDD_Plan_September_13.pdf

Associated Performance in Prior Years

FY 2006: **G** Developed industry standards for the design and operation of a bench scale advanced hydrogen separation system, identify such standards and requirements in the RD&D plan, and conduct initial tests of a prototype unit to validate design parameters.

FY 2005: **G** Completed analysis and continued compilation of data derived from hydrogen separations research and document in the Hydrogen from Coal RD&D Plan. These are in a format that can be used as the basis for developing industry standards needed to design and operate commercial-scale separation technology.

FY 2004: **G** Prepared and communicated a Hydrogen from Coal R&D program strategy and develop solicitation research guidance for technology innovation to reduce the cost of producing hydrogen from coal.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000086.2005.html>

Program Office: <http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Near-Zero Atmospheric Emissions Coal Based Electricity & Hydrogen Production (1.2.8)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Measure: **Clean Coal Power Initiative (CCPI) Technology Demonstrations**
Award CCPI-2 projects based on decisions made in FY 2006. (1.2.8.6)

2007 Results

Commentary: **G** Annual Target Met. The following CCPI-2 projects were awarded by 2007: Southern Company Services Project, Pegasus Project. The successful completion of these projects meet the long-term objectives of the Clean Coal program.

Future Plans /
Explanation of
Shortfalls: Clean Coal Power Initiative – Fossil Energy will continue to work to encourage the Nation's energy industry to identify and cost share through the use of industry partnerships to bring the best emerging new coal-based power generating technology to demonstration and begin to assemble the initial portfolio of advanced technology systems that sequester carbon dioxide.

Supporting
Documentation: DOE amended the Cooperative Agreement (Amendment No. A004) on August 9, 2007 and this is documented in the Notice of Financial Assistance Award, to Cooperative Agreement No. DE-FC26-04NT4173.

Associated Performance in Prior Years

FY 2006: **G** Made go/no go decisions regarding award of cooperative agreements for all projects selected under Round 2 CCPI.

FY 2005: **G** Initiated 100% of the active industrial projects selected under the first round of the competitive CCPI solicitation and made project selections from the second round CCPI solicitation.

FY 2004: **G** Made go/no go decisions regarding award of cooperative agreements for up to 5 Round 1 CCPI projects and issued a Round 2 CCPI solicitation.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000086.2005.html>

Program Office: <http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Near-Zero Atmospheric Emissions Coal Based Electricity & Hydrogen Production (1.2.8)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Combustor Module Testing

Measure: 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. (1.2.8.7)

2007 Results

Commentary: **G** Annual Accomplishment Met. The conceptual prototype combustor module testing being conducted under Phase I of the hydrogen turbine development project was completed on September 30, 2007. The test demonstrated that single digit NOx emissions were demonstrated at lower firing temperatures (2100° F vs design inlet temperature of 2500° F). The two most promising low NOx, high-hydrogen fueled, combustion concepts that offer the highest probability of meeting the efficiency, emissions, and cost goals of the turbine program are a lean (fuel & air) pre-mix concept and a lean dilute diffusion concept.

Future Plans / Explanation of Shortfalls: Turbines – The FE program is working to ensure the availability of a new generation of electric power generating "platforms" by initiating the development of large frame hydrogen-fired turbine technologies capable of reaching single digit NOx emissions at progressively higher temperatures and pressures.

Supporting Documentation: The accomplishment is documented in the General Electrics Phase I technical progress report.

Associated Performance in Prior Years

| | | |
|----------|----------|--|
| FY 2006: | G | Initiate a prototype combustor module test for large frame engines of low NOx combustion technology (trapped vortex, catalytic, lean premix, or modified diffusion flame) using simulated coal based synthesis gas to demonstrate progress towards a 2 ppm NOx emissions goal. |
| FY 2005: | N/A | No targets reported. |
| FY 2004: | G | Performed a thermal analysis of syngas turbine blades, initiated testing of an H2 delivery system, and perform a systems study of an optimized IGCC turbine design. Ultimately by 2008 these and follow-on efforts will reduce IGCC NOx emissions toward 2 ppm, reduce turbine cost by 10-20% by increasing specific power output, increase turbine firing temperature and combined cycle integration to improve efficiency by 2-3 percentage points and reduce emissions turbines for coal derived synthesis gas. |

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000086.2005.html>

Program Office: <http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Fossil Energy

Program: Near-Zero Atmospheric Emissions Coal Based Electricity & Hydrogen Production (1.2.8)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

FE Operational Efficiency Measure

Measure: Maintain total administrative overhead costs in relation to total program costs of less than 18 percent. Baseline for administrative overhead rate currently being validated. (1.2.8.8)

2007 Results

Commentary: **G** The end-of-year efficiency measure rate was calculated using the following formula - FY07 actual appropriations for indirect program direction / actual total for FER&D appropriation or $\$101/\$581 = 17\%$ Based on these calculations, Fossil Energy was under plan by 1%. This result is due to the ratio of indirect program direction to the total appropriation in Congressional appropriations.

Future Plans /
Explanation of
Shortfalls: Determine the objective of the efficiency measure. Based on the objective, collaborate with programs, CFO, and OMB to develop a efficiency measure that meets the agreed upon objective.

Supporting
Documentation: The Figures used to calculate the end-of-year efficiency measure rate were obtained from a standard status of obligations report from the DOE IDW financial system as of 9/30/07.

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000086.2005.html>

Program Office: <http://www.fossil.energy.gov/>

FY 2007 Performance Measures

Office: Nuclear Energy

Program: Develop New Nuclear Generation Technologies (1.2.14)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Total NE Administrative Overhead Costs

Measure: Maintain total administrative overhead costs in relation to total program costs less than 8%.
(1.2.14.1)

2007 Results

Commentary: **G** For FY 2007, the Office of Nuclear Energy maintained a total administrative overhead cost efficiency of 7.97%, in relation to total R&D program costs. Achievement of the annual target shows that R&D program management costs are being effectively controlled.

Future Plans /
Explanation of
Shortfalls: The Department is pursuing a common approach for calculating total administrative overhead costs in its applied R&D programs, allowing some measure of comparability among program offices. The Office of Nuclear Energy will continue to work to increase its R&D program management efficiency during FY 2008.

Supporting
Documentation: Quarterly Measure Calculation; Program Manager Performance Certification Memorandum.

Associated Performance in Prior Years

FY 2006: **G** Maintain total administrative overhead costs in relation to total program costs of less than 8 percent. (Baselining for administrative overhead rate is currently being validated).

FY 2005: **G** Achieve cumulative variance of less than 10 percent from each of the cost and schedule baselines for the Advanced Fuel Cycle, Generation IV Nuclear Energy Systems and Nuclear Hydrogen Initiatives.

FY 2004: N/A

Additional Information

PART: N/A

Program Office: <http://www.nuclear.gov/>

FY 2007 Performance Measures

Office: Nuclear Energy

Program: Develop New Nuclear Generation Technologies (1.2.14)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Nuclear Power (NP) 2010 Engineering and Licensing Activities

Measure: 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. (1.2.14.2)

2007 Results

Commentary: **G** In FY 2007, the program met its annual performance measure through completion of combined COL cooperative agreement restructuring, and the review and acceptance of cost and schedule baselines from the program's two power company partners. Successful completion of these activities ensure that engineering and licensing activities necessary to enable an industry decision in 2010 are properly planned and executed.

Future Plans /
Explanation of
Shortfalls: NP 2010 will continue to support industry development of COL applications with the submission of two applications to the Nuclear Regulatory Commission (NRC) planned for early FY 2008; the program will also support interactions with NRC as they review the applications. Additionally, NP 2010 will support continuation of reactor vendor first-of-a-kind design finalization activities for the standardized reactor designs necessary to support an industry decision to build by 2010.

Supporting
Documentation: Monthly program reports and documentation validating specific milestones; Program Manager Performance Certification Memorandum.

Associated Performance in Prior Years

FY 2006: **G** Complete engineering and licensing demonstration activities necessary to implement the NP 2010 program in accordance with the principles of project management, to help ensure that program performance goals are achieved on schedule and within budget.

FY 2005: **G** Issue project implementation plans for two Construction and Operating Licensing (COL) Demonstration Projects.

FY 2004: **G** Select for award at least one cost-shared project with a power generating company-led team for activities required to demonstrate for the first time the combined Construction and Operating License (COL) process.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000116.2003.html>

Program Office: <http://www.nuclear.gov/>

FY 2007 Performance Measures

Office: Nuclear Energy

Program: Develop New Nuclear Generation Technologies (1.2.14)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Measure: **Generation IV Research and Development Activities**
Complete Generation IV Research and Development Activities. (1.2.14.3)

2007 Results

Commentary: **G** In FY 2007, Generation IV met its annual performance measure through a number of research, design and regulatory activities, including the issuance of a Pre-Conceptual Design Report that establishes preliminary functional and operational design requirements for the Next Generation Nuclear Plant (NGNP). Successful experimental activities included operational testing of the Graphite Creep Test capsule and fuels irradiations that began in December 2006. These activities significantly contribute to the program's 2011 selection of functional and operational design requirements of the NGNP in accordance with the Energy Policy Act of 2005.

Future Plans /
Explanation of
Shortfalls: As a result of its FY 2007 accomplishments, the program is prepared to award conceptual design work to several nuclear vendors in FY 2008. Experimental activities will include continuation of fuels irradiation testing and expansion of testing of environmental effects on high temperature materials. The major deliverable for FY 2008 is the NGNP Licensing Strategy report to Congress that is being prepared jointly with the Nuclear Regulatory Commission.

Supporting
Documentation: Monthly program reports and documentation validating specific milestones; Program Manager Performance Certification Memorandum.

Associated Performance in Prior Years

FY 2006: **G** Complete Generation IV research and development activities to inform a design selection for the next generation nuclear power plant by FY 2011.

FY 2005: **G** Issue the final design documents for the fuel capsule, test train, fission product monitoring system, and control system for the fuel irradiation shakedown test (AGR-1).

FY 2004: **R** Award one or more contracts for the Next Generation Nuclear Plant (NGNP) pre-conceptual design.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000100.2003.html>

Program Office: <http://www.nuclear.gov/>

FY 2007 Performance Measures

Office: Nuclear Energy

Program: Develop New Nuclear Generation Technologies (1.2.14)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Nuclear Hydrogen Initiative (NHI) Research and Development Activities
Measure: Complete NHI research and development activities focused on thermochemical and high temperature electrolysis (HTE) processes to support the Department's selection of a hydrogen production technology in 2011. (1.2.14.4)

2007 Results

Commentary: **G** In FY 2007, NHI met its annual performance measure through the construction and completion of shakedown testing of integrated laboratory-scale (ILS) system experiments for the Sulfur-Iodine and HTE technologies, and the completion of activities associated with the examination of alternative and Hybrid-Sulfur thermochemical cycles. These activities significantly contribute to the program's 2011 selection of a technology that will be demonstrated in a pilot scale hydrogen production project. This technology may also be employed in the demonstration of the next generation nuclear power plant.

Future Plans /
Explanation of
Shortfalls: Successful achievement of FY 2007 performance measures will allow NHI researchers to begin collection of performance data on processes to confirm the technical viability of the integrated hydrogen production systems. The results from these integrated tests and other research on membranes, catalyst and materials performed in FY 2008 will be used to inform the 2011 selection of a hydrogen technology that will be demonstrated in a pilot scale project, scheduled for 2013.

Supporting
Documentation: Monthly program reports and documentation validating specific milestones; Program Manager Performance Certification Memorandum.

Associated Performance in Prior Years

FY 2006: **G** Complete development of key technologies and infrastructure requirements in preparation for the thermochemical and hightemperature electrolysis integrated laboratory-scale experiments.

FY 2005: **G** Issue conceptual design documents for the thermochemical and hightemperature electrolysis pilot scale experiments.

FY 2004: **G** Complete final designs for the baseline thermochemical and high-temperature electrolysis laboratory-scale experiments.

Additional Information

PART: N/A

Program Office: <http://www.nuclear.gov/>

FY 2007 Performance Measures

Office: Nuclear Energy

Program: Develop New Nuclear Generation Technologies (1.2.14)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Advanced Fuel Separations Technology

Measure: 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. (1.2.14.5)

2007 Results

Commentary: **G** In FY 2007, the program met its annual target through the completion of key advanced fuel cycle R&D activities in the areas of spent fuel separations and fast reactor fuel fabrication, as well as through facility design activities for the Consolidated Fuel Treatment Center, Advanced Burner Reactor and Advanced Fuel Cycle Facility. The successful completion of these activities significantly adds to the Department's body of knowledge on advanced fuel cycle technologies that will help inform a Secretarial determination on the need for a second geologic repository for spent nuclear fuel, as well as a path forward for the Global Nuclear Energy Partnership in June 2008.

Future Plans /
Explanation of
Shortfalls: Achievement of the FY 2007 annual target validates the need for continuation of advanced fuel cycle R&D and is the basis for facility design activities in FY 2008. R&D and design results to-date will be collected in early CY 2008 to inform the Secretarial determination of a path forward for GNEP in June 2008. This data will also be submitted to the Office of Civilian Radioactive Waste Management in FY 2008 to support the Secretarial determination on the need for a second geologic repository, due by FY 2010.

Supporting
Documentation: Monthly program reports and documentation validating specific milestones; Program Manager Performance Certification Memorandum.

Associated Performance in Prior Years

FY 2006: **G** Complete research and development activities that allow the AFCI program to support the Secretary of Energy's determination of the need for a second geologic repository for spent nuclear fuel by FY 2008.

FY 2005: **G** Issue preliminary report on the post-irradiation examination (PIE) of actinide-bearing metal and nitride transmutation fuels in the Advanced Test Reactor (ATR).

FY 2004: **G** Complete fabrication and irradiation of advanced light water reactor (LWR) proliferation-resistant transmutation fuel samples, and initiate post-irradiation examination of the samples.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000072.2003.html>

Program Office: <http://www.nuclear.gov/>

FY 2007 Performance Measures

Office: Nuclear Energy

Program: Maintain and Enhance National Nuclear Infrastructure (1.2.15)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Cost and Schedule Baseline Variance

Measure: Consistent with safe operations, achieve cumulative variance of less than 10% from each of the cost and schedule baselines for the Radiological Facilities Management (RFM) and Idaho Facilities Management (IFM) programs at INL. (1.2.15.1)

2007 Results

Commentary: **G** For FY 2007, the program met its target by achieving cumulative cost and schedule variances at Idaho National Laboratory of less than 10%. The cumulative cost variance (CV) was + 3.2% percent and the schedule variance (SV) was - 4.4% percent. Monitoring performance against established baselines helps managers achieve desired program results consistent with NE's budget execution strategy, and provides early identification of possible problems in program execution.

Future Plans /
Explanation of
Shortfalls: This measure will be tracked in FY 2008 to continue to demonstrate the program's ability to execute work within established cost and schedule baselines. Maintaining this standard will enable the Office of Nuclear Energy to ensure critical infrastructure at Idaho National Laboratory is available to help meet program goals.

Supporting
Documentation: Monthly IFM Project Management Reports; Program Manager Performance Certification Memorandum.

Associated Performance in Prior Years

FY 2006: **G** Consistent with safe operations, achieve cumulative variance of less than 10 percent from each of the cost and schedule baselines for the Reactor Technology Complex and the Materials and Fuels Complex.

FY 2005: **G** Consistent with safe operations, achieve cumulative variance of less than 10 percent from each of the cost and schedule baselines for the Radiological Facilities Management and Idaho Facilities Management programs.

FY 2004: **G** Consistent with safe operations, achieve cumulative variance of less than 10 percent from each of the cost and schedule baselines for the Radiological Facilities Management and Idaho Facilities Management programs.

Additional Information

PART: Results Not Demonstrated <http://www.whitehouse.gov/omb/expectmore/summary/10002130.2004.html>

Program Office: <http://www.nuclear.gov/>

FY 2007 Performance Measures

Office: Nuclear Energy

Program: Maintain and Enhance National Nuclear Infrastructure (1.2.15)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Facility Operability Index

Maintain operability of key Radiological Facilities Management and Idaho Facilities

Measure: Management-funded facilities to enable accomplishment of Nuclear Energy, other DOE and Work-for-Others milestones by achieving a Facility Operability Index (FOI) of 0.9 or greater. (1.2.15.2)

2007 Results

Commentary: **G** For FY 2007, the Medical Isotopes program achieved a perfect FOI, while Idaho Facilities Management and Space and Defense Power Systems achieved FOI values above 0.9. Successful achievement of the milestones indicates that essential infrastructure and associated activities are operational to ensure that the Department's unique nuclear infrastructure, required for advanced nuclear energy research and development, is available to support national priorities.

Future Plans /
Explanation of
Shortfalls: This measure will continue to be tracked in FY 2008. The Space and Defense Power Systems and Medical Isotopes program will continue to track the same elements from FY 2007. Idaho Facilities Management will evaluate its current list of critical operability elements and determine if revisions are required for FY 2008. All three programs will continue to maintain a FOI of 0.9 or above.

Supporting
Documentation: Annual Operating Plans and Monthly Performance Reports; Program Manager Performance Certification Memorandum.

Associated Performance in Prior Years

FY 2006: **G** Maintain operability of Radiological Facilities Management and Idaho Facilities Management-funded facilities to enable accomplishment of Nuclear Energy, other DOE and Work-for-Others milestones by achieving a Facility Operability Index of 0.9.

FY 2005: **G** Keep cost and schedule milestones for upgrades and construction of key nuclear facilities within 10 percent of approved baselines, using the cost-weighted mean percent variance (+/-10 percent) approach.

FY 2004: **G** Keep cost and schedule milestones for upgrades and construction of key nuclear facilities within 10 percent of approved baselines, using the cost-weighted mean percent variance (+/-10 percent) approach.

Additional Information

PART: Results Not Demonstrated <http://www.whitehouse.gov/omb/expectmore/summary/10002130.2004.html>

Program Office: <http://www.nuclear.gov/>

FY 2007 Performance Measures

Office: Nuclear Energy

Program: Maintain and Enhance National Nuclear Infrastructure (1.2.15)

Strategic Goal(s)
Supported: Goal 1.2 Environmental Impacts of Energy

Activities to Protect DOE Interests

Measure: Complete FY 2007 activities to protect DOE interests from theft, diversion, sabotage, espionage, unauthorized access, compromise and other hostile acts, which may cause unacceptable adverse impacts on national security, program continuity, or the health and safety of employees, the public or the environment at SECON 3 Modified level. (1.2.15.3)

2007 Results

Commentary: **G** In FY 2007, the program met its annual target by maintaining critical posts at a full state of readiness in accordance with the Idaho National Laboratory Site Safeguards and Security Plan. Force-on-force exercises were successfully completed to evaluate security force robustness and validate no security vulnerabilities against the 2003 Design Basis Threat (DBT). Successful achievement of this measure helps ensure that the DOE's critical nuclear infrastructure, required for advanced nuclear energy research and technology, was available to support national priorities.

Future Plans /
Explanation of
Shortfalls: The program will continue activities in FY 2008 to validate the absence of security vulnerabilities against the 2003 DBT, and helps position the Office of Nuclear Energy to meet future safeguards and security commitments, including the implementation of the 2005 DBT.

Supporting
Documentation: Monthly reports from the Federal Security Director and contractor completion documents; Program Manager Performance Certification Memorandum

Associated Performance in Prior Years

FY 2006: **G** Install all physical protective system upgrades outlined in the approved May 2003 Design Basis Threat (DBT) Implementation Program Management Plan that remains consistent with the requirements of the 2004 DBT.

FY 2005: **G** Complete FY 2005 actions at the Idaho Site required to implement the May 2003 Design Basis Threat (DBT) as defined in the Program Management Plan that remain consistent with the requirements of the October 2004 DBT.

FY 2004: **G** Issue the Design Basis Threat Implementation Plan for the Idaho National Engineering and Environmental Laboratory and Argonne National Laboratory-West.

Additional Information

PART: Results Not Demonstrated <http://www.whitehouse.gov/omb/expectmore/summary/10002130.2004.html>

Program Office: <http://www.ne.doe.gov/facilitiesManagement/neFacMgmtOverview.html>

FY 2007 Performance Measures

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability (1.3.16)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

High Temperature Superconductivity

Measure: Complete six months operation of superconducting cable operating on the grid at greater than 10 kilovolts. (1.3.16.1)

2007 Results

Commentary: **G** Two superconducting cables operated on the grid for more than 6 months (4380 hours). The Albany cable rated at 34.5 kilovolts ran for 4989 hours in FY 2007 and the Columbus cable rated at 13.8 kilovolts ran for 6542 hours in FY 2007.

Future Plans /
Explanation of
Shortfalls: Cables will continue to operate for at least one year of operation.

Supporting
Documentation: SuperPower Quarterly Progress Report, Albany project (albany DOE Qtly Prog Report Cable 0407-0607 Final.pdf). Southwire Quarterly Progress Report, Columbus project, (Southwire_2Q_ CY2007 tech report.pdf).

Associated Performance in Prior Years

FY 2006: **G** Operated a first-of-a-kind superconducting power cable on the electric grid for 240 hours.

FY 2005: **G** Completed the manufacture of a 200m superconducting power cable for American Electric Power (AEP).

FY 2004: **R** Completed testing of 10 MVA superconducting transformer in operation on the Wisconsin Electric Power Company grid.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001045.2003.html>

Program Office: <http://www.oe.energy.gov/>

FY 2007 Performance Measures

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability (1.3.16)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Visualization and Control

Measure: 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. (1.3.16.2)

2007 Results

Commentary: **G** The plan was completed with regards to the transition of leadership of the North American SynchroPhasor Initiative (NASPI) from the Department of Energy to the North American Electric Reliability Corporation (NERC) with respect to deploying the synchrophasor network in North America. DOE will shift its focus to longer range research and development on applications that use the data from this network, and NERC, as the new Electricity Reliability Organization (ERO), will oversee expansion of the network itself, which can monitor compliance with the ERO mandatory grid reliability standards.

Future Plans /
Explanation of
Shortfalls: This transition plan is the future plan for the division of duties on all phases of the project between DOE and the NERC/ERO.

Supporting
Documentation: North American SynchroPhasor Initiative Transition Plan: Facilitating Increased Industry Leadership (NASPI Transition Plan Sept 2007.doc).

Associated Performance in Prior Years

FY 2006: **G** Facilitated the installation and operation of 30 additional measurement units and 2 additional archiving and analysis locations in a real-time measurement network, for a cumulative total of 80 measuring units and 8 archiving and analysis locations.

FY 2005: **G** Installed four additional data concentrators at four different data archiving and analysis locations, achieving a prototype wide area measurement system in the Nation's Eastern Interconnection consisting of six fully functioning data archiving and analysis locations installed at six different utilities.

FY 2005: **G** Completed field hardware installation at a cumulative total of at least 100 commercial, industrial and/or municipal customers participating in the demand response and load conservation network in Connecticut, and reduce peak demand (kilowatt hours) in real-time by 5-8% on average (as compared to non-curtailed kilowatt hour consumption) for all participating customers, thereby improving the energy efficiency of electricity usage.

FY 2004: **G** Installed and operated a prototype wide area measurement system in the Nation's Eastern Interconnection with realtime synchronized measuring instruments that feed data into two data archiving and analysis locations.

Additional Information

PART: N/A

Program Office: <http://www.oe.energy.gov/>

FY 2007 Performance Measures

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability (1.3.16)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Energy Storage Program

Measure: 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. (1.3.16.3)

2007 Results

Commentary: **G** A preliminary report on the joint State projects with the California Energy Commission (CEC) and the New York State Energy Research and Development Authority (NYSERDA) has been completed. The 450kW energy storage device utilizing supercapacitor technology was commissioned September 19, 2007 at the Vermont facility of Distributed Energy Systems. The system will be installed at the Palmdale, CA water treatment plant microgrid as part of the CEC/DOE Energy Storage Collaboration. It will provide backup power and help balance generation by wind, hydro, and natural gas.

Future Plans /
Explanation of
Shortfalls: After installation, the system will undergo extensive testing by EPRI during a 15 month period to collect sufficient data for a comprehensive analysis of system performance.

Supporting
Documentation: Commissioning and Initial Technical & Economic Data Collection in FY06 of Three Pioneering Energy Storage Systems in the DOE Collaborations with CEC and NYSERDA: A Study for the DOE Energy Storage Program (Storage Q4 07 Documentation 1 NYSERDA-CEC Q4 FY07-SAND_Draft.PDF)

Sandia FY07 4th Quarter Milestone Status Report: A Study for the DOE Energy Storage Program (storage documentation Palmdale.pdf)

Associated Performance in Prior Years

FY 2006: **G** Commissioned three pioneering energy storage systems in collaboration with the California Energy Commission and collect preliminary technical and economic data.

FY 2005: **R** Complete the manufacture of and factory testing on a 2MW/2MWh zinc-bromine battery system (consisting of four 500kW / 500kWh units) for supplying extra power during peak load conditions at a utility substation.

FY 2004: **G** Tested and evaluated the performance of a 500kW/750kWh sodium sulfur battery (first in U.S) installed at an American Electric Power site for six months to determine technical and economic performance.

Additional Information

PART: N/A

Program Office: <http://www.oe.energy.gov/>

FY 2007 Performance Measures

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability (1.3.16)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Research and Development Program Efficiency Measure

Measure: Maintain total Research and Development Program Direction costs in relation to total Research and Development costs of less than 12%. (1.3.16.5)

2007 Results

Commentary: **G** At 7.73%, OE's efficiency measure was well within the 12% goal. This reflected OE's restricted use of program direction funds under the year-long continuing resolution. At the same time, the rise in the measure from 5.74% in FY 2006 was due to the maturing of the program, as well as more adequate program direction funding. The additional funding went to support services to enable improved planning, analysis and evaluation, as well as improved documentation of standard operating procedures.

Future Plans /
Explanation of
Shortfalls: Program direction funding and expenditures will be monitored more closely using a Corporate Planning System tool which may enable OE to further streamline costs. Training and travel should increase, as management and staff have postponed both in previous years because of a limited budget or funding uncertainties.

Supporting
Documentation:

- Common R&D Efficiency Measure Calculation Worksheet (RM Q4 07 Documentation 1 Common RD Efficiency Measure - FY07 Calc Worksheet - 4th Quarter.pdf)
- Common R&D Efficiency Measure Methodology Worksheet (RM Q4 07 Documentation 2 Common RD Efficiency Measure - METHODOLOGY - FY07 4th Quarter.pdf)
- Common R&D Efficiency Measure OE Funding Activity Summary (RM Q4 07 Documentation 3 Common RD Efficiency Measure - OE Funding Activity Summary - FY07 4th Quarter.pdf)

Associated Performance in Prior Years

FY 2006: **G** Maintained total Research and Development Program Direction costs in relation to total Research and Development costs of less than 12%.

FY 2005: N/A Reduce by 10% the total time required by OE to complete its FY 2006 CFO, OMB and Congressional budget submissions as compared to its FY 2005 budget submissions.

FY 2004: N/A

Additional Information

PART: N/A

Program Office: <http://www.oe.energy.gov/>

FY 2007 Performance Measures

Office: Electricity Delivery and Energy Reliability

Program: Electricity Delivery and Energy Reliability (1.3.16)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Measure: **Distributed Generation Technology Development**
Develop second packaged CHP system which operates at 70%+ efficiency. (1.3.16.4)

2007 Results

Commentary: **G** System was developed and is operating at 70%+ efficiency.

Future Plans /
Explanation of
Shortfalls: None. This project is complete.

Supporting
Documentation: ORNL Quarter 3 Report on Eastern Maine Medical Center in Bangor Maine, excerpt (EMCCQ4 Submission.doc). ORNL DE Quarterly Progress Report for April 1, 2007 to June 30, 2007, Subtask 4.4.3 (ORNL Quarter Report Q3.2007.pdf). Eastern Maine Medical Center CHP System Data Report (EMMC CHP Data.doc)

Associated Performance in Prior Years

FY 2006: **G** Developed one packaged CHP system which operates at 70+% efficiency.
Completed a case study on a CHP installation that uses heat from microturbine to provide plate tank heating and sludge drying at an industrial facility, contributing to the PART long-term measure of developing a 70 percent efficient CHP integrated system.

FY 2005: **G** Completed and documented two DE/CHP demonstration projects within the high tech industry, contributing to the PART long-term measure of developing a 70 percent efficient CHP integrated system.

FY 2004: **G** Completed final design and initiated field testing an evaluation of a complete, fully functional integrated CHP system consisting of a turbine, absorption chiller and control system.

Additional Information

PART: N/A

Program Office: <http://www.oe.energy.gov/>

FY 2007 Performance Measures

Office: Western Area Power Administration

Program: Western Area Power Administration (1.3.17)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

System Reliability Performance

Measure: 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). (1.3.17.1)

2007 Results

Commentary: **G** Overall Western FY 2007 CPS1 and 2 averages are: CPS1 - 181.08; CPS2 - 98.64. Balanced supply and demand ensures sage and stable electric power grid operation.

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

Supporting
Documentation: NERC Control Performance Report.

Associated Performance in Prior Years

FY 2006: **G** System Reliability Performance: Attain acceptable North American Electric Reliability Corporation (NERC) ratings for the following 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). Actual: CPS1: 184.4; CPS2: 98.7. Industry average: CPS1: 161.5; CPS2: 97.0.

FY 2005: **G** System Reliability Performance: Attain acceptable North American Electric Reliability Corporation (NERC) ratings for the following 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). Actual: CPS1: 183.9; CPS2: 98.2. Industry average: CPS1: 161.4; CPS2: 95.9.

FY 2004: **G** System Reliability Performance: The target is to attain monthly NERC compliance ratings of 100 or higher for Control Performance Standard (CPS) 1 and a rating of 90 or above for CPS2. Actual: CPS1:184.0; CPS2:98.3. Industry average: CPS1: 165.1, CPS2: 96.7.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000130.2002.html>

Program Office: <http://www.wapa.gov/>

FY 2007 Performance Measures

Office: Western Area Power Administration

Program: Western Area Power Administration (1.3.17)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Repayment of Power Investment

Measure: Ensure unpaid investment is equal to or less than the allowable unpaid investment. Achieve a ratio of unpaid to allowable unpaid ≤ 1.00 . (1.3.17.2)

2007 Results

Commentary: **G** Collective repayment data for Western projects through FY 2007 indicate that the ratio is on target to be equal to or less than 1.00.

Future Plans /
Explanation of
Shortfalls: Western has made all required Treasury payments in full and on time. In meeting this performance target, Western continues to demonstrate its ongoing commitment to repay the Federal investment within the required repayment period, meeting obligations to U.S. taxpayers.

Supporting
Documentation: Final FY 06 Power Repayment Studies.

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: **G** Repayment of Power Investment: Ensure unpaid investment is equal to or less than the allowable unpaid investment. Achieve a ratio of unpaid to allowable unpaid ≤ 1.00 .
Actual: 1.0

FY 2004: **G** Repayment of Federal Power Investment: Meet planned annual repayment of principal on Federal power investment.
Goal: \$31.9 M
Actual: \$93.6M

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000130.2002.html>

Program Office: <http://www.wapa.gov/>

FY 2007 Performance Measures

Office: Western Area Power Administration

Program: Western Area Power Administration (1.3.17)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

System Reliability Performance

Measure: Accountable customer and/or transmission element outages will not exceed 26 for FY 2007. (1.3.17.3)

2007 Results

Commentary: **G** October-2, November-1, December-3, January-0, February-1, March-0, April-2, May-1, June-1, July-2, August - 1, September - 3. The annual total accountable customer and/or transmission element outages for Western is 17 for FY 2007. Achieving this target reflects Western's ability to maintain power system reliability, thus providing dependable service to customers.

Future Plans /
Explanation of
Shortfalls: Achieving this target reflects Western's ability to maintain power system reliability, thus providing dependable service to customers.

Supporting
Documentation: FY 2007 Accountable Outages Report.

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: **G** System Reliability Performance: Accountable customer and/or transmission element outages will not exceed the average number of outages for the past five years. Goal: <= 23 outages; Actual: 23

FY 2004: **G** System Reliability Performance: Accountable customer and/or transmission element outages will not exceed the average number of outages for the past five years. Goal: <= 26 outages; Actual: 21

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000130.2002.html>

Program Office: <http://www.wapa.gov/>

FY 2007 Performance Measures

Office: Bonneville Power Administration

Program: Bonneville Power Administration (1.3.18)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

System Reliability Performance – Accountable Transmission Outages

Measure: 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)

2007 Results

Commentary: **G** For July, Aug., and Sept. 2007, respectively, achieved performance on CPS-1 of 197.1%, 195.5%, and 192.3% against a target of no less than 100%; and on CPS-2 of 96.3%, 97.5%, and 97.1% against a target of no less than 90%. Achieving 6 of 6 possible CPS pass ratings in all four quarters for FY 2007 demonstrates Bonneville's ongoing commitment and ability to provide reliable transmission for the region.

Future Plans /
Explanation of
Shortfalls: For 2008, BPA has developed a daily CPS-1 and -2 monitoring report of these targets to assure prompt notification of performance band deviation so any immediate corrective actions can take place.

Supporting
Documentation: Fourth Quarter FY 2007 Findings Memo.

Associated Performance in Prior Years

FY 2006: **G** Attain average 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 greater than or equal to 100); and (2) CPS2, which limits any imbalance magnitude to acceptable levels (rating greater than or equal to 90).

Actual: Met - CPS1: 193.3%; CPS2: 96.1%

FY 2005: **G** Same measure as FY 2006
Actual: Met - CPS1: 196.6%; CPS2: 93.9%

FY 2004: **G** Same measure as FY 2006
Actual: Met - CPS1: 198.5%; CPS2: 94.3%

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000082.2002.html>

Program Office: <http://www.bpa.gov/corporate/>

FY 2007 Performance Measures

Office: Bonneville Power Administration

Program: Bonneville Power Administration (1.3.18)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Repayment of Federal Power Investment Performance

Measure: Meet planned annual repayment of principal on Federal power investments.
(1.3.18.2)

2007 Results

Bonneville made its annual Treasury payment in full and on time, with a FY 2007 Treasury principal amortization payment of \$618.4 million which included \$329.5 million of planned principal amortization and \$289.9 million of advanced principal amortization.

Commentary: **G** Cumulative advanced amortization (principal repaid earlier than planned) at the end of FY 2007 totaled \$2.091 billion. For the 24th straight year Bonneville has made its annual Treasury payment in full and on time -- meeting this performance target demonstrates Bonneville's ongoing commitment to meeting its obligations to U.S. taxpayers.

Future Plans /
Explanation of
Shortfalls: BPA is targeting to meet its planned payment to Treasury in full and on time for the 25th consecutive year. BPA sets rates designed to assure full payment of planned principal and manages costs and other financial drivers throughout the year to help assure payments to Treasury on an annual basis.

Supporting
Documentation: Fourth Quarter FY 2007 Findings Memo.

Associated Performance in Prior Years

| | | |
|----------|----------|---|
| FY 2006: | G | Meet planned annual repayment of principal on Federal power investments. Met Goal (\$304 million); Actual: \$646 million. |
| FY 2005: | G | Meet planned annual repayment of principal on Federal power investments. Met Goal (\$303 million); Actual: \$618 million. |
| FY 2004: | G | Meet planned annual repayment of principal on Federal power investments. Met Goal (\$246 million); Actual: \$592 million. |

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000082.2002.html>

Program Office: <http://www.bpa.gov/corporate/>

FY 2007 Performance Measures

Office: Bonneville Power Administration

Program: Bonneville Power Administration (1.3.18)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Hydropower Generation Efficiency Performance

Measure: 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. (1.3.18.4)

2007 Results

Commentary: **G** Bonneville and its FCRPS partners met this operational goal for the hydropower system with a result of 99.6% (official) for the cumulative four quarters of FY 2007. Achieving this target for FY 2007 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: For FY2008, BPA and its partner agencies plan to refine the annual outage planning process to ensure system capacity is available as needed. Scheduled outage plans are going to be compared to projected water and marketing forecasts, and will be adjusted based on capacity needs.

Supporting
Documentation: Fourth Quarter FY 2007 Findings Memo.

Associated Performance in Prior Years

FY 2006: **G** Achieve 97% 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. Hydropower Generation Efficiency Performance: Met Goal (97%); Actual: 98.3%

FY 2005: **G** Same measure as FY 2006. Hydropower Generation Efficiency Performance: Met Goal (97%); Actual: 101%

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000082.2002.html>

Program Office: <http://www.bpa.gov/corporate/>

FY 2007 Performance Measures

Office: Southeastern Power Administration

Program: Southeastern Power Administration (1.3.23)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

System Reliability Performance

Measure: 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. (1.3.23.1)

2007 Results

Commentary: **G** Achieving this target provides grid operators assurance that the power comes on line when it is supposed to (CPS 1) and that the quality of the power meets prescribed standards (CPS 2) in order for it to be useful to the transmission grid. CPS 1: 186.34; CPS 2: 99.71

Future Plans /
Explanation of
Shortfalls: Southeastern 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 2007.

Associated Performance in Prior Years

FY 2006: **G** 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.

FY 2005: **G** 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.

FY 2004: **G** Attained an average monthly NERC compliance ratings of 100 or higher for Control Performance Standard (CPS) 1 and a rating of 90 or above for CPS2.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000122.2002.html>

Program Office: <http://www.sepa.doe.gov/>

FY 2007 Performance Measures

Office: Southeastern Power Administration

Program: Southeastern Power Administration (1.3.23)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Measure: **Repayment of Federal Power Investment Performance**
Meet planned annual repayment of principal on Federal power investments. (1.3.23.2)

2007 Results

Commentary: **G** Southeastern exceeded its required repayment. Despite record drought conditions Southeastern repaid \$2.1 million which was greater than the target amount.
Target: \$1.0 million Actual: \$2.1 million

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

Supporting
Documentation: FY 2007 Power Repayment Study.

Associated Performance in Prior Years

FY 2006: **G** Assure Annual Required Repayment of the Federal Investment. FY 06 required repayment is \$1.0 million. Repaid \$4.4 million.
FY 2005: **G** Meet planned annual repayment of principal on Federal power investment. Actual: \$51 million
FY 2004: **G** Meet planned annual repayment of principal on Federal power investment. Actual: \$45 million

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000122.2002.html>

Program Office: <http://www.sepa.doe.gov/>

FY 2007 Performance Measures

Office: Southwestern Power Administration

Program: Southwestern Power Administration (1.3.24)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

System Reliability Performance

Measure: 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. (1.3.24.1)

2007 Results

Commentary: **G** During FY 2007, Southwestern achieved 6 out of 6 control compliance ratings. Southwestern's average annual results are 199.26 for CPS 1 & 99.61 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 2007. Data can be found at <http://www.nerc.com/~filez/cps.html>.

Associated Performance in Prior Years

FY 2006: **G** Meet industry averages (CPS1:161.8 and CPS2: 97.2) 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. Actual: CPS 1: 180.23; CPS 2: 99.18.

FY 2005: **G** Meet industry averages (CPS1: 162.0 and CPS2: 96.7) 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. Actual: CPS 1: 186.74; CPS 2: 99.40.

FY 2004: **G** Attain average NERC compliance ratings of 100 or higher for Control Performance Standard 1, and 90 or above for Control Performance Standard 2. Actual: CPS 1: 183.8; CPS 2: 99.6.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000124.2002.html>

Program Office: <http://www.sepa.doe.gov/>

FY 2007 Performance Measures

Office: Southwestern Power Administration

Program: Southwestern Power Administration (1.3.24)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

System Reliability Performance

Measure: Operate the transmission system so there are no more than 3 preventable outages annually.
(1.3.24.2)

2007 Results

Commentary: **G** During FY 2007, Southwestern had no preventable customer outages. Achieving this target reflects Southwestern's ability to provide reliable service to customers each year, thereby maintaining power system reliability.

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: Southwestern's Point of Delivery Incidents Log.

Associated Performance in Prior Years

FY 2006: **G** Operate the transmission system so there are no more than 3 preventable outages annually.
Actual: Southwestern incurred one preventable outage.

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000124.2002.html>

Program Office: <http://www.swpa.gov/>

FY 2007 Performance Measures

Office: Southwestern Power Administration

Program: Southwestern Power Administration (1.3.24)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Measure: **Repayment of the Federal Power Investment Performance**
Repay the Federal Investment within the required payment period. (1.3.24.3)

2007 Results

Commentary: **G** During FY 2007, Southwestern achieved 100.0% of planned 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.
Target: \$586,991 Actual: \$28,018,029

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

Supporting
Documentation: FY 2006 Power Repayment Studies.

Associated Performance in Prior Years

FY 2006: **G** Repay the Federal investment within the required repayment period. Actual: met all required repayment.

FY 2005: **G** Repay the Federal investment within the required repayment period. Actual: met all required repayment.

FY 2004: **G** Repay the Federal investment within the required repayment period. Actual: met all required repayment.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000124.2002.html>

Program Office: <http://www.swpa.gov/>

FY 2007 Performance Measures

Office: Southwestern Power Administration

Program: Southwestern Power Administration (1.3.24)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Annual Operating Cost Performance

Measure: Provide power at the lowest possible cost by keeping average operation and maintenance cost per kilowatt-hour below the National average for hydropower. (1.3.24.4)

2007 Results

During FY 2007, cost per kilowatt-hour statistics are as follows:

Southwestern: \$0.0126

National industry average: \$0.0137

Commentary: **G** 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: Annual Reports, Energy Information Administration Form 1 Reports, CBO Budget and Economic Outlook Forecast.

Associated Performance in Prior Years

FY 2006: **G** Provide power at the lowest possible cost by keeping average operation and maintenance cost per kilowatt-hour below the National average for hydropower.
Actual: Southwestern: \$0.0116
National industry average: \$0.0136

FY 2005: **G** Provide power at the lowest possible cost by keeping average operation and maintenance cost per kilowatt-hour below the National average for hydropower.
Actual:
Southwestern: \$0.0109
National industry average: \$0.0126

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000124.2002.html>

Program Office: <http://www.swpa.gov/>

FY 2007 Performance Measures

Office: Southwestern Power Administration

Program: Southwestern Power Administration (1.3.24)

Strategic Goal(s)
Supported: Goal 1.3 Energy Infrastructure

Economic Benefit Performance

Measure: Provide \$468 million in economic benefits to the region from the sale of hydroelectric power (under average water conditions). (1.3.24.5)

2007 Results

Commentary: **G** During FY 2007, Southwestern achieved 100.8%, or \$471.6 million, of the \$468 million annual goal. Achieving this target reflects Southwestern's effort to provide economic benefits within its marketing area through the delivery of Federal hydropower, thereby advancing the President's commitment to provide both renewable and affordable energy to the nation, while reducing the nation's use of conventional fossil fueled energy.

Future Plans /
Explanation of
Shortfalls: Southwestern will continue to provide economic benefits to the region.

Supporting
Documentation: Energy dollar values were obtained from U.S. Army Corps of Engineers' (Corps) Greers Ferry Lake Reallocation Study dated September 1997. Capacity dollar values were developed by the Corps' Hydropower Analysis Center using Federal Energy Regulatory Commission procedures. Actual generation was obtained from the Corps power plant reports. Southwestern has 2,247.8 megawatts of capacity for support of the 2052.6 megawatts of marketed capacity with 5,570.0 gigawatt-hours of energy produced from average water conditions.

Associated Performance in Prior Years

FY 2006: **Y** Provide \$462 million in economic benefits to the region from the sale of hydroelectric power (under average water conditions). Actual: \$322 million

FY 2005: **G** Provide \$457 million in economic benefits to the region from the sale of hydroelectric power (under average water conditions). Actual: \$488 million

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000124.2002.html>

Program Office: <http://www.swpa.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Industrial Technologies (1.4.19)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Industry - Emerging Technologies

Measure: 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%. (1.4.19.1)

2007 Results

Commentary: **G** A total of three new technologies were reported as commercialized including the Dilute Oxygen Combustion technology, the Cromer Cycle Air Conditioner technology, and the Lower-pH Copper Flotation Reagent System. These commercialized efficiency technologies support the goal of an 14.9% reduction in industrial energy intensity by 2015 (baseline 2002).

Future Plans /
Explanation of
Shortfalls: In FY 2008 the program will 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%.

Supporting
Documentation: PNNL report (IMPACTS: Industrial Technologies Program: Summary of Program Results, draft September 2007).

Associated Performance in Prior Years

FY 2006: **G** Commercialize 3 new technologies in partnership with the most energy-intensive industries.

FY 2005: **G** Commercialize 3 new technologies in partnership with the most energy-intensive industries.

FY 2004: **G** Commercialize 4 new technologies in partnership with the most energy-intensive industries.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10003402.2005.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Industrial Technologies (1.4.19)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Industry - Unique Energy-Intensive Industrial Plants

Measure: An estimated 125 trillion Btus saved by an additional 1,000 energy intensive U.S. plants applying EERE technologies and services. (1.4.19.2)

2007 Results

Commentary: **G** More than 1380 unique energy intensive plants in US applied EERE technologies and services in FY07, saving an estimate 125 trillion Btus. This supports the goal of an 14.9% reduction in industrial energy intensity by 2015 (baseline 2002).

Future Plans /
Explanation of
Shortfalls: For FY 2008, the program estimates that 100 trillion Btus will be saved by an additional 800 energy intensive U.S. plants applying EERE technologies and services.

Supporting
Documentation: Lawrence Berkeley National Laboratory reports September 2007.

Associated Performance in Prior Years

FY 2006: **G** An additional 200 (leading to a cumulative 8,600) energy intensive U.S. plants will apply EERE technologies and services contributing to the goal of a 20 percent reduction in energy intensity from 2002 levels by 2020.

FY 2005: **G** An additional 200 (leading to a cumulative 7,000) energy intensive U.S. plants will apply EERE technologies and services.

FY 2004: **G** An additional 600 (leading to a cumulative 6,800) energy intensive U.S. plants will apply EERE technologies and services averaging a 5 percent improvement in energy productivity per plant.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10003402.2005.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Industrial Technologies (1.4.19)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Industry - Operational Efficiency Measure

Measure: Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%. (1.4.19.3)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans / Explanation of Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: **G** 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.

FY 2005: **G** Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline (\$40,741K) until the target range is met.

FY 2004: **G** Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2004 relative to the program uncosted baseline (2003) until the target range is met.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10003402.2005.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Buildings Technologies (1.4.20)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Buildings - Residential Buildings

Measure: 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. (1.4.20.1)

2007 Results

Commentary: **G** Multiple case studies demonstrating successful achievement of 30% and 40% savings relative to the Building America research benchmark have been completed for the Hot humid and Hot/Mixed Humid climate regions (respectively). Achievement of this target moves the program closer to the program goal of homes that use net zero energy by 2020.

Future Plans /
Explanation of
Shortfalls: The program will continue conduct research for production ready residential buildings at improved efficiency rates with FY 2008 target of demonstrating successful achievement of 40% savings relative to the Building America research benchmark for an additional climate zone. Achievement of this target moves the program closer to the program goal of homes that use net zero energy by 2020.

Supporting
Documentation: Final Building America Technology Package Research Reports.

Associated Performance in Prior Years

FY 2006: **G** Complete system research with lead builders in two climate zones demonstrating production-ready new residential buildings that are 30 percent more efficient than the whole-house Building America benchmark and document the results in Technology Package Research Reports.

FY 2005: **G** Complete the research for production-ready new residential buildings that are 30 percent more efficient than the whole-house Building America benchmark in 2 climate zones and document the results in Technology Package Research Reports.

FY 2004: **G** Initiate 5 design packages that provide promising technological solutions considering regional and housing type differences targeting 40 - 50 percent reductions in residential space conditioning loads, compared to IECC 2003, through Building America Consortia. Strategies to reduce the major loads, including energy used for hot water, lighting and clothes dryers were also investigated.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000084.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Buildings Technologies (1.4.20)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Buildings - Commercial Buildings

Measure: 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. (1.4.20.2)

2007 Results

Commentary: **G** This target was met by completing the analysis and documentation of the pathways and recommendations for achieving 30% energy savings through sets of technology design packages for K-12 schools in various U.S. climates. This supports progress towards the 2025 goal of commercial buildings that are 60 to 70% more energy efficient.

Future Plans /
Explanation of
Shortfalls: The Department will continue to advance analysis to support increases in the energy efficiency of commercial buildings in the full range of climate zones resulting in the development of four additional design technology packages for small to medium sized commercial building types to achieve 30% energy savings over ASHRAE 90.1-2004. These activities support progress towards the 2025 goal of commercial buildings that are 60 to 70 percent more energy efficient.

Supporting
Documentation: September 2007 report "Technical Support Document: Development of the Advanced Energy Design Guide for K-12 Schools--30% Energy Savings" <http://www.nrel.gov/docs/fy07osti/42114.pdf>.

Associated Performance in Prior Years

FY 2006: **G** Complete the development of one design technology package to achieve 30 percent or better energy savings, focusing on a single, high priority building type, such as small commercial retail or office buildings, based on the technical and market assessments completed in 2005.

FY 2005: **G** Complete assessments of controls technology, optimization methods and market opportunities, with substantial input from designers and building owners, to establish a framework for development of programmatic pathways to achieve 50 percent or better energy performance in significant numbers of buildings enabling development of design and/or technology packages for new commercial buildings.

FY 2004: N/A

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000084.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Buildings Technologies (1.4.20)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Buildings - Appliance Standards

Measure: 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. (1.4.20.3)

2007 Results

Commentary: **Y** DOE issued four final rules in FY 2007 which included standards required for support of EPACT 2005 (including ceiling fan light kits, test procedure for central air conditioners, and test procedures for consumer products and certain commercial and industrial equipment) as well as the Final Rule for distribution transformers. These rulemaking activities fulfill the schedule the Department laid out to clear the backlog of delayed standards actions while simultaneously implementing the new requirements of the Energy Policy Act of 2005. The furnace and boiler rule was published in November 2007.

Future Plans /
Explanation of
Shortfalls: The Final Rule for Energy Conservation Standards for Residential Furnaces and Boilers was published on November 19, 2007. The Department will continue to maintain the schedule submitted to Congress in January 2006. To meet the schedule, an increased number of rules will need to be issued.

Supporting
Documentation: Rules published in Federal Register.

Associated Performance in Prior Years

FY 2006: **G** Complete analytical and regulatory steps necessary for DOE issuance of 4 rules, consistent with enacted law, to amend appliance standards and test procedures that are economically justified and will result in significant energy savings. Develop for DOE issuance notices of proposed rulemaking (NPRs) regarding energy conservation standards for electric distribution transformers, commercial unitary air conditioners and heat pumps, and residential furnaces and boilers.

FY 2005: **G** Complete analytical and regulatory steps necessary for DOE issuance of 3-4 rules, consistent with enacted law, to amend appliance standards and test procedures that are economically justified and will result in significant energy savings.

FY 2004: **G** Prepare for issuance up to four rules to amend appliance standards and test procedures for some of the following products: Residential Furnaces, Boilers, and Mobile Home Furnaces; Electrical Distribution Transformers; Commercial Unitary Air-Conditioners and Heat Pumps; and Residential Niche Product Air-Conditioners and Heat Pumps.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000084.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Buildings Technologies (1.4.20)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Buildings - Solid State Lighting

Measure: 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. (1.4.20.4)

2007 Results

Commentary: **G** Improvements in materials, circuitry, and heat transfer incorporated in a single package of higher efficacy raised the bar for light-emitting diode (LED) performance (a CREE, Inc. new cool white multi-chip LED array prototype demonstrated a luminous efficacy of 95 lm/W). By improving the performance of solid state lighting, the program moves closer to the goal of achieving net zero energy use in homes by 2020 and in commercial buildings by 2025.

Future Plans /
Explanation of
Shortfalls: The program will continue making improvements in materials, circuitry, and heat transfer incorporated in a single package of higher efficacy will raise the bar for LED performance with a FY 2008 target of at least 93 lumens per Watt in a laboratory device for white light from solid state devices. By 2025, the SSL Portfolio will develop advanced solid state lighting technologies that compared to conventional lighting technologies, are much more energy efficient, longer lasting, and cost-competitive by targeting a product system efficiency of 50% with lighting that accurately reproduces sunlight spectrum.

Supporting
Documentation: Research reports from cost-shared research which is competitively selected.

Associated Performance in Prior Years

FY 2006: **G** Conduct cost-shared, competitively selected research on technology to achieve = 65 lm/W (in a laboratory device) of white light from solid state devices with industry, National Laboratories, and universities.

FY 2005: **G** Select five new competitively based research awards for costshared research on technology (such as optical materials and device structures) to achieve ?65 lm/W white light from solid state devices with industry, National Laboratories, and universities.

FY 2004: **G** Complete a solicitation and award five or more competitively based research awards for cost-shared research on technology (such as materials and light extraction) to contribute to the goal of 160 lumens/Watt (lm/W) and \$11/Klm of white light from solid state devices with industry, National Laboratories, and universities.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000084.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Buildings Technologies (1.4.20)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Buildings - Energy Star

Measure: Increase market penetration of appliances to 30 to 32% (baseline 30% calendar year 2003), to 2.5 to 4% for compact fluorescent lamps (CFLs) (baseline 2% calendar year 2003) and 45 to 50% for windows (baseline 40% for calendar year 2003). Estimated energy savings will be 0.032 Quads and \$671 million in consumer utility bill savings (1.4.20.5)

2007 Results

Commentary: **G** The ENERGY STAR Appliance program has exceeded the targets for market penetration of the appliances, compact fluorescent lamps, and windows (estimated savings was .044 Quad). This voluntary program helps consumers purchase more efficient technologies which saves money for these households as well as reduces energy consumption. By increasing the deployment of highly energy efficient appliances, the program moves closer to the goal of achieving net zero energy use in homes by 2020 and in commercial buildings by 2025.

Future Plans /
Explanation of
Shortfalls: The Energy Star program will continue to increase the market penetration target for Energy Star® appliances (FY 2008 target of 33%), CFLs (FY 2008 target of 6%), and windows (FY 2008 target of 48%) as well as continue to update the criteria for existing products as well as develop criteria for advanced technologies.

Supporting
Documentation: Documentation can be found at the following web page under the Appliance Sales Data section (http://www.energystar.gov/index.cfm?c=manuf_res.pt_appliances).

Associated Performance in Prior Years

FY 2006: **G** Increase market penetration of appliances (clothes washers, dishwashers, room air conditioners and refrigerators) to 38 to 42 percent (baseline 30 percent calendar year 2003), to 2 to 3 percent for Compact Fluorescent Lamps (baseline 2 percent calendar year 2003) and 40 to 45 percent for windows (baseline 40 percent calendar year 2004). Estimated energy savings will be 0.030 Quads and \$657 million in consumer utility bill savings.

FY 2005: **G** Recruit 500 additional retail stores, 5 additional utilities and 10 additional manufacturers. Complete draft Commercial Window specification. Begin update of Residential Window specification. Expand coordination with all gateway activities.

FY 2004: **R** Recruit 500 additional retail stores, 5 additional utilities and 10 additional manufacturers. Add domestic hot water heaters to the program. Begin work on a Commercial Window Specification. Expand room air-conditioner program to include heating cycle. Continue outreach to non-English speaking communities and Weatherization activities.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000084.2003.html>

Program Office: http://www.energystar.gov/index.cfm?c=manuf_res.pt_appliances

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Buildings Technologies (1.4.20)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Buildings - Operational Efficiency Measure

Measure: Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%. (1.4.20.6)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans /
Explanation of
Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting
Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: **G** 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.

FY 2005: **R** Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2005 relative to the program uncosted baseline in 2004 (\$33,417k) until the target range is met.

FY 2004: **R** Contributed proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2004 relative to the program uncosted baseline (in 2003) until the target range is met.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10000084.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Weatherization (1.4.21)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Measure: **Weatherization Assistance Program**
Weatherization Program - Weatherize 70,051 units with DOE funds. (1.4.21.1)

2007 Results

Commentary: **G** The Weatherization Assistance Program (WAP) supported the deployment of cost-effective energy efficiency improvements to low-income households by weatherizing 101,667 homes in FY 2007. Through helping low-income citizens reduce their energy bills by permanently increasing the energy efficiency of their homes. DOE provides funding to states, which manage the day-to-day operations of the program. Low-income families receive services from a network of about 970 local weatherization providers.

Future Plans /
Explanation of
Shortfalls: The Weatherization Assistance Program (WAP) at the FY 2008 request will weatherize over 54,000 homes.

Supporting
Documentation: WINSAGA report.

Associated Performance in Prior Years

FY 2006: **G** Weatherize 97,300 homes, with DOE funds.

FY 2005: **G** Weatherize 92,500 homes, with DOE funds, and support the weatherization of approximately 100,000 additional homes with leveraged funds.

FY 2004: **G** Weatherize 94,450 homes, with DOE funds.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000128.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: Weatherization (1.4.21)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Weatherization - Operational Efficiency Measure

Measure: Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%. (1.4.21.2)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans /
Explanation of
Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting
Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000128.2003.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: State Energy Program (1.4.22)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

State Energy Program

Measure: 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)

2007 Results

Commentary: **G** The State Energy Program (SEP) met its target, achieving an annual energy savings of 12.364 trillion source Btus (\$78 million in annual energy cost savings) with DOE funds. The energy saving target was established and achieved using a methodology developed by the ORNL in Estimating Energy and Cost Savings and Emissions Reductions for the State Energy Program Based on Enumeration Indicators Data (January 2003).

Future Plans /
Explanation of
Shortfalls: The State Energy Program will provide financial and technical assistance to States through formula and competitive special project grants that will result in savings of 10-12 trillion source Btus (an estimated \$60-\$70 million in annual energy cost savings) with DOE funds.

Supporting
Documentation: The Oak Ridge National Laboratory report ORNL/CON-487.

Associated Performance in Prior Years

FY 2006: **G** Achieve an average annual energy savings of 8-10 trillion source Btus (an estimated \$50-60 million in annual energy cost savings) with DOE funds. Achieve an additional average energy savings of 26-30 trillion source Btus (an estimated \$190-\$200 million in annual energy cost savings) from leveraged funds.

FY 2005: **G** Achieve an annual energy savings of 10,250,000 source Btus and \$64,780,000 in annual energy cost savings with DOE funds. Achieve an annual energy savings 36,695,000 source Btus and \$231,912,400 in annual energy cost savings with leveraged funds. Program will update Btu to dollar calculation derived from 2003 metrics study to establish new baseline.

FY 2004: **G** Achieve an annual energy savings of 52,406,930 source Btu and \$317,772,960 in annual energy cost savings by awarding \$43,952,000 in grants to States and Territories.

Additional Information

PART: Results Not Demonstrated <http://www.whitehouse.gov/omb/expectmore/summary/10002136.2004.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: State Energy Program (1.4.22)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

State Energy Program - Operational Efficiency Measure

Measure: Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%. (1.4.22.2)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans /
Explanation of
Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting
Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: **G** 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.

FY 2005: **G** Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline (\$21,257K) until the target range is met.

FY 2004: **R** Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25 percent by reducing program annual uncosteds by 10 percent in 2004 relative to the program uncosted baseline (in 2003) until the target range is met.

Additional Information

PART: Results Not Demonstrated <http://www.whitehouse.gov/omb/expectmore/summary/10002136.2004.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: DEMP/FEMP (1.4.7)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Federal Energy Management Program (FEMP) Contract Awards
Measure: 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 (1.4.7.1)

2007 Results

Commentary: **G** ESPC and UESC contract awards, technical assistance, and DOE retrofits resulted in 33.2 trillion Btu savings exceeding the target. This will help Federal agencies to reduce the energy intensity of their operations, increase the use of renewable energy, accelerate the protection and improvement of the environment, and increase our Nation's energy security.

Future Plans /
Explanation of
Shortfalls: The Federal Energy Management Program will continue to assist Federal energy managers to make better energy management choices that result in a more efficient, effective and energy secure government through support in ESPC and UESC contract awards and technical assistance (planned lifecycle Btu savings of 20.2 trillion from FY 2008 activities). This will allow attainment of the goals outlined in EPACT 2005 and Executive Order 13423.

Supporting
Documentation: For ESPCs, copy of the awarded contract between the Energy Service Company (ESCO) and the agency receiving the award. For UESCs, memorandum from the Federal Agency receiving the award. For technical assistance, memorandum or reports from DOE National Laboratories or other contractors.

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003401.2005.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

Office: Energy Efficiency & Renewable Energy

Program: DEMP/FEMP (1.4.7)

Strategic Goal(s)
Supported: Goal 1.4 Energy Productivity

Federal Energy Management Program (FEMP) Operational Efficiency Measure

Measure: Maintain total administrative overhead costs (defined as program direction and program support excluding earmarks) in relation to total program costs of less than 12%. (1.4.7.2)

2007 Results

Commentary: **G** Overall performance is 7.8%; annual target is to be less than 12%. EERE regards this as an artificially low anomaly due to continuing resolution constraints for 6 months into the FY (the continuing resolution provided an unanticipated increase of which a disproportionate amount was put in program direction/support).

Future Plans /
Explanation of
Shortfalls: Future plans are to keep administrative support below the 12% criteria, unless external budgetary decisions beyond EERE's control such as rescissions, extended continuing resolutions, etc., impact the criteria formula.

Supporting
Documentation: Documentation is the DOE STARS accounting system and the EERE Executive Information System. This rating is based on preliminary FY 2007 actuals.

Associated Performance in Prior Years

FY 2006: **G** 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.

FY 2005: **R** Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the FEMP/DEMP Program FY 2004 end of year adjusted uncosted baseline (\$11,266K) until the target range is met.

FY 2004: **R** EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25 percent by reducing annual program uncosteds by 10 percent in 2004 relative to the program uncosted baseline (in 2003) until the target range is met.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003401.2005.html>

Program Office: <http://www.eere.energy.gov/>

FY 2007 Performance Measures

THEME 2 – NUCLEAR SECURITY

Office: National Nuclear Security Administration

Program: Office of the Administrator (2.0.25)

Strategic Goal(s) Supported: Goal 2.1 Nuclear Deterrent
Goal 2.2 Weapons of Mass Destruction
Goal 2.3 Nuclear Propulsion Plants

Average OMB PART Score

Measure: Cumulative average NNSA Program score on the OMB PART assessment indicating progress in budget performance integration and results (EFFICIENCY MEASURE) (2.0.25.01)

2007 Results

Commentary: **Y** This result is important because it indicates that NNSA has a set of challenging measures that are not routinely met, and that NNSA's program managers are thoroughly involved in budget performance integration and achieving results. The annual target of 85% was missed (FY 2007 result was 84.3%) because there was a decrease in the FY 2007 ASC Campaign score from the FY 2002 PART score (from 88% to 87%). This decrease was a result of the program manager choosing to change the performance metrics to improve management irrespective of the impact on the PART score. Even though the annual target was missed, the impact to NNSA is positive because the new performance metrics will provide better tools to manage the ASC Campaign.

Future Plans / Explanation of Shortfalls: Action Plan: NNSA has changed the measure in FY 2008 from an average cumulative measure to an average annual measure because evaluating the average of annual PART scores is more meaningful than using cumulative historical scores, which tends to dilute the current trend.

Future Plans: The annual target will remain the same, but the measure will be calculated to reflect an annual target, instead of a cumulative target.

Supporting Documentation: OMB-reported results on PARTWeb.

Associated Performance in Prior Years

FY 2006: **G** Achieve a cumulative average NNSA Program score of 80 percent on the OMB PART assessment indicating progress in budget performance integration and results (NA GG 1/2.50.02)
FY 2005: **G** Achieve an average NNSA Program score of 75 percent (cumulative) on the OMB Program Assessment Rating Tool (PART) (NA GG 1/2.50.03)
FY 2004: **G** Average NNSA program score on the OMB PART assessment indicating progress in budget performance integration and results.

Additional Information

PART: N/A

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Directed Stockpile Work (2.1.26)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Annual certification of warheads in the Stockpile

Measure: Annual percentage of warheads in the Stockpile that are safe, secure, reliable, and available to the President for deployment (Annual Outcome) (2.1.26.01)

2007 Results

Commentary: **G** This result is important because it ensures the overall availability of the nuclear weapons stockpile for the national nuclear deterrent. The annual target was 100% (FY 2007 result was 100%).

Future Plans /
Explanation of
Shortfalls: Future Plan: The annual target will remain constant at 100% in FY 2008 in support of the requirement that the warheads in the Stockpile are safe, secure, reliable, and available to the President for deployment. Directed Stockpile Work (DSW) will continue to document the condition of bombs/warheads and overall stockpile status and continue to report on the status until completion.

Supporting
Documentation: 1. 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)
2. Weapon Reliability Reports (Biannually)
3. Significant Finding Investigation Reports (Quarterly)
4. Weapon Yield Certification Letter
5. End-of-Year Reconciliation Report

Associated Performance in Prior Years

FY 2006: **G** Assure 100 percent of warheads in the stockpile are safe, secure, reliable, and available to the President for deployment (NA GG 1.27.01)
FY 2005: **G** Assure that 100 percent of warheads in the Stockpile are safe, secure, reliable, and available to the President for deployment (NA GG 1.27.08)
FY 2004: **G** Complete 100% of required Annual Stockpile Certification and Surety assessments and reports..(NA GG 1.27.01)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002126.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Directed Stockpile Work (2.1.26)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Stockpile Maintenance

Measure: Annual percentage of items supporting Enduring Stockpile Maintenance completed (Annual percentage of prior-year non-completed items completed) (Annual Output) (2.1.26.2)

2007 Results

Commentary: **G** This result is important because it keeps active nuclear weapons fully operational, if needed by the President. The annual target was 95% (100%) (FY 2007 result was 95% (100%).

Future Plans /
Explanation of
Shortfalls: The annual target will remain constant at 95% (100%) in FY 2008 in support of Enduring Stockpile Maintenance. DSW will continue to monitor and fully maintain operational nuclear weapons stockpile and continue to report status until completion.

Supporting
Documentation:

1. End-of-Year Reconciliation Report
2. Limited Liability Component Exchange, including DoD shipping schedules/database
3. Program Control Document
4. Quarterly Surveillance Backlog Report (From NA-122)
5. Integrated Weapons Activity Plan, Rev. J
6. Nuclear Safety Research & Development Working Group Report

Associated Performance in Prior Years

FY 2006: **Y** Complete 95 percent of items supporting Enduring Stockpile Maintenance (complete 100 percent of prior-year non-completed items) (NA GG 1.27.03)

FY 2005: **R** Complete 95 percent of items supporting Enduring Stockpile Maintenance (annual percentage of prior-year non-completed items completed) (NA GG 1.27.02)

FY 2004: **Y** Complete 95% of all PCD-scheduled activity; finish 100% of all prior year non-completed scheduled evaluations (NA GG 1.27.06)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002126.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Directed Stockpile Work (2.1.26)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

W76-1 Life Extension Program (LEP)

Measure: Cumulative percentage of progress in completing Nuclear Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activity (Long-term Output) (2.1.26.03)

2007 Results

Commentary:

R

This result is important because extending the life of the W76-1, the weapon system for Navy submarines, is on a highly success-oriented refurbishment schedule to meet DoD requirements and national security needs. The cumulative target of 39% was missed (FY 2007 result was 37.9%) mainly because of a schedule shortfall, associated with Canned Sub-Assembly (CSA) special material production problems at Y-12. Because this target was missed, the NWC milestone for the First Production Unit (FPU) by September 2007 was not met.

Future Plans /
Explanation of
Shortfalls:

NNSA has directed four immediate actions: (1) continue efforts to resolve material issue at Y-12; (2) pursue an alternate material design as a parallel activity; (3) sustain minimum component production to avoid re-start and re-qualification; and (4) preserve the authorization basis for assembly and disassembly operations at Pantex. Actions No. 1 and 2 will be resolved with a down select of the CSA material in March 2008. Items No. 3 and 4 have been achieved with the W76-1 first prototype build completed at Pantex on September 26, 2007. DSW will re-baseline the schedule following the decision regarding the material issue at Y-12 and continue to report status until completion. The cumulative target will be increased to 44% in FY 2008 to support the completion of the NWC approved W76-1 LEP activity by FY 2020.

Supporting
Documentation:

1. W76-1 LEP Project Execution Plan (revised under Enhanced Management Guidelines)
2. Planning and Production Document
3. W76-1 Program Control Documents
4. W76-1 LEP Full-Scale Engineering Development Schedule
5. W76-1 LEP Selected Acquisition Report (SAR)
6. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

| | | |
|----------|----------|--|
| FY 2006: | G | Complete 34 percent (cumulative) of the Nuclear Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activity (NA GG 1.27.04) |
| FY 2005: | G | Complete 29 percent progress (cumulative) for Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activities (NA GG 1.27.04) |
| FY 2004: | Y | Complete 75% of W76-1 Phase 6.3 (FY03 – 50%); complete 10% of Phase 6.4 (FY03 – 0%) (NA GG 1.27.03) |

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002126.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Directed Stockpile Work (2.1.26)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

B61-7/11 LEP

Measure: Cumulative percentage of progress in completing NWC-approved B61-7/11 LEP activity (Long-term Output) (2.1.26.04)

2007 Results

Commentary: **G** This result is important because, by extending the life of the B61-7/11 for the U.S. Air Force, the NNSA has demonstrated its ability to meet DoD requirements and national security needs on schedule. The cumulative target was 70% (FY 2007 result was 70%).

Future Plans /
Explanation of
Shortfalls: The cumulative target will be increased to 90% in FY 2008 to support the completion of the NWC-approved B61-7/11 LEP activity by FY 2009. DSW will continue the production cycle as planned, and continue to report the status until completion.

Supporting
Documentation:

1. B61 7/11 ALT 357 CSA LEP NNSA Program Plan (revised under Enhanced Management Guidelines)
2. Planning and Production Document
3. B61 7/11 Program Control Documents
4. B61 7/11 LEP Integrated Master Schedule
5. B61 7/11 LEP Selected Acquisition Report (SAR)
6. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **Y** Complete 40 percent (cumulative) of the Nuclear Weapons Council (NWC) B61-7/11 Life Extension Program (LEP) activity (NA GG 1.27.06)

FY 2005: **Y** Complete 30 percent of progress (cumulative) in completing NWC-approved B61-7/11 Life Extension Program (LEP) activity (NA GG 1.27.03)

FY 2004: **G** Receive B61-7/11 Phase 6.4 authorization and complete 30% of Phase 6 (NA GG 1.27.02)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002126.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Directed Stockpile Work (2.1.26)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

W76 warhead production costs

Measure: 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 MEASURE) (2.1.26.05)

2007 Results

Commentary: **R** This result is important because NNSA must demonstrate an increasingly cost-effective life extension program within the nuclear weapons program. The cumulative target of .5% was missed (FY 2007 result was .39%) because current and projected cost increases in FY 2007 & FY 2008 result from a special material technical issue; this cost increase may be offset by efficiencies elsewhere in the program, but the efficiencies have not been demonstrated at this time. Because this cumulative target was missed, production costs will be higher, unless mitigated.

Future Plans /
Explanation of
Shortfalls: NNSA has requested budget revisions for the current and planning years from the sites impacted by the technical issue. If the technical issue is resolved with the current material, the cost anomaly may be reduced through plant yield efficiencies and implementing recommendations from the Cost Review Report. If the alternate material is used, the initial cost increase in design certification and qualification may be offset by the lower production cost of the alternate material. The cumulative target will be increased to 1.0% in FY 2008 to support the W76 Cost Control Board objective of reducing by 2% the W76-1 warhead production costs per warhead from the established validated baseline by FY 2010. The cost efficiency measure will be retained and reported on throughout the W76-1 LEP program, until completion; however, NNSA will re-baseline the cost and schedule based on the resolution of the special material technical issue. The NNSA baseline will be revised to retain key cost data to allow the cost efficiency measure to be compared to prior year efficiency calculations.

Supporting
Documentation: 1. W76-1 LEP Project Execution Plan (revised under Enhanced Management Guidelines)
2. W76-1 LEP Cost Control Board Reports
3. W76-1 LEP Selected Acquisition Report (SAR)

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002126.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Science Campaign (2.1.27)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Quantification of Margins and Uncertainties (QMU)

Measure: Cumulative percentage of progress in development of the Quantification of Margins and Uncertainties (QMU) methodology to provide quantitative measures of confidence in the performance, safety, and reliability of the United States (U.S.) nuclear weapons stockpile (Long-term Outcome) (2.1.27.01)

2007 Results

Commentary: **G** This result is important because it enables the continued certification of weapons without underground nuclear testing. The cumulative target was 55% (FY 2007 result was 55%).

Future Plans /
Explanation of
Shortfalls: The cumulative target will be increased to 70% in FY 2008 in order to complete development of QMU methodology to apply quantitative measures of confidence in the performance, safety, and reliability of the nuclear weapons stockpile by FY 2010. The Science Campaign will continue to keep on track towards the completion of the QMU methodology.

Supporting
Documentation: 1. Milestones supporting the performance measure are documented in the Campaign's plans. A classified plan is in development: the Predictive Capability Framework (PCF). The outcome of these plans is documented in the annual assessment of the state of the nuclear weapons stockpile provided by the directors of the NNSA laboratories.
2. FY 2005 Underground Testing (UGT) Readiness Assessment (BN-LN005-0039)
3. FY 2007 National Academy of Science Review (Ongoing)
4. JASON Report, October 2006
5. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Develop 40 percent (cumulative) of the Quantification of Margins and Uncertainties (QMU) methodology to provide quantitative measures of confidence in the performance, safety, and reliability of the U.S. nuclear weapons stockpile (NA GG 1.28.01)

FY 2005: **G** Complete 25 percent of progress (cumulative) along the Primary Predictive Capability Roadmap for development and implementation of the new Quantification of Margins and Uncertainties (QMU) certification and assessment methodology (NA GG 1.28.01)

FY 2004: **G** Complete development of Quantitative Margins and Uncertainties (QMU) logic for the W76, incorporate logic in advanced simulation, and conduct peer review (NA GG 2.28.01)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003405.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Science Campaign (2.1.27)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Dual-Axis Radiographic Hydrotest Facility (DARHT)
Measure: Cumulative percentage of progress towards completing the Dual-Axis Radiographic Hydrotest Facility (DARHT) to provide data required to certify the safety and reliability of the U.S. nuclear weapons stockpile (Long-term Outcome) (2.1.27.02)

2007 Results

Commentary: **G** This result is important because it enables the continued certification of weapons without underground nuclear testing. The cumulative annual target was 80% (FY 2007 result was 95%).

Future Plans /
Explanation of
Shortfalls: The cumulative target will be increased to 100% in order to complete the DARHT facility to provide data required to certify the safety and reliability of the US nuclear weapons stockpile by FY10. The Science Campaign will continue completing the project; reporting until completion.

Supporting
Documentation:

1. Project schedule and major decision points—documented in Project Plan
2. JASON Report, October 2006
3. On-site observation of the completed work (by Program Manager (on 031507)
4. Monthly and quarterly progress reports and reviews
5. Project Assessment and Reporting System (PARS) database/status
6. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Complete 60 percent (cumulative) of the Dual-Axis Radiographic Hydrotest (DARHT) facility to provide data required to certify the safety and reliability of the U.S. nuclear weapons stockpile (NA GG 1.28.02)

FY 2005: **G** Complete 25 percent of progress (cumulative) towards conducting the first 2-axis hydrodynamics test/hydro shot on the Dual-Axis Radiographic Hydrotest Facility (DARHT) to support assessment of nuclear performance required by the National Hydrodynamics Plan (NA GG 1.28.02)

FY 2004: **Y** Complete 100% of the external technical review of required work on the Dual-Axis Radiographic Hydrotest (DARHT) facility and plans for completion of DARHT Second Axis (NA GG 2.28.02)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003405.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Science Campaign (2.1.27)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Test Readiness

Measure: Readiness, measured in months, to conduct an underground nuclear test as established by current NNSA policy (Long-term Outcome) (2.1.27.03)

2007 Results

Commentary: **G** This result is important because it means that the United States has maintained a credible capability to test nuclear weapons, if required by the President. The annual target was 24 months (FY 2007 result was 24 months).

Future Plans /
Explanation of
Shortfalls: The annual target will be increased. Going into FY 2008 with a \$0 budget, the program is forced to accept a 24-36 month posture. The NNSA will leverage Science Campaign efforts to ensure that the 24-36 month posture is maintained, at a minimum, and reported.

Supporting
Documentation: 1. Milestones to support the performance measure are documented in the Campaign's plans
2. FY 2005 UGT Readiness Assessment (BN-LN005-0039) & FY 2006 UGT Readiness Assessment
3. Annual Test Scenarios and Capabilities Report (SRD)
4. Annual Test Readiness Completion Report
5. Monthly and Quarterly progress reports/reviews
6. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Maintain a 24 month readiness to conduct an underground nuclear test as established by current NNSA policy (NA GG 1.28.03)

FY 2005: **G** Achieve 24 month readiness to conduct an underground nuclear test as established by National Security policy (NA GG 1.28.03)

FY 2004: **G** Complete the Master Study for the Device Assembly Facility and implement the Technical Safety Requirements (NA GG 2.28.02)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003405.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Science Campaign (2.1.27)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Hydrodynamic Testing

Measure: Annual percentage of hydrodynamic tests completed in accordance with the National Hydrodynamics Plan, to support the assessment of nuclear performance (Annual Output) (2.1.27.04)

2007 Results

Commentary: **G** This result is important because these experiments are critical to W76-1 Life Extension Program and W88 certifications. The annual target was 75% (FY 2007 result was 75%).

Future Plans /
Explanation of
Shortfalls: The annual target will remain constant at completing 75% of all scheduled hydrodynamic tests in accordance with the National Hydrodynamics Plan. The Science Campaign will continue to keep on track to fully achieve the annual target of hydrodynamic tests and report to completion.

Supporting
Documentation: 1. This measure is documented in the National Hydrotest Plan; milestones to support the performance measure are documented in the Campaign's plans
2. Site report of individual hydrotest conducted
3. Radiographs and videotapes of the hydrotest tests conducted
4. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Complete 75 percent of the hydrodynamic tests in accordance with the National Hydrodynamics Plan, to support the assessment of nuclear performance (NA GG 1.28.04)

FY 2005: **G** Complete 75 percent of annual hydrodynamic tests completed in accordance with the National Hydrodynamics Plan, to support the assessment of nuclear performance (NA GG 1.28.04)

FY 2004: **R** Execute the planned hydrodynamic experiments on DARHT and Container Firing Facility (CFF)/Flash X-Ray (FXR) at Los Alamos and Lawrence Livermore National Laboratories (NA GG 1.28.04)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003405.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Science Campaign (2.1.27)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Stockpile Stewardship Science
Measure: Cumulative percentage of progress towards creating and measuring extreme temperature and pressure conditions for the 2013 stockpile stewardship requirement (Long-term Outcome) (2.1.27.05)

2007 Results

Commentary: **G** This result is important because it will improve nuclear weapon certification confidence. The cumulative target was 70% (FY 2007 result was 70%).

Future Plans / Explanation of Shortfalls: Future Plans: The cumulative target will increase to 75% in FY 2008. The Science Campaign will continue progress towards creating and measuring extreme temperature and pressure conditions and reporting until completion.

Supporting Documentation: 1. Progress reports provided by LLNL, Rochester (Omega), and Z (Sandia).
2. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Complete 70 percent (cumulative) towards creating and measuring extreme temperature and pressure conditions for the 2013 stockpile stewardship requirement (NA GG 1.28.05)

FY 2005: **G** Complete 68 percent of progress (cumulative) toward creating and measuring extreme conditions for the FY 2010 stockpile stewardship requirement (NA GG 1.30.01)

FY 2004: **Y** Cumulative percentage of progress towards creating and measuring extreme temperature and pressure conditions for the 2010 nuclear stockpile stewardship requirements (NA GG 1.30.01)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003405.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Science Campaign (2.1.27)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Joint Actinide Shock Physics Experimental Research (JASPER)

Measure: Annual average cost per test, expressed in terms of thousands of dollars, of obtaining plutonium experimental data on the Joint Actinide Shock Physics Experimental Research (JASPER) facility to support primary certification models (EFFICIENCY MEASURE) (2.1.27.06)

2007 Results

Commentary: **G** This result is important because it demonstrates program efficiencies without drop in JASPER testing capabilities. The annual target was \$360K (FY 2007 result was \$360K).

Future Plans /
Explanation of
Shortfalls: The annual target will be decreased to \$340K in support of reducing the annual average cost of obtaining plutonium experimental data on JASPER by FY 2008. However, due to recategorization of the facility, the annual average cost is expected to increase; status will be reported until completion.

Supporting
Documentation: 1. Reports for the measure are provided by LLNL at the end of each Quarter. Data submitted is verified with LLNL POC by program staff
2. Log books supporting each test are available at LLNL for review by program manager/staff
3. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Achieve a \$380 thousand average annual cost per test of obtaining plutonium experimental data on the Joint Actinide Shock Physics Experimental Research (JASPER) facility to support primary certification models. (NA GG 1.28.06)

FY 2005: **G** Achieve 95 percent of baseline for obtaining plutonium experimental data on the Joint Actinide Shock Physics Experimental Research (JASPER) facility. (NA GG 1.28.05)

FY 2004: **G** Establish the baseline cost for JASPER experiments (NA GG 1.28.05)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003405.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Engineering Campaign (2.1.28)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Measure: **Microsystems and Engineering Sciences Applications (MESA)**
Cumulative percentage of the Microsystems and Engineering Sciences Applications (MESA) facility project completed (total project cost), while maintaining a Cost Performance Index of 0.9-1 (EFFICIENCY MEASURE) (2.1.28.01)

2007 Results

Commentary: **G** This result is important because it provides a key facility to support the campaign in an efficient manner, completed ahead of schedule. The cumulative target was 75% (FY 2007 result was 95%).

Future Plans /
Explanation of
Shortfalls: The cumulative target will be increased to 100% completion of the major facilities of the MESA project while maintaining a CPI of 0.9-1.5. The Engineering Campaign will continue reporting until target completion.

Supporting
Documentation:

1. Project schedule and major decision points – documented in Project Plan
2. On-site observation of the completed work by Federal Project Director/Staff
3. Monthly and quarterly progress reports and reviews
4. DOE PARS database/project status
5. NA-10 Milestone reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Complete 65 percent (cumulative) of the Microsystems and Engineering Sciences Applications (MESA) facility project completed (total project cost), while maintaining a Cost Performance Index of 0.9-1.15. (NA GG 1.29.01)

FY 2005: **G** Complete 50 percent (cumulative) of the Microsystems and Engineering Sciences Applications (MESA) facility project, while maintaining a Cost Performance Index of 0.9-1.15. (NA GG 1.29.01)

FY 2004: **G** Complete 35 percent (cumulative) of the Microsystems and Engineering Sciences Applications (MESA) facility project, while maintaining a Cost Performance Index of 0.9-1.15 (NA GG 1.29.01)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003236.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Engineering Campaign (2.1.28)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Improved Initiation System

Measure: Cumulative percentage of progress towards an improved initiation system to meet detonation safety requirements for the Reliable Replacement Warhead (RRW) and any future alterations or modifications to stockpiled weapons, measured by the number of milestones, in the implementation plan, completed (Long-term Output) (2.1.28.02)

2007 Results

Commentary: **G** This result is important because new components and materials will enable future systems to better satisfy surety requirements outlined in departmental directives, and provide for a safer and more secure stockpile. The cumulative target was 70% (FY 2007 result was 70%).

Future Plans /
Explanation of
Shortfalls: The cumulative target will be increased to 75% in FY 2008 to support the long-term target of a next-generation initiation system to meet nuclear detonation safety requirements by 2012.

Supporting
Documentation:

1. Supporting schedule and milestones in approved program plans
2. Program reports of specific accomplishment
3. Program-specific quarterly review briefings
4. Weighted statistical tool used to calculate overall milestone scope accomplishment
5. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **G** Achieve cumulative 70 percent of progress towards developing all improved surety improvements for the Life Extension Programs (LEPs) having Phase 6.3 beginning in 2010 or later, as documented in the Engineering Campaign Program Plan (Long-term Output) (NA GG 1.29.02)

FY 2005: **G** Achieve cumulative 60 percent of progress towards developing all improved surety improvements for the Life Extension Programs (LEPs) having Phase 6.3 beginning in 2010 or later, as documented in the Engineering Campaign Program Plan (Long-term Output) (NA GG 1.29.02)

FY 2004: **G** Achieve 50 percent of progress towards developing all improved surety improvements for the Life Extension Programs (LEPs) having Phase 6.3 beginning in 2010 or later, as documented in the Engineering Campaign Program Plan (Long-term Output) (NA GG 1.29.02)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003236.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Engineering Campaign (2.1.28)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Science-Based Lifetime Predictions

Measure: 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) (2.1.28.03)

2007 Results

Commentary: **G** 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. The cumulative target was 40% (FY 2007 result was 40%).

Future Plans /
Explanation of
Shortfalls: The cumulative target will be increased to 47% in FY 2008 in support of completing the long-term goals for the current phase of Enhanced Surveillance by FY 2017.

Supporting
Documentation:
1. Supporting schedule and milestones in approved program plans
2. Program reports of specific accomplishment
3. Program-specific quarterly review briefings
4. Weighted statistical tool used to calculate overall milestone scope accomplishment
5. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **G** Achieve cumulative 32 percent of delivery of lifetime assessments, predictive aging models, and surveillance diagnostics, as documented in the Engineering Campaign Program Plan (Long-term Output) (NA GG 1.29.02)

FY 2005: **G** Achieve cumulative 24 percent of delivery of lifetime assessments, predictive aging models, and surveillance diagnostics, as documented in the Engineering Campaign Program Plan (Long-term Output) (NA GG 1.29.02)

FY 2004: **G** Achieve cumulative 14 percent of delivery of lifetime assessments, predictive aging models, and surveillance diagnostics, as documented in the Engineering Campaign Program Plan (Long-term Output) (NA GG 1.29.02)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003236.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Engineering Campaign (2.1.28)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

System Engineering Methodology

Measure: 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) (2.1.28.04)

2007 Results

Commentary: **G** 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. The cumulative target was 45% (FY 2007 result was 45%).

Future Plans /
Explanation of
Shortfalls: The cumulative target will be increased to 53% in FY 2008 in support of the long-term target of the development of system engineering methodology for assessing and predicting the effects of large thermal, mechanical, and combined forces on nuclear weapons by FY 2012.

Supporting
Documentation:

1. Supporting schedule and milestones in approved program plans
2. Program reports of specific accomplishment
3. Program-specific quarterly review briefings
4. Weighted statistical tool used to calculate overall milestone scope accomplishment
5. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **G** Achieve cumulative 37 percent of completed data sets used in developing tools and technologies to validate structural and thermal models with well-defined ranges of applicability and qualified uncertainties in accordance with the Engineering Campaign Program Plan.

FY 2005: **R** Achieve cumulative 55 percent of completed data sets used in developing tools and technologies to validate structural and thermal models with well-defined ranges of applicability and qualified uncertainties in accordance with the Engineering Campaign Program Plan.

FY 2004: **R** Achieve cumulative 27 percent of completed data sets used in developing tools and technologies to validate structural and thermal models with well-defined ranges of applicability and qualified uncertainties in accordance with the Engineering Campaign Program Plan.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003236.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Engineering Campaign (2.1.28)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Design and Qualification Tools

Measure: 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) (2.1.28.05)

2007 Results

Commentary: **G** This result is important because the improved tools for the survivability of weapons in the future stockpile will meet nuclear survivability requirements for non-nuclear components in life extension programs and new insertion opportunities including weapon alterations and modifications. These tools will aid in the development, validation, improvement, and sustainment of experimental and theoretical capabilities resulting in the development of radiation-hardening technologies to support the certification and effectiveness of the evolving and aging stockpile. The cumulative target was 40% (FY 2007 result was 40%).

Future Plans /
Explanation of
Shortfalls: The cumulative target will be increased to 48% in FY 2008 in support of the long-term target of replacement of relevant design and assessment technologies for weapon components to allow new or existing weapons to meet requirements for survivability in intense radiation environments by FY 2014.

Supporting
Documentation:

1. Supporting schedule and milestones in approved program plans
2. Program reports of specific accomplishment
3. Program-specific quarterly review briefings
4. Weighted statistical tool used to calculate overall milestone scope accomplishment
5. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

| | | |
|----------|----------|--|
| FY 2006: | G | Achieve cumulative 27 percent of progress towards meeting goals identified in the Nuclear Survivability Annex of the Engineering Campaign Program Plan and effectiveness tools and technologies (Long-term Output) (NA GG 1.29.05) |
| FY 2005: | G | Achieve cumulative 24 percent of progress towards meeting goals identified in the Nuclear Survivability Annex of the Engineering Campaign Program Plan and effectiveness tools and technologies (Long-term Output) (NA GG 1.29.05) |
| FY 2004: | G | Achieve cumulative 20 percent of progress towards meeting goals identified in the Nuclear Survivability Annex of the Engineering Campaign Program Plan and effectiveness tools and technologies (Long-term Output) (NA GG 1.29.05) |

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003236.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign (2.1.29)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Measure: **National Ignition Facility (NIF)**
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) (2.1.29.01)

2007 Results

Commentary: **G** This result is important because demonstrating ignition will increase confidence in the ability to certify weapons performance through computational models without weapon testing. The cumulative target was 80% (FY 2007 result was 80%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 86% in FY 2008 in support of the goal of completing the first attempt to demonstrate ignition at the NIF by the end of FY 2010.

Supporting
Documentation:

1. Program and Project schedule and milestones are detailed in Program & Project plans
2. Program & Project monthly reports
3. DOE PARS database/status
4. JASON Review, 2006
5. On-site observation of the ongoing work by the HQ Program Manager/staff
6. Lehman Reviews, 2005 & 2006
7. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **Y** Complete cumulative 73 percent towards demonstrating ignition (simulating fusion conditions in a nuclear explosion) at the National Ignition Facility (NIF) to increase confidence in modeling weapons performance (NA GG 1.30.01)

FY 2005: **Y** Complete cumulative 67 percent of progress towards demonstrating ignition (simulating fusion conditions in a nuclear explosion) at the National Ignition Facility (NIF) (NA GG 1.30.02)

FY 2004: **Y** Cumulative cumulative 63 percent of progress towards demonstrating ignition (simulating fusion condition in a nuclear explosion) at the National Ignition Facility (NIF) to increase confidence in modeling weapons performance (NA GG 1.30.01).

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001046.2003.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign (2.1.29)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

National Ignition Facility (NIF)

Measure: Cumulative percentage of construction completed on the 192-laser beam NIF (Long-term Output) (2.1.29.02)

2007 Results

Commentary: **G** This result is important because it measures progress towards the construction of the NIF that is required to demonstrate ignition. The cumulative target was 94% (FY 2007 result was 94%).

Future Plans / Explanation of Shortfalls: Future Plans: The cumulative target will be increased to 98% in FY 2008 in support of the goal of completing construction on the NIF in FY 2009. The annual target was 94% (FY 2007 result was 94%).

Supporting Documentation:

1. Project schedule and milestones are detailed in Project Plan
2. Project monthly reports
3. DOE PARS database/status
4. On-site observation of the ongoing work by the HQ Program Manager/staff
5. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Complete cumulative 87 percent of the construction of the 192-laser beam National Ignition Facility (NIF) (NA GG 1.30.02)

FY 2005: **G** Complete cumulative 81 percent of construction on the 192-laser beam National Ignition Facility (NIF) (NA GG 1.30.02)

FY 2004: **G** Complete cumulative 74 percent of construction completed on the 192-laser beam NIF (NA GG 1.30.03)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001046.2003.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign (2.1.29)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Ignition Experiments at National Ignition Facility (NIF)

Measure: Cumulative percentage of equipment fabricated to support ignition experiments at NIF (Long-term Output) (2.1.29.03)

2007 Results

Commentary: **G** 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. The cumulative target was 63% (FY 2007 result was 63%).

Future Plans /
Explanation of
Shortfalls: The cumulative target will be increased to 82% in FY 2008 in support of the goal of conducting the first credible ignition experiments at the NIF by the end of FY 2010.

Supporting
Documentation:

1. Program schedule and supporting milestones are in program plans
2. Monthly National Ignition Campaign (NIC)/program reports
3. Lehman Reviews, 2005 & 2006
4. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

| | | |
|----------|----------|---|
| FY 2006: | G | Complete cumulative 45 percent of the equipment fabrication to support ignition experiments at National Ignition Facility (NIF) (NA GG 1.30.03) |
| FY 2005: | Y | Complete cumulative 26 percent of equipment fabrication to support ignition experiments at National Ignition Facility (NIF) (NA GG 1.30.04) |
| FY 2004: | R | Complete cumulative 16 percent of equipment fabricated to support ignition experiments at NIF (NA GG 1.30. |

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001046.2003.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign (2.1.29)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Stockpile Stewardship Experiments at ICF Facilities

Measure: Annual number of days available to conduct stockpile stewardship experiments, totaled for all ICF facilities (Annual Output) (2.1.29.04)

2007 Results

Commentary: **G** This result is important because the NNSA Science, ASC, and Engineering Campaigns use these ICF facilities for experiments to obtain required stockpile stewardship data. The annual target was 270 (FY 2007 result was 403).

Future Plans /
Explanation of
Shortfalls: The annual target will be decreased to 240 days in FY 2008 to reflect that shots on the Nike laser system at the Naval Research Laboratory will no longer be funded by the ICF Campaign.

Supporting
Documentation:

1. Program schedule and supporting milestones are in program plans
2. e-mail reports from site facilities supported by experimental logs
3. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Provide 400 days to conduct stockpile stewardship experiments, totaled for all Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign facilities (NA GG 1.30.04)

FY 2005: **G** Provide 500 days to conduct stockpile stewardship experiments (totaled for all Inertial Confinement Fusion facilities) (NA GG 1.30.05)

FY 2004: **G** Provide 500 days to conduct stockpile stewardship experiments (totaled for all Inertial Confinement Fusion facilities) (NA GG 1.30.05)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001046.2003.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign (2.1.29)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Z Facility Experiments

Measure: Annual average hours per experiment required by the operational crew to prepare the Z facility for an experiment (EFFICIENCY MEASURE). (2.1.29.5)

2007 Results

Commentary: **R** This result is important because a reduction in Z experimental preparation time may allow 2 shots per day, making it possible to obtain required additional and/or earlier data at reduced cost. The annual target of 11 was missed (FY 2007 result was 0) because the Z facility was not operational in FY07 due to refurbishment (was originally scheduled to be operational in 4th Quarter, FY 2007). Although this target was missed, there is no impact to the program.

Future Plans /
Explanation of
Shortfalls: Z became operational in October 2007, allowing shots to be resumed, so that the necessary data to determine average hours between shots can now be collected. The facility will be expected to achieve the annual target in FY 2008. The annual target will remain constant at an average 11 hours to prepare Z for an experiment, because it will allow sufficient time for 2 shots per day if required.

Supporting
Documentation: 1. Program schedule and supporting milestones are in program plans
2. e-mail reports from site facilities supported by experimental logs
3. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Achieve an average of 11 hours per experiment required by the operational crew to prepare the Z-facility for an experiment (NA GG 1.30.05)

FY 2005: **Y** Achieve an average of 9 hours per experiment required by the operational crew to prepare the Z facility for an experiment (NA GG 1.30.06)

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001046.2003.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Inertial Confinement Fusion Ignition and High Yield Campaign (2.1.30)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Measure: **Improved Models and Methods** Peer-reviewed progress in completing milestones, according to a schedule in the Advanced Simulation and Computing Campaign Program Plan, in the development and implementation of improved models and methods into integrated weapon codes and deployment to their users (Long-term Output) (2.1.30.01)

2007 Results

Commentary: **G** This result is important because it continued the maturing of the modern codes provided to users to support stockpile certification. The annual target was to achieve the integrated weapon code target of the W76 code baseline (FY 2007 result was W76 code baseline completed).

Future Plans /
Explanation of
Shortfalls: Future Plans: The integrated weapon code target will be deleted in FY 2008 because the ASC Campaign will transition to a new set of performance indicators that will replace this measure (consistent with the FY 2007 OMB PART evaluation).

Supporting
Documentation: 1., Periodic reports to HQ Program Manager from responsible site concerning specific deliverables
2. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **G** Completion and peer review of the initial baseline secondary code, a milestone in the Advanced Simulation and Computing Campaign Program Plan, for the development and implementation of improved models and methods into integrated weapon codes and deployment to their users (NA GG 1.31.01)

FY 2005: **G** Develop the initial baseline Primary Code for measuring peer-reviewed progress in completing milestones in the development and implementation of improved models and methods into integrated weapon codes and deployment to their users (NA GG 1.31.01)

FY 2004: **G** Peer-reviewed progress, according to schedule in the Advanced Simulation and Computing Campaign Program Plan, toward a validated full-system, high-fidelity simulation capability. Annual Target: Achieve high-fidelity primary simulation and Stockpile to Target Sequence (STS) abnormal environments (NA GG 1.31.01)

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000076.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Advanced Simulation and Computing Campaign (2.1.30)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Computer Codes Assessments and Certifications

Measure: Cumulative percentage of the 31 weapon system components, primary/secondary/ engineering system, analyzed using ASC codes, as part of annual assessments and certifications (Long-term Output) (2.1.30.02)

2007 Results

Commentary: **G** This result is important because it furthers the adoption of the modern codes for improved assessment and certification of the nuclear stockpile. The cumulative annual target was 67% (FY 2007 result was 67%).

Future Plans / Explanation of Shortfalls: Future Plans: The cumulative ASC code utilization target will be deleted in FY 2008 because the ASC Campaign will transition to a new set of performance indicators that will replace this measure (consistent with the FY 2007 OMB PART evaluation).

Supporting Documentation: 1. Laboratory Reports to HQ Program Manager
2. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **G** Analyze 51 percent (cumulative) percentage of the 31 weapon system components, primary/secondary/ engineering system using Advanced Simulation and Computing (ASC) codes, as part of annual assessments and certifications (NA GG 1.31.02)

FY 2005: **G** Analyze 38 percent (cumulative) of the 31 weapon system components (primary/secondary/engineering system) using Advanced Simulation and Computing codes, as part of annual assessments and certifications (NA GG 1.31.02)

FY 2004: **G** Analyze 10 of the 31 weapon system components, primary/secondary/engineering system, using ASCI codes, as part of annual assessments and certifications (NA GG 1.31.02)

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000076.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Advanced Simulation and Computing Campaign (2.1.30)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Computing Capability

Measure: Annual maximum individual platform computing capability delivered, measured in trillions of operations per second (teraflops) (Annual Output) (2.1.30.03)

2007 Results

Commentary: **G** This result is important because it maintains the expansion of the computing capability required to better support weapons complex users in accordance with the ASC 10-year vision. The annual target was 100 teraflops (FY 2007 result was 100 teraflops).

Future Plans / Explanation of Shortfalls: Future Plans: The maximum computing capability target will be deleted in FY 2008 because the ASC Campaign will transition to a new set of performance indicators that will replace this measure (consistent with the FY 2007 OMB PART evaluation).

Supporting Documentation: 1. Laboratory reports to HQ Program Manager
2. Press releases

Associated Performance in Prior Years

| | | |
|----------|----------|--|
| FY 2006: | Y | Deliver a 100 trillion floating point operations per second (teraflops) maximum individual platform computing capability (NA GG 1.31.03) |
| FY 2005: | Y | Attain maximum individual platform capacity of 100 TeraOPS (with 50 TB memory & 1 PetaByte (PB) storage) (NA GG 1.31.03) |
| FY 2004: | R | Attain maximum individual platform computing capability of 40 TeraOPS delivered and 10 TeraBytes memory (NA GG 1.31.03) |

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000076.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Advanced Simulation and Computing Campaign (2.1.30)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Advanced Simulation and Computing (ASC) Production Platforms Attained

Measure: Cumulative capacity of ASC production platforms attained, measured in teraflops, taking into consideration procurements and retirements of systems (Long-term Output) (2.1.30.04)

2007 Results

Commentary: **G** This result is important because it better supports weapons complex users in accordance with the ASC 10-year vision. The cumulative target was 160 teraflops (FY 2007 result was 160 teraflops).

Future Plans / Explanation of Shortfalls: Future Plans: The cumulative capacity target will be deleted in FY 2008, because the ASC Campaign will transition to a new set of performance indicators that will replace this measure (consistent with the FY 2007 OMB PART evaluation).

Supporting Documentation: Laboratory reports to HQ Program Manager

Associated Performance in Prior Years

FY 2006: **G** Attain total platform capacity of 160 trillion floating point operations per second (teraflops), taking into consideration procurements and retirements of systems

FY 2005: **Y** Attain total production platform capacity of 172 TeraOPS (NA GG 1.31.04)

FY 2004: **G** Attain total capacity of 75 TeraOPS of ASCI production platforms, taking into consideration procurements and retirements of systems (NA GG 1.31.04)

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000076.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Advanced Simulation and Computing Campaign (2.1.30)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Computing Cost per Teraflops

Measure: Annual average cost per teraflops of delivering, operating, and managing all Stockpile Stewardship Program (SSP) production systems (EFFICIENCY MEASURE) (2.1.30.5)

2007 Results

Commentary: **G** This result is important because it is an indication that platform capability delivery and maintenance are becoming more efficient. The annual target was \$2.79M (FY 2007 result was \$2.79M).

Future Plans / Explanation of Shortfalls: Future Plans: The average cost per teraflop target will be deleted in n FY 2008, because the ASC Campaign will transition to a new set of performance indicators that will replace this measure (consistent with the FY 2007 OMB PART evaluation).

Supporting Documentation:

1. Appropriation-based Program Implementation Plan
2. Program budget execution worksheet
3. Platform summary worksheets from Laboratories
4. Efficiency indicator worksheet.

Associated Performance in Prior Years

FY 2006: **G** Achieve an average \$3.99 million per trillion floating point operations per second (teraflops) for delivering, operating, and managing all Stockpile Stewardship Program (SSP) production systems in a given fiscal year (NA GG 1.31.05)

FY 2005: **G** Attain average cost of \$5.70M per teraflops for delivering, operating, and managing all Stockpile Stewardship Program (SSP) production systems (NA GG 1.31.05)

FY 2004: **Y** Achieve an average cost of &8.15M per TeraOPS of delivering, operating and managing all Stockpile Stewardship Program production systems in a given fiscal year (NA GG 1.31.05)

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000076.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Pit Manufacturing and Certification Campaign (2.1.31)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Pit Manufacturing

Measure: Cumulative percentage of major milestones completed toward establishing a limited capability of manufacturing 10 sea launched ballistic missiles (W88) pits/year at Los Alamos National Laboratory (LANL) (Long-term Output) (2.1.31.01)

2007 Results

Commentary: **G** This result is important to restore a W88 pit manufacturing capability to support the U.S. nuclear weapons complex. The cumulative target was 100% (FY 2007 result was 100%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be deleted in FY08, since the goal of completing 100% of major milestones toward establishing a limited capability of manufacturing 10 SLBM pits was achieved in FY 2007. The program plans to complete further equipment installations supporting sustained manufacturing capacity in FY 2008.

Supporting
Documentation: 1. Determination of progress percentage computation from the Pit Manufacturing and Certification Campaign Implementation Plan and earned value management reporting
2. Site Reports on accomplishment of pit manufacturing schedule
3. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **G** Complete 60 percent of the major milestones toward establishing a limited capability of 10 W88 pits/year at Los Alamos National Laboratory (LANL) (NA GG 1.32.01)

FY 2005: **G** Complete 30 percent (cumulative) of major milestones toward establishing a limited capability of 10 W88 pits/year at Los Alamos National Laboratory (LANL) (NA GG 1.32.06)

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003237.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Pit Manufacturing and Certification Campaign (2.1.31)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Certified LANL W-88 Pits

Measure: Annual number of certified W-88 pits manufactured at LANL (certified means the pit is approved for use within the nuclear weapons stockpile based on quality assurance of the product and evaluation of performance through non-nuclear testing) (Annual Output) (2.1.31.02)

2007 Results

Commentary: **G** This result is important to support the pit surveillance requirements necessary for continued certification of the W88 warhead. The annual target was 10 pits (FY 2007 result was 10 pits).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will remain constant to manufacture 10 pits in FY 2008.

Supporting
Documentation:

1. Determination of progress percentage computation from the Pit Manufacturing and Certification Campaign Implementation Plan and earned value management reporting
2. Site Reports on accomplishment of pit manufacturing schedule
3. Site Visits by Program Staff
4. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003237.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Pit Manufacturing and Certification Campaign (2.1.31)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Pits Certification

Measure: Cumulative percentage of major milestones completed toward certification of the LANL-built pit (Long-term Output) (2.1.31.03)

2007 Results

Commentary: **G** This result is important to the ability to deploy W88 warheads with LANL-manufactured pits and to restore a certification capability in support of the nuclear weapons complex. The cumulative target was 100% (FY 2007 result was 100%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be deleted in FY2008, since the goal of completing 100% of major milestones toward certification of the LANL-built pit was achieved in FY2007. The program plans to complete further studies of Pu equation of state and further analysis of LANL manufactured pit to gain further confidence in the W88 warhead.

Supporting
Documentation: 1. Determination of progress percentage computation from the Pit Manufacturing and Certification Campaign Implementation Plan and earned value management reporting
2. Site Reports on accomplishment of pit manufacturing schedule
3. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **Y** Complete cumulative 70 percent of the major milestones, documented in the Pit Manufacturing and Certification Campaign Program Plan, completed toward W88 Pit Certification (Long-term Output) (NA GG 1.32.03)

FY 2005: **G** Complete cumulative 50 percent of the major milestones, documented in the Pit Manufacturing and Certification Campaign Program Plan, completed toward W88 Pit Certification (Long-term Output) (NA GG 1.32.03)

FY 2004: **R.** Complete cumulative 25 percent of major milestones, documented in the Pit Manufacturing and Certification Program Plan, on/ahead of schedule toward FY2007 W88 pit certification (Long-term Output) (NA GG 1.32.03)

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003237.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Pit Manufacturing and Certification Campaign (2.1.31)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Pit Manufacturing Capability

Measure: Cumulative percentage of major milestones completed toward restoration of the capability to manufacture all pit types in the enduring stockpile (Long-term Output) (2.1.31.04)

2007 Results

Commentary: **G** This result is important to restore a manufacturing capability for pit types other than the W-88 and at greater than 10 pits per year to support the long-term nuclear weapons stockpile. The cumulative target was 55% (FY 2007 result was 55%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 75 percent in FY2008 to achieve 100 percent of major milestones completed toward restoration of the capability to manufacture all pit types in the enduring stockpile by FY2009.

Supporting
Documentation:

Associated Performance in Prior Years

FY 2006: **G** Achieve cumulative 35% percent of major milestones, documented in the Pit Manufacturing and Certification Campaign Program Plan, toward restoration of manufacturing capability for all pit types in the enduring stockpile (NA GG 1.32.04)

FY 2005: **G** Achieve cumulative 20% percent of major milestones, documented in the Pit Manufacturing and Certification Campaign Program Plan, toward restoration of manufacturing capability for all pit types in the enduring stockpile (NA GG 1.32.04)

FY 2004: **G** Cumulative percentage of major milestones, documented in the Pit Manufacturing and Certification Program Plan, completed on/ahead of schedule toward restoration of capability to manufacture the pit types in the enduring stockpile in FY 2009 and manufacture initial Engineering Development Units (EDUs) in FY 2012 (NA GG 1.32.02)

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003237.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Readiness Campaign (2.1.32)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Critical Capabilities Deployed

Measure: 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) (2.1.32.01)

2007 Results

Commentary: **G** This result is important because it is required to support immediate and urgent nuclear weapon refurbishment needs. The cumulative target was 20 (FY 2007 result was 20).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 22 in FY 2008, and the cumulative number of deployed capabilities will continue to increase annually to achieve the goal of deploying 38 critical immediate and urgent capabilities to support DSW nuclear weapons refurbishment deliverables by FY 2017.

Supporting
Documentation:

1. Milestones supporting the performance measure are documented in the Campaign's plans
2. 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)
3. Weekly/monthly site status calls with the Federal Program Manager
4. Submittal of copies of Qualification Engineering Releases (QERs)
5. Federal Program Manager/staff confirm completion during site visits and Program Reviews by observation of the capability in use
6. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Deploy cumulative 15 critical capabilities to support our Directed Stockpile Work (DSW) customer's immediate and urgent nuclear weapon refurbishment needs derived from the Production Readiness Assessment Plan (NA GG 1.33.01)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003406.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Readiness Campaign (2.1.32)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Reduce Cycle Times

Measure: The number of capabilities deployed every other year to stockpile programs that will reduce cycle times at least by 35% (against baselined agility and efficiency) (Annual Outcome) (2.1.32.2)

2007 Results

Commentary: **G** This result is important because it is required to support immediate and urgent nuclear weapon refurbishment needs. The annual target was 1 (FY 2007 result was 1).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will remain constant at completing at least one new capability to a stockpile program every other year that reduces cycle time by at least 35%. Readiness Campaign will accomplish this by emphasizing complex-wide capability investments to optimize investment benefits in NWC design to manufacturing activities.

1. Milestones supporting the performance measure are documented in the Campaign's plans
2. 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)
3. Weekly/monthly site status calls with the Federal Program Manager
4. Submittal of copies of Qualification Engineering Releases (QERs)
5. Federal Program Manager/staff confirm completion during site visits and Program Reviews by observation of the capability in use
6. NA-10 Milestone Reporting Tool (MRT) Reports

Supporting
Documentation:

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003406.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Readiness Campaign (2.1.32)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Tritium Production

Measure: 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) (2.1.32.03)

2007 Results

Commentary: **G** This result is important because irradiation of Tritium Producing Burnable Absorber Rods is essential for the establishment of an assured domestic source of tritium to meet the continuing needs of the nuclear weapons stockpile. The cumulative target was 480 (FY 2007 result was 480).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 720 Tritium-Producing Burnable Rods in support of the goal to complete irradiation of 1,200 Tritium-Producing Burnable Rods by FY 2011.

Supporting
Documentation: 1. Milestones supporting the performance measure are documented in the Campaign's plans
2. 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)
3. Weekly project status calls with the Federal Program Manager
4. End of cycle reports submitted by the Tennessee Valley Authority (TVA)
5. Quarterly Program Reviews (attended by TVA)
6. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Irradiate cumulative 240 Tritium-Producing Burnable Absorber Rods in Tennessee Valley Authority reactors to provide the capability of collecting new tritium to replace inventory for the nuclear weapons stockpile. (NA GG 1.33.03)

FY 2005: **G** Irradiate cumulative 240 Tritium-Producing Burnable Absorber Rods in Watts Bar reactor. (NA GG 1.33.03)

FY 2004: N/A

Additional Information

PART: Moderately
Effective

<http://www.whitehouse.gov/omb/expectmore/summary/10003406.2005.html>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Readiness Campaign (2.1.32)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Tritium Extraction Facility (TEF)

Measure: Cumulative percentage of Tritium Extraction Facility (TEF) project completed (total project cost), while maintaining a Cost Performance Index of 0.9 - 1.15. (EFFICIENCY MEASURE). (2.1.32.4)

2007 Results

Commentary: **G** This result is important because operation of the TEF is essential for the establishment of an assured domestic source of tritium to meet the continuing needs of the nuclear weapons stockpile. The cumulative target was 100% (FY 2007 result was 100%).

Future Plans / Explanation of Shortfalls: Future Plans: The cumulative target will be deleted in FY 2008 because the goal is complete; reporting will be discontinued in FY 2008, other than to show the item as complete. The metric is planned to be considered for replacement in FY 2009.

Supporting Documentation: 1. Project schedule and major decision points are documented in the TEF Project Plan
2. On-site observation of the completed work
3. Monthly progress reports that include earned value management data regarding cumulative percentage completed
4. DOE PARS database/status reports to DOE Deputy Secretary and NNSA Administrator
5. Weekly project status calls with the Federal Program Manager
6. Signed/approved Critical Decision-4 document
7. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Complete cumulative 96 percent of the Tritium Extraction Facility (TEF) project (total project cost), while maintaining a Cost Performance Index of 0.9 - 1.15 (NA GG 1.33.04)

FY 2005: **G** Complete cumulative 87 percent of Tritium Extraction Facility (TEF) project, while maintaining a Cost Performance Index of 0.9-1.15 (NA GG 1.33.05)

FY 2004: **G** Complete cumulative 80 percent of Tritium Extraction Facility (TEF) project (total project cost), while maintaining a Cost Performance Index of 0.9-1.5 (NA GG 1.33.04)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003406.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Readiness in Technical Base and Facilities (2.1.33)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Mission-Essential Facilities

Measure: Annual percentage of scheduled days that mission-essential facilities are available (Annual Output) (2.1.33.01)

2007 Results

Commentary: **G** This result is important because mission essential facilities are needed to support critical nuclear weapons stockpile work. The annual target was 90% (FY 2007 result was 99%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will be increased to 95% in FY 2008 and beyond. Consistent with FY 2007 OMB PART evaluation, measure will be slightly changed for next year and will continue to be tracked in Joule.

Supporting
Documentation: 1. Milestones supporting the performance measure are documented in the program and site RTBF plans
2. Quarterly reports from M&O Contractors
3. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **G** Mission-essential facilities are available 90 percent of the scheduled days (NA GG 1.34.01)

FY 2005: **G** Assure that mission-essential facilities are available on 90 percent of scheduled days (NA GG 1.34.01)

FY 2004: **G** Assure that mission-essential facilities are available 90% of scheduled days (NA GG 1.34.01)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001047.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Readiness in Technical Base and Facilities (2.1.33)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Reportable Accidents

Measure: Number of Reportable Accidents per 200,000 hours of work [vs. Bureau of Labor Statistics (BLS) standard average] (Annual Output) (2.1.33.02)

2007 Results

Commentary: **G** This result is important because safe operations are essential to support critical nuclear weapons stockpile work. The annual target was 5.0 (FY 2007 result was 1.67).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will be deleted in FY 2008, consistent with the FY 2007 OMB PART evaluation. Although the measure will no longer be tracked in Joule, the measure will remain/be tracked internally/in the Milestone Reporting Tool.

1. Milestones supporting the performance measure are documented in the program and site RTBF plans

Supporting
Documentation: 2. Quarterly reports from Management & Operating Contractors
3. DOE Computerized Accident/Incident Reporting and Recordkeeping System (CAIRS) database reports
4. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **G** Limit the number of Reportable Accidents/200,000 hours of work to five maximum [vs. the Bureau of Labor Statistics (BLS) standard average of 6.4]. (NA GG 1.34.02)

FY 2005: **G** Limit the Number of Reportable Accidents per 200,000 hours of work to less than 6.4. (NA GG 1.34.02)

FY 2004: **G** Limit the Number of Reportable Accidents/200,000 hours work to less than the 6.4 Bureau of Labor and Statistics (BLS) national standard (NA-1.34.02)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001047.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Readiness in Technical Base and Facilities (2.1.33)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Facility Condition Index (FCI)

Measure: 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 MEASURE) (2.1.33.03)

2007 Results

Commentary: **G** This result is important because it demonstrates progress in improved facility conditions and increased operational effectiveness and efficiency. The annual target was 6.8% (FY 2007 result was 6.5%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will be decreased to 5% in FY 2008 and beyond. Consistent with FY 2007 OMB PART evaluation, the measure will be expanded into two measures: one for mission-critical facilities and infrastructure and one for mission-dependent, not critical facilities and infrastructure, and become joint with Facilities and Infrastructure Recapitalization Program (FIRP).

Supporting
Documentation: 1. Milestones supporting the performance measure are documented in the program and site RTBF plans
2. Ten Year Planning Guidance and Site Ten Year Site Plans
3. DOE Facility Information Management System (FIMS) database
4. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **G** Achieve a NNSA complex-wide aggregate Facility Condition Index (FCI) of less than 7.4 percent, as measured by deferred maintenance per replacement plant value, for all mission-essential facilities and infrastructure (the industry standard is below 5 percent) (NA GG 1.34.03)

FY 2005: **G** Achieve an annual NNSA complex-wide aggregate Facility Condition Index (FCI) of less than 9 percent, as measured by deferred maintenance per replacement plant value, for all mission essential facilities and infrastructure (NA GG 1.34.03)

FY 2004: **G** Achieve an annual NNSA complex-wide aggregate Facility Condition Index (FCI) of less than 10%, measured in deferred maintenance cost per replacement plant value, for all mission-essential facilities and infrastructure (the industry standard for good facilities is below 5%) (NA GG 1.34.03)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001047.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Readiness in Technical Base and Facilities (2.1.33)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Major Construction Projects

Measure: 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) (2.1.33.04)

2007 Results

Commentary: **G** This result is important because it demonstrates effective program management over multiple projects and improved efficiencies. The annual target was 80% (FY 2007 result was 100%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will increase to 85% of baselined construction projects with Total Estimated Cost greater than \$20M with actual SPI and CPI of 0.9-1.15 against approved baseline definitions in FY 2008. The program plans to continue careful management of the NNSA construction project portfolio to achieve the goal of 90% in FY 2009 and beyond.

Supporting
Documentation: 1. Baselined schedules and major decision points for projects are in individual project plans
2. Monthly project progress reports that include Earned Value Management (EVM) data (provides project cumulative percentage completed information)
3. DOE PARS reports providing official project status to the DOE Deputy Secretary and NNSA Administrator
4. NA-10 Milestone Reporting Tool (MRT) reports

Associated Performance in Prior Years

FY 2006: **G** Achieve a cumulative 75 percent of baselined construction projects with total estimated cost (TEC) greater than \$20M with an actual schedule performance index (SPI) of 0.9-1.15 and a cost performance index (CPI) of 0.9-1.15, as measured against approved baseline definitions (NA GG 1.34.04)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001047.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Secure Transportation Asset (2.1.34)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Radioactive Material Shipments

Measure: Annual percentage of shipments completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material (Annual Outcome) (2.1.34.01)

2007 Results

Commentary: **G** This result is important because it indicates mission accomplishment, especially in light of the increased risks and threats to the Nuclear Security Enterprise. The annual target was 100% (FY 2007 result was 100%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will remain constant to ensure that 100% of shipments are completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material. This metric will remain as the STA's primary focus for the conduct of mission operations.

Supporting
Documentation: 1. Milestones supporting the performance measure are documented in the program's plans
2. Completed DOE NRC Forms 741
3. Completed DOE Forms 60 or DoD Forms 1911
4. AL Forms 5600 A/B
5. DOE ORPS reports
6. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Complete 100 percent of the shipments safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material (NA GG 1.36.01)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002134.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Secure Transportation Asset (2.1.34)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Convoy Costs

Measure: Annual cost per convoy expressed in terms of millions of dollars. (EFFICIENCY MEASURE) (2.1.34.02)

2007 Results

Commentary: **G** This result is important because it represents cost efficiencies--a continuous decrease in cost from a baseline of \$2.65 M in FY 2002. The annual target was \$1.80 (FY 2007 result was \$1.69).

Future Plans / Explanation of Shortfalls: Future Plans: The annual target will be decreased to \$1.79 in FY 2008 to achieve a cost per convoy equivalent of \$1.65M by FY 2013. The STA will continue to maximize convoy output while providing a safe and secure infrastructure and report on this measure.

Supporting Documentation: 1. Milestones supporting the performance measure are documented in the program's plans
2. FY 2007 Appropriations/DOE I-MANAGE/STARS
3. NA-15 Convoy computation (2.1.34.03)
NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **Y** Keep the cost per convoy to less than \$1.80 million (NA GG 1.36.02)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002134.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Secure Transportation Asset (2.1.34)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Measure: **Secure Convoys Completed**
Annual number of secure convoys completed (Annual Output) (2.1.34.03)

2007 Results

Commentary: **Y** This result is important because it shows an increase in mission capacity from the FY 2002 baseline of 60 convoys. The annual target of 115 was missed (FY 2007 result was 113) because of the delay in the Hanford Campaign, customer shipping cancellations, and the diversion of agent resources to provide security at Pantex during the guard force strike. Although the target was missed, there was no impact to customers, as all requested work was completed.

Future Plans /
Explanation of
Shortfalls: Action Plan: program will continue to work with customers to better forecast requirements and provide alternatives/backups. The STA will restore agent training time and continue to increase mission capacity toward an annual output of 135 convoys. A new predictable schedule has been implemented to better coordinate customer requirements and agent training needs.
Future Plans: The annual target will be increased to 118 in FY 2008 to achieve 135 convoy equivalents by 2013.

Supporting
Documentation: 1. Milestones supporting the performance measure are documented in the program's plans
2. NA-15 Mission Folders
3. TRIPS database/reports
4. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Complete 115 secure convoys (NA GG 1.36.03)

FY 2005: **G** Complete 105 secure convoys (NA GG 1.36.01)

FY 2004: **G** Complete 90 secure convoys (NA GG 1.36.01)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002134.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Secure Transportation Asset (2.1.34)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Safeguard Transporters (SGTs)

Measure: Cumulative number of Safeguard Transporters (SGTs) in operation (Long-term Output)
(2.1.34.4)

2007 Results

Commentary: **G** This result is important because an increase in the SGT capability directly supports the increase of STA mission capacity. The cumulative target was 38 (FY 2007 result was 39).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 42 SGT production targets in FY 2008; this target will be adjusted by three per year toward an endpoint goal of 51 trailers by the end of FY 2011.

Supporting
Documentation: 1. Milestones supporting the performance measure are documented in the program's plans
2. KCP Production Certification
3. NA-15 Delivery Acceptance Documentation
NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **G** Have a cumulative 36 Safeguard Transporters (SGTs) in operation (NA GG 1.36.04)

FY 2005: **G** Achieve 33 Safeguard Transporters (SGTs) in operation (NA GG 1.36.03)

FY 2004: **Y** Produce 3 Safeguard Transporters (SGTs) for a total of 32 trailers (NA GG 1.36.03)

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002134.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Secure Transportation Asset (2.1.34)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Federal Agents/Couriers

Measure: Cumulative number of Federal Agents at the end of each year (Long-term Output)
(2.1.34.05)

2007 Results

Commentary: **Y** This result is important because it is a key milestone in reaching an agent strength of 420 by FY 2009 to support STA consolidation and Complex Transformation initiatives. The cumulative target of 355 was missed (FY 2007 result was 351) because processing efforts were not at optimal efficiency. Although the target was missed, there is no impact to mission operations, as the results are statistically insignificant to the target.

Future Plans /
Explanation of
Shortfalls: Action Plan: Expect recovery in FY 2008; the targets are straight-line midpoints on a line to reach the end-strength of 420 and program actions continue toward meeting this target. The program plans to improve processing efforts to increase the recruit class size and ensure the endpoint goal is met.
Future Plans: The annual target will be increased to 385 in FY 2008 to achieve an end strength of 420 Agents by FY 2009.

Supporting
Documentation: 1. Milestones supporting the performance measure are documented in the program's plans
2. Federal Personnel database/reports
3. NA-10 Milestone Reporting Tool (MRT) Reports

Associated Performance in Prior Years

FY 2006: **Y** End the year with 355 Federal Agents (NA GG 1.36.05)

FY 2005: **Y** Maintain 335 Federal Agents at the end of the year (NA GG 1.36.04)

FY 2004: **G** Achieve a total number of 266 Federal Agents by year-end to achieve 420 agents by the end of 2008

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002134.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nuclear Weapons Incident Response (2.1.35)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Emergency Operations Readiness Index

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 MEASURE). (2.1.35.1)

2007 Results

Commentary: **G** This result is important because it assesses emergency response readiness and helps program managers identify and fix deficiencies within key elements of the program. The annual target was 91 (FY 2007 result was 91).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will remain constant at 91 out of 100 in FY 2008 and beyond, while enhancements to subprogram measures are reviewed for feasibility.

Supporting
Documentation:

Associated Performance in Prior Years

FY 2006: **Y** Achieve an Emergency Operations Readiness Index of at least 91 percent. The 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). (NA GG 1.37.01)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003240.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Facilities and Infrastructure Recapitalization Program (2.1.36)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Deferred Maintenance

Measure: 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). (2.1.36.1)

2007 Results

Commentary: **G** This result is important because it demonstrates progress in improving nuclear weapons complex facilities conditions by reducing the deferred maintenance backlog. The annual target was \$60M (38%) (FY 2007 result was \$75M (56%)).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will remain constant at \$60M (based on the current \$137M House Appropriations Committee mark) to support the program goal. This does not support achieving the goal to eliminate \$900M of NNSA's legacy deferred maintenance backlog by 2013. With full funding, the FY 2008 target is set at \$135M (71%), supporting the accomplishment of the long-term goal.

Supporting
Documentation: FIRP Work Authorizations and Site Program Reviews

Associated Performance in Prior Years

FY 2006: **G** Fund at least \$60 million (cumulative 28 percent) of FY 2003 deferred maintenance baseline of \$1.2 billion planned for elimination by FY 2009. (NA GG 1.38.01)

FY 2005: **G** Issue authorizations to start work to achieve a reduction in NNSA's deferred maintenance of \$154.75 million, and stabilize deferred maintenance by the end of FY 2005. (NA GG 1.38.01)

FY 2004: **G** Annual Target: By the end of the fiscal year, issue authorizations to start work to achieve a reduction in NNSA's deferred maintenance of \$79 million (7% of the estimated FY03 \$1.2 billion baseline).

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000088.2002.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Facilities and Infrastructure Recapitalization Program (2.1.36)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Facilities Space Eliminated

Measure: Annual gross square feet (gsf) of NNSA excess facilities space funded for elimination and cumulative percentage of FY2002-FY2009 total goal of three million gsf eliminated. (Long-term Output). (2.1.36.2)

2007 Results

Commentary: **G** This result is important because it demonstrates progress in improving nuclear weapons complex facilities cost-effectiveness by eliminating excess facility space. The annual target was 225,000 (92%) (FY 2007 result was 264,000 (96%)).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will remain constant at 225,000 gsf and the 3 million gsf goal will be achieved one year earlier than the FY 2009 strategic goal.

Supporting
Documentation: FIRP Work Authorizations and Site Program Reviews

Associated Performance in Prior Years

FY 2006: **G** Fund for elimination at least 175,000 gross square feet (gsf) of excess NNSA facilities (cumulative 79 percent) of FY2002-FY2009 total goal of three million gsf eliminated. (NA GG 1.38.02)

FY 2005: **G** Issue authorizations to start work to achieve a 350,000 gsf reduction to the NNSA footprint. (NA GG 1.38.02)

FY 2004: **G** By the end of the fiscal year, issue authorizations to start work to achieve a reduction to the NNSA footprint of 325,000 gsf, increasing the total footprint reduction to 45% of the estimated 3 million gsf that FIRP will disposition by FY 2009.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000088.2002.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Facilities and Infrastructure Recapitalization Program (2.1.36)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Measure: **NNSA Complex-Wide Aggregate Facility Condition Index (FCI)**
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 MEASURE). (2.1.36.3)

2007 Results

Commentary: **G** This result is important because it demonstrates progress in improved facilities conditions and increased operational effectiveness and efficiency. The annual target was 6.8% (FY 2007 result was 6.5%).

Future Plans / Explanation of Shortfalls: Future Plans: The annual target will be deleted in FY 2008 and beyond. This measure will be replaced in FY 2008 with a performance measure for facility condition that is consistent with recent changes in the Department definition and reporting requirements.

Supporting Documentation: Facilities Information Management System (FIMS) and FIMS Site Validations

Associated Performance in Prior Years

FY 2006: **G** Achieve a NNSA complex-wide aggregate Facility Condition Index (FCI) of less than 7.4 percent, as measured by deferred maintenance per replacement plant value, for all mission-essential facilities and infrastructure (the industry standard is below 5 percent). (NA GG 1.38.03)

FY 2005: **G** Achieve an annual NNSA complex-wide aggregate Facility Condition Index (FCI) of 9 percent, as measured by deferred maintenance per replacement plant value, for all mission-essential facilities and infrastructure. (NA GG 1.38.04)

FY 2004: **G** Achieve a NNSA complex-wide aggregate Facility Condition Index (FCI) of less than 5 percent, as measured by deferred maintenance per replacement plant value, for all mission-essential facilities and infrastructure.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000088.2002.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Defense Nuclear Security, Physical (2.1.37)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Physical Security Reviews

Measure: Cumulative percentage of Physical 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 last OA review at each site over 6 physical security topical areas). (Long-term Output). (2.1.37.1)

2007 Results

Commentary: **G** This result is important because it identifies independent review ratings, which allows the program to take corrective action at sites that receive ratings of less than effective. The annual target was 75% (FY 2007 result was 79%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The target will be increased to 80% in FY 2008, to achieve and maintain an effectiveness rating on 85% of Physical Security reviews by FY 2009. The measure will be submitted for revision in FY 2008 to improve alignment with program evaluation activities and provide a more realistic approach towards achieving and maintaining the target of 85% of Physical Security inspections conducted by OIO and security surveys conducted by NNSA Field Site Offices that result in effective rating in the past 12 months.

Supporting
Documentation: The Office of Independent Oversight Reports

Associated Performance in Prior Years

FY 2006: **Y** Ensure that 70 percent of the physical security reviews conducted by the Office of Independent Oversight and Performance Assurance (OA) at NNSA sites receive a rating of at least "effective" (based on last OA review at each site over 6 physical security topical areas). (NA GG 1.39.01)

FY 2005: **G** Ensure that 65 percent (cumulative) of Physical Security reviews conducted by the Office of Independent Oversight and Performance Assurance (OA) at NNSA sites result in the rating of "effective" (based on last OA review at each site over 6 physical security topical areas). (NA GG 1.39.02)

FY 2004: **R** Percentage of each of six physical security topical area reviews (program management, protective forces, physical security systems, information security, nuclear materials control and accountability and personnel security) at the NNSA sites where an evaluation of "effective" is achieved. Annual Target: Increase to 80%.

Additional Information

PART: N/A

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Defense Nuclear Security, Physical (2.1.37)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Q-Clearance Processing

Measure: Annual average calendar days per applicant for NNSA Service Center to complete the processing needed to grant Q Security Clearance for federal and contractor employees in the NNSA complex, other than Headquarters (does not include days for Office of Personnel Management or the Federal Bureau of Investigation to conduct background checks). (EFFICIENCY MEASURE). (2.1.37.2)

2007 Results

Commentary: **G** This result is important because it helps to expedite the hiring process for and improve the effectiveness of NNSA employees requiring access to classified data. The annual target was 110 days (FY 2007 result was 105 days).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will decrease to 65 days in FY 2008, to achieve an average of 30 days to adjudicate 80% of Q Security Clearances by FY 2011. The measure will be submitted for revision to ensure meeting the adjudication requirements stipulated by national policy. Out-year targets will be reduced to adjudicate 80% of Q Security Clearances to 30 days; 20 days is OPM Standard for FY 2009.

Supporting
Documentation: Monthly and Quarterly Reports from NNSA SC

Associated Performance in Prior Years

FY 2006: **G** Complete the processing needed to grant Q Security Clearance for federal and contractor employees in the NNSA complex, other than Headquarters in 110 days or less (does not include days for Office of Personnel Management or the Federal Bureau of Investigation to conduct background checks). (NA GG 1.39.02)

FY 2005: **Y** Complete the processing needed to grant Q Security Clearance for federal and contractor employees in the NNSA complex, other than headquarters (does not include days for OPM or FBI background checks), in 85 annual average calendar days per applicant. (NA GG 1.39.06)

FY 2004: N/A

Additional Information

PART: N/A

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Defense Nuclear Security, Cyber (2.1.37)

Strategic Goal(s)
Supported: Goal 2.1 Nuclear Deterrent

Cyber Security Reviews

Measure: 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 last OA review at each site over 2 Cyber Security topical areas). (Long-term Output). (2.1.37.3)

2007 Results

Commentary: **G** This result is important because it ensure that NNSA system and network have met their certification and accreditation requirements as outlined in DOE, NNSA and Federal policy. The annual target was 57% (FY 2007 result was 57%).

Future Plans / Explanation of Shortfalls: Future Plans: The annual target will be increased to 100% in FY 2008 and beyond. Cyber Security will be requesting the addition of two performance measures in FY 2008 to better evaluate the effectiveness of the program.

Supporting Documentation: System Security Plans and Accreditation Letters

Associated Performance in Prior Years

FY 2006: **R** Ensure that 57 percent of the Cyber Security reviews conducted by the Office of Independent Oversight and Performance Assurance (OA) at NNSA sites receive at least a rating of "effective" (based on last OA review at each site over 2 Cyber Security topical areas). (NA GG 1.39.04)

FY 2005: **R** Ensure that 80 percent (cumulative) of Cyber Security reviews conducted by the Office of Independent Oversight Performance Assurance (OA) at NNSA sites result in the rating of "effective" (based on last OA review at each site over 2 Cyber Security topical areas). (NA GG 1.39.03)

FY 2004: **G** Percentage of classified and unclassified Cyber Security reviews at the NNSA sites where an evaluation of "effective" is achieved.
Annual Target: Increase to 80%.

Additional Information

PART: N/A

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development (2.2.39)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Uranium-235 Production Detection

Measure: 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) (2.2.39.1)

2007 Results

Commentary: **G** This result is important because it increases the U.S. capability to detect clandestine nuclear weapons production activities. The cumulative target was 15% (FY 2007 result was 15%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 20% in FY 2008 in support of long-term target of 100% by 2016.

Supporting
Documentation: Program Plan/Roadmap document and Memorandum for Record (unclass in R&D certified by ADA)

Associated Performance in Prior Years

FY 2006: **G** Progress 10 percent (cumulative) toward demonstrating the next generation of technologies and methods to detect Uranium-235 Enrichment activities. (NA GG 2.40.01)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003408.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development (2.2.39)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Plutonium Production Detection

Measure: 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) (2.2.39.2)

2007 Results

Commentary: **G** This result is important because it increases the U.S. capability to detect clandestine nuclear weapons production activities. The cumulative target was 20% (FY 2007 result was 20%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 25% in FY 2008 in support of long-term target of 100% by 2015.

Supporting
Documentation: Program Plan/Roadmap document and Memorandum for Record (unclass in R&D certified by ADA)

Associated Performance in Prior Years

FY 2006: **G** Progress 10 percent (cumulative) toward demonstrating the next generation of technologies and methods to detect Plutonium Reprocessing activities. (NA GG 2.40.02)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003408.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development (2.2.39)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Special Nuclear Material Detection

Measure: 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). (2.2.39.3)

2007 Results

Commentary: **G** This result is important because it improves U.S. capability detect the illicit transport and diversion of special nuclear material (SNM). The cumulative target was 20% (FY 2007 result was 20%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 27% in FY 2008 in support of long-term target of 100% by 2013.

Supporting
Documentation: Program Plan/Roadmap document and Memorandum for Record (unclass in R&D certified by ADA)

Associated Performance in Prior Years

FY 2006: **G** Progress 10 percent (cumulative) toward demonstrating the next generation of technologies and methods to detect Special Nuclear Material (SNM) movement. (NA GG 2.40.03)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003408.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development (2.2.39)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Nuclear Explosion Monitoring

Measure: Annual index that summarizes the status of all NNSA nuclear explosion monitoring R&D deliveries that improve the nation's ability to detect nuclear explosions (Annual Output). (2.2.39.4)

2007 Results

Commentary: **G** This result is important because it tracks the timeliness in delivering nuclear detonation detection (NDD) products within customer schedules and potential impacts on the nation's ability to detect nuclear explosions. The annual target was 90% (FY 2007 result was 90%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will remain constant at 90% cumulative progress towards NDD deliveries.

Supporting
Documentation: Monthly reports for progress against schedules; Final delivery transmittal letters to user agencies for satellite payloads ('Consent to Ship' letters); and Knowledge Base updates

Associated Performance in Prior Years

FY 2006: **G** Achieve a 90 percent on an annual index that summarizes the status of all NNSA nuclear explosion monitoring (NEM) R&D deliveries that improve the nation's ability to detect nuclear explosions. (NA GG 2.40.04)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003408.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development (2.2.39)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Research Projects Reviewed

Measure: 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 MEASURE). (2.2.39.5)

2007 Results

Commentary: **G** This result is important to verify scientific quality and mission relevance of each research project. The annual target was 100% (FY 2007 result was 100%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will remain constant at 100% independent merit reviews of active research papers.

Supporting
Documentation: Quarterly reports and Annual independent review status reports

Associated Performance in Prior Years

FY 2006: **G** Achieve 100 percent (cumulative) on active research projects for which an independent R&D peer 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). (NA GG 2.40.05)

FY 2005: **G** Complete 70 percent of research projects for which an independent R&D merit assessment has been completed during the second year of effort, and again within each subsequent three year period to assess scientific quality and mission relevance. (NA GG 2.40.03)

FY 2004: **Y** Annual percentage of all active R&D projects for which an independent R&D merit assessment has been completed within the last 3 years to determine the scientific quality and continued user and mission relevance.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003408.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and Verification Research and Development (2.2.39)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Articles Published

Measure: Annual number of articles published in merit reviewed professional journals/ forums representing leadership in advancing science and technology knowledge (Annual Output) (2.2.39.6)

2007 Results

Commentary: **G** This result is important because it demonstrates the program is a leader in advancing science and technology knowledge. The annual target was 200 (FY 2007 result was 220).

Future Plans /
Explanation of
Shortfalls: Future Plans: The target will remain constant for completing 200 merit reviews annually.

Supporting
Documentation: Quarterly reports/papers, Annual peer-review publications and Other forums reports

Associated Performance in Prior Years

FY 2006: **G** Publish 200 articles in peer reviewed professional journals/ forums representing leadership in advancing science and technology knowledge. (NA GG 2.40.06)

FY 2005: **G** Present 200 professional papers/exchanges, each representing Science and Technology knowledge and U.S. leadership in program areas. (NA GG 2.40.04)

FY 2004: **G** Number of professional papers/exchanges presented – each representing Science and Technology knowledge and U.S. leadership in program area.
Annual Target: 200 (FY03 - 250).

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003408.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Elimination of Weapons-Grade Plutonium Production (2.2.40)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Refurbishing Seversk Fossil Plant

Measure: Cumulative percentage of progress towards refurbishing a fossil plant in Seversk shutting down two weapons-grade plutonium production reactors. (Long-term Output). (2.2.40.1)

2007 Results

Commentary: **G** This result is important because completion of the fossil plant will replace energy capacity from two of the three Russian plutonium production reactors allowing them to be shutdown. The cumulative target was 72% (FY 2007 result was 73%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 90% in FY 2008 to support the goal of shutting down two reactors in December 2008.

Supporting
Documentation: Seversk Plutonium Production Elimination Project Monthly Progress Report

Associated Performance in Prior Years

FY 2006: **Y** Complete 55 percent (cumulative) of the refurbishment of a fossil plant in Seversk, shutting down two weapons-grade plutonium production reactors. (NA GG 2.42.01)

FY 2005: **Y** Achieve 32 percent progress (cumulative) towards refurbishing a fossil plant in Seversk, facilitating shut down of two weapons -grade plutonium production reactors. (NA GG 2.42.01)

FY 2004: **Y** Percentage of progress towards constructing a fossil plant in Seversk facilitating shut down of two weapons-grade plutonium production reactors.
Annual Target: Complete 16% of the construction (FY03 - 1%).

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001044.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Elimination of Weapons-Grade Plutonium Production (2.2.40)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Cost Performance Index (CPI) for Seversk Construction
Measure: 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 MEASURE). (2.2.40.2)

2007 Results

Commentary: **G** This result is important because it represents efficiency in constructing the Seversk fossil plant. The annual target was 1.0 (FY 2007 result was 1.02).

Future Plans / Explanation of Shortfalls: Future Plans:
The annual target will remain constant at 1.0 for FY 2008, in support of completing work on the Seversk construction project at or below budgeted cost.

Supporting Documentation: Seversk Plutonium Production Elimination Project Monthly Progress Report

Associated Performance in Prior Years

FY 2006: **G** Achieve a 1.0 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. (NA GG 2.42.02)
FY 2005: **G** Achieve 1.0 against the Seversk Cost Performance Index (cumulative actual costs per budgeted cost of work performed at Seversk). (NA GG 2.42.05)
FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001044.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Elimination of Weapons-Grade Plutonium Production (2.2.40)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Constructing Zheleznogorsk Fossil Plant
Measure: Cumulative percentage of progress towards constructing a fossil plant in Zheleznogorsk shutting down one weapons-grade plutonium production reactor. (Long-term Output). (2.2.40.3)

2007 Results

Commentary: **G** This result is important because completion of the fossil fuel plant will replace energy capacity from one of the three remaining Russian plutonium production reactors allowing it to be shutdown, and the production of weapons-grade plutonium to be eliminated. The cumulative target was 33.6% (FY 2007 result was 34%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 62.6% in FY 2008 to support the project goal of reactor closure in December 2010.

Supporting
Documentation: Zheleznogorsk Plutonium Production Elimination Project Monthly Progress Report

Associated Performance in Prior Years

FY 2006: **G** Complete 9.6 percent (cumulative) of the construction of a fossil plant in Zheleznogorsk, shutting down one weapons-grade plutonium production reactor. (NA GG 2.42.03)

FY 2005: **G** Achieve 4.8 percent progress (cumulative) towards constructing a fossil plant in Zheleznogorsk, facilitating shut down of one weapons -grade plutonium production reactor. (NA GG 2.42.02)

FY 2004: **G** Percentage of progress towards constructing a fossil plant in Zheleznogorsk facilitating shut down of one weapons-grade plutonium production reactor.
Annual Target: Complete 3% of the construction.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10001044.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and International Security (2.2.41)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

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). (2.2.41.1)

2007 Results

Commentary: **G** This result is important because it provides assurance that weapons-grade material is being eliminated from Russia's stockpile, and no longer available for use in the nuclear weapons program. The cumulative target was 312 (FY 2007 result was 315).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 342 in FY 2008, in support of the long-term target of 500 metric tons by 2013.

Supporting
Documentation: Primary documentation: Through Russia HEU to LEU Contract Summaries of shipments, amounts and schedule (provided by United States Enrichment Corporation, USEC).
Secondary documentation: Details of delivery from St. Petersburg to USEC plant, Russian quality and weighing certificate (Document 1.2), and sample analysis results from USEC's Paducah plant.

Associated Performance in Prior Years

FY 2006: **G** Eliminate 282 metric tons (cumulative) of Russian weapons-usable Highly Enriched Uranium (HEU) which U.S. experts have confirmed as permanently removed from the Russian stockpile under the HEU Purchase Agreement. (NA GG 2.44.01)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002132.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and International Security (2.2.41)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Global Initiatives to Prevent Proliferation (GIPP)

Measure: Cumulative number of the Global Initiatives to Prevent Proliferation (GIPP) target population of displaced Russian and FSU WMD experts who are currently employed in GIPP grants or long-term private sector jobs (and cumulative number who are employed in long-term private sector jobs resulting from NIS grants). (Long-term Outcome). (2.2.41.2)

2007 Results

Commentary: **G** This result is important because it prevents the migration of weapons of mass destruction expertise, to terrorists or states of concern, by redirecting displaced scientist and personnel to peaceful, sustainable civilian work. The reduction of FY2008 targets in line with the budget reduction over the past two fiscal years. The cumulative target was 12,100 (4,400) (FY 2007 result was 12,100 (4,400)).

Future Plans / Explanation of Shortfalls: Future Plans: The cumulative target will be increased to 12,400 (4,400) in FY 2008, in support of the goal to employ 17,000 in grants or long-term private sector jobs by 2015 (employ 11,000 in long-term private sector jobs resulting from grants by 2019). However, GIPP plans a complete re-examination and adjustment of current metrics to more accurately reflect the significant changes in program structure since the program's reorganization beginning in FY2006.

Supporting Documentation: GIPP metrics are validated by a semi-annual survey of laboratory program managers;

Associated Performance in Prior Years

FY 2006: **G** The cumulative number of the Global Initiatives to Prevent Proliferation (GIPP) target population of displaced Russian and FSU WMD experts who are currently employed in GIPP grants or long-term private sector jobs is 11,800 (and cumulative number who are employed in long-term private sector jobs resulting from NIS grants is 4,100). (NA GG 2.44.02)

FY 2005: **Y** Annual percentage of non-USG funding contributions obtained.

FY 2004: **G** Annual percentage of non-USG funding contributions obtained.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002132.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and International Security (2.2.41)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Non-USG Project Funding
Measure: Cumulative percentage of non-USG (private sector and foreign government) project funding contributions obtained relative to cumulative USG GIPP funding contributions. (EFFICIENCY MEASURE). (2.2.41.3)

2007 Results

Commentary: **G** This result is important because it sustains the economic development of the closed cities and prevents the migration of weapons of mass destruction scientists and personnel to terrorists or states of concern. The cumulative target was 75% (FY 2007 result was 75%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 78% in FY 2008 in support of the goal to obtain non-USG funding contributions equal to 100% of the cumulative USG GIPP funding contributions by 2019. However, GIPP plans a complete re-examination and adjustment to current metrics to more accurately reflect the significant changes in program structure since the program's reorganization beginning in FY2006.

Supporting
Documentation: GIPP metrics are validated by payment records from the International Science & Technology Center (ISTC); Science and Technology Center in Ukraine (STCU); and Civilian Research & Development Foundation (CRDF).

Associated Performance in Prior Years

FY 2006: **G** The cumulative percentage of non-United States Government (non-USG) (private sector and foreign government) project funding contributions obtained relative to cumulative USG Global Initiatives to Prevent Proliferation (GIPP) funding contributions is 70 percent. (NA GG 2.44.03)

FY 2005: **G** Annual number of former Soviet weapons scientists, engineers, and technicians engaged

FY 2004: **G** Annual number of former Soviet weapons scientists, engineers, and technicians engaged

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002132.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and International Security (2.2.41)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Technologies Transferred to Counter Proliferation
Measure: Annual number of technologies transferred to international regimes and other countries to prevent and counter WMD proliferation and nuclear-related terrorism. (Annual Output). (2.2.41.4)

2007 Results

Commentary: **G** This result is important because it provides policy and technical support to the International Atomic Energy Agency (IAEA) on verification technologies and international safeguards concerning countries suspected of having clandestine nuclear weapons programs. The annual target was 5 (FY 2007 result was 5).

Future Plans /
Explanation of
Shortfalls: The annual target will decrease to 4 technologies transferred to international regimes and other countries to prevent and counter WMD proliferation and nuclear-related terrorism.

Supporting
Documentation: This metric is comprised from performance of two N&IS programs: Nuclear Noncompliance Verification (NNV) and International Nuclear Safeguards Exchange Program (INSEP). INSEP performance measures are validated by 1) shipping records demonstrating technology shipments from a DOE National Laboratory to a foreign partner and 2) training records and technical reports issued as a result of technical transfers.
NNV documentation is provided through reports certifying the calibration and documentation of results for specific tools or technologies available for transfer to the IAEA, other countries, or other United States agencies.

Associated Performance in Prior Years

FY 2006: **G** Transfer five technologies to international regimes and other countries to prevent and counter Weapons of Mass Destruction (WMD) proliferation and nuclear-related terrorism. (NA GG 2.44.04)
FY 2005: **G** Cumulative number of technologies commercialized or businesses created
FY 2004: **G** Cumulative number of technologies commercialized or businesses created

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002132.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Nonproliferation and International Security (2.2.41)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Nonproliferation Experts Trained

Measure: Annual number of international and domestic experts (e.g., IAEA inspectors, export control officers, physical protection personnel) trained in nonproliferation to fulfill the President's policy delineated on 11 February 2004 and implement the U.S.-sponsored UN Security Council Resolution 1540 criminalizing proliferation. (Annual Output). (2.2.41.5)

2007 Results

Commentary: **G** This result is important to fulfill the President's policy delineated on February 11, 2004 and to implement the U.S.-sponsored UN Security Council Resolution 1540 criminalizing proliferation because it educates experts in the prevention of proliferation of nuclear and nuclear-related materials, equipment and technology. The annual target was 1,330 (FY 2007 result was 3,907).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will increase to 2,500, and supports the goal of training at least 1,000 experts per year.

Supporting
Documentation: This metric is comprised from performance of three N&IS programs: International Nuclear Export Control Program (INECP), International Safeguards Exchange Program (INSEP), and Physical Protection.

Associated Performance in Prior Years

FY 2006: **G** Train 1,160 international and domestic experts (e.g., IAEA inspectors, export control officers, physical protection personnel) in nonproliferation to fulfill the President's policy delineated on February 11, 2004 and implement the U.S.-sponsored UN Security Council Resolution 1540 criminalizing proliferation. (NA GG 2.44.05)

FY 2005: **G** Train 5,500 (cumulative) international and domestic experts in nuclear nonproliferation since 9/11/01 (e.g. International Atomic Energy Agency inspectors, export control officers, etc.). (NA GG 2.44.02)

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10002132.2004.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: International Nuclear Materials Protection and Cooperation (2.2.42)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Secured Buildings

Measure: Cumulative number of buildings with weapons-usable material secured. (EFFICIENCY MEASURE). (2.2.42.1)

2007 Results

Commentary: **G** This result is important because it prevents the theft/diversion of vulnerable nuclear weapons for use by terrorists. The annual target was 190 (FY 2007 result was 193).

Future Plans / Explanation of Shortfalls: Future Plans: The annual target will be deleted in FY 2008 and replaced by a new target associated with a new indicator which measures the cumulative number of buildings containing weapons usable material with completed MPC&A upgrades (consistent with the FY 2009 OMB PART evaluation.).

Supporting Documentation: Statements of Work and Contracts for Security Upgrade Construction and System Installation; 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 2006: **G** Secure 175 (cumulative) buildings with weapons-usable material. (NA GG 2.46.01)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000108.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: International Nuclear Materials Protection and Cooperation (2.2.42)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Material Protection, Control, and Accounting (MPC&A) Upgrades

Measure: Cumulative number of warhead sites with completed MPC&A upgrades. (Long-term Output). (2.2.42.2)

2007 Results

Commentary: **G** This result is important because it prevents the theft/diversion of vulnerable nuclear weapons for use by terrorists. The cumulative target was 58 (FY 2007 result was 64).

Future Plans /
Explanation of
Shortfalls: The cumulative target will remain constant at 64 warhead sites secured in FY 2008 because the target was accomplished one year early, and the plan is to complete the program goal of securing all 73 warhead sites by first quarter FY 2009.

Supporting
Documentation: Monthly progress reports; Assurance site visits; Contract deliverables and in-progress reviews.

Associated Performance in Prior Years

FY 2006: **G** Complete 53 security upgrades at warhead sites. (NA GG 2.46.02)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000108.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: International Nuclear Materials Protection and Cooperation (2.2.42)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Measure: **Highly Enriched Uranium (HEU) converted to Low Enriched Uranium (LEU)**
Cumulative metric tons of HEU converted to LEU. (Long-term Outcome). (2.2.42.3)

2007 Results

Commentary: **G** This result is important because it prevents the theft/diversion of excess HEU. The cumulative target was 9.5 (FY 2007 result was 9.8).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will increase to a cumulative total of 10.7 metric tons in FY 2008 in order to meet the program goal to blend down a cumulative total of 17 MTs of HEU to LEU by the end of 2015.

Supporting
Documentation: Monthly U.S. monitoring visits to the downblending sites to validate process results. Contract deliverable downblending and monthly status reports.

Associated Performance in Prior Years

FY 2006: **Y** Convert 8.6 metric tons (cumulative) of highly enriched uranium (HEU) to low enriched uranium (LEU). (NA GG 2.46.03)

FY 2005: **Y** Convert 7.5 (cumulative) metric tons of Highly Enriched Uranium to Low Enriched Uranium. (NA GG 2.46.04)

FY 2004: **Y** Percentage of 27 MTs of HEU converted to LEU.
Annual Target: Convert 24% of the material (FY03 - 16%).

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000108.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: International Nuclear Materials Protection and Cooperation (2.2.42)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Second Line of Defense (SLD) Sites

Measure: Cumulative number of Second Line of Defense (SLD) sites with nuclear detection equipment installed. (Cumulative number of Megaports completed) (Long-term Output). (2.2.42.4)

2007 Results

Commentary: **Y** 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 cumulative target of 173 (12) was missed (FY 2007 result was 162 (12)) because delays in several countries impacted the program's ability to complete the 63 sites anticipated in FY 2007. Because this target was missed there is a reduced capability in these countries to detect and deter illicit trafficking in nuclear and other radioactive materials in these countries.

Future Plans /
Explanation of
Shortfalls: Action Plan: Subcontractor performance issues in Ukraine being addressed with revisions in contracting approach and temporary assignment of program rep in-country. In Turkey and Kyrgyzstan, host government delays in completion of agreements to cooperate are being worked via SLD Embassy contacts in-country. In Slovakia, host government agreed to fund construction, but their delays in contracting for installations pushed completion dates to November 2007. Delays in finalizing design at an airport in Lithuania have pushed completion of that site until November 2007. Unanticipated site construction at a site in Azerbaijan prevented that site from being completed. In Kazakhstan, sites scheduled for completion in September 2007 slipped into FY 2008 due to equipment and site access problems.

Future Plans: The cumulative target will be increased to a cumulative total of 263 sites in FY 2008 in support of the long-term target of completing installations of radiation detection equipment at 450 Core SLD program sites and 75 Megaports by FY 2014.

Supporting
Documentation: Schedules, trip reports, acceptance testing documentation.

Associated Performance in Prior Years

FY 2006: **Y** Install 114 (cumulative) Second Line of Defense (SLD) sites with nuclear detection equipment installed. (Complete a cumulative 10 Megaports.) (NA GG 2.46.04)

FY 2005: **Y** Achieve 98 (cumulative) Second Line of Defense (SLD) sites with nuclear detection equipment installed, along with 5 (cumulative) Megaports completed. (NA GG 2.46.06)

FY 2004: **Y** Cumulative number of Second Line of Defense (SLD) sites with nuclear detection equipment installed.
Annual Target: Install equipment at 74 sites (FY03 - 39).

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000108.2007.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: (2.2.43)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Mixed Oxide (MOX) Fuel Fabrication Facility

Measure: Cumulative percentage of the design, construction, and cold start-up activities completed for the Mixed Oxide (MOX) Fuel Fabrication Facility (Long-term Output) (2.2.43.1)

2007 Results

Commentary: **G** This result is important because it demonstrates progress toward the Department's goal of disposing of at least 34 metric tons of surplus U.S. weapons-grade plutonium. The annual target was 24% (FY 2007 result was 24%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will increase to 30% in FY 2008 in support of the goal to complete the design, construction, and cold-start-up activities for the MOX facility by 2016.

Supporting
Documentation: Earned Value Management System (EVMS) data from MOX FFF Monthly Status Report.

Associated Performance in Prior Years

FY 2006: **G** Complete 17 percent (cumulative) of the Mixed Oxide (MOX) Fuel Fabrication facility and equipment design, construction, and cold start-up activities. (NA GG 2.47.01)

FY 2005: **Y** Complete 100 percent (cumulative) of the detailed design, and begin site preparation and procurement for the mixed oxide (MOX) Fuel Fabrication Facility. (NA GG 2.47.02)

FY 2004: **Y** Percentage of the design and construction of the MOX Fuel Fabrication Facility completed. Annual Target: Complete 100% of the detailed design (FY03 - 75%).

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003238.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Fissile Materials Disposition (2.2.43)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Pit Disassembly and Conversion Facility (PDCF)
Measure: Cumulative percentage of the design, construction, and cold start-up activities completed for the Pit Disassembly and Conversion Facility (PDCF) Facility (Long-term Output). (2.2.43.2)

2007 Results

Commentary: **G** This result is important because it demonstrates progress toward the Department's goal of disposing of at least 34 metric tons of surplus U.S. weapons-grade plutonium. The cumulative target was 18% (FY 2007 result was 18%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will increase to 19% in FY 2008 in support of the goal to complete the design, construction, and cold-start-up activities for the PDCF by 2018.

Supporting
Documentation: EVMS and cost data from the PDCF consolidated monthly status reports

Associated Performance in Prior Years

FY 2006: **G** Complete 24 percent (cumulative) of the design, construction, and cold start-up activities completed for the Pit Disassembly and Conversion Facility (PDCF). (NA GG 2.47.02)

FY 2005: **R** Complete 100 percent (cumulative) of the detailed design, and 25 percent (cumulative) of site preparation for the Pit Disassembly and Conversion Facility (PDCF). (NA GG 2.47.01)

FY 2004: **Y** Percentage of the design and construction of the Pit Disassembly and Conversion Facility (PDCF) completed.
Annual Target: Complete 85% of the detailed design (FY03 - 60%).

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003238.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Fissile Materials Disposition (2.2.43)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

U.S. Highly Enriched Uranium (HEU) Downblended

Measure: Cumulative amount of surplus U.S. highly enriched uranium (HEU) down-blended or shipped for down-blending (EFFICIENCY MEASURE). (2.2.43.3)

2007 Results

Commentary: **G** This result is important because it is contributing to the Department's goal of disposing of surplus U.S. HEU. The cumulative target was 103MT (FY 2007 result was 103MT).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will increase to 112 MT in FY 2008 in support of the goal to complete disposition of the 217 MT of surplus HEU by 2050.

Supporting
Documentation: BWXT Y-12 monthly program status documents.

Associated Performance in Prior Years

FY 2006: **G** The cumulative amount of surplus U.S. highly enriched uranium (HEU) down -blended or shipped for down -blending is 93 metric tons. (NA GG 2.47.03)

FY 2005: **G** Downblend, or ship for downblending, 82 MT (cumulative) of surplus U.S. HEU. (NA GG 2.47.03)

FY 2004: **G** Amount of HEU shipped to the United States Enrichment Corporation (USEC) for down-blending. Annual Target: Ship an additional 11 metric tons (MT) for a total of 45MT.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003238.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Program: Global Threat Reduction Initiative (2.2.44)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Highly Enriched Uranium (HEU) Reactors Shutdown

Measure: Cumulative HEU reactors converted or verified as shutdown (Long-term Outcome).
(2.2.44.1)

2007 Results

Commentary: **G** This result is important because to date conversion of these reactors has reduced the amount of civil commerce in HEU by 275/kg per year. The cumulative target was 53 (FY 2007 result was 55).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will increase to 61 in FY 2008 in support of the goal to convert or verify the shutdown of a cumulative 129 HEU reactors by 2018.

Supporting
Documentation: GTRI Scorecard; Written Notification of conversion; and Conversion Report

Associated Performance in Prior Years

FY 2006: **Y** Convert 46 (cumulative) targeted research/test reactors from highly enriched uranium (HEU) to low enriched uranium fuel (LEU). (NA GG 2.64.01)
FY 2005: **Y** Convert 44 (cumulative) targeted research/test reactors from HEU to LEU fuel. (NA GG 2.64.01)
FY 2004: N/A

Additional Information

Office: National Nuclear Security Administration

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003239.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Global Threat Reduction Initiative (2.2.44)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Nuclear Material Removed

Measure: Cumulative kilograms of nuclear material (HEU and plutonium) removed or disposed (Long-term Outcome). (2.2.44.2)

2007 Results

Commentary: **G** This result is important because this effort will minimize the amount of weapons-usable material around the world. The cumulative target was 1,671 (FY 2007 result was 1,791).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will increase to 2,175 in FY 2008 in support of the goal to remove or dispose of a cumulative 4,917 kilograms of HEU and plutonium by 2015.

Supporting
Documentation: GTRI Scorecard; and Notification of removal; and Remove Report

Associated Performance in Prior Years

FY 2006: **Y** Repatriate 232 (cumulative) kilograms of fresh highly enriched uranium and/or spent fuel from Soviet-supplied research reactors to Russia. (NA GG 2.64.02)

FY 2005: **R** Repatriate 175 kilograms (cumulative) of HEU fresh and/or spent fuel from Soviet-supplied research reactors to Russia. (NA GG 2.64.02)

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003239.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Global Threat Reduction Initiative (2.2.44)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Measure: **Radiological Sources Removed**
Cumulative U.S. radiological sources removed or disposed (Long-term Outcome). (2.2.44.3)

2007 Results

Commentary: **G** This result is important because this effort will minimize the amount of excess and unwanted radioactive material that could be used in radiological dispersal devices. The cumulative target was 15,455 (FY 2007 result was 15,503).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will increase to 17,750 in FY 2008 in support of the goal to remove or dispose of a cumulative 31,700 excess domestic radiological sources by 2020.

Supporting
Documentation: GTRI Scorecard; Monthly notification of removals; Work team reports; Radiological recovery life cycle plan and GTRI website <http://osrp.lanl.gov/>

Associated Performance in Prior Years

FY 2006: **G** 7,115 (cumulative) fuel assemblies containing U.S.-origin spent fuel returned from foreign research reactors. (NA GG 2.64.03)

FY 2005: **G** Return 6,693 fuel assemblies (cumulative) containing U.S.-origin spent fuel from foreign research reactors. (NA GG 2.64.03)

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003239.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Global Threat Reduction Initiative (2.2.44)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Measure: **Radiological Sites Protected**
Cumulative high priority radiological sites protected (Long-term Outcome). (2.2.44.4)

2007 Results

Commentary: **G** This result is important because it reduces the risk posed by radioactive materials worldwide that could be used in radiological dispersal devices. The cumulative target was 590 (FY 2007 result was 599).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will increase to 790 in FY 2008 in support of the goal to protect a cumulative 3,311 vulnerable, high-priority international radiological sites by 2022.

Supporting
Documentation: GTRI Scorecard; Monthly notification of protection; Work team reports; and Global Threat Reduction Initiative Programmatic Guidelines for Site Prioritization and Protection Implementation

Associated Performance in Prior Years

FY 2006: **G** Secure 498 (cumulative) high priority sites with vulnerable radiological material. (NA GG 2.64.05)

FY 2005: **G** Secure 174 high priority sites (cumulative) with vulnerable radiological material. (NA GG 2.64.05)

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003239.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Global Threat Reduction Initiative (2.2.44)

Strategic Goal(s)
Supported: Goal 2.2 Weapons of Mass Destruction

Contracted Funds

Measure: Cumulative funds contracted directly with the private sector (EFFICIENCY MEASURE).
(2.2.44.5)

2007 Results

Commentary:

R

This result is important because it reduces the overall cost necessary to remove or protect nuclear and radiological materials worldwide than would otherwise occur through funding through government laboratories. The cumulative target of \$1M was missed (FY 2007 result was \$0.128M) because a post-award protest by a non-awardee prevented the program from issuing task orders until the protest was resolved. In August, the protest was resolved and GTRI held an orientation meeting with the awardees to review the Task Orders anticipated to be made. Given the lateness in the fiscal year, only two Task Orders were able to be processed, resulting in a total of \$128,453 being contracted in September. Because this target was missed, planned execution of threat reduction work under these task orders, anticipated for completion in 2007, were delayed into 2008. No agreements or commitments will be missed because of this delay.

Future Plans /
Explanation of
Shortfalls:

Action Plan: Additional Task Orders are being processed in October and will be issued in line with Budgets and work scope over the five year period.
Future Plan: The cumulative target will increase to \$3M in FY 2008 in support of the goal to directly contract with the private sector for \$100M worth of threat reduction services by 2013.

Supporting
Documentation:

GTRI Scorecard; --Task Order Tracking List; and Task Orders

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003239.2006.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Naval Reactors (2.3.45)

Strategic Goal(s)
Supported: Goal 2.3 Nuclear Propulsion Plants

Nuclear Propulsion Plant Operations
Measure: Cumulative miles steamed, in millions, of safe, reliable, militarily effective nuclear propulsion plant operation supporting National security requirements (Long-term Outcome). (2.3.45.1)

2007 Results

Commentary: **G** This result is important because it measures the safety and reliability of operating nuclear propulsion plants. The cumulative target was 138 million miles (FY 2007 result was 138 million miles).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 140 million miles in FY 2008 in support of the long-term target of 154 million miles safely steamed by 2015.

Supporting
Documentation: Commissioned Ship Operating Reports

Associated Performance in Prior Years

FY 2006: **G** Achieve 134 million miles (cumulative) of safe, reliable, militarily effective nuclear propulsion plant operation supporting National security requirements. (NA GG 3.49.01)
FY 2005: **G** Achieve 132 million cumulative miles of safe reactor plant operation supporting National security requirements (NA GG 3.49.01)
FY 2004: **G** Complete safe steaming of approximately two million miles in nuclear powered ships.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003404.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Naval Reactors (2.3.45)

Strategic Goal(s)
Supported: Goal 2.3 Nuclear Propulsion Plants

Transformational Technology Core (TTC)

Measure: Cumulative percentage of completion on the Transformational Technology Core (TTC) reactor plant design and core delivery (Long-term Outcome). (2.3.45.2)

2007 Results

Commentary: **G** This result is important because it provides the Navy with next-generation propulsion plant technology core fuel design that could provide an energy increase to the Navy's submarines, extending the ship life by as much as 30%. The cumulative target was 100% (FY 2007 result was 100%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be deleted, since the goal of completing the TTC reactor plant core fuel design has been achieved.

Supporting
Documentation: TTC Quarterly Performance Reports

Associated Performance in Prior Years

FY 2006: **G** Complete 34 percent (cumulative) of the Transformational Technology Core (TTC) reactor plant design. (NA GG 3.49.02)

FY 2005: **G** Achieve 23 percent cumulative of core conceptual design for the Transformational Technology Core (TTC) reactor plant, and initiate final design and development work. (NA GG 3.49.03)

FY 2004: **G** Percent of completion on the Transformational Technology Core (TTC) reactor plant design. Annual Target: Establish design basis from preliminary studies and development to enable the start of conceptual design.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003404.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Naval Reactors (2.3.45)

Strategic Goal(s)
Supported: Goal 2.3 Nuclear Propulsion Plants

Reactor Plant Design

Measure: Cumulative percentage of completion on the next-generation aircraft carrier reactor plant design (Long-term Outcome). (2.3.45.3)

2007 Results

Commentary: **G** 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. This will enable the Navy to meet current forecasted operational requirements. The cumulative target was 80% (FY 2007 result was 80%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The cumulative target will be increased to 85% in FY 2008 in support of the long-term target of completing 100% of the next-generation aircraft carrier reactor plant design by 2015.

Supporting
Documentation: CVN 21 Propulsion Plant Planning Estimate & Actual Reporting

Associated Performance in Prior Years

FY 2006: **G** Complete 75 percent of the next-generation aircraft carrier reactor plant design. (NA GG 3.49.03)

FY 2005: **G** Complete 70 percent (cumulative) of the next-generation aircraft carrier reactor plant design. (NA GG 3.49.04)

FY 2004: **G** Percent of completion on the next-generation aircraft carrier reactor plant design.
Annual Target: Complete 60%.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003404.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Naval Reactors (2.3.45)

Strategic Goal(s)
Supported: Goal 2.3 Nuclear Propulsion Plants

Program Operations

Measure: Annual percentage of Program operations that have no adverse impact on human health or the quality of the environment (Annual Outcome) (2.3.45.5)

2007 Results

Commentary: **G** This result is important because it assesses human health and environmental risks associated with program operations. The annual target was 100% (FY 2007 result was 100%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will remain constant at ensuring 100% of program operations have no adverse impact on human health or the quality of the environment

Supporting
Documentation: Annual Monitoring Report

Associated Performance in Prior Years

FY 2006: **G** Achieve 100 percent of Program operations that have no adverse impact on human health or the quality of the environment. (NA GG 3.49.04)

FY 2005: **G** Achieve 100 percent of annual program operations with no adverse impact on human health or the quality of the environment. (NA GG 3.49.07)

FY 2004: **G** Operations have no adverse impact on human health or the quality of the environment.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003404.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Naval Reactors (2.3.45)

Strategic Goal(s)
Supported: Goal 2.3 Nuclear Propulsion Plants

Test Reactor Plants

Measure: Annual utilization factor for operation of test reactor plants (EFFICIENCY MEASURE).
(2.3.45.6)

2007 Results

Commentary: **G** This result is important because it represents a cost-effective way of training Naval nuclear plant operators. The annual target was 90% (FY 2007 result was 95%).

Future Plans /
Explanation of
Shortfalls: Future Plans: The annual target will remain constant at achieving a minimum utilization rate of 90% for operation of test reactor plants.

Supporting
Documentation: Prototype Annual Activity Schedule & Actual Reporting

Associated Performance in Prior Years

FY 2006: **G** Achieve a 90 percent utilization factor for operation of test reactor plants. (NA GG 3.49.05)

FY 2005: **G** Achieve 90 percent annual utilization factor for operation of test reactor plants. (NA GG 3.49.02)

FY 2004: **G** Achieve a utilization factor of at least 90% for operation of test reactors.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003404.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

Office: National Nuclear Security Administration

Program: Naval Reactors (2.3.45)

Strategic Goal(s)
Supported: Goal 2.3 Nuclear Propulsion Plants

Naval Reactors Facility Condition Index (FCI)

Measure: 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). (2.3.45.7)

2007 Results

Commentary: **G** 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. The annual target was 5% (FY 2007 result was 5%).

Future Plans /
Explanation of
Shortfalls: The annual target will remain constant at achieving a FCI of less than 5% or less.

Supporting
Documentation: Deferred maintenance and plant replacement value reported in FIMS

Associated Performance in Prior Years

FY 2006: **G** Achieve a five percent annual Naval reactors complex-wide aggregate Facility Condition Index, as measured by deferred maintenance per replacement plant value for all program facilities and infrastructure. (NA GG 3.49.06)

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10003404.2005.html>

Program Office: <http://www.nnsa.doe.gov/>

FY 2007 Performance Measures

THEME 3 – SCIENTIFIC DISCOVERY AND INNOVATION

Office: Science

Program: High Energy Physics (3.1/2.46)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Inverse Picobarns

Measure: 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. (3.1/2.46.1)

2007 Results

Commentary: **G** Annual target met. Tevatron delivered 1311 pb⁻¹ to CDF and D-Zero. Achieving this target produces experimental data that advances our knowledge of the nature of fundamental particles and the physical laws that govern matter, energy, space and time

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

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

Associated Performance in Prior Years

FY 2006: **G** Delivered data as planned within 20% of the baseline estimate (675 pb⁻¹) to CDF and D-Zero detectors at the Tevatron.

FY 2005: **G** Delivered data as planned within 20% of the baseline estimate (390 pb⁻¹) to CDF and D-Zero detectors at the Tevatron.

FY 2004: **G** Delivered data as planned within 20% of the baseline estimate (240 pb⁻¹) to CDF and D-Zero detectors at the Tevatron.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000104.2003.html>

Program Office: <http://www.science.doe.gov/feature/HEP.htm>

FY 2007 Performance Measures

Office: Science

Program: High Energy Physics (3.1/2.46)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Inverse Femtobarns

Measure: Deliver within 20% of baseline estimate a total integrated amount of data (in inverse femtobarns[fb⁻¹]) delivered to the BABAR detector at the Stanford Linear Accelerator (SLAC) B-factory. The FY 2007 baseline is 130 fb⁻¹, so within 20% of baseline is 104 fb⁻¹. (3.1/2.46.2)

2007 Results

Commentary: **R** Annual target not met. B-factory delivered 90 fb⁻¹ to the BABAR detector in FY07. Recovery from scheduled shutdown in Q1 to install accelerator and detector upgrades was slow, and several vacuum and magnet failures impacted both peak performance and average uptime. Achieving this target produces experimental data that advances our knowledge of the nature of fundamental particles and the physical laws that govern matter, energy, space and time.

Future Plans /
Explanation of
Shortfalls: Several technical projects are underway to solve the problems that hurt the PEP-II performance in FY 2007. They are: 1) replace the damaged vacuum chamber in the interaction region, 2) replace all 192 arc flex-flange rf seals, 3) repair several radio frequency cavity vacuum issues, and 4) install several Higher Order Mode (HOM) absorbing expansion bellows around both rings. These projects are proceeding well and will be completed during the scheduled down period extending from September 4 through December 4, 2007. These improvements will both reduce the probability of unscheduled downs due to vacuum issues and remove one of the main limitations on raising beam currents. PEP-II is preparing a strategic plan for maximizing the integrated luminosity from the FY 2008 run, which will be reviewed by the PEP-II Machine Advisory Committee on November 15-17, 2007.

Supporting
Documentation: http://www.slac.stanford.edu/grp/ad/PEP-II_Run_Time_Statistics/PEP%20FY2003-5%20totals%20for%20DOE.pdf

Associated Performance in Prior Years

| | | |
|----------|----------|--|
| FY 2006: | G | Delivered data as planned within 20% of the baseline estimate (100 fb ⁻¹) to the BaBar detector at the SLAC B-factory. |
| FY 2005: | G | Delivered data as planned within 20% of baseline estimate (50 fb ⁻¹) to the BaBar detector at the SLAC B-factory. |
| FY 2004: | G | Delivered data as planned within 20% of baseline estimate (45 fb ⁻¹) to the BaBar detector at the SLAC B-factory. |

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000104.2003.html>

Program Office: <http://www.science.doe.gov/feature/HEP.htm>

FY 2007 Performance Measures

Office: Science

Program: High Energy Physics (3.1/2.46)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Cost and Schedule Baselines

Measure: 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. (3.1/2.46.3)

2007 Results

Commentary: **G** Annual target met. Cost variance for ATLAS is +0.8%. Cost variance for CMS is +1.1%. Total project cost-weighted average is +1.0%. Schedule variance for both ATLAS and CMS is less than 0.1%. Therefore, the total project cost-weighted average is less than 0.1%. Controlling project costs and meeting construction schedules enables the Department to conduct world-class scientific research across a wide-range of disciplines.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
Documentation: Derived from Quarterly Project Reports for the following projects:
- U.S. CMS;
- U.S. ATLAS;
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 2006: **G** Maintained cost and schedule milestones for major items of equipment and new construction projects within 10% of baseline estimates.
FY 2005: **G** Maintained cost and schedule milestones for upgrades and new major construction projects within 10% of baseline estimates.
FY 2004: **G** Maintained cost and schedule milestones for upgrades and new major construction projects within 10% of baseline estimates.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000104.2003.html>

Program Office: <http://www.science.doe.gov/feature/HEP.htm>

FY 2007 Performance Measures

Office: Science

Program: High Energy Physics (3.1/2.46)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Scientific User Facilities

Measure: 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)

2007 Results

Commentary: **G** Annual target met. Fermi operation time was 83% in FY07 and SLAC operation time was 81%. Overall HEP average is 82%. Achieving this target ensures full use of the HEP scientific user facilities and justifies investments in these crucial facilities.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Derived from letters from Lab Directors or designee. Fermi data are reported at same website as for SC GG 3.1/2.46.1 (<http://www-bdnew.fnal.gov/operations/lum/supertable.html>); SLAC data at same website as for SC 3.1/2.46.2

(http://www.slac.stanford.edu/grp/ad/PEP/Run_Time_Statistics/PEP%20FY2003-5%20totals%20for%20DOE.pdf.)

Supporting
Documentation: The scientific user facilities and scheduled hours:
- the Fermilab Tevatron, 4560
- the Stanford Linear Accelerator (SLAC) B-factory, 5200 for a total of 9760 hours (7808 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 FY07 budget submission.

Associated Performance in Prior Years

FY 2006: **R** Maintained and operated HEP facilities such that unscheduled downtime was on average less than 20% of the total scheduled operating time.
FY 2005: **R** Maintained and operated HEP facilities such that unscheduled downtime was on average less than 20% of the total scheduled operating time.
FY 2004: **G** Maintained and operated HEP facilities such that unscheduled downtime was on average less than 20% of the total scheduled operating time.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000104.2003.html>

Program Office: <http://www.science.doe.gov/feature/HEP.htm>

FY 2007 Performance Measures

Office: Science

Program: High Energy Physics (3.1/2.46)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

MINOS Detector

Measure: 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)

2007 Results

Commentary: **G** Annual target met. NuMI delivered 1.9×10^{20} protons-on-target. Achieving this target produces experimental data that advances our knowledge of the nature of fundamental particles and the physical laws that govern matter, energy, space and time.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

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

Associated Performance in Prior Years

FY 2006: **G** Delivered data as planned within 20% of the baseline estimate (1×10^{20} protons on target) for the MINOS experiment using the NuMI facility.

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000104.2003.html>

Program Office: <http://www.science.doe.gov/feature/HEP.htm>

FY 2007 Performance Measures

Office: Science

Program: Nuclear Physics (3.1/2.47)

Strategic Goal(s) Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Events

Measure: 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, HRIBF-1.8; FY 07 within 20% of baseline ATLAS-17.6, HRIBF-1.4. (3.1/2.47.1)

2007 Results

Commentary: **G** Annual Target met. Achieved 27.6 billion events at ATLAS and 7.1 billion events at HRIBF. Scientists accelerate and collide radioactive and stable beams on targets to investigate new regions of nuclear structure; studying interactions in nuclear matter like those occurring in neutron stars; and determining the reactions that created the nuclei of the chemical elements inside stars and supernovae.

Future Plans / Explanation of Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting Documentation: Official letters from ANL and ORNL management to NP Office reporting and certifying accuracy of recorded number of events at ATLAS and HRIBF (per documented control process). Documentation resides in the Office of Nuclear Physics (SC-26) files.

Associated Performance in Prior Years

FY 2006: **G** Weighted average number (within 20% of baseline estimate of billions of events recorded by experiments at the Argonne Tandem Linac Accelerator System (24.6) and Holifield Radioactive Ion Beam (7.1) facilities, respectively.

FY 2005: **G** Weighted average number (within 20% of baseline estimate of billions of events recorded by experiments at the Argonne Tandem Linac Accelerator System (28.1) and Holifield Radioactive Ion Beam (3.76) facilities, respectively.

FY 2004: **G** Weighted average number (within 20% of baseline estimate of billions of events recorded by experiments at the Argonne Tandem Linac Accelerator System (25) and Holifield Radioactive Ion Beam (5.3) facilities, respectively.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000114.2003.html>

Program Office: <http://www.science.doe.gov/feature/NP.htm>

FY 2007 Performance Measures

Office: Science

Program: Nuclear Physics (3.1/2.47)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Experiments

Measure: 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. (3.1/2.47.2)

2007 Results

Commentary: **G** Annual Target met. Recorded 2.49 billion events in Hall A, 12.42 billion events in Hall B, and 3.01 billion events in Hall C. Achieving this target allows scientists to study the structure of the nucleon and light nuclei. These accomplishments allow precise measurements of fundamental properties of the proton, neutron and simple nuclei for comparison with theoretical calculations to provide a quantitative understanding of the quark sub-structure.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
Documentation: Official letter from TJNAF management to NP Office reporting and certifying accuracy of recorded number of events in Hall A, B, C at CEBAF (per documented control process).
Documentation resides in the Office of Nuclear Physics (SC-26) files.

Associated Performance in Prior Years

FY 2006: **G** Weighted average number (within 20% of baseline estimate) of billions of events recorded by experiments in Hall A (1.77), Hall B (9.9), and Hall C (1.9), respectively, at the Continuous Electron Beam Accelerator Facility.

FY 2005: **G** Weighted average number (within 20% of baseline estimate) of billions of events recorded by experiments in Hall A (2.83), Hall B (8.06), and Hall C (2.11), respectively, at the Continuous Electron Beam Accelerator Facility.

FY 2004: **G** Weighted average number (within 20% of baseline estimate) of billions of events recorded by experiments in Hall A, Hall B, and Hall C, respectively, at the Continuous Electron Beam Accelerator Facility. FY04 – 2.4, 7.2, 2.1

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000114.2003.html>

Program Office: <http://www.science.doe.gov/feature/NP.htm>

FY 2007 Performance Measures

Office: Science

Program: Nuclear Physics (3.1/2.47)

Strategic Goal(s) Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Heavy-Ion Collision Events

Measure: 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. (3.1/2.47.3)

2007 Results

Commentary: **G** Annual Target met. Sampled 5,100 million events in PHENIX and STAR recorded 86.6 million events. Achieving this target allows scientists to study heavy-ion collision events that create new forms of hot, dense nuclear matter and to probe their properties.

Future Plans / Explanation of Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting Documentation: Official letter from BNL management to NP Office reporting and certifying accuracy of heavy-ion collision events sampled by the PHENIX and recorded by the STAR detectors at RHIC. Documentation resides in the Office of Nuclear Physics (SC-26) files.

Associated Performance in Prior Years

FY 2006: N/A No Target. (The Relativistic Heavy Ion Collider did not operate in heavy ion mode during FY 2006)

FY 2005: **G** Weighted average number (within 30% of baseline estimate of millions of events sampled by the PHENIX (900) and recorded by the STAR (40) detectors, respectively, at the Relativistic Heavy Ion Collider.

FY 2004: **G** Initiated first round of experiments with collisions with other ions to compare to results of gold-gold collisions.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000114.2003.html>

Program Office: <http://www.science.doe.gov/feature/NP.htm>

FY 2007 Performance Measures

Office: Science

Program: Nuclear Physics (3.1/2.47)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Scientific User Facilities

Measure: Achieve at least 80% average operation time of the scientific user facilities as a percentage of the total scheduled annual operating time. (3.1/2.47.5)

2007 Results

Commentary: **G** Annual Target met. NP user facilities (ATLAS, HRIBF, RHIC and CEBAF) achieved an average of 91% reliability of the uptime/scheduled time for the year. Achieving this target, scientists can optimally use the facility's capability and optimize operation time studying nuclear physics.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
Documentation: 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 2006: **G** Maintained and operated Nuclear Physics scientific user facilities so the unscheduled operational downtime was 6%, on average, of scheduled operating time.

FY 2005: **G** Maintained and operated Nuclear Physics scientific user facilities so the unscheduled operational downtime was 13%, on average, of total scheduled operating time.

FY 2004: **G** Maintained and operated Nuclear Physics scientific user facilities so the unscheduled operational downtime was 12%, on average, of total scheduled operating time.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000114.2003.html>

Program Office: <http://www.science.doe.gov/feature/NP.htm>

FY 2007 Performance Measures

Office: Science

Program: Biological and Environmental Research (3.1/2.48)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Contaminant Transport

Measure: Implement a field-oriented, integrated experimental research program to quantify coupled processes that control reactive transport of at least one key DOE contaminant. (3.1/2.48.1)

2007 Results

Commentary: **G** Implementation Plan progress report from the Oak Ridge Integrated Field Challenge (IFC) project announced in the first quarter of FY2007 is posted at http://www.lbl.gov/ERSP/generalinfo/milestones/ersd_data07.html. Success represents incremental progress toward determining the dominant processes controlling the fate and transport of contaminants in subsurface environments and developing quantitative numerical models to describe contaminant mobility at the field scale.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
Documentation: 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 2006: **G** Develop predictive model for contaminant transport that incorporates complex biology, hydrology, and chemistry of the subsurface. Validate model through field tests.

FY 2005: **G** Determine scalability of laboratory results in field experiments - Conduct two sets of field experiments to evaluate biological reduction of chromium and uranium by microorganisms and compare the results to laboratory studies to understand the long term fate and transport of these elements in field settings.

FY 2004: **G** Perform combined field/laboratory/modeling to determine how to interpret data at widely differing scales: Quantify contaminant immobilization and remobilization by different factors: 1. natural microbial mechanisms; 2. chemical reactions with minerals; and 3. colloid formation.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000080.2003.html>

Program Office: <http://www.science.doe.gov/feature/BER.htm>

FY 2007 Performance Measures

Office: Science

Program: Biological and Environmental Research (3.1/2.48)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

DNA Sequencing

Measure: 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). (3.1/2.48.2)

2007 Results

Commentary: **R** Annual target not met. 38.95 Billion bases (97% of goal) achieved. However the cost milestone was achieved: JGI produced 714 base pairs (vice goal of 644) per \$1. Achieving this target increases our body of knowledge about DNA from which scientists hope to find new ways to treat or avoid illness, as well as develop new pharmaceutical and agricultural products, energy sources, industrial processes, and solutions to a variety of environmental problems.

Future Plans /
Explanation of
Shortfalls: Increase proportion of 454 and Illumina sequencing (vs. capillary sequencing) to meet FY 2008 goals.

Supporting
Documentation: 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 Production Genomics Facility to calculate the cost of DNA sequencing. Production Genomics Facility – <http://www.jgi.doe.gov/sequencing/statistics.html>.

Associated Performance in Prior Years

FY 2006: **G** Increase the rate of DNA sequencing: Number (in billions) of base pairs of high quality (less than one error in 10,000 bases) DNA microbial and model organism genome sequence produced annually. FY 2006 at least 30 billion base pairs will be sequenced.

FY 2005: **G** Increase the rate of DNA sequencing: Number (in billions) of base pairs of high quality (less than one error in 10,000 bases) DNA microbial and model organism genome sequence produced annually. FY 2005 at least 28 billion base pairs will be sequenced.

FY 2004: **G** Increase the rate of DNA sequencing: Produce at least 20 billion base pairs of high quality DNA microbial and model organism genome sequence.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000080.2003.html>

Program Office: <http://www.science.doe.gov/feature/BER.htm>

FY 2007 Performance Measures

Office: Science

Program: Biological and Environmental Research (3.1/2.48)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Climate Models

Measure: Provide new mixed-phase cloud parameterization for incorporation in atmospheric general circulation models (GCMs) and evaluate extent of agreement between climate model simulations and observations for cloud properties in the arctic. (3.1/2.48.3)

2007 Results

Commentary: **G** Annual target met. The new cloud microphysics scheme is further tested in CAM3 climate simulations and results are evaluated using the ARM measurements. The new scheme leads to the improvement of the cloud fraction and reduction of temperature bias in the tropical tropopause. The predicted ice water content in the CAM3 with the new scheme is in better agreement with the ARM observation at the SGP site for the mixed-phase clouds and with the Aura MLS data than that in the standard CAM3. Achieving this target moves the program closer to climate simulations that will help determine energy policy relative to global climate change.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
Documentation: 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 2006: **G** Improve climate models: Produce a new continuous time series of retrieved cloud properties at each ARM site and evaluate the extent of agreement between climate model simulations of water vapor concentration and cloud properties and measurements of these quantities on the timescale of 1 to 4 days.

FY 2005: **G** Improve climate models: Implement three separate component submodels (an interactive carbon cycle submodel, a secondary sulfur aerosol submodel, and an interactive terrestrial biosphere submodel) within a climate model and conduct 3-4 year duration climate simulation using the fully coupled model.

FY 2004: **G** Improve climate models: Implement a model test bed system to incorporate climate data rapidly into climate models to allow testing of the performance of sub-models (e.g. cloud resolving module) and model parameters by comparing model simulations with real world data from the ARM sites and satellites.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000080.2003.html>

Program Office: <http://www.science.doe.gov/feature/BER.htm>

FY 2007 Performance Measures

Office: Science

Program: Biological and Environmental Research (3.1/2.48)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

ARM Climate Research Facilities

Measure: 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%. (3.1/2.48.4)

2007 Results

Commentary: **G** The FY2007 annual target met; achieved an average of 104%. Achieving this target, scientists can optimally use the facility's capability.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
Documentation: 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 2006: **G** Maintain and operate BER Climate Change research facilities such that achieved operation time is on average greater than 98% of the total scheduled annual operation time for each group of facilities.

FY 2005: **G** Maintain and operate BER Climate Change research facilities such that achieved operation time is on average greater than 90% of the total scheduled annual operation time for each group of facilities.

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000080.2003.html>

Program Office: <http://www.science.doe.gov/feature/BER.htm>

FY 2007 Performance Measures

Office: Science

Program: Biological and Environmental Research (3.1/2.48)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Molecular Sciences Laboratory

Measure: The achieved operation time of the (environment) scientific user facility as a percentage of the total scheduled annual operating time is greater than 98%. (3.1/2.48.5)

2007 Results

Commentary: **G** Annual target met; achieved an average of 99.9% . Achieving this target, scientists can optimally use the facility's capability.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
Documentation: 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 2006: **G** Maintain and operate BER Environmental Remediation facilities such that achieved operation time is on average greater than 95% of the total scheduled annual operation time for each group of facilities.

FY 2005: **G** Maintain and operate BER Environmental Remediation facilities such that achieved operation time is on average greater than 90% of the total scheduled annual operation time for each group of facilities.

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000080.2003.html>

Program Office: <http://www.science.doe.gov/feature/BER.htm>

FY 2007 Performance Measures

Office: Science

Program: Biological and Environmental Research (3.1/2.48)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Production Genomics User Facilities

Measure: 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%. (3.1/2.48.6)

2007 Results

Commentary: **G** Annual target met; achieved an average of 102%. Achieving this target, scientists can optimally use the facility's capability.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
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 2006: **G** Maintain and operate BER Life Science facilities such that achieved operation time is on average greater than 98% of the total scheduled annual operation time for each group of facilities.

FY 2005: **G** Maintain and operate BER Life Science facilities such that achieved operation time is on average greater than 90% of the total scheduled annual operation time for each group of facilities.

FY 2004: N/A

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000080.2003.html>

Program Office: <http://www.science.doe.gov/feature/BER.htm>

FY 2007 Performance Measures

Office: Science

Program: Biological and Environmental Research (3.1/2.48)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Advance Blind Patient Sight

Measure: Advance blind patient sight: complete design and construction of final 256 electrode array. Begin in vitro testing and non-stimulating testing in animals. (3.1/2.48.7)

2007 Results

Commentary: **G** Annual target met. The design and construction of two 256 electrode arrays was completed, and in vitro and animal non-stimulating tests were initiated. Achieving this target will allow scientists to replicate human function and advance blind patient sight, spurring R&D for other prostheses/organs

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
Documentation: EOY - Emails reporting the results and publication/availability of the results (per documented control process).
The e-mails reside at <http://artificialretina>

Associated Performance in Prior Years

FY 2006: **G** Advance blind patient sight: Begin testing of prototypes for 256 microelectrode array artificial retina.

FY 2005: **R** Advance blind patient sight: Complete testing on a 60 microelectrode array artificial retina and insert prototype device into a blind patient.

FY 2004: **G** Advance blind patient sight: Complete fabrication of 60 microelectrode array for use as an artificial retina and tested in animal subject.

Additional Information

PART: Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000080.2003.html>

Program Office: <http://www.science.doe.gov/feature/BER.htm>

FY 2007 Performance Measures

Office: Science

Program: Fusion Energy (3.1/2.49)

Strategic Goal(s) Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Experiments

Measure: Experiments - 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. (3.1/2.49.1)

2007 Results

Commentary: **G** Annual target met. Completed a series of energetic particle-related experiments and identified three Alfvén Eigenmodes. Carried out a comprehensive analysis of the behavior of the modes and their effect on the confinement of fast particles, and compared the results with published theoretical models. These experiments provide critical data on plasma behavior needed to eventually predict the performance of burning plasmas.

Future Plans / Explanation of Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting 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 2006: **G** Conduct experiments on the major fusion facilities (DIII-D, Alcator C-Mod, and NSTX) leading toward the predictive capability for burning plasmas and configuration optimization. In FY 2006, FES injected 2 MW of neutral power in the counter direction on DIII-D and began physics experiments.

FY 2005: **G** Conduct experiments on the major fusion facilities (DIII-D, Alcator C-Mod and NSTX) leading toward the predictive capability for burning plasmas and configuration optimization. In FY 2005, FES measured plasma behavior in Alcator CMod with high-Z antenna guards and input power greater than 3.5 MW.b

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000096.2003.html>

Program Office: <http://www.science.doe.gov/feature/fes.htm>

FY 2007 Performance Measures

Office: Science

Program: Fusion Energy (3.1/2.49)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Plasma Phenomena

Measure: 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. (3.1/2.49.2)

2007 Results

Commentary: **G** Annual target met. Analyzed possible ITER reversed shear discharges. Looked at a variety of plasma states to determine the linear stability of toroidal mode number n=1-15 TAE modes. With this information, prepared a comprehensive review of the TAE energetic particle stability of ITER discharges in three operating regimes. Achieving this target allows scientists to determine which instabilities are expected to be observed in ITER. This is the starting point to measuring these instabilities and determining their impact on ITER.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
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 2006: **G** 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 2006, FES simulated nonlinear plasma edge phenomena using extended MHD codes with a resolution of 40 toroidal modes.

FY 2005: **G** 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 2005, FES simulated nonlinear plasma edge phenomena using extended MHD codes with a resolution of 20 toroidal modes.

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/1000096.2003.html>

Program Office: <http://www.science.doe.gov/feature/fes.htm>

FY 2007 Performance Measures

Office: Science

Program: Fusion Energy (3.1/2.49)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Facility Operations

Measure: 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%. (3.1/2.49.3)

2007 Results

Commentary: **G** Annual target met. A total of 40.1 weeks of operations exceeded the target of 35 weeks; 114.6% > 90%." with "Annual target met. DIII-D completed 12.8 weeks of experiments on August 8. NSTX finished 12.6 weeks of research operations on June 22. C-Mod completed 14.7 weeks of experiments on August 31. A total of 40.1 weeks of operations exceeded the target of 35 weeks or facilities operated at 114.6% of schedule/planned operations. A total of 40.1 weeks of operations exceeded the target of 35 weeks; 114.6% > 90%.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

The V&V website is: <http://www.science.doe.gov/ofes/performancetargets.shtml>
This site provides quarterly progress reports and documentation of achievement for this annual target.
The results will be updated on a timely basis.

Supporting
Documentation: 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.
35 weeks total (baseline) are expected for the year.

Associated Performance in Prior Years

FY 2006: **G** Average achieved operational time of major national fusion facilities as a percentage of total planned operational time is greater than 90%.

FY 2005: **G** Average achieved operational time of major national fusion facilities as a percentage of total planned operational time is greater than 90%.

FY 2004: **G** Average achieved operational time of major national fusion facilities as a percentage of total planned operational time is greater than 90%.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000096.2003.html>

Program Office: <http://www.science.doe.gov/feature/fes.htm>

FY 2007 Performance Measures

Office: Science

Program: Fusion Energy (3.1/2.49)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Cost and Schedule Baselines

Measure: Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects in FY 2007 of less than 10% each. (3.1/2.49.4)

2007 Results

Commentary: **R** Target's FY07 Goal Not Met. NCSX is assessed as "red" because it was unable to meet the currently approved baseline. Controlling project costs and meeting construction schedules enables the Department to conduct world-class scientific research across a wide-range of disciplines.

The following corrective actions have been performed or are in progress associated with the NCSX project:

- Future Plans /
Explanation of
Shortfalls:
1. In August 2007, SC performed a technical, cost, schedule and management review. The proposed new baseline would be an increase of about \$40M with a schedule extension of ~29 months.
 2. In August 2007, SC requested that the Fusion Energy Science Advisory Committee (FESAC) initiate a scientific/programmatic review to evaluate the merit of continuing with the NCSX program. SC will receive the FESAC report at its next meeting in October 2007.
 3. In October 2007, Princeton University was asked to perform a comprehensive technical design review to determine the feasibility of building NCSX, based on the current design, within its required tolerances and to submit a final review report to SC by November 2007.
- Based on the above reviews, SC will decide whether to rebaseline or cancel the NSCX project by second quarter 2008.

Supporting
Documentation: <http://ncsx.pppl.gov/CPR/CPR.html> : The website provides monthly progress reports and documentation of achievement for this annual target. The results will be updated on a timely basis. The relevant project is the National Compact Stellarator Experiment (NCSX). "Cost-weighted mean" in reference to cost variance is $((\text{budgeted cost for work performed}) - (\text{actual cost of work performed})) / ((\text{budgeted cost for work performed}) * (\text{number of projects}) * 100)$. "Cost-weighted mean" in reference to schedule variance is $((\text{budgeted cost for work performed}) - (\text{budgeted cost for work scheduled})) / ((\text{budgeted cost for work scheduled}) * (\text{number of projects}) * 100)$. Definitions are standard, from OMB Circular No. A-11 (2004), Part 7, Section 300-30, at http://www.whitehouse.gov/omb/circulars/a11/current_year/s300.pdf.

Associated Performance in Prior Years

| | | |
|----------|----------|--|
| FY 2006: | G | Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects kept to less than 10%. |
| FY 2005: | G | Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects kept to less than 10%. |
| FY 2004: | G | Cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects kept to less than 10%. |

FY 2007 Performance Measures

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000096.2003.html>

Program Office: <http://www.science.doe.gov/feature/fes.htm>

FY 2007 Performance Measures

Office: Science

Program: Basic Energy Science (3.1/2.50)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Temporal Resolution

Measure: Demonstrate an X-ray pulse of less than 100 femtoseconds in duration and containing more than 100 million photons per pulse. (3.1/2.50.1)

2007 Results

Commentary: **G** Annual target met. 70 femtosecond pulses with 100 million photons per pulse. Achieving this target allows scientists to "see" fast events, such as chemical reactions and the folding of proteins.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY08. No further quantitative improvements are expected in these measures in FY 2007 as compared to the level of achievement for FY 2006. 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.

Supporting
Documentation: This page, "Quarterly Performance Numbers," lists the number of inverse picobarns for each quarter of 2006. <http://www-bdnew.fnal.gov/operations/lum/supertable.html>

Associated Performance in Prior Years

FY 2006: **G** Improve temporal resolution: X-ray pulses were measured at 70 femtoseconds in duration with an intensity of 100 million photons per pulse.

FY 2005: **G** Improve temporal resolution: X-ray pulses were measured at 70 femtoseconds in duration with an intensity of 100 million photons per pulse.

FY 2004: **G** Improve temporal resolution: X-ray pulses were measured at 20 femtoseconds in duration with an intensity of 10,000 photons per pulse.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000078.2003.html>

Program Office: <http://www.science.doe.gov/feature/BES.htm>

FY 2007 Performance Measures

Office: Science

Program: Basic Energy Science (3.1/2.50)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Spatial Resolution

Measure: 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. (3.1/2.50.2)

2007 Results

Commentary: **G** Annual target met. Results: Hard x-ray - 90 nanometers; Soft x-ray - 15 nanometers; Electron microscope - 0.078 nanometers. This allows scientists to improve the clarity from which they can "see" very small objects such as viruses or even atoms, which have a size on the scale of nanometers.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008. No further quantitative improvements are expected in these measures in FY 2007 as compared to the level of achievement for FY 2006. 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.

Supporting
Documentation: This page, "SLAC-PEP-II Run Statistics," for the BABAR Detector and PEP-II B-factory, records its "data delivery" (in fb-1) and "unscheduled downtime."
http://www.slac.stanford.edu/grp/ad/PEP-II_Run_Time_Statistics/PEP%20FY2003-5%20totals%20for%20DOE.pdf

Associated Performance in Prior Years

FY 2006: **G** Improve Spatial Resolution: Spatial resolution for imaging in the hard x-ray region was measured at 90 nm and in the soft x-ray region was measured at 15 nm, and spatial information limit for an electron microscope of 0.078 nm was achieved.

FY 2005: **G** Improve Spatial Resolution: Spatial resolution for imaging in the hard x-ray region was measured at 90 nm and in the soft x-ray region was measured at 15 nm, and spatial information limit for an electron microscope of 0.078 nm was achieved.

FY 2004: **G** Improve Spatial Resolution: Spatial resolution for imaging in the hard x-ray region was measured at 100 nm and in the soft x-ray region was measured at 19 nm, and spatial information limit for an electron microscope of 0.078 nm was achieved.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000078.2003.html>

Program Office: <http://www.science.doe.gov/feature/BES.htm>

FY 2007 Performance Measures

Office: Science

Program: Basic Energy Science (3.1/2.50)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Cost and Schedule Baselines

Measure: 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. (3.1/2.50.3)

2007 Results

Commentary: **R** Annual target not met. Results: -5.8% (cost variance) and -11.0% (schedule variance). Due to the FY 2007 Continuing Resolution (H.J.R 20), the Linac Coherent Light Source (LCLS) project experienced a reduction of \$7,740,000, including \$4,740,000 in construction funds and \$3,000,000 in Other Project Costs, and a six month delay in receiving FY 2007 appropriated funding, which has driven the LCLS project schedule variance 11.0% behind the original baseline. Controlling project costs and meeting construction schedules enables the Department to conduct world-class scientific research across a wide-range of disciplines.

Future Plans /
Explanation of
Shortfalls: As a result of the DOE directed change under the FY 2007 Continuing Resolution, the cost and schedule baseline for the LCLS project is being revised for Acquisition Executive approval. A new CD-4 will be proposed, and FY 2009 funding will be requested to complete the first phase of construction to allow the LCLS scientific program to begin while the second phase of construction continues through 2010. Additional information on the LCLS Project is provided in the LCLS construction datasheet, project number 05-R-320. Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
Documentation: 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). Final results for FY 2007 will be submitted when available (September 2007 PARS data not yet available).

Associated Performance in Prior Years

FY 2006: **G** Cost and timetables were maintained within 10% of the baselines given in the construction project datasheets for all construction projects ongoing during the year (Results: -1.7% cost variance and -3.2% schedule variance).

FY 2005: **G** Cost and timetables were maintained within 10% of the baselines given in the construction project datasheets for all construction projects ongoing during the year (Results: +0.2% cost variance and -2.5% schedule variance).

FY 2004: **G** Cost and timetables were maintained within 10% of the baselines given in the construction project datasheets for all construction projects ongoing during the year (Results: +1.3% cost variance and +0.8% schedule variance).

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000078.2003.html>

Program Office: <http://www.science.doe.gov/feature/BES.htm>

FY 2007 Performance Measures

Office: Science

Program: Basic Energy Science (3.1/2.50)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Operation Time

Measure: Achieve an average operation time of the scientific user facilities as a percentage of the total scheduled annual operating time of greater than 90%. (3.1/2.50.4)

2007 Results

Commentary: **G** Annual target met. Results: 102.1% (27,010 actual total hours delivered to users versus 26,450 total planned hours) Achieving this target ensures full use of the seven scientific user facilities and justifies investments in these crucial facilities.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal based on appropriated funding for FY 2008.

Supporting
Documentation: Supporting documents consist of the required quarterly and annual reports submitted to BES by all 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).
Final fourth quarter Joule progress reports of FY 2007 operating hours submitted to BES by 7 BES user facilities (3 neutron sources and 4 light sources). These facilities 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 operating hours of these individual user facilities: NSLS 5,000; SSRL 5,300; ALS 4,200; APS 4850; HFIR 1000; IPNS 2600; Lujan 3500 for a total of 26,450 hours (23,805 hours is 90%).

Associated Performance in Prior Years

FY 2006: **G** Scientific user facilities were maintained and operated to achieve an average at least 90% of the total scheduled operating time (Results: 96.7%).
FY 2005: **G** Scientific user facilities were maintained and operated to achieve an average at least 90% of the total scheduled operating time (Results: 97.7%).
FY 2004: **G** Scientific user facilities were maintained and operated to achieve an average at least 90% of the total scheduled operating time (Results: 91.9%).

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000078.2003.html>

Program Office: <http://www.science.doe.gov/feature/BES.htm>

FY 2007 Performance Measures

Office: Science

Program: Advanced Scientific Computing Research (3.1/2.51)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

National Energy Research Scientific Computing Center

Measure: 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%. (3.1/2.51.1)

2007 Results

Commentary: **G** Annual target of 67.9% was met. Increasing the use of primary supercomputer for large-scale problems enables the Office of Science to answer complex scientific questions sooner - keeping US research on the frontiers of science.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised (re-worded to track growing numbers of processors) goal based on appropriated funding for FY 2008.

Supporting
Documentation: This data comes directly from the batch queue accounting system at NERSC. The Number of CPU hours accounted for by jobs that use at least 1/8 of the maximum number of available 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 2006: **G** Focused usage of the primary supercomputer at the NERSC on capability computing. Percentage of the computing time used that was accounted for by computations that require at least 1/8 of the total resource. FY 2006—40%.

FY 2005: **G** Focused usage of the primary supercomputer at the NERSC on capability computing. Percentage of the computing time used that was accounted for by computations that require at least 1/8 of the total resource.

FY 2004: **R** Focused usage of the primary supercomputer at the NERSC on capability computing. Percentage of the computing time used was accounted for by computations that required at least 1/8 of the total resource.

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000074.2003.html>

Program Office: <http://www.science.doe.gov/feature/ASCR.htm>

FY 2007 Performance Measures

Office: Science

Program: Advanced Scientific Computing Research (3.1/2.51)

Strategic Goal(s)
Supported: Goal 3.1 Scientific Breakthroughs and Goal 3.2 Foundations of Science

Improve Computational Science Capabilities

Measure: 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 FY 2007, the computational effectiveness is greater than 100%. (3.1/2.51.2)

2007 Results

Commentary: **G** Annual target met, achieved improvement of computational effectiveness of selected codes of > 100%. Three codes were selected for improvement this year: GTCS, Chimera, and S3D. The average code improvement exceeds the doubling of processors goal (two codes greatly exceeded doubling the number of processors and one just missed at 1.96 times the number of nodes – processors). This improvement allowed all three codes to perform larger and/or more complex problems. The enhanced performance of these codes enable scientist to obtain computational solutions previously unachievable using earlier versions of the computer applications.

Future Plans /
Explanation of
Shortfalls: Target will be continued with a revised goal of 100% based on appropriated funding for FY 2008.

Supporting
Documentation: In the first Quarter of FY 2007, the Suite of SciDAC applications to be evaluated is proposed by ASCR to ASCAC. After the applications list is approved by ASCAC an initial set of baseline science problems for each application is defined in detail. The time to solution on each of these baseline science problems, using the application software as of the beginning of FY 2007 is determined. Progress towards the 100% goal is determined by monitoring the time to solution of the baseline science problem as the application software 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 2006: **G** Improved Computational Science Capabilities. Average annual percentage increased 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 SciDAC effort. FY 2006—>50%.

FY 2005: **G** Improved Computational Science Capabilities. Average annual percentage increased 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 SciDAC effort.

FY 2004: **G** Improved Computational Science Capabilities. Average annual percentage increased 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 SciDAC effort.

FY 2007 Performance Measures

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/summary/10000074.2003.html>

Program Office: <http://www.science.doe.gov/feature/ASCR.htm>

FY 2007 Performance Measures

Office: Science

Program: Research Integration (3.3)

Strategic Goal(s)
Supported: Goal 3.3 Research Integration

Research Integration

Measure: Coordinate with SC and applied program managers regarding collaboration status; coordination efforts include: document extent of integration activities; identify and promote best practices, and resolve issues related to integration processes. (3.3.52)

2007 Results

Commentary: **G** Under Secretary for Science assigned a working group to analyze the issues associated with strengthening the research integration in six areas of R&D from the EPA Act 994 Report. The working group presented its analysis results to the Science and Technology (S&T) Council (the three Under Secretaries) in June 2007. One conclusion was that R&D integration analysis should be completed prior to the beginning of CPR.

Future Plans /
Explanation of
Shortfalls: Two of the acting S&T council members were replaced with permanent members on 8/30/2007 and 9/4/2007. S&T council (with new members) still considering next step for research integration efforts.

Supporting
Documentation:

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: N/A

Program Office: <http://www.science.doe.gov/>

FY 2007 Performance Measures

THEME 4 – ENVIRONMENTAL RESPONSIBILITY

Office: Environmental Management

Program: Environmental Management (4.1.53)

Strategic Goal(s)
Supported: Goal 4.1 Environmental Cleanup

Enriched Uranium Containers Packaged for Disposition
Measure: 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. (4.1.53.1)

2007 Results

Commentary: **G** The ID site is on schedule for this metric, however, the Savannah River Site (SRS) is behind schedule for FY 2007. This is due to a revised schedule shift that was negotiated with the new contractors for this project.

Future Plans /
Explanation of
Shortfalls: Future work on this measure will include activities for the sites currently handling this measure, SRS and Idaho. Also, future activities will also include the Portsmouth and Paducah sites.

Supporting
Documentation: Shipping Manifests and Disposal Records.

Associated Performance in Prior Years

FY 2006: **G** Package for disposition a cumulative total of 6,159 enriched uranium containers.

FY 2005: **G** Package for disposition a cumulative total of 3,944 enriched uranium containers.

FY 2004: N/A Package for disposition a cumulative total of 3,055 enriched uranium containers.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10001176.2003.html>

Program Office: <http://www.em.doe.gov/pages/emhome.aspx>

FY 2007 Performance Measures

Office: Environmental Management

Program: Environmental Management (4.1.53)

Strategic Goal(s)
Supported: Goal 4.1 Environmental Cleanup

High Level Waste Packaged for Disposition

Measure: 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. (4.1.53.2)

2007 Results

Commentary: **Y** The Savannah River Site (SRS) completed packaging 160 canisters (86 percent) of high level waste. The processing and packaging of this waste contributes to the reduction in the amount of high-risk radioactive liquid waste in the Department's inventory.

Future Plans /
Explanation of
Shortfalls: The Savannah River Site (SRS) is behind schedule for FY 2007 by 26 canisters. This is largely due to a several unplanned production delays at the Defense Waste Processing Facility. The SRS will produce 26 canisters in the first quarter of FY 2008 to account for this shortfall. Future work on this measure will include ongoing activities at the Defense Waste Processing Facility at the SRS. The Office of River Protection is currently designing and constructing the Waste Treatment Plant to package Hanford high-level waste for final disposition. In addition, the Idaho National Laboratory has already processed tank waste into a powdered calcine form that is currently being stored on-site, but has not yet packaged this high-level waste for final disposition.

Supporting
Documentation: Quality Assurance Inspection Records for waste packaging.

Associated Performance in Prior Years

FY 2006: **G** Package for disposition a cumulative total of 2,492 containers of high level waste.

FY 2005: **G** Package for disposition a cumulative total of 2,242 containers of high level waste.

FY 2004: N/A Package for disposition a cumulative total of 1,992 containers of high level waste.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10001176.2003.html>

Program Office: <http://www.em.doe.gov/pages/emhome.aspx>

FY 2007 Performance Measures

Office: Environmental Management

Program: Environmental Management (4.1.53)

Strategic Goal(s)
Supported: Goal 4.1 Environmental Cleanup

TRU Waste Disposed at WIPP

Measure: Dispose at the Waste Isolation Pilot Plant (WIPP) a cumulative total of 43,701 cubic meters of transuranic (TRU) waste. This is an estimated increase of 6,412 m³ over the planned cumulative total of 37,289 m³ of TRU waste disposed at WIPP at the end of FY 2006. (4.1.53.3)

2007 Results

Commentary: **G** The Department is ahead of schedule for FY 2007 by 298 cubic meters. This is largely due to accelerated shipments from a variety of sites including Idaho, Richland and the SRS.

Future Plans /
Explanation of
Shortfalls: Future work on this measure will include activities throughout the complex. This will include ongoing shipments of both contact-handled as well as remote-handled TRU waste.

Supporting
Documentation: Shipping Manifests.

Associated Performance in Prior Years

FY 2006: **R** Ship for disposal at the Waste Isolation Pilot Plant (WIPP) a cumulative total of 50,095 cubic meters of transuranic (TRU) waste.

FY 2005: **R** Ship for disposal at the Waste Isolation Pilot Plant (WIPP) a cumulative total of 39,856 cubic meters of transuranic (TRU) waste.

FY 2004: **R** Ship for disposal at the Waste Isolation Pilot Plant (WIPP) a cumulative total of 24,944 cubic meters of transuranic (TRU) waste.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10001176.2003.html>

Program Office: <http://www.em.doe.gov/pages/emhome.aspx>

FY 2007 Performance Measures

Office: Environmental Management

Program: Environmental Management (4.1.53)

Strategic Goal(s)
Supported: Goal 4.1 Environmental Cleanup

Release Site Remediation Completions

Measure: 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. (4.1.53.4)

2007 Results

Commentary: **G** The Department completed FY 2007 ahead of schedule by 78 release sites. This is due to increased cleanup activities at a variety of sites including Idaho, the Nevada Test Site and the Lawrence Berkeley National Laboratory where the Department declared the site to be physically complete in FY 2007.

Future Plans /
Explanation of
Shortfalls: Future work on this measure will include activities aimed at completing remediation work throughout the complex.

Supporting
Documentation: State and federal regulator acceptance of the Remedial Action Report

Associated Performance in Prior Years

FY 2006: **G** Complete a cumulative total of 6,018 release sites.

FY 2005: **G** Complete a cumulative total of 5,630 release sites.

FY 2004: **G** Complete a cumulative total of 5,330 release sites.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10001176.2003.html>

Program Office: <http://www.em.doe.gov/pages/emhome.aspx>

FY 2007 Performance Measures

Office: Environmental Management

Program: Environmental Management (4.1.53)

Strategic Goal(s)
Supported: Goal 4.1 Environmental Cleanup

Nuclear and Radioactive Facility Completions
Measure: Complete remediation work at a cumulative total of 389 nuclear and radioactive facilities. This is an estimated increase of 24 facilities over the planned cumulative total of 365 nuclear and radioactive facility completions at the end of FY 2006. (4.1.53.5)

2007 Results

Commentary: **G** The Department completed FY 2007 ahead of schedule by 5 facilities.

Future Plans /
Explanation of
Shortfalls: Future work on this measure will include activities dedicated to the decontamination and decommissioning of facilities throughout the complex.

Supporting
Documentation: Decommissioning Project Final Report. State and federal regulator acceptance of completion report.

Associated Performance in Prior Years

FY 2006: **G** Complete a cumulative total of 315 combined nuclear and radioactive facilities.

FY 2005: **G** Complete a cumulative total of 261 combined nuclear and radioactive facilities.

FY 2004: **Y** Complete a cumulative total of 194 combined nuclear and radioactive facilities.

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10001176.2003.html>

Program Office: <http://www.em.doe.gov/pages/emhome.aspx>

FY 2007 Performance Measures

Office: Environmental Management

Program: Environmental Management (4.1.53)

Strategic Goal(s)
Supported: Goal 4.1 Environmental Cleanup

Efficiency Measure

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. (4.1.53.6)

2007 Results

Commentary: **G** After compiling the IPABS-IS Earned Value Management Project to Date Data with approved EVM data the current information was calculated:
The cost – weighted mean cost performance index - 1.01
The cost – weighted mean schedule performance index - 0.99

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 2006: **G** 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 2005: N/A

FY 2004: N/A

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10001176.2003.html>

Program Office: <http://www.em.doe.gov/pages/emhome.aspx>

FY 2007 Performance Measures

Office: Civilian Radioactive Waste Management

Program: Civilian Radioactive Waste Management (4.2.54)

Strategic Goal(s)
Supported: Goal 4.2 Managing the Legacy

License Application

Measure: Demonstrate progress toward completion of a high-quality License Application consistent with the established schedule and content requirements. (4.2.54.1)

2007 Results

Commentary: **R** Overall results are mixed. Only two sections, instead of five, were completed at the 100% level. However the organization did exceed criteria set for the 90% and 50% level.

Future Plans /
Explanation of
Shortfalls: Submit a high-quality and docketable license application to the NRC no later than Monday, June 30, 2008.

Supporting
Documentation: Signed memo and availability of data.

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: **Y** Completed processing of documents and emails (dated January 1, 2005 or earlier) to be ready for LSN. (PARTIALLY MET TARGET)

FY 2004: N/A

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10001049.2007.html>

Program Office: <http://www.ocrwm.doe.gov/>

FY 2007 Performance Measures

Office: Civilian Radioactive Waste Management

Program: Civilian Radioactive Waste Management (4.2.54)

Strategic Goal(s)
Supported: Goal 4.2 Managing the Legacy

Prepare documents for Licensing Support Network (LSN)

Measure: Complete processing of documents and emails dated June 30, 2007 or earlier to be ready for the LSN. (4.2.54.2)

2007 Results

Commentary:

G

Approximately 100% of the documentary material dated June 30, 2007 or earlier were processed and made available. This allowed the Department to certify the document collection for the Nuclear Regulatory Commission's (NRC) electronic Licensing Support Network (LSN), further advancing the Yucca Mountain repository licensing process. The Department made electronically available on the NRC LSN over 3.5 million documents, estimated to exceed 30 million pages. The Department is required to certify its LSN document collection prior to submitting its license application to the NRC for authorization to construct the Yucca Mountain repository.

Future Plans /
Explanation of
Shortfalls: In FY 2008 the Department certifies its documentation collection for the Nuclear Regulatory Commission's (NRC) electronic Licensing Support Network (LSN), further advancing the Yucca Mountain repository licensing process.

Supporting
Documentation: Status report provided upon request

Associated Performance in Prior Years

FY 2006: N/A Provide specifications for developing TAD canister.

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10001049.2007.html>

Program Office: <http://www.ocrwm.doe.gov/>

FY 2007 Performance Measures

Office: Civilian Radioactive Waste Management

Program: Civilian Radioactive Waste Management (4.2.54)

Strategic Goal(s)
Supported: Goal 4.2 Managing the Legacy

Draft Rail Alignment Environment Impact Statement (EIS)

Measure: Publish a draft Rail Alignment Environment Impact Statement (RA EIS) for public comment. (4.2.54.3)

2007 Results

Commentary:

G

Approval to publish was granted by September 14th and the Draft Rail Corridor Supplement and Rail Alignment EIS were sent to the publisher on September 17th. The Draft Rail Corridor Supplement considers the potential environmental impacts of transport along the Mina corridor, which was analyzed in response to public comments. It also updates the information and analysis for other Nevada rail corridors evaluated in the Yucca Mountain Final EIS. The Draft Rail Alignment EIS evaluates the potential environment impacts of constructing and operating a railroad along specific alignments for both the Mina and Caliente corridors, although Caliente is the Department's preferred corridor.

Future Plans /
Explanation of
Shortfalls:

Issue a Final Rail Alignment Environmental Impact Statement on June 30, 2008.

Supporting
Documentation:

Rail Alignment EIS has been placed on OCRWM website

Associated Performance in Prior Years

| | | |
|----------|-----|--|
| FY 2006: | N/A | Issue Revision 4 of the Transportation System Requirements Document. |
| FY 2005: | N/A | Submit the preliminary draft EIS, prepared by the EIS contractor, for DOE internal review. |
| FY 2004: | N/A | Approve the Transportation Project Plan for internal use by the Director of the National Transportation Program. |

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10001049.2007.html>

Program Office: <http://www.ocrwm.doe.gov/>

FY 2007 Performance Measures

Office: Civilian Radioactive Waste Management

Program: Civilian Radioactive Waste Management (4.2.54)

Strategic Goal(s)
Supported: Goal 4.2 Managing the Legacy

Efficiency Measure

Measure: Maintain total administrative overhead costs in relation to total program costs of less than 22%. (4.2.54.4)

2007 Results

Commentary: **G** Total program funding was approximately \$445 million. The overhead portion was approximately \$92 million and included categories such as project support, federal salaries and benefits, other support services, and general counsel services.

Future Plans /
Explanation of
Shortfalls: Maintain administrative costs at an amount consistent with the projected scope of work and the projected underlying structure and requirements of the organization to include information management support; project, business and legal support; and quality assurance.

Supporting
Documentation: Quarterly Execution Report is available including calculation from STARS data.

Associated Performance in Prior Years

| | | |
|----------|-----|--|
| FY 2006: | N/A | In FY 2006, reduce the ratio of total administrative overhead costs to total program costs by 10 percent from the FY 2005 baseline ratio of 0.274. |
| FY 2005: | N/A | Project management costs for the OCRWM management and operating contractor will be reduced to 15% of the total budget. |
| FY 2004: | N/A | |

Additional Information

PART: Adequate <http://www.whitehouse.gov/omb/expectmore/summary/10001049.2007.html>

Program Office: <http://www.ocrwm.doe.gov/>

FY 2007 Performance Measures

Office: Legacy Management

Program: Legacy Management (4.2.55)

Strategic Goal(s)
Supported: Goal 4.2 Managing the Legacy

Maintain the protectiveness of installed environmental remedies

Measure: 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). (4.2.55.1)

2007 Results

Commentary: **G** Inspections were conducted at 70 sites, including 34 sites that are "records only."

Future Plans /
Explanation of
Shortfalls:

Supporting
Documentation: Supporting documentation is located in the Grand Junction Office in Grand Junction, CO.

Associated Performance in Prior Years

FY 2006: **G** Ensure continued effectiveness of cleanup remedies through surveillance and maintenance activities at 64 sites funded under the Energy Supply appropriation in accordance with legal agreements. This target was achieved.

FY 2005: **G** Ensure continued effectiveness of cleanup remedies through surveillance and maintenance activities at 61 sites funded under the Energy Supply appropriation in accordance with legal agreements. This target was achieved.

FY 2004: N/A

Additional Information

PART: N/A

Program Office: <http://www.lm.doe.gov/>

FY 2007 Performance Measures

Office: Legacy Management

Program: Legacy Management (4.2.55)

Strategic Goal(s)
Supported: Goal 4.2 Managing the Legacy

Surveillance and Maintenance Cost

Measure: 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. (4.2.55.2)

2007 Results

Commentary: **G** Actual cost savings were more than 15% -- a much greater savings than the goal of 2%.

Future Plans /
Explanation of
Shortfalls:

Supporting Documentation: Supporting documentation of the cost savings is located in the Grand Junction Office in Grand Junction, CO.

Associated Performance in Prior Years

FY 2006: N/A

FY 2005: N/A

FY 2004: N/A

Additional Information

PART: Moderately Effective <http://www.whitehouse.gov/omb/expectmore/detail/10009032.2007.html>

Program Office: <http://www.lm.doe.gov/>

Status of FY 2006 Unmet Measures

The FY 2006 PAR is available at <http://www.cfo.doe.gov/cf1-2/2007parpilot.htm>

| Goal | Measure (PAR) | Status | Description of Performance Target | FY 2006 PAR (Page No.) | Crosswalk to FY 2007 Program Goal |
|------|---------------|--------|-----------------------------------|------------------------|-----------------------------------|
|------|---------------|--------|-----------------------------------|------------------------|-----------------------------------|

Goal 1: Nuclear Weapons Stewardship

| | | | | | |
|--|---------|-----|--|----|-------------|
| Goal 1: Nuclear Weapons Stewardship | 1.27.03 | MET | Annual percentage of items supporting Enduring Stockpile Maintenance completed (Annual percentage of prior-year non-completed items completed) (Annual Output) | 59 | NA 2.1.26.2 |
| Unmet portions of target were rolled into FY 2007 target as "prior year" and completed in FY 2007. | | | | | |

| | | | | | |
|--|---------|------------------|--|----|----------------|
| Goal 1: Nuclear Weapons Stewardship | 1.27.05 | Unmet/ Closed | Cumulative percentage of progress in completing NWC-approved W80-3 LEP activity (Long-term Output) | 60 | Not Applicable |
| The W80-3 Life Extension Program (LEP) was cancelled by the Nuclear Weapons Council (NWC) on May 10, 2006; the program stopped LEP activity and achieved full shutdown in FY 2007. | | | | | |

| | | | | | |
|---|---------|-----|---|----|-------------|
| Goal 1: Nuclear Weapons Stewardship | 1.27.06 | MET | Cumulative percentage of progress in completing NWC-approved B61-7/11 LEP activity (Long-term Output) | 60 | NA 2.1.26.4 |
| The unmet portion of the target was rolled into the FY 2007 cumulative target and completed in FY 2007. | | | | | |

| | | | | | |
|---|---------|------------------|---|----|----------------|
| Goal 1: Nuclear Weapons Stewardship | 1.27.08 | Unmet/ Closed | Cumulative percent reduction in projected W80 warhead production costs per warhead from established validated baseline, as computed and reported annually by the W80 LEP Cost Control Board. (EFFICIENCY MEASURE) | 60 | Not Applicable |
| The W80-3 LEP was cancelled by the NWC on May 10, 2006; the program stopped LEP activity and achieved full shutdown in FY 2007. | | | | | |

| | | | | | |
|---|---------|-----|---|----|-------------|
| Goal 1: Nuclear Weapons Stewardship | 1.30.01 | 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) | 65 | NA 2.1.29.1 |
| The unmet portion of the target was rolled into the FY 2007 cumulative target and completed in FY 2007. | | | | | |

| | | | | | |
|---|---------|-----|--|----|-------------|
| Goal 1: Nuclear Weapons Stewardship | 1.31.03 | MET | Annual maximum individual platform computing capability delivered, measured in trillions of operations per second (teraflops) (Long-term Output) | 67 | NA 2.1.30.3 |
| The target was continued into FY 2007 and completed in early FY 2007 (10 Nov 06). | | | | | |

Status of FY 2006 Unmet Measures

| | | | | | |
|---|---------|------------------|---|----|-------------------|
| Goal 1: Nuclear Weapons Stewardship | 1.32.03 | MET | Cumulative percentage of major milestones, documented in the Pit Manufacturing and Certification Campaign Program Plan, completed toward W88 Pit Certification (Long-term Output) | 69 | NA 2.1.31.2 |
| The unmet portion of the target was rolled into the FY 2007 cumulative target and completed in FY 2007. | | | | | |
| Goal 1: Nuclear Weapons Stewardship | 1.36.02 | Unmet/ Closed | Annual cost per convoy expressed in terms of millions of dollars. (EFFICIENCY MEASURE) | 73 | Not Applicable |
| Since this is an annual target, the shortfall could not be made up; however, the FY 2007 target of \$1.80 was achieved. | | | | | |
| Goal 1: Nuclear Weapons Stewardship | 1.36.03 | Unmet/ Closed | Annual number of secure convoys completed (Annual Output) | 73 | Not Applicable |
| Since this is an annual target, the shortfall could not be made up. | | | | | |
| Goal 1: Nuclear Weapons Stewardship | 1.36.05 | MET | Cumulative number of Federal Agents at the end of each year (Long-term Output) | 74 | NA 2.1.34.5 |
| The unmet portion of the target was rolled into the FY 2007 cumulative target and completed in FY 2007. | | | | | |
| Goal 1: Nuclear Weapons Stewardship | 1.37.01 | 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 MEASURE) | 74 | NA 2.1.35.1 |
| The performance deficiency was remedied by filling the critical hire pilot position and equipment maintenance was completed in first quarter FY 2007. | | | | | |
| Goal 1: Nuclear Weapons Stewardship | 1.39.01 | MET | Cumulative ppercentage of Physical 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 last OA review at each site over 6 physical security topical areas). | 76 | NA 2.1.37.1 |
| The performance metric was achieved in FY 2007 with an effectiveness rating of 79%. | | | | | |
| Goal 1: Nuclear Weapons Stewardship | 1.39.04 | MET | Cumulative ppercentage 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 last OA review at each site over 2 Cyber Security topical areas). | 77 | NA 2.1.37.3 |
| Completed all of the requirements for FY 2006 during first quarter FY 2007 with a rating of effective over 2 cyber security topical areas. | | | | | |

Status of FY 2006 Unmet Measures

Goal 2: Nuclear Nonproliferation

| | | | | | |
|----------------------------------|---------|-----|---|----|-------------|
| Goal 2: Nuclear Nonproliferation | 2.42.01 | MET | Cumulative percentage of progress towards refurbishing a fossil plant in Seversk shutting down two weapons-grade plutonium production reactors. | 81 | NA 2.2.40.1 |
|----------------------------------|---------|-----|---|----|-------------|

Seversk schedule recovery efforts in FY 2007 were effective, achieving a cumulative percentage progress of 73% versus a target of 72 % in FY 2007.

| | | | | | |
|----------------------------------|---------|-----|---|----|-------------|
| Goal 2: Nuclear Nonproliferation | 2.46.03 | MET | Cumulative metric tons of HEU converted to LEU. | 84 | NA 2.2.42.3 |
|----------------------------------|---------|-----|---|----|-------------|

The unmet portion of the target was rolled into the FY 2007 cumulative target and a cumulative total of 9.8 MTS of HEU was down-blended to LEU in FY 2007.

| | | | | | |
|----------------------------------|---------|-----|--|----|-------------|
| Goal 2: Nuclear Nonproliferation | 2.46.04 | MET | Cumulative number of Second Line of Defense (SLD) sites with nuclear detection equipment installed. (Cumulative number of Megaports completed) | 84 | NA 2.2.42.4 |
|----------------------------------|---------|-----|--|----|-------------|

The unmet portion of the target was rolled into the FY 2007 cumulative target and a cumulative total of 162 sites (including 12 Megaports) was completed in FY 2007.

| | | | | | |
|----------------------------------|---------|-----|---|----|-------------|
| Goal 2: Nuclear Nonproliferation | 2.64.01 | MET | Cumulative number of targeted research/test reactors converted from HEU to LEU fuel | 86 | NA 2.2.44.1 |
|----------------------------------|---------|-----|---|----|-------------|

Conversion of Libya IRT-1 reactor was completed in October 2006.

| | | | | | |
|----------------------------------|---------|-----|--|----|-------------|
| Goal 2: Nuclear Nonproliferation | 2.64.02 | MET | Cumulative kilograms of HEU fresh and/or spent fuel from Soviet-supplied research reactors repatriated to Russia | 86 | NA 2.2.44.2 |
|----------------------------------|---------|-----|--|----|-------------|

Agreements with countries were completed and work is on track. Joule metrics were exceeded in FY 2007.

Goal 4: Energy Security

| | | | | | |
|-------------------------|--------|----------------|--|----|------------|
| Goal 4: Energy Security | 4.02.4 | Unmet/ Open | Complete R&D on technologies, which, if implemented in high volume, could reduce the projected (i.e., modeled) bulk cost of automotive –grade carbon fiber to less than \$3.00/pound | 94 | EE 1.1.2.3 |
|-------------------------|--------|----------------|--|----|------------|

The Vehicle Technologies Program goal to reduce the projected bulk cost of automotive-grade carbon fiber to less than \$3.00 per pound by October 2006 has not been met but continues as an area of research and development. In addition to continuing the R&D on the barriers to this goal, the Program undertook a detailed assessment of the factors affecting the underlying technologies, potential impact of the technology pathways on CF cost, and the projected cost of CF based on the near term state of technology. The outcomes of this assessment were that (1) the goal could be adjusted upwards and still meet the needs of the automotive industry (cost of \$5 to \$7 per pound in 2010), (2) near term technology could meet the industry cost targets, and projected longer term technology improvements could provide additional meaningful improvements to cost. The assessment and other factors have led the program to place greater near term emphasis on deployment of technology while continuing to support R&D for further cost improvements. The original target of \$3.00 per pound is no longer considered viable.

Status of FY 2006 Unmet Measures

| | | | | | |
|-------------------------|--------|-----|---|----|------------------------|
| Goal 4: Energy Security | 4.05.1 | MET | Low Wind Speed Technology (LWST): Annual COE Target: 4.2 cents per kWh in onshore Class 4 winds, and 9.3 cents per kWh for offshore systems in Class 6 winds. Distributed Wind Technology (DWT) COE Target: 11-16 cents per kWh in Class 3 winds. Technology Acceptance: 19 States with over 100 MW wind installed. | 98 | EE 1.1.4.2 and 1.1.4.3 |
|-------------------------|--------|-----|---|----|------------------------|

By the end of 2007, the number of states with over 100 MW of wind installed was 21, exceeding the 2006 annual target.

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|-------------------------|--------|------------------|---|-----|----------------|
| Goal 4: Energy Security | 4.09.2 | Unmet/ Closed | Complete planning for and initiate implementation of the new comprehensive national evaluation of the Weatherization Assistance Program. The evaluation is a multi-year task that will provide new, accurate baselines for average energy savings, benefit cost ratios, and BTU energy savings per Federal dollar expended. | 102 | Not Applicable |
|-------------------------|--------|------------------|---|-----|----------------|

The program has developed a draft evaluation plan, established a peer review panel, distributed survey instruments to the panel, conducted peer reviews of the survey instruments, revised the survey instruments in response to the panel's recommendations, issued an RFP (through Oak Ridge) and evaluated the proposals received.

DOE has decided to pause all activities related to the evaluation prior to awarding a contract pending further review.

Goal 5: World-Class Scientific Research Capacity

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|--|--------|----------------|--|-----|---------------|
| Goal 5: World-Class Scientific Research Capacity | 5.19.4 | Unmet/ Open | 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. | 126 | SC 3.1/2.46.4 |
|--|--------|----------------|--|-----|---------------|

Closed as of the end of 2006. The actual FY 2006 operation time for Fermi Lab was 76.6%. For the B-Factory at SLAC the operating time was 82.4%. Both user facilities experienced hardware problems which negatively impacted their performance during the first two quarters of FY 2006. These issues were corrected and the average budget-weighted operation time for these facilities was 78.4% by end of FY 2006. In FY 2007, these user facilities exceeded their 80% goal.

Department of Energy

Operating Principles

- **Ensure** safe, secure, and environmentally responsible operations
- **Act** with sense of urgency
- **Work** together
- **Treat** people with dignity and respect
- **Make** the tough choices
- **Keep** our commitments
- **Embrace** innovation
- **Always** tell the truth
- **Do** the right thing

Acronyms

A list of all acronyms is located at the following site:

<http://www.cfo.doe.gov/CF1-2/2007other.pdf>