



The Office of Fossil Energy: Striving for Environmental, Security, Safety and Health Excellence

Annual Report Fiscal Year 2006



Office of Environment,
Security, Safety and
Health



OFFICE OF FOSSIL ENERGY COMMITMENT TO ENVIRONMENT, SECURITY, SAFETY AND HEALTH

Overall Commitment

- We will support the Department of Energy's mission by safely operating and safeguarding our facilities, by proactively protecting our workers, the public and the environment, and by fully complying with applicable Federal, state and local environmental, security, safety and health (ESS&H) requirements.
- We will strive continually to improve our performance and practices by integrating ESS&H into all facets of work planning and execution and by adopting systems and/or quality management approaches to ESS&H.
- We will prioritize our resources and measure our progress in meeting this Commitment.

Maintain Strong Security and Emergency Response Programs

- We will be prepared for emergencies and will be actively engaged with our local communities to enhance mutually supportive emergency preparedness and response capabilities.
- We will improve continually our critical infrastructure protection and security capabilities to counter homeland security threats and to protect our nation's strategic energy supplies.
- We will conduct drills and exercises to test and improve our emergency management and response programs.

Strive to Eliminate Injuries, Illnesses and Incidents

- We will strive to eliminate occupational injuries and illnesses and environmental incidents to the maximum extent possible.
- We will fully and aggressively investigate work-related injuries, illnesses and incidents to understand the causes, take corrective actions, and apply lessons learned to prevent recurrence.
- We will continue to train employees to recognize unsafe work practices and encourage managers and workers to eliminate these unsafe practices through incentive and behavior-based safety programs.

Promote Environmental Protection and Pollution Prevention

- We will strive to prevent environmental releases and their impacts, giving priority to those that present the greatest potential risk to human health and the environment.
- We will assess the environmental impact of facilities that we own or manage and will design, build, operate and maintain them in a safe and environmentally friendly manner.
- In order to conserve resources and to minimize the treatment and disposal of wastes, we will substitute, reuse and recycle materials whenever it is feasible. Where wastes are generated, we will handle and dispose of it in accordance with applicable laws and regulations.
- Where past environmental practices have created environmental conditions that require correction, we will correct them responsibly.

Adopt High Performance Expectations, Plan Proactively and Share Expertise

- We will strive to be a "high-performing" organization related to ESS&H performance when compared to other DOE offices, other Federal agencies, and to other appropriate non-Federal organizations or sectors.
- We will identify risks associated with our work primarily in the planning stage and implement strategies to manage these risks to acceptably low levels as determined by management.
- We will share ESS&H expertise and lessons learned across our programs to cost-effectively improve our performance.
- We will employ the Department's policies on Integrated Safety Management to provide for continued integration of ESS&H into all elements of program management.

Facilitate Public Participation

- We will invite open discussion with our stakeholders concerning our work and its impacts on their environment, security, safety and health.
- We will build alliances with governments, policy makers, businesses, professional societies, academic institutions and advocacy groups to assist us in developing our ESS&H-related policies, practices, objectives and goals.

Encourage Worker Participation

- We will make ESS&H information available to our employees and encourage them to report unsafe acts without retribution, to provide input to ESS&H policy and practices, and to stop work when hazards place them and/or the public in imminent danger.
- We invite employees to be actively involved in reviewing work activities, identifying associated risks, and implementing measures to eliminate, reduce and control risks.

Ensure Management and Employee Accountability

- Managers will ensure that policies are documented and communicated to employees, clear assignments of authority and accountability are established, and actions taken to meet this Commitment.
- The Department's Fossil Energy employees and their contractors will be encouraged to meet this Commitment by having ESS&H goals and expectations contained in Federal employee performance evaluations and new contractor conditions of employment or contracts.
- Managers will educate, train and encourage employees to understand this Commitment and to comply with all ESS&H requirements that result from this Commitment.

A Letter From The Secretary

March 2007



I am pleased to present the FY 2006 Environment, Security, Safety and Health (ESS&H) Annual Report for the Office of Fossil Energy (FE). FE plays a key role in meeting the Nation's energy security needs through innovative research and development projects such as FutureGen, a prototype of the near zero-emissions fossil-fueled power plant of the future, and improvements to the infrastructure and operations of the Strategic Petroleum Reserve (SPR).

In executing these projects, the Office of Fossil Energy seeks to ensure that all of our employees have a safe and secure work place and that our activities minimize adverse impacts on the environment. This past year FE has implemented identity verifications, improved security infrastructure around sensitive site areas, and instituted new security protocols. FE's focus on keeping its workers safe has resulted in a low number of accidents and incidents. FE has implemented lessons learned from Hurricanes Katrina and Rita and maintains emergency readiness assurance plans, as well as continuity of operations plans at all of its sites. FE remains vigilant in ensuring its ability to meet the broader DOE energy security mission, as well as the energy needs of the Nation during any type of supply disruption.

The Office of Fossil Energy is continuing to make progress in cleaning up contamination that resulted from legacy research and development projects and is a departmental leader in developing strategies for preventing future environmental damage. I am pleased to report that FE recently completed an Environmental Impact Statement examining sites for an expanded Strategic Petroleum Reserve. In so doing, FE examined the impacts on wetlands, endangered species, cultural resources, and water resources of five new candidate sites; the expansion of three existing sites in three different States, and the development of hundreds of miles of new pipelines. The analysis, which incorporated extensive input from the public and consultation with regulatory agencies, concluded that the preferred alternative should be a new site at a salt dome near Richton, Mississippi, and expansion at two existing SPR sites.

The Office of Fossil Energy has been widely recognized within Government and in private industry as a leader in ESS&H programs, winning awards from OSHA, the National Pollution Prevention Roundtable, and EPA Performance Track. It has also won numerous State awards and maintained certifications from the International Organization for Standardization for ISO 14001.

Fiscal Year 2006 was clearly a year of many accomplishments and commendations for FE. Dedication and a passion to serve our Nation has been an underlying factor in the Office of Fossil Energy's performance and will continue to be a motivating force for years to come.

A handwritten signature in black ink that reads "Samuel W. Bodman". The signature is written in a cursive, flowing style.

Samuel W. Bodman
Secretary
Department of Energy

A Letter from the Assistant Secretary

March 2007



Over the past year, our nation has faced a number of challenges affecting our Nation's overall energy picture. The aftermath and recovery from Hurricanes Katrina and Rita; the continued instability of oil prices on the world market; the pressing need to find alternatives to foreign energy sources; and the mandate to vigilantly protect our physical assets, have all played key roles in shaping our agenda over the past year. While addressing these challenges, the Office of Fossil Energy (FE) has never wavered in its commitment to strong Environment, Security, Safety, and Health (ESS&H) programs. I am pleased to present our record of achievement in our Annual Report for Fiscal Year 2006: Striving for ESS&H Excellence.

FE demonstrates its commitment to ESS&H in every task it undertakes. Our values are embodied in the "Commitment to Environment, Security, Safety and Health" document, which guides all of our activities. In FY 2006, FE revised this Commitment Statement, adding new mandates for increased security awareness, emergency preparedness, and formal quality assurance programs.

In FY 2006, FE focused on increasing security at all of its sites. In accordance with Homeland Security Presidential Directive-12, FE conducted background checks and identification verifications of employees at its sites and upgraded its physical assets and

infrastructure to limit access to sensitive areas. FE also significantly increased its emergency preparedness activities, incorporating lessons learned from FE's responses to the devastation caused by the 2005 hurricane season, and addressing new concerns regarding potential pandemics.

FE also developed formal quality assurance systems in compliance with DOE Order 414.1C that enable our sites to effectively track and review work, to help prevent errors from occurring, and continue to produce the highest quality work for the American people.

Along with security, the health and safety of our employees also continues to be our highest priority. While I am very proud of our excellent safety record, we can always do better. I am asking all of our employees to search for new ways to make our workplace safer. FE will continue to refine its hazard prevention programs, seek out best practices, and maintain third party certifications such as ISO 14001, as ways to continuously improve our already strong ESS&H programs. FE will also continue to remediate its environmental legacies, and work diligently to prevent current and future projects from adversely impacting the environment.

We invite you to review our performance and we welcome any suggestions that you may have for improving our ESS&H programs.

A handwritten signature in black ink that reads "Jeffrey D. Jarrett". The signature is fluid and cursive, with a long horizontal line extending from the end of the name.

Jeffrey D. Jarrett
Assistant Secretary
Office of Fossil Energy

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I. Introduction

The Office of Fossil Energy (FE) is dedicated to providing a clean, reliable, secure, and affordable energy for the nation. Fossil fuels currently represent over 85% of domestic energy consumption and are projected to continue to do so for the next several decades. FE's mission is both to ensure that the nation can continue to rely on clean, affordable energy from our traditional fuel resources and meet the nation's energy security needs. FE is working on a variety of projects to provide pollution-free coal plants, more productive oil and gas fields, and the continued readiness of Federal emergency oil stockpiles.

To achieve its mission, FE continues to integrate the highest level of quality assurance (QA) principles and actions into all activities, to maintain the highest levels of security at its facilities, and to provide a safe work environment for its employees. In addition, as a Federal agency responsible to the public, FE continues to work hard to maintain its reputation as a model environmental steward for industry and neighboring communities. FE recently revised its Environment, Security, Safety & Health (ESS&H) Commitment Statement. This Statement clearly demonstrates FE's core values through its commitment to ensuring the highest levels of protection for FE's physical assets; maintaining strong emergency preparedness and response programs; integrating ESS&H into all program activities; eliminating injuries and incidents; promoting environmental protection and pollution prevention; adopting the highest applicable standards of performance; ensuring management and employee accountability; encouraging worker participation; and facilitating public participation.

This report summarizes FE-wide ESS&H performance in fiscal year (FY) 2006 for FE HQ; the National Energy Technology Laboratory (NETL), including the site formally known as the

Albany Research Center; the Strategic Petroleum Reserve (SPR); and the Naval Petroleum Reserves, including the Rocky Mountain Oilfield Testing Center (RMOTC). Chapter II highlights key ESS&H accomplishments in FY 2006. Chapter III presents quantitative results of the FE-wide performance for key Environmental Safety & Health (ES&H) performance indicators. Chapter IV outlines planned FY 2007 initiatives for continued performance improvement in ESS&H issues.

The FE Sites

The FE workforce includes approximately 2,500 employees, including Federal employees, contractors, and subcontractors. FE HQ is in Washington, DC, and Germantown, Maryland. FE field sites are in Morgantown, West Virginia; Pittsburgh, Pennsylvania; Tulsa, Oklahoma; New Orleans, Louisiana; Casper, Wyoming; Albany, Oregon; and Fairbanks, Alaska.



A wellhead at the SPR Bayou Choctaw Site.

NETL is FE's lead research and development (R&D) center and the only national laboratory dedicated solely to fossil energy research. NETL's primary missions include enhancing America's energy security; improving the environmental acceptability of energy production and use; increasing the competitiveness and reliability of U.S. energy systems; and ensuring a robust U.S. energy future. NETL plays a crucial role in shaping, funding, and managing external research,

development, and demonstration projects; conducting on-site science and technology research; and supporting energy policy development and best business practices within the Department that ensure that U.S. fossil energy resources can meet the increasing demand for affordable energy without compromising the quality of life for future generations.

NETL has sites located in Morgantown, West Virginia; Pittsburgh, Pennsylvania; Albany, Oregon; Tulsa, Oklahoma; and Fairbanks, Alaska. In FY 2006, the site formerly known as the Albany Research Center (ARC) was merged into NETL. NETL-Albany continues to provide expertise and capabilities in materials wear and corrosion, melting and casting, and materials development. This restructuring has allowed for greater coordination and focus of FE research efforts and has enhanced NETL capabilities to include materials research.



NETL-Albany employees removing dross from an aluminum melting furnace.

NETL manages over 1,400 active projects in 47 states and in more than 40 foreign countries with contract values of approximately \$8 billion and private sector cost-sharing of almost \$4 billion. NETL functions as both an in-house science and technology research center and provides financial assistance agreements involving partnerships between DOE and industrial, academic, and other governmental

stakeholders. These partnerships result in technologically significant and commercially viable technical solutions to energy and environmental problems, and provide economic growth to the local economies near NETL sites.



Artist rendering of NETL's FutureGen project.

NETL is responsible for several national high priority environmental and energy security initiatives, including the \$1 billion FutureGen project to develop a pollution-free plant capable of co-producing electricity and hydrogen; research in clean power generation, hydrogen fuel cells, and climate change mitigation; and programs to allow domestic coal, natural gas, and oil to efficiently power homes, industry, business, and transportation in an environmentally responsible manner. NETL continues to be a long-standing participant in the development and demonstration of fossil fuel-based technologies that can be used to develop flexible, market-based protocols as low-cost solutions for achieving global reduction of greenhouse gas emissions.

SPR is a DOE-owned, contractor-operated complex of four field sites that serves as the nation's first line of defense against an interruption in petroleum supplies through its emergency supply of crude oil stored in underground salt dome caverns along the coastline of the Gulf of Mexico. FE's overriding objective in managing the SPR is to maintain the readiness of the oil stockpile for emergency use at the President's direction. The SPR has

been used under these circumstances only twice—during Operation Desert Storm in 1991 and after Hurricanes Katrina and Rita in 2005.



Prover loop on meter skid at the SPR Bryan Mound Site.

Headquartered in New Orleans, Louisiana, the Project Management Office (PMO) of the SPR oversees the operation and management of the four sites: Bayou Choctaw and West Hackberry in Louisiana, and Bryan Mound and Big Hill in Texas. DynMcDermott serves as the primary contractor for SPR. Today, with the capacity to hold 727 million barrels, SPR is the largest emergency oil stockpile in the world at an estimated national investment of \$22 billion for facilities and crude oil.

The Energy Policy Act of 2005 directs the Secretary of Energy to expand the SPR to its authorized one billion barrel capacity from 727 million barrels to further minimize the threat of severe oil supply disruptions. On December 8, 2006, after a 16-month long proceeding that included an Environmental Impact Statement and extensive public involvement, DOE identified the salt dome at Richton, near Hattiesburg, Mississippi, as the preferred site to lead the expansion. The Richton site will be the fifth site of the SPR and, unlike the other four SPR sites, it is situated at an inland location in an effort to reduce any potential impact of Gulf

region hurricanes on the SPR. In addition to this originally planned expansion, President Bush announced during his State of the Union address in January 2007 an additional initiative to further increase the SPR capacity to 1.5 billion barrels.

SPR also manages the Northeast Home Heating Oil Reserve which has a two million barrel supply of fuel oil stored in commercial tank farms in the Northeast. This supply is for Northeastern homes and businesses in the event the region suffers a severe heating oil disruption.



A workover rig at RMOTC.

RMOTC continues to operate the Teapot Dome oil production field (formerly referred to as NPR-3) located near Casper, Wyoming. RMOTC is a Government-owned and operated facility that performs technology research that contributes to the nation's energy security, economic well-being, and energy technological leadership. RMOTC provides organizations the opportunity

to field test theoretical assumptions and ideas in a real world setting and share their results with the public. The field test site is a 10,000-acre operating oilfield offering approximately 1,200 well bores and 600 producing wells in 9 producing reservoirs ranging in depth from 500 to 5,000 feet. RMOTC's testing ability includes the capacity for tests on improved oil and gas production and drilling, tests for bioremediation, wetlands creation, petrophysics, and options for preventing and managing environmental risks.

The Naval Petroleum Reserves are oil fields owned by the U.S. Government. Originally

established in the early 1900s to provide U.S. naval vessels with an assured source of fuel, the Naval Petroleum Reserves once included three major oil fields. The largest of the original Reserves, the Naval Petroleum Reserve No. 1 (Elk Hills field), located in Kern county, California, was sold in 1998. Although no longer operated by FE, DOE is continuing to fulfill its environmental obligations to remediate any pre-sale contamination created by FE activities.

II. Highlights of FY 2006 ESS&H Accomplishments

At the conclusion of FY 2005, FE identified several areas in which the organization faced key challenges. In response, FE assigned significant resources to target these issues and ensure the overall improvement of the organization. This chapter summarizes the accomplishments of these efforts in FY 2006, which focused on:

- Protecting workers and meeting DOE security and emergency response needs.
- Ensuring an effective QA process for all of our work.
- Striving for zero accidents.
- Eliminating environmental legacies and maintaining strong environmental and pollution prevention programs.
- Pursuing injury prevention, physical fitness, and employee wellness.
- Achieving self-assessment and external certification of ESS&H programs.
- Fostering a continuous learning environment.

Protecting Workers And Meeting DOE Security And Emergency Response Needs

National security has become an increasingly important consideration over the past five years at every level of Government. The President has made it a priority to protect and secure the nation's resources as demonstrated through the Homeland Security Presidential Directives (HSPD). FE has diligently worked to increase security for both its sites and its employees in the past year, including implementing HSPD-12 and DOE Notice 206.3, which require that sites institute an identity verification process. FE has achieved a superior level of security at each of

its sites through a variety of initiatives ranging from infrastructure improvements to restrict facility access, increased security at sensitive areas of facilities, and training exercises. FE also conducted emergency response drills and exercises to ensure that its employees are prepared to respond to any security threat or emergency situation.



NETL-Pittsburgh HazMat Team practicing confined space rescue techniques.

Staying on the cutting edge of site security continues to be a top priority at NETL. In accordance with DOE Notice 206.3, Personal Identification Verification (PIV) Phase 1 background investigations were performed for all employees at the Morgantown and Pittsburgh sites. Infrastructure improvements were also made, including a perimeter fence at the NETL-Pittsburgh R&D plateau area and programmable Light Emitting Diodes (LED) message boards at the main entry locations at NETL-Pittsburgh and NETL-Morgantown. These improvements will help NETL effectively and efficiently secure their facilities and communicate with employees in case of emergencies.

NETL-Albany has enhanced its on-site security by upgrading the security office and the camera surveillance equipment and incorporating NETL procedures into its own security guidelines. An additional badge reader was installed at the southeast gate of NETL-Albany to enable employees to use the gate as an emergency exit while keeping the site optimally secure. The

records retention area was also reorganized and re-keyed to restrict access to the area. NETL-Albany also conducted PIV background checks on its employees.

SPR successfully completed its Security Systems Management Plan, which allows the site to maintain a more prepared security force while the site's security infrastructure continues to be improved. Personal Identity Verification Phase I background checks were conducted for employees who have been on-site for at least six months. Hydraulic barriers were put into place at each storage site at the facility to protect the storage sites against explosive or incendiary devices and to restrict access strengthen protection against unauthorized access to the sites.



RMOTC employees practice immobilizing an injured person during a Basic Emergency Care Provider Training.

RMOTC has taken steps to guarantee that only authorized personnel have access to sensitive data and facilities. The issuance of new keypad combinations to recently hired employees and the invalidation of combinations when employees leave RMOTC allows the site to track access to site facilities at all times. An escort system has also been put into place for foreign national visitors, and security information has been moved to the site's internal server to limit unauthorized access to RMOTC's infrastructure.

In addition to security enhancements, all of the sites have spent significant resources assessing and improving their emergency response capabilities in the event that an emergency situation does occur. For example, NETL-Pittsburgh and NETL-Morgantown both conducted emergency response exercises and training including a tabletop exercise, a simulated drill with community involvement, and an all-employee emergency response computer-based training. NETL also revised its current emergency management and preparedness guidelines to reflect policy changes and new requirements.



NETL Director, Carl Bauer, participates in a HazMat Drill at NETL- Pittsburgh.

NETL also has been developing its plan to ensure that the site continues to operate in the event of a pandemic outbreak of avian flu. NETL's Emergency Response Organization (ERO) attended training for responding to pandemic avian flu and began revising their Continuity of Operations (COOP) Plan. To further ensure a rapid and comprehensive response, both the Pittsburgh and Morgantown locations have established relationships with their surrounding counties and established Joint Information Centers to alert the communities in the event of a disaster. NETL-Albany developed a crisis communications plan and worked with local Oregon agencies to develop its pandemic plan and a COOP Plan to outline how the site would continue to operate in the event of a disaster.

As a result of Hurricanes Katrina and Rita, SPR has learned a great deal about what it takes to be prepared to manage an emergency. In the past year, SPR acquired an Emergency Communications Network (ECN) that works in conjunction with the already established DOE-wide ECN and will aid, with the help of satellite phones, in maintaining communication capabilities among first responders, the Emergency Management team, and Headquarters during any emergency. This system was field-tested during two hurricanes last year and is being expanded to include both fixed and mobile phone systems.



SPR's workforce examines the new Emergency Command Vehicle (ECV). The ECV will greatly enhance emergency communications capabilities during an emergency or disaster.

SPR also procured an Emergency Command Vehicle for mobile command and control of SPR emergency/COOP incidents. The vehicle will increase availability and reliability of communications for immediate remote and on-scene decisions with field and headquarters. SPR has also developed a coordinated emergency action plan with military, Federal, State, and local law enforcement and support agencies to allow SPR and its partners in the community to seamlessly react to any emergency situation.

RMOTC developed several emergency management drills to prepare for potential disasters and familiarize workers with innovative safety tools, including their new

Kendrick Extraction Device, a tool for extracting partially or fully immobilized personnel from perilous locations. RMOTC staff also took several modules of the National Incident Management System (NIMS) emergency management training, and participated in a training simulation to improve response to heart attacks. RMOTC also prepared emergency contact lists for NPR-3 and the RMOTC drilling rig to expedite emergency communication.

Ensuring That All Work Undergoes An Effective QA Process

In accordance with DOE Order 414.1C, this year FE has made great progress to ensure that a well-structured QA system is in place at each of its sites and that every task undergoes a rigorous QA process. For example, NETL designed a new QA Policy and a corresponding QA plan that addresses document control, certification of inspectors, design and engineering changes, pressure relief valves, handling suspect items, and controlling non-conformities.



FE Assistant Secretary Jarrett visiting the SPR site at Bayou Choctaw.

SPR established site-wide ES&H goals and conducted on-site management reviews at each of its four field sites and the New Orleans Project Office to monitor progress on these goals. SPR also kept a log throughout the year to track suspect activities or items, which allowed them to identify several potential suspect/counterfeit items. RMOTC has

awarded a contract to guarantee that their QA plan fits the needs of the site.

In addition to implementing strong QA programs, FE sites have adopted recognized best practices and standards to verify their work. NETL-Albany trained staff on how to audit for ISO 9001 and later conducted several audits using both the ISO 9001 and ISO 14001 standards as benchmarks for performance. SPR self-certified to ANSI Z 10-2005, *Health and Safety Management Systems* which is a new nationally recognized standard, adopted by the Occupational Safety and Health Administration (OSHA). This standard performs the function provided by ISO 9001 for QA and ISO 14001 for Environmental Management.



DOE Secretary Bodman visits NETL-Pittsburgh.

Striving For "Zero" Accidents

FE has continued to work toward its goal of zero accidents and injuries in the workplace. An analysis of accidents and injuries over the past several years suggests that employee error is the most frequent cause of accidents at FE sites. Consequently, FE has established several different programs to address this finding, including:

- Improving worker safety protocols to address new safety issues.

- Instituting behavioral safety programs to encourage managers and employees to be more proactive in identifying and addressing potential safety problems in their work areas.
- Conducting extensive employee safety training.
- Continuing to upgrade facilities and infrastructure to ensure that employees have a safe work environment.



SPR personnel monitoring a Welder Qualification Test for the Raw Water Pipeline replacement job.

In the past year, SPR has instituted several new programs aimed at increasing employee awareness of occupational hazards and reducing accidents. A key initiative has been its Human Performance Improvement (HPI) program, which is a systematic process of discovering and analyzing important human performance gaps and identifying the best interventions for closing these gaps. In FY 2006, SPR held its first HPI training for senior management. The integration of HPI into site operations has helped decrease accidents by improving incident investigations and allowing managers to be more pro-active in addressing work-related problems. Additional HPI trainings are scheduled, and new methods will be adapted to operations, maintenance, and safety management functions. SPR also has continued to support and improve its behavioral safety programs to encourage safer behavior.

This past year, data from the SPR Close Call Program and information on pollution prevention behavior were included in the behavioral database to expand the scope of the program. SPR's self-certification to the ANSI Z 10-2005 safety standard further demonstrates the site's commitment to strive for zero accidents.

NETL has enhanced its accident analysis capabilities by training its employees on job hazard analysis and encouraging employees to perform their own hazard analyses prior to task execution. NETL also has implemented an Off-Site Contractor ES&H plan aimed at inspecting concurrent work at its new Technology Support Facility and its heating boiler replacement project. This plan has succeeded in reducing injuries on these construction projects to a few very minor incidents. The site also established an occupational health medical monitoring program, aimed at reducing injuries due to health-related issues.



Trisa Pew calibrates a Spirometer in the Occupational Health Unit at NETL.

NETL established additional performance measures for OSHA recordable and lost workday case rates and its occupational safety and health cost index. For these measures, NETL has performed better than the industry standard. In addition, NETL has continued the process of updating and renovating its facilities to ensure workers have safe environments in which to perform their duties.

NETL-Albany has continued its record of having no reportable incidents or injuries at its site during FY 2006. Continued revisions to the site's Incident Tracking System and further integration of NETL's ES&H programs should help NETL-Albany continue its stellar record in the future.



NETL earned 3 prestigious National Safety Council (NSC) awards in recognition of its accident prevention performance in occupational safety and health: Holding the NSC awards are left to right: Parsons ES&H Manager, Regis Louder; DOE Safety Engineer, Andy Sivak; SAIC ES&H Lead, Ed Palko; SAIC Safety Engineer, Jack Fishell; and SAIC ES&H Manager, Jerry Simkonis.

RMOTC updates and revises its safety and environmental standard operating procedures to ensure that they adequately reflect the diverse types of work being conducted at the site. Site personnel received OSHA training to keep them up-to-date on techniques to reduce injuries at work, and new employees were given an orientation to the safety requirements of the workplace. Additional safety training also was delivered to the NPR-3 field site and Casper offices to further reduce accidents caused by error and a lack of knowledge of work hazards.

Eliminating Environmental Legacies And Maintaining Strong Environmental And Pollution Prevention Programs

FE has consistently made implementation of strong environmental and pollution prevention programs and cleanup of environmental legacies from past practices a high priority.

Within the Department, FE has the distinction of conducting the most National Environmental Policy Act (NEPA) actions, demonstrating a strong commitment to environmental stewardship. All FE sites have Environmental Management Systems that are operational and publicly declared. In addition, FE is recognized in the Department as a leader for its pollution prevention and energy efficiency activities.



An interior view of the refurbished Chemical Handling Facility at NETL-Pittsburgh.

In FY 2006, NETL continued to make progress on its remediation activities at a number of legacy research sites. At Hoe Creek, the operation of four air sparge wells has been successfully reducing the levels of benzene; these levels of contaminant are expected to stabilize below regulated levels in FY 2007, at which time NETL will begin a two-year stabilization program for the ground water supply in the area.

At the Rock Springs site, air sparge activities are also in operation to reduce contaminant levels in the area water wells. Analyses of the site indicate that indigenous anaerobic microbe populations have begun to thrive in the area's ground water, suggesting that by FY 2007 the site will have reached its targeted reduction levels and the one-year stabilization program to confirm groundwater quality can begin.

Lastly, at the Hanna DOE Underground Coal Gasification site, analyses of the area's

vegetation show growth of new plants that exceed regulatory agency requirements, thus completing the last phase of the remediation. NETL anticipates receiving a letter of release from its financial responsibility obligations, permit requirements, and all further environmental obligations from the State in early FY 2007.

NETL-Albany has continued to place a high priority on remediation associated with ground water contamination resulting from activities undertaken by the Bureau of Mines. During the past year, area residents who were affected were given clean drinking water. The site has hired a contractor to help them develop a conceptual model and analyze the best approach for remediation. This analysis is expected to be completed by early 2007.



NETL-Albany employees recovering precious metals from catalysts via water-jet granulation of molten metal.

NETL-Albany has also continued to make progress on assessing the extent of beryllium contamination and the impact on employees and site operations. The site has initiated Phase II of the beryllium inventory and has awarded a hazard assessment contract.

FE's sites continue to pursue new approaches to conducting work that will minimize environmental impacts. One of the Department's most significant activities in FY 2006 was the SPR's Environmental Impact Statement (EIS) to identify an appropriate site

for the expansion of the SPR to reach its full authorized capacity of 1 billion barrels. The EIS evaluated the potential environmental impacts of five potential new sites in Louisiana, Mississippi, and Texas; three existing sites; and the associated infrastructure for the expansion of the SPR, which included raw water intake systems, brine disposal systems, tank farms and terminals, power lines, and hundreds of miles of pipelines. The key issues included the potential significant impacts on wetlands, endangered species, cultural resources, and surface water and groundwater resources. The Department published the draft EIS in May 2006 and the final EIS in December 2006, which identified the preferred alternative as a new SPR site at a salt dome near Richton, MS and expansion of two existing SPR sites. In this accelerated 16-month project, SPR facilitated extensive public involvement, consulted with numerous Federal, State, local, and tribal agencies, and developed a Programmatic Agreement to address potential impacts on cultural and historic resources.



At SPR a Maintenance Technician cleans the site's retention pond 2, as part of DynMcDermott's Preventive Maintenance Program.

SPR's Big Hill facility completed work on its crude oil degasification process this past year that will minimize hydrocarbon emissions produced by customer facilities. The mobile Degas Plant used in the degasification process will be moved to Bryan Mound in FY 2007. A study has been completed on options for controlling hydrocarbon emissions that stem

from storage tanks at Big Hill and Bryan Mound and implementation is anticipated in FY 2007. SPR also completed the construction of the Bayou Choctaw clear zone to allow for preservation of old growth bald cypress trees near the site and help to reduce damage to nearby swamp lands.



RMOTC personnel engaged in environmental protection activities at the site.

FE sites continue to be leaders in promoting pollution prevention and energy efficiency initiatives. For example, NETL installed new energy efficient lighting and HVAC systems at the Pittsburgh and Morgantown sites, and a new metering system at Building 26 in Morgantown that will allow it to become an EPA Energy Star building. SPR established a vanpool program to help reduce vehicle-related pollution at its site, and redesigned buildings at the Big Hill facility, among others, to Green Building specifications. RMOTC improved its waste management recycling program to reduce the amount of sanitary waste produced at the site.

Pursuing Injury Prevention, Physical Fitness, And Employee Wellness

FE recognizes the importance of employee wellness in maintaining a safe and productive working environment. Healthy employees are less prone to physical injuries and are more likely to have a faster recovery in the event of an injury or illness. Better overall health also increases overall employee productivity and

morale by limiting disruptions in workflow due to chronic conditions resulting from physical over-exertion in the joint, back, and neck areas.

This past year, NETL improved its Employee Wellness program, offering its employees more fitness programs and opportunities to learn about strategies for remaining healthy. These programs included exercise, weight management, and educational awareness programs. NETL received Well Workplace designation from the Wellness Councils of America for building and sustaining a results-oriented wellness program. NETL-Albany's renewed emphasis on its Employee Wellness program include yoga classes, health fairs, and new wellness resources through the Occupational Medical Contract.

RMOTC provides injury-prevention and fitness training to its employees, including back and neck safety instruction, ergonomics training, and OSHA training to make employees aware of ways they can proactively keep themselves healthy. Offsite sports such as basketball, racquetball, and personal training are also encouraged. SPR publishes a monthly newsletter to employees providing tips and suggestions for employee wellness programs, resources, and guidelines and offers discounted fitness club memberships. SPR also encourages walking by distributing pedometers to its employees.

Achieving Self-Assessment And External Certification Of ESS&H Programs

Evaluating and measuring programs through both internal and external assessments helps FE to identify deficiencies and target potential areas for improvements for all of its programs. For example, SPR conducted performance management reviews of its Managing and Operating (M&O) contractor, DynMcDermott, the Construction Management Services Contractor (CMS) at all four field sites, and the New Orleans Project Management Office.

RMOTC, in response to a Congressional request, recently prepared a draft report on the environmental liabilities of NPR-3 that incorporated the results of self-assessments of environmental site management, asbestos presence, and alluvial groundwater on facility grounds. FE sites also conducted ISO 14001 assessments to confirm that all programs were adhering to prescribed environmental management standards.



SPR's personnel prepare to inspect Bryan Mound's BMT-3 crude oil tank.

To supplement self-assessments as a way to identify areas for improvement, FE continually challenges itself to follow best practices and integrate innovative approaches into work processes by gaining external certifications. For example, SPR has been a member of the Environmental Protection Agency (EPA) National Environmental Performance Track program since the program's inception in 2000. Members must maintain compliance with Federal regulations, perform above and beyond Federal requirements, and have an independently certified environmental management system. Two of the SPR sites—Big Hill and Bryan Mound—achieved the highest Platinum level of the Texas Commission on Environmental Quality's Clean Texas Program, the first two sites to achieve this certification. DynMcDermott also maintained its certification of its environmental management system, which is based on ISO 14001.

SPR continues to retain its strong reputation for excellent quality and safety programs. SPR's M&O Contractor won the Malcolm Baldrige National Quality Award and SPR was awarded OSHA and DOE Star recognitions for all four of its participating sites for its exceptional employee health and safety programs. The director of the Big Hill site was additionally awarded the Voluntary Protection Program (VPP) Contractor Champions Award. SPR was visited in September by examiners for the internationally renowned Campbell Safety Award.

NETL recertified compliance with ISO 14001 for its Morgantown, Pittsburgh, and Albany facilities. Independent assessments conducted of NETL's Workplace Monitoring Program, Safety Analysis and Review System (SARS) program, and Industrial Wastewater Program found them to be working well and identified some improvements to enhance efficiency even further.



NETL-Pittsburgh hosts a visit from DOE Secretary Bodman and U.S. House Representative Murphy.

For the tenth consecutive year, the NETL-Pittsburgh and Morgantown sites have earned the prestigious National Safety Council's Level 1 Green Cross Excellence Achievement award in recognition of its accident prevention performance in occupational safety and health. The Pittsburgh site has previously received eight consecutive awards from the Western Pennsylvania Safety Council, a chapter of the National Safety Council (NSC). The NSC Green

Cross Award is given to industries that maintained the lowest OSHA Lost Work Case Rate and had no fatalities.



DOE FE's judging panel for the 2006 Excellence in ESS&H Awards. Pictured from left to right: Guido DeHoratiis, Mike Jacobs, Darren Mollot, John Shages, Robert Pafe, and Mark Matarrese

FE HQ is also proud to announce that NETL and SPR were both awarded the 2006 Excellence in ESS&H Award. NETL received its award for its behavior safety training program created for NETL-Morgantown HAZMAT/Rescue Team to improve patient packaging and rescue from confined spaces. SPR received its award for its integrated safety and security planning and exercise program to reduce accidents during field training exercises.

Fostering A Learning Organization

FE has always devoted a significant amount of resources to employee training, information sharing, and gaining new information on best practices as strategies for continuously improving performance. For example, in the aftermath of hurricanes Katrina and Rita, SPR compiled an extensive lessons learned document addressing the effectiveness of its emergency response capabilities as well as its ability to release some of its oil reserves during the emergency. SPR has held workshops throughout the organization to discuss the results of the analysis and address areas for improvement to better prepare for future storms. SPR has also given presentations and workshops throughout the past year for outside organizations including the Federal Emergency Management Agency (FEMA), Office of Personnel Management (OPM), and several

other Federal, State, and local governmental officials.



SPR's Big Hill site held a recognition event in January as one of the 1st two facilities in Texas (Bryan Mound was the other) to be recognized as Clean Texas Certified National Leader.

SPR is also transforming its "Crosstalk" program from simply a mechanism to exchange information among site employees to a program that will incorporate different perspectives surrounding a central issue. This practice will then produce "lessons learned" that will promote better practices in the workplace. This evolution will continue as SPR changes the

program to support DOE Order 210.2 on Operating Experience.

NETL continued to expand its employee training program for employees in Morgantown, Pittsburgh, and Albany to include seven additional computer-based training modules and three lecture-based courses covering topics such as beryllium awareness, hazard communication, waste minimization, and facility access authorization. NETL is also reviewing the effectiveness of its current learning management system, which could result in future upgrades to the system.

RMOTC has placed a high priority on communicating site-wide policy changes and emerging systems, including the site's new Emergency Management System. Other training included mini-drills to test the site's emergency response personnel, injury prevention training, and new employee orientation training.

III. Summary of ES&H Performance

FE has put the goal of reducing and ultimately eliminating injuries, illnesses, and environmental releases at the forefront of how it conducts its operation. This section highlights the progress made in FY 2006 in improving FE-wide ES&H performance on a number of key performance measures. Data related to FE's and DOE's safety and health performance represent all workers, including Federal employees, contractors, and subcontractors, where available. Safety and health data and accident root cause information were obtained from DOE's Computerized Accident/Incident Reporting System (CAIRS). Data on operational occurrences, environmental releases, and regulatory violations were obtained from DOE's Occurrence Reporting Processing System (ORPS); data on affirmative procurement and hazardous and sanitary wastes generation were obtained directly from FE sites. Appendix A summarizes site-specific ES&H quantitative performance information, including comparisons of FE performance to DOE overall and to DOE VPP sites.

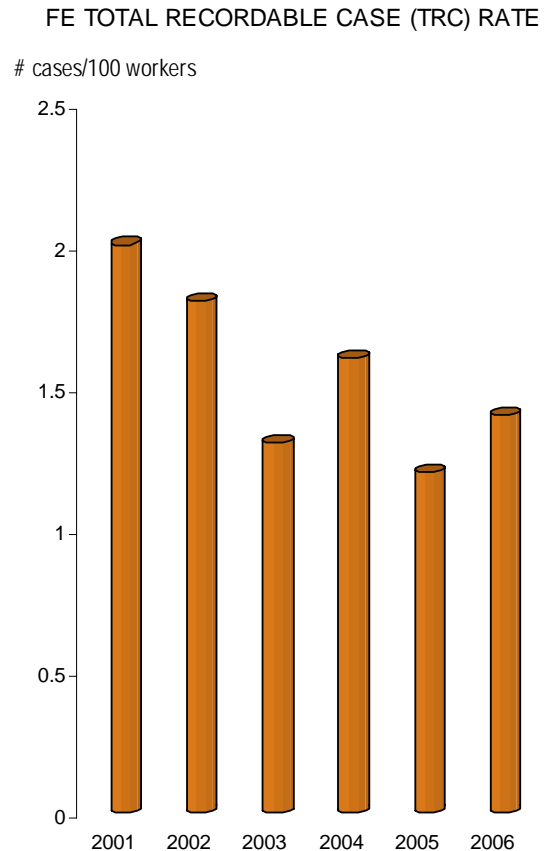
Total Recordable Case Rate Increased Slightly But Still Below DOE Rate

The Total Recordable Case (TRC) rate includes injuries and illnesses incurred by Federal and contractor employees that are serious enough to result in medical attention, loss of consciousness, restriction of work activity, or time away from work. In FY 2006, the TRC rate for FE was 1.4, which is 17% higher than in FY 2005. While FE's TRC rate for FY 2006 did increase, it was still lower than the DOE-wide TRC rate of 1.6. For FE, the actual number of recordable cases at FE was 31, which is the second lowest number of recordable cases in FE in the last six years.

The TRC rate accounts for the number of injuries and illnesses that occur in a given year,

normalized for the hours worked at all FE sites. The basis for this normalization is 200,000 hours worked, which is equivalent to the number of hours worked by 100 workers in a year. This year's rate of 1.4 means that 14 of every 1,000 workers were injured at work or had a work-related illness.

Figure 1



Number of injury and illness cases per 100 workers

Source: Computerized Accident/Incident Reporting System

TRC rates varied quite a bit across the different FE sites. FE HQ continued its 8-year trend of a TRC rate of zero and NETL lowered its TRC rate by 10% to 0.9, the lowest in 6 years. NETL attributes this improvement to the numerous programs it launched in FY 2006 including an Off-Site Contractor ES&H plan, an occupational health medical monitoring program, and an expanded job hazards analysis program. RMOTC and SPR both had increases in their TRC rates to 10.4 and 1.4 respectively for FY

2006. It is important to note that while SPR's overall TRC rate increased in FY 2006, its construction management contractor completed its second straight year with zero recordable cases.

The primary root causes of FE's 31 recordable cases this past year were: (1) employee error, (2) repetitive motion tasks, and (3) facility design. It is worth noting that equipment malfunctions and insufficient equipment inspection, which were the root causes of most accidents last year, were not identified as a primary root cause for any recordable case in FY 2006. FE attributes this improvement to its increased commitment to provide its employees with safe and reliable equipment that is routinely inspected to ensure that it meets all DOE safety requirements. For FY 2007, FE will further enhance and reinforce its employee safety training and awareness programs, including behavioral safety awareness training, where appropriate, to reduce accidents and injuries as the result of employee error. In addition, FE will continue to share best practices among its sites and HQ to ensure that the entire FE community has access to the best methods for reducing and eliminating accidents and injuries at FE.

Lost Workday Case Rate Increases

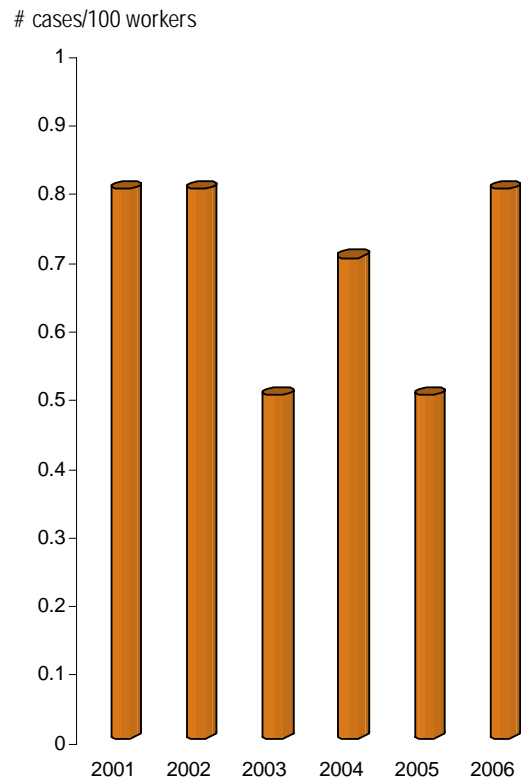
FE's Lost Workday Case (LWC) rate represents the number of work-related injuries that resulted in employees missing days of work or returning to work on restricted duty. In FY 2006, FE's LWC rate was 0.8, an increase over its historic low rate of 0.5 achieved in FY 2005. FE's FY 2006 LWC rate of 0.8 is the result of 18 accidents at FE sites that resulted in lost workdays.

As with the TRC rate, the LWC rate is normalized to hours worked. A rate of 0.8 indicates that 8 of every 1,000 workers suffered a work-related injury or illness that resulted in lost workday(s) or day(s) of restricted duty. This category of injuries has the most serious

consequences and cost implications for FE, because while the employee recuperates, other people have to complete the injured worker's assignments or the project is delayed until the employee returns to work.

Figure 2

FE LOST WORKDAY CASE (LWC) RATE



Number of cases resulting in lost workdays or workdays with restricted duty per 100 workers

Source: Computerized Accident/Incident Reporting System

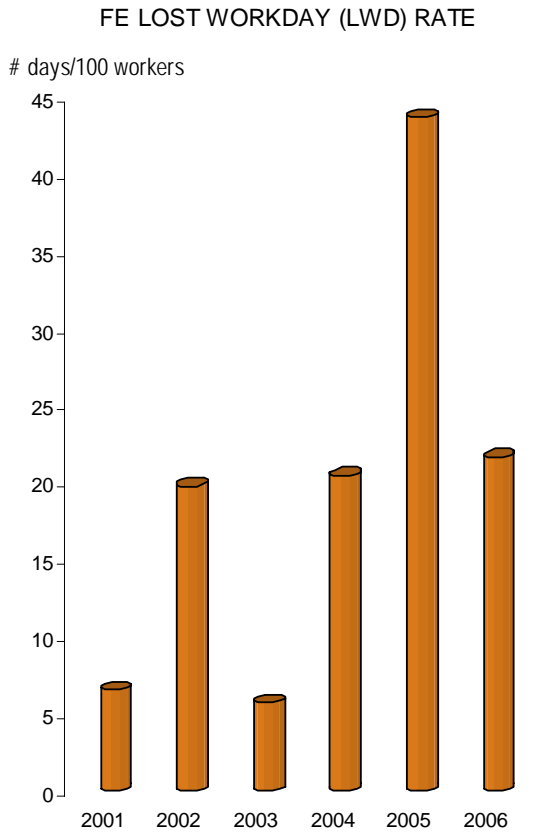
FE HQ continued a seven-year trend of having no accidents that resulted in lost workdays and SPR maintained its LWC rate of 0.7 from last year. NETL and RMOTC both had significant increases in their LWC rate in FY 2006. NETL had a LWC rate of 0.5 (67% increase from FY 2005) and RMOTC had a LWC rate of 7.4 (a three-fold increase from FY 2005).

Lost Workday Rate Reduced By Half

The Lost Workday (LWD) rate is the number of lost workdays normalized for the number of

hours worked by 100 employees, and is an indicator of the severity of the accidents that occur. FE's LWD rate of 21.6 represents a decrease of approximately 50% from the FY 2005 rate of 43.6. This marks a strong reversal for FE from its significant increase incurred in FY 2005.

Figure 3



Number of lost workdays or workdays with restricted duty per 100 workers

Source: Computerized Accident/Incident Reporting System

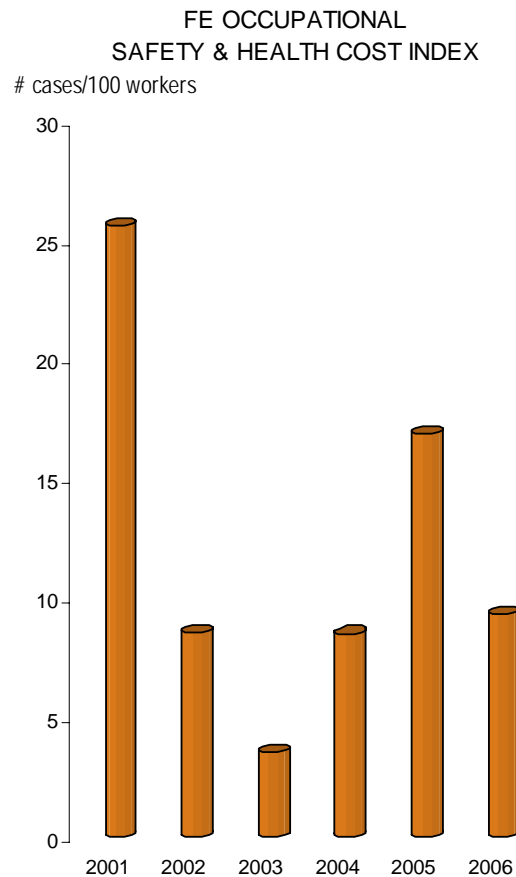
While the number of cases that resulted in lost workdays increased in FY 2006, the total number of lost workdays or workdays with restricted duty was significantly lower in FY 2006 — 479 lost workdays in FY 2006 compared to 964 lost workdays in FY 2005. This suggests that while the overall number of cases of lost workdays or days with restricted duty increased, the severity of these accidents and injuries were not as serious or as costly for FE in FY 2006. In addition, FE's LWD rate of

21.6 is 26% lower than the overall DOE rate of 29.1.

Results for the LWD rate in FY 2006 varied across the FE sites. FE HQ continued to have no lost workdays. RMOTC's LWD rate tripled, largely due to one incident caused by repetitive motion that resulted in 75 lost workdays. RMOTC's increase in LWD rate was offset by reductions at both NETL and SPR. NETL's LWD rate of 13.7 represented a 23% reduction from its FY 2005 LWD rate. SPR had the largest percentage decrease for FE sites with a 73% reduction to a LWD rate of 19.7 in FY 2006. This marks SPR's lowest LWD rate in the last three years.

Safety And Health Cost Index Reduced By Nearly 50%

Figure 4



Estimated cost of injuries and illnesses per 100 work hours

Source: Computerized Accident/Incident Reporting System

The Occupational Safety and Health Cost Index is a performance indicator that represents the normalized estimate of the costs of FE's injuries incurred by FE sites. In FY 2006, FE's cost index was reduced by 45% from FY 2005. This reduction is primarily the result of a substantial reduction in both the number of days away from work and the number of days on job transfer or restriction as a result of injury or illness suffered on the job. FE's cost index of 9.33 is 40% lower than the DOE-wide cost index for FY 2006. This marks the fifth year in a row that FE's cost index is below the DOE-wide cost index.

Despite FE's overall reduction in the cost index for FY 2006, results at the sites varied. SPR had a 73% decrease in its cost index, which is its lowest cost index value since 2003. FE HQ had no compensation costs for the fourth year in a row. RMOTC's cost index value was nearly five times higher than in FY 2005 due in large part to the repetitive motion injury. NETL's cost index increased from 5.00 in FY 2005 to 5.92 in FY 2006.

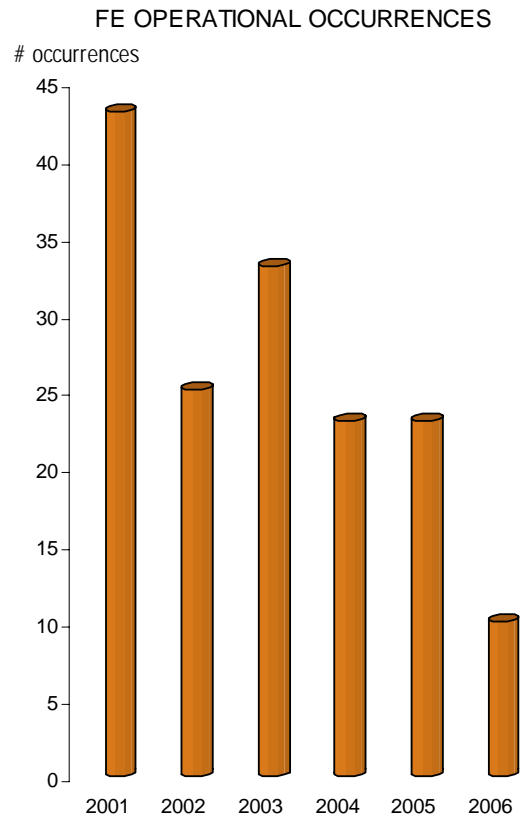
Number Of Operational Occurrences Decreases To Historic Low

The operational occurrences performance metric represents the number of operational events or conditions that may adversely affect DOE or contractor personnel, the public, DOE property, the environment, or the DOE mission. In FY 2006, there were 10 operational occurrences at FE sites. This represents a 57% decrease from FY 2005 and is the lowest number of occurrences for FE since 1990.

All FE sites reduced their number of operational occurrences in FY 2006. NETL and SPR reduced their occurrences by 50% from eight to four and six to three respectively. RMOTC improved its performance significantly, reducing the number of operational occurrences from nine to three for FY 2006. The major causes of FE's operational occurrences in FY 2006 were corrosion, malfunctioning equipment, and suspect/counterfeit parts. Preventive

maintenance, regular equipment inspections for suspect/counterfeit parts, and employee training on how to recognize potential part failures should help reduce these operational occurrences even further.

Figure 5



Number of operational events or conditions that adversely affect or may affect DOE or contractor personnel, the public, property, the environment, or the FE mission

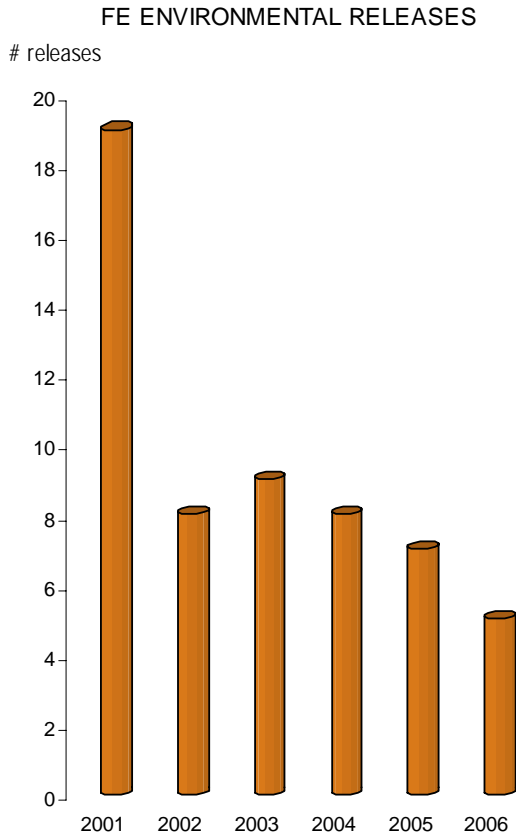
Source: Occurrence Reporting Processing System

Number Of Environmental Spills And Releases Sets Six Year Low

Environmental releases represent the total number of spills, leaks, and discharges of hazardous substances, oil, and regulated pollutants to the environment that must be reported. For FY 2006, FE sites reported five environmental spills and releases, the fewest in the past six years. As in FY 2005, NETL and SPR each had one release. RMOTC improved

its performance by reducing the number of releases from five to three.

Figure 6



Number of spills, leaks, and discharges

Source: Occurrence Reporting Processing System

Most of the releases at FE sites were a result of external corrosion of flow lines, weakened tubing, and leaks due to cold weather which weakened equipment. These releases consisted of produced fluids, produced water, potable water, produced oil, and processed crude oil.

FE Had No Regulatory Violations In FY 2006

The regulatory violations performance metric refers to the total number of violations or citations received from external regulatory agencies, such as EPA, OSHA, or state regulatory agencies, during the fiscal year.

In FY 2006, FE reached its organizational goal of receiving no regulatory violations. This perfect record was attributable to improvements at NETL, which successfully addressed the compliance issues related to their wastewater treatment facility. This FE-wide achievement is even more notable compared with the Department, which had a 35% increase in regulatory violations in FY 2006.

Table 1

Fiscal Year	# of Violations
2001	2
2002	3
2003	3
2004	4
2005	3
2006	0

Source: Occurrence Reporting Processing System with Field site verification

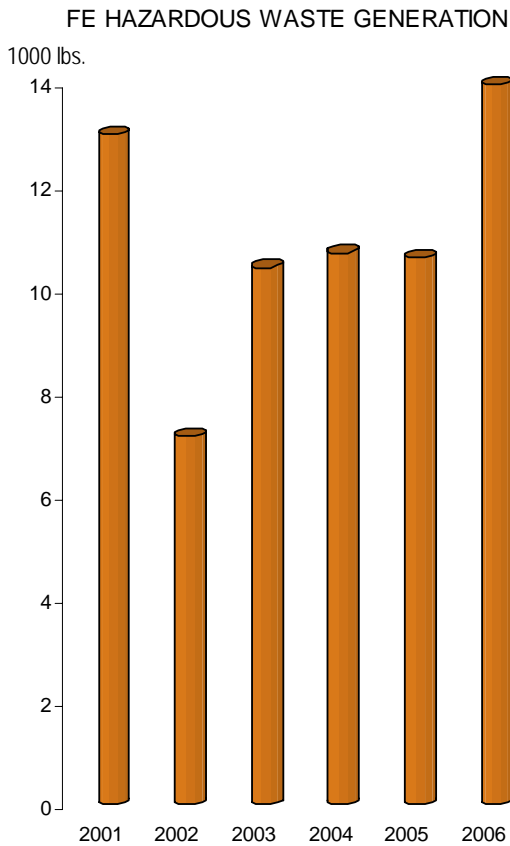
Hazardous Waste Generation Increases Due To Cleanup Activities

In FY 2006, FE generated 13,966 pounds of hazardous wastes (wastes defined as hazardous under EPA's RCRA regulations), a 32% net increase from FY 2005. This increase is primarily the result of aggressive cleanup activities at NETL.

In FY 2006, RMOTC and FE HQ again generated no hazardous waste. SPR's hazardous waste generation was 268 pounds in FY 2006, which is a 46% reduction from FY 2005. This is the second year in a row that SPR's level of hazardous waste production was at an all-time low.

NETL produced 13,698 pounds of hazardous waste in FY 2006, which is an increase of 162% from its FY 2005 number. However, 78% of this waste was the result of decommissioning one Process Development Unit and two pilot coal combustion research projects. Excluding hazardous wastes generated from cleanup activities, NETL reduced the amount of hazardous waste generated by 42%.

Figure 7



Hazardous wastes are wastes defined as hazardous under EPA's RCRA regulations

Source: Field sites

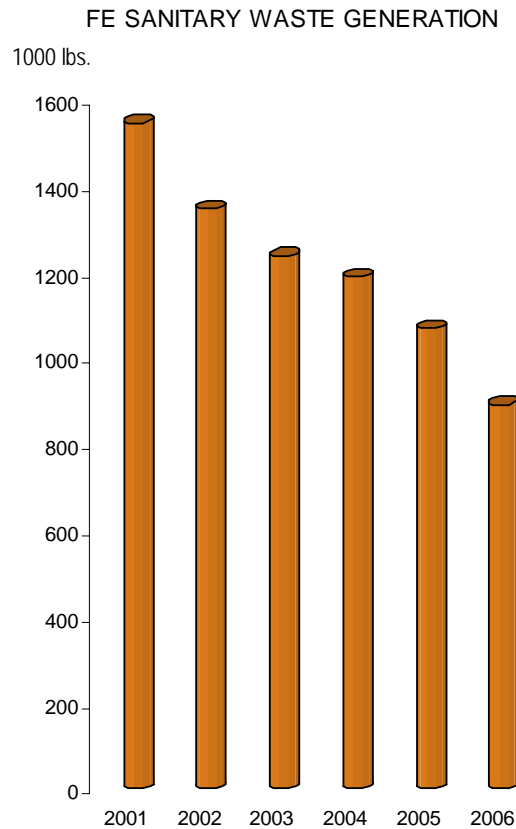
Sanitary Waste Declines For Sixth Consecutive Year

Sanitary waste is defined as all wastes generated, excluding RCRA hazardous wastes and recycled wastes. In FY 2006, FE generated approximately 892,155 pounds of sanitary waste, which is a 17% reduction from FY 2005. FE's sanitary waste generation for FY 2006 represents a six-year low for FE.

Site-specific experience was varied. SPR increased its sanitary waste generation by 11% but RMOTC and NETL reduced the amounts of sanitary wastes generated by 44% and 1%, respectively.

All of the FE sites continue to actively pursue recycling and reuse programs for office materials, batteries, and scrap metal. Sites have also established a broad range of other innovative site-specific recycling and reuse programs. For example, SPR had over one million pounds of recycled waste and recycled over 74,000 pounds of paper. NETL expanded their recycling and reuse programs to include recycling of toner cartridges, cardboard, office paper, newspapers, magazines, and aluminum materials; the reuse of wooden pallets; and the reuse and recycling of construction debris where possible. RMOTC recycled 1,310 gallons of used oil and 95 gallons of parts washer fluid and cleaned and reused nearly a thousand maintenance rags.

Figure 8



Sanitary wastes is defined as all wastes generated, excluding RCRA hazardous wastes and recycled wastes

Source: Field sites

Continued Achievement Of Affirmative Procurement Goals

Federal agencies are required to purchase products with recycled content as designated by EPA. These categories are paper and paper products, construction materials, non-paper office products, vehicular transportation, and landscaping materials. EPA allows Federal agencies to exclude from its total purchases those purchases in which a product with recycled content is not available at a reasonable cost within a reasonable period or does not meet performance standards.

FE improved its affirmative procurement “green” purchasing programs and instituted additional

recycling programs for office supplies to reduce the need to purchase new items. FE continues to be successful in attaining high levels of affirmative procurement in FY 2006. For example, SPR has achieved 100% affirmative procurement purchases for FY 2006. To reach its goal, NETL has focused on employee behaviors and personal commitments to take advantage of the site’s recycling and reuse programs. RMOTC purchased, when available, recycled paper products, re-refined oil products, energy-star compliant equipment, and recycled antifreeze.

IV. Next Steps in the Pursuit of ESS&H Excellence

In FY 2006, FE made marked progress in its ESS&H performance, demonstrating a level comparable to or better than Department-wide performance on most ESS&H indicators. However, on several ESS&H performance measures, FE needs to continue to be vigilant to maintain its historically strong performance and to improve in a couple of targeted areas. This section summarizes some of the ESS&H challenges that FE faces on a corporate-wide basis and the planned initiatives to continue to improve performance in FY 2007. A summary of site-specific initiatives for FY 2007 is also presented below.

Key Challenges And Initiatives

Protecting Workers And Meeting DOE Security Needs

For the last five years FE has maintained an enhanced security posture at all of its sites and expects to improve its protection and security capabilities for the foreseeable future. To this end, FE will continue to maintain strong emergency response programs, implement all Homeland Security directives, and bolster its security measures through additional upgrades to its infrastructure, security, and surveillance equipment. FE will continue to maintain strong collaborative relationships with local, State, and Federal law enforcement officials to ensure strong communication and coordination. Additionally, FE will continue its increased attention to physical fitness and overall awareness of its security officers.

FE will evaluate and review security programs, plans, and training to ensure that current practices are up-to-date, consistent with Government-wide standards and are as effective as possible. FE will continue to augment its training drills and exercises to incorporate additional security concerns to

ensure that the workforce is ready to respond regardless of the event.

Ensuring That All Work Undergoes An Effective QA Process

With the importance, complexity, variety, and volume of work that FE conducts on a daily basis, it is crucial that FE adhere to effective and efficient QA procedures. FE will continue to emphasize QA in FY 2007 by implementing and updating QA plans, tracking progress toward FE and site goals, and conducting audits of FE systems to ensure that they are performing at the highest effectiveness and efficiency. In addition, FE will strive to identify duplicative programs and activities and those that are not strategically aligned to FE's mission and goals.

Striving For "Zero"

FE continues to strive towards its goal of zero accidents, work-related injuries and illnesses, regulatory enforcement actions, and reportable environmental releases. While FE had a strong environmental record in FY 2006, it did have a significant number of accidents caused by employee error. As a result, FE will continue to (1) enhance employee safety training on safety procedures to ensure that employees understand and follow prescribed safety standards, (2) increase employee awareness training to empower employees to recognize potential health and safety hazards, and (3) work to foster a work environment that encourages free and open communication about ESS&H concerns to identify and correct deficiencies before accidents occur.

Eliminating Environmental Legacies

FE has continued to make progress this year on addressing environmental legacies and ensuring that its current activities and operations do not create new legacies for future generations. FE has continued to implement a number of leading edge and cost-effective technological approaches to remediation and post-closure activities. For FY 2007, FE will

focus on: (1) cleanup of NRC, as part of DOE's obligations under a privatization agreement with the State of California; (2) a beryllium hazards assessment for NETL-Albany to ensure the protection of our employees; (3) further investigation and clean-up of groundwater contamination at NETL-Albany in cooperation with Oregon's Department of Environmental Quality; (4) air sparge activities at Rock Springs to reach the regulatory limit for BTEX contamination levels; and (5) ongoing restoration, monitoring, and closeout at sites where FE previously conducted research, development, and demonstration projects. By continuing to work closely with affected communities, the State, and Federal regulatory agencies, FE will achieve its desired outcome of complete, successful, and cost effective remediation at the sites.

Pursuing Injury Prevention And Physical Fitness

FE has long been committed to the philosophy that poor overall physical and mental fitness can contribute to injuries and illnesses, and result in high compensation costs. FE will continue to make physical and mental fitness of the workforce a high priority in FY 2007, through physical and mental fitness programs designed to increase employee awareness and improve overall wellness.

Achieving Self-Assessment And External Certification Of ESS&H Programs

For FY 2007, FE will continue its successful three-pronged approach for ensuring effective assessment of its ESS&H performance, namely, site self-assessments; assessments utilizing representatives from other organizations within FE and DOE; and assessment utilizing experts from outside the Department. By following this approach, FE will validate that its ESS&H programs are successful and reliable and that it is meeting its ESS&H goals and objectives. FE HQ will

compile quarterly safety updates on key ESS&H indicators and share the results with FE HQ senior leadership and all FE sites. This will allow all sites to share lessons learned and best practices with each other and identify potential problems that can be corrected before accidents occur. The key to FE's approach will be effective self-assessment, which puts accountability and responsibility at the appropriate organizational level. This will allow potential problems to be corrected at the appropriate level before they occur and will provide effective home grown solutions.

In addition to the emphasis on self-assessment, external, nationally recognized experts will be employed to carry out independent assessments to validate and certify that FE's management systems meet applicable laws and regulations. This approach will allow employees and the public to have the highest confidence level that FE's systems are reliable and have accountability built into them. By maintaining external certifications of its ESS&H programs by organizations such as OSHA, EPA, and the International Organization for Standardization, FE will continue to foster strong and positive relationships with its stakeholders, employees, and the communities in which FE works. For FY 2007, FE will strive to make its ESS&H programs the benchmark for the Department.

Fostering A Learning Organization

One of FE's most effective prevention activities is its strong continuous learning initiatives including instructor-led training, web-based solutions, and shared learning activities. FE will continue to utilize its wealth of internal knowledge and experts for internal trainings and knowledge sharing events. By continuing to harness its substantial internal resources and sharing best practices, FE will elevate the knowledge of its entire workforce at little cost. In FY 2007, FE will make a considerable effort to increase its security and emergency response capabilities through classroom instruction,

training exercises and drills. In addition, FE HQ will continue to sponsor its Annual Excellence in ESS&H Award program to recognize and honor DOE personnel for outstanding contributions toward ESS&H performance improvements. The program will continue to highlight FE's most cutting edge and cost effective ESS&H techniques being employed by FE sites.

Site-Specific Initiatives

National Energy Technology Laboratory (NETL)

- ✓ Begin conversion of NETL Access Control Systems to integrate HVAC, Energy Management, Fire Alarm, Emergency Notification, Surveillance, and Access Control systems on a common platform. The access control portion will meet HSPD-12/FIPS 201 requirements.
- ✓ Complete installation of secure portion of DOE Emergency Communications Network node and attain initial classified AIS approval.
- ✓ Complete HSPD-12 PIV-1 Background Investigation Status Checks on existing staff for all Federal employees with less than 15 years of service by the October 27, 2007 goal.
- ✓ Conduct staffing review of NETL S&S planning and administration functions.
- ✓ Generate new Memorandum of Understanding contracts for National Incident Management System compliance in emergency management.
- ✓ Conduct both on-site and table-top exercise emergency response drills at NETL-Albany, NETL-Morgantown, and NETL-Pittsburgh.
- ✓ Evaluate the suitability of the WebEOC® proprietary emergency response information system for NETL.
- ✓ Train key emergency preparedness personnel on the National Atmospheric Release Advisory Center system.
- ✓ Continue the transition of NETL-Albany into NETL, merging the best practices of existing NETL and NETL-Albany processes and procedures.
- ✓ Provide for additional management and ESS&H oversight at NETL-Albany as part of their integration into NETL.
- ✓ Evaluate and design the sewage outlet system to replace aging infrastructure and combine discharge locations into one location at NETL-Albany.
- ✓ Complete construction upgrades to the Pittsburgh Waste Water Treatment Facility.
- ✓ Continue groundwater site investigation and remediation activities with cooperation from Oregon Department of Environmental Quality at NETL-Albany.
- ✓ Continue sampling, hazard assessment, and remediation activities associated with beryllium contamination at NETL-Albany.
- ✓ Prepare a pollution prevention opportunity assessment (PPOA) of NETL's hazardous waste streams and identify waste streams that can be reduced.
- ✓ Implement the selection and placement of heat and smoke detectors to reduce the number of false alarms.
- ✓ Begin implementation of safety analysis and review system on in-house R&D and construction projects at NETL-Albany.
- ✓ Continue implementation of Fire Proof Manager software to computerize inspection and maintenance data storage and the tracking of fire protection systems and fire extinguishing equipment.

- ✓ Continue an aggressive toxic gas cylinder storage safety inspection program.
- ✓ Continue to expand the industrial hygiene services to support the Medical Monitoring/ Surveillance Program, especially adding Bloodborne Pathogen Program requirements at NETL-Albany.
- ✓ Continue to implement a wellness program at NETL-Albany.
- ✓ Procure the services of the Army Corps of Engineers to conduct an independent review of ES&H procedures.

Strategic Petroleum Reserve (SPR)

- ✓ Review and update FY 2007 Site Security Plan.
- ✓ Plan protective, administrative, and staffing requirements for Security and Emergency Operations Division for the SPR expansion.
- ✓ Complete the design phase of complying with HSPD-12 phase two for physical and logical access control of Federal security badges.
- ✓ Explore new technology for closed circuit TV and intelligence video system for detection and assessment.
- ✓ Improve COOP through realistic training exercises, which will include the Emergency Command Vehicle.
- ✓ Prepare five-year revision of the Big Hill Spill Prevention Control and Countermeasures Plan.
- ✓ Execute Security Awareness and Refresher Training.
- ✓ Complete a comprehensive assessment of the Emergency Management Program.
- ✓ Conduct OPSEC, CMPC, Survey and Classification training.

- ✓ Conduct Fire, COOP, and Emergency Operations drills/exercises.
- ✓ Design and award contract for PIV II compliant physical security systems.
- ✓ Execute the Security Systems Management Plan.
- ✓ Complete fire and hazard assessments.
- ✓ Work with Independent Oversight Inspection Team and Health, Safety, and Security to improve the SPR.
- ✓ Complete closure of the St. James facility oil remediation project.
- ✓ Renew (triennial) SPR Performance Track membership for all six SPR facilities.
- ✓ Safely deploy the degasification plant to Bryan Mound for startup and operation there.
- ✓ Perform flow integrity tests on the Big Hill and Bryan Mound brine discharge pipelines to the Gulf of Mexico.
- ✓ Conduct semiannual ISO 14001 third-party certification audits for all six SPR locations.
- ✓ Conduct expanded Human Performance Improvement training for operations and maintenance as well as ESS&H.

Rocky Mountain Oilfield Testing Center (RMOTC)

- ✓ Conduct National Incident Management System Training.
- ✓ Fully implement the QA Plan.
- ✓ Complete the Environmental Liabilities Study.
- ✓ Conduct a site-wide Environmental Assessment.

- ✓ Conduct an ESS&H best practices gap Analysis.
- ✓ Conduct a Class III Cultural Resources Survey of Sections 22, 23, and 26.
- ✓ Fill ESS&H staff requirements and upgrade the expertise identified as needed for FY 2007.
- ✓ Increase the level of ESS&H contact with site personnel, through training and inspections.
- ✓ Review the roles and responsibilities of ESS&H and Operations personnel, and re-distribute responsibilities, as required.
- ✓ Increase advocacy of safety practices by DOE and contractor management.
- ✓ Evaluate and re-design the personnel protective equipment (PPE) program.
- ✓ Implement and train personnel on the Standard Operating Procedure (SOP) for the proper handling, labeling, and disposal of used engine oil.
- ✓ Continue to recycle paper, cardboard, old computers, batteries, cell phones, aluminum cans, etc.
- ✓ Evaluate the recycling program.

Appendix A. SUMMARY OF FE FY 2006 PERFORMANCE MEASURES: PERCENTAGE CHANGE FROM FY 2005 PERFORMANCE

Metric	FE Total	FE HQ	SPR	NETL	R/MOTC	DOE Total	DOE VPP Sites*
Total Recordable Cases	31 (19%)	0 (NC)	14 (17%)	10 (-9%)	7 (133%)	2,020 (-2%)	230 (5%)
Total Recordable Case Rate	1.4 (17%)	0 (NC)	1.4 (17%)	0.9 (-10%)	10.4 (117%)	1.6 (7%)	0.8 (-11%)
# Lost Workday Cases	18 (50%)	0 (NC)	7 (NC)	6 (50%)	5 (400%)	870 (1%)	85 (-6%)
Lost Workday Case Rate	0.8 (60%)	0 (NC)	0.7 (NC)	0.5 (67%)	7.4 (363%)	0.7 (17%)	0.3 (-25%)
# Lost Workdays	479 (-50%)	0 (NC)	197 (-73%)	158 (-23%)	124 (343%)	36,392 (11%)	3,297 (-6%)
Lost Workday Rate	21.6 (-50%)	0 (NC)	19.7 (-73%)	13.7 (-23%)	184.5 (311%)	29.1 (19%)	12.1 (-11%)
Occupational Safety and Health Cost Index	9.33 (-45%)	0 (NC)	8.44 (-73%)	5.92 (18%)	80.80 (486%)	15.57 (11%)	5.25 (7%)
Estimated Injury & Illness Costs	\$413,200 (-45%)	\$0 (NC)	\$168,600 (-73%)	\$136,000 (18%)	\$108,600 (531%)	\$38,938,200 (3%)	\$2,856,600 (12%)
# Operational Occurrences	10 (-57%)	0 (NC)	3 (-50%)	4 (-50%)	3 (-67%)	1576 (-13%)	Not Available
# Environmental Releases	5 (-29%)	0 (NC)	1 (NC)	1 (NC)	3 (-40%)	39 (-26%)	Not Available
# Regulatory Violations	0 (-100%)	0 (NC)	0 (NC)	0 (-100%)	0 (NC)	39 (35%)	Not Available
Lbs. Hazardous Waste Generated	13,966 (32%)	0 (NC)	268 (-46%)	13,698 (162%)	0 (NC)	Not Available	Not Available
Lbs. Sanitary Waste Generated	892,155 (-17%)	0 (NC)	446,818 (11%)	424,637 (-1%)	20,700 (-44%)	Not Available	Not Available
Hours Worked	4,430,304 (NC)	Not Available	1,996,969 (NC)	2,298,935 (NC)	134,400 (8%)	250,007,286 (-7%)	54,398,887 (4%)
Near Misses	1 (-88%)	0 (NC)	0 (NC)	1 (-80%)	0 (-100%)	159 (-30%)	Not Available

Numbers in parentheses represent change from FY 2005. Change reflects updated FY 2005 CAIRS and ORPS data.

***FY 2005 number equaled zero

NC = No Change from FY 2005

* DOE VPP Sites include sites associated with INL, PNNL, the Hanford Site, the Yucca Mountain Project, SPR, Fernald, Kanasa City Plant, New Mexico Operations, Oak Ridge, Nevada Test Site, WIPP, West Valley, and Savannah River Site, and includes participants such as BEA, BMI, Washington Group, Bechtel SAIC, Fluor Hanford, DynMcDermott, Fluor Fernald, Honeywell Fedearnl Manufacturing & Technologies, ORISE, Wackernut Services, Washington TRU Solutions, Westinghouse Savannah River Company, and CH2M Hill Hanford Group.

Office of Environment, Security, Safety, and Health

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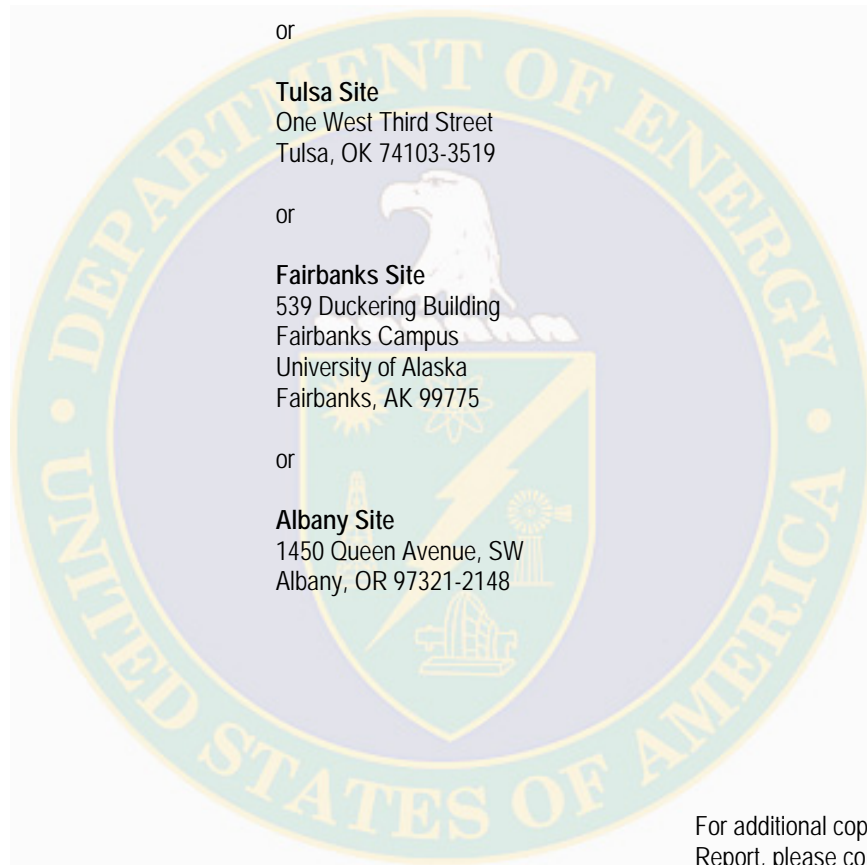
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Office of Environment, Security, Safety and Health

FE FY 2006 Site Awards

- Malcolm Baldrige National Quality Award – SPR
- OSHA Star among Stars Award – SPR site Bryan Mound
- OSHA Superstar Award – SPR sites Big Hill and West Hackberry
- National Safety Council's Level 1 Green Cross Excellence Achievement Award – NETL sites Pittsburgh and Morgantown
- OSHA Star of Excellence Award – SPR site Bayou Choctaw
- EPA Region VII Excellence award for perfect bacteriological compliance with drinking water regulations – RMOTC
- EPA National Environmental Performance Track Outreach Award – SPR
- DOE VPP Stars of Excellence Award – All four SPR sites
- DOE VPP Contractors Champion Award – SPR Site Director Big Hill
- FE Excellence in Environment, Security, Safety, and Health Award – NETL, SPR
- Western Pennsylvania Safety Council Award – NETL Pittsburgh
- DOE Best in Class Pollution Prevention Award for Green Building Charrette Team – SPR
- National Pollution Prevention Roundtable Most Valuable Pollution Prevention Award for Downstream Product Stewardship (Honorable Mention) – SPR
- Federal Electronics Recycling and Reuse Challenge – NETL