



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

Annual Report Fiscal Year 2010



Office of Environment,
Security, Safety and Health

A Letter from the Acting Assistant Secretary



The Department of Energy's Office of Fossil Energy (FE) is dedicated to ensuring that the nation can continue to rely on traditional resources for clean, affordable energy. This mission is achieved by maintaining three key sites: the Strategic Petroleum Reserve (SPR), the National Energy Technology Laboratory (NETL), and the Rocky Mountain Oilfield Testing Center (RMOTC). During FY 2010, FE addressed a number of challenges such as the Deepwater Horizon oil spill, focused on clean coal power projects and the beginning of implementation of Executive Order (EO 13514), and continued to commit itself to environment, security, safety, and health (ESS&H) programs.

During FY 2010, FE focused on enhancing security and emergency preparedness. All sites conducted emergency training, upgraded physical security, identified emerging threats, and maintained a high level of preparedness. As we move forward, FE will continue to make improvements in security and emergency management programs to mitigate risk and injuries.

FE also sponsors innovative research and development programs that promote environmental protection and pollution prevention. FE partners with public- and private-sector organizations and universities to foster innovative solutions. The American Recovery and Reinvestment Act and the signing of EO 13514 allow FE to further invest in the Nation's economic and national security while maintaining a clean, environmentally friendly, and accountable program.

A commitment to safety and health can be found at all levels of management and in offices throughout FE's sites. FE seeks recognition by external organizations such as the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the International Organization for Standardization (ISO). FE will also continue to foster a culture of safety by reinforcing the importance of integrated safety management, incorporating industry-wide safety-related best practices, and refining internal processes to ensure the well-being of our employees. Looking forward, we want to improve our already strong ESS&H programs and practices.

FY 2010 was marked by the continued commitment of our employees and managers to ESS&H. This report shares our accomplishments and we appreciate any of your suggestions for improving our ESS&H programs.

A handwritten signature in black ink, appearing to read "Victor K. Der". The signature is fluid and cursive, with a long horizontal stroke at the end.

Victor K. Der
Acting Assistant Secretary
Office of Fossil Energy

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I. Introduction

More than 85 percent of the Nation's energy is supplied by fossil fuels, a share the Energy Information Administration projects will be maintained through at least 2030. The Department of Energy's (DOE) Office of Fossil Energy (FE) plays a crucial role in ensuring that the nation can rely on traditional resources for clean, affordable energy. FE's mission is two-fold: 1) establish emergency stockpiles of crude and heating oil to protect the nation against rapid fuel supply changes; and 2) develop future fossil energy technologies such as cleaner and more efficient fuels.

FE has proven its commitment to ensuring the highest possible standards for the environment, security, safety, and health (ESS&H) of its sites and operations through the ESS&H Commitment Statement. FE dedicates itself to ensuring the highest level 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. These core values help FE focus on integrating ESS&H into all aspects of the work planning and implementation processes.

The 2010 Annual Report summarizes FE's ESS&H performance for fiscal year (FY) 2010 and includes data from the National Energy Technology Laboratory (NETL), the Strategic Petroleum Reserve (SPR), the Rocky Mountain Oilfield Testing Center (RMOTC), and FE Headquarters (FE-HQ). Chapter I of the report introduces the document and the FE sites. Chapter II provides a comprehensive overview of key accomplishments during FY 2010. Chapter III presents the quantitative results of

FE-wide performance for key ESS&H performance indicators. Finally, Chapter IV outlines the key challenges, plans, and initiatives for improvement during FY 2011.

The FE Sites

With more than 2,500 Federal employees, contractors, and subcontractors, FE explores diversified ways to obtain supplies of fossil energy in the future, maintain and increase the U.S. petroleum reserves, and lead state-of-the-art research and development focused on fossil energy and technology research. FE is



An SPR Emergency Response Team advances during live fire training.

headquartered in Washington, DC and Germantown, MD, and has field sites in Morgantown, WV; Pittsburgh, PA; Fairbanks, AK; New Orleans, LA; Casper, WY; Albany, OR; and Houston, TX.

FE sponsors innovative research and development programs to develop clean coal technologies. FE's focus on energy efficiency also led to an examination of how natural gas production and utilization might be increased through improved characterization of reserves and infrastructure.

FE is also responsible for \$3.4 billion through the American Recovery and Reinvestment Act. Initiatives focus on research, development, and the deployment of technologies to use coal

more cleanly and efficiently. Research and development programs in fossil energy total \$1 billion. The American Recovery and Reinvestment Act will also fund a competitive solicitation for a range of industrial carbon capture and energy efficiency improvement projects.



Crude oil pipelines at SPR's Bryan Mound site.

SPR is a DOE-owned, contractor-operated complex of sites that store oil in 62 subterranean salt dome caverns along the Gulf Coast. Each oil cavern holds between 6 and 35 million barrels. With a total of slightly more than 726 million barrels of crude oil in the reserve, SPR is the largest stockpile of Government-owned crude oil in the world.

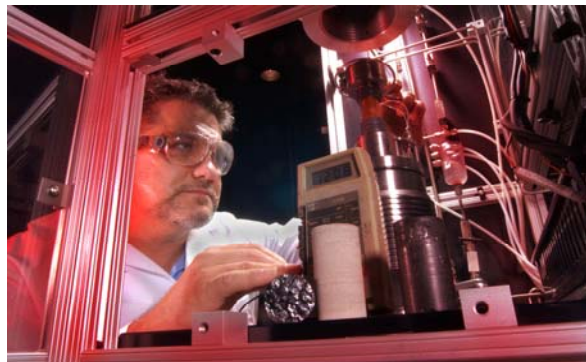
The SPR's Project Management Office (PMO) is headquartered in New Orleans, Louisiana, and has four operating sites: Bayou Choctaw and West Hackberry in Louisiana, and Bryan Mound and Big Hill in Texas. The PMO oversees daily operations of the major crude oil storage sites and logistical facilities for the nation's oil stockpile. The four storage sites encompass the largest emergency oil stockpile in the world. The sites are managed and operated by contractor, DM Petroleum Operations Company.

The purpose of SPR is to maintain the readiness of the Nation's oil stockpile for emergency use at the President's direction. On

Christmas Day 2009, a tanker ship arrived in Freeport, Texas with the final 493,000 barrels of crude oil, bringing the total to 726.6 million barrels and completing the fill program (actual capacity is 727 million barrels). To date, no acquisition or construction activities have begun on the new site and the Administration is currently reviewing SPR's 1 billion barrel expansion policy.

SPR also manages the 2 million barrel emergency Northeast Home Heating Oil Reserve, which houses fuel oil at three sites throughout the Northeast. Because people in the Northeast tend to rely on oil to heat their homes, it is vital to maintain this reserve.

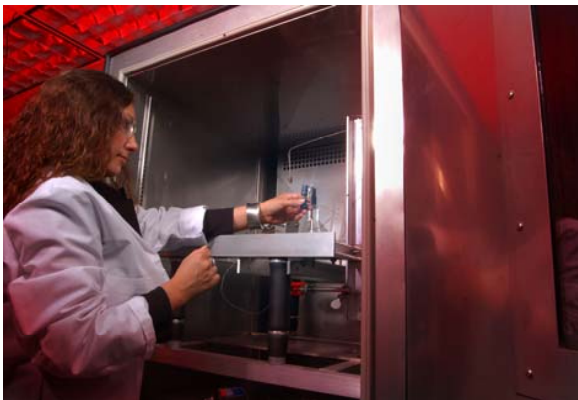
NETL is the only U.S. national laboratory devoted to fossil energy research. Its expertise in coal, natural gas, oil technologies, energy systems, and international energy analysis allow NETL to form research partnerships with industry, universities, and other government entities. NETL functions as both an onsite science and technology research center and as the administrator of nearly 1,800 contracts with external organizations. These partnerships, coupled with Federally-owned laboratory research, allow NETL to pursue new systems and technologies that will promote affordable and sustainable energy solutions in the future.



A research engineer in the Geosciences Division of NETL's Office of Research and Development (ORD), prepares a Pittsburgh #8 coal core sample to be tested within ORD's Geological Sequestration Core Flow Laboratory.

NETL has more than 1,100 Federal and contractor employees at its five sites located in Morgantown, WV; Pittsburgh, PA; Albany, OR; Houston, TX; and Fairbanks, AK. In total, NETL manages more than 1,900 projects in 47 states and more than 40 projects overseas. Total contract value of NETL projects is more than \$9 billion, and private sector cost-sharing is more than \$5 billion. NETL also funds nearly 500 university research projects that help to train the next generation of energy scientists.

In addition to enhancing America's energy independence through research, NETL also



A chemical engineer in the Geosciences Division at NETL's Office of Research and Development (ORD) performs research in NETL's Hydrate Facility.

seeks to enhance America's energy security, improve the environmental acceptability of energy production and use, and ensure a robust U.S. energy future. NETL conducts research on topics including secure and reliable energy; coal, oil, and natural gas efficiency; carbon sequestration; the future role of hydrogen; clean power generation from coal; and critical infrastructure assurance.

During FY 2010, NETL won a prestigious Research and Development (R&D) 100 Award from *R&D Magazine*. NETL researchers have won more than 30 R&D 100 awards in the last decade. The award was granted for the research topic: "Cerium Oxide Coating for Oxidation Rate Reduction in Stainless Steel and Nickel Superalloys," focusing on a surface



RMOTC's produced water wetlands.

treatment that extends the lifetime of metal components exposed to oxidizing environments. NETL employees also received the United States Geological Survey (USGS) Director's Award for Exemplary Service to the Nation for providing accurate estimates of leakage rates during the Deepwater Horizon oil spill response during the summer of 2010.

Located in the Teapot Dome oil production field near Casper, WY, RMOTC (formerly referred to as Naval Petroleum Reserve No. 3) is a Government-owned and operated facility performing technology research. Its testing capabilities not only focus on oil and gas production, but also on drilling, renewable energy, flow assurance, bioremediation, wetlands creation, well completions, geology and petrophysics. RMOTC partners with private manufacturers and companies to test, evaluate, and demonstrate new ideas and technologies in the oil and gas industry. It also partners with



Recurrent Engineering's geothermal power test unit at RMOTC.

environmental firms to find ways to manage, mitigate, and prevent environmental risk. In addition, RMOTC collaborates with national laboratories, research universities, and



A RMOTC drilling rig located on the 10,000-acre Teapot Dome Oil Field.

Government organizations to test innovations in real-world settings.

With a 9,481-acre operating field and 120 producing wells in seven producing reservoirs ranging in depth from 500 to 5,000 feet, RMOTC provides organizations with the opportunity to field test their theoretical assumptions and ideas in a practical environment.

During FY 2010, RMOTC released a white paper comparing geologic formations at its test site to other formations in the United States, validating that Teapot Dome provides an excellent natural laboratory in which to conduct research in Enhanced Oil Recovery (EOR) and carbon sequestration in geologic reservoirs.

To rebuild site infrastructure and bolster safety, RMOTC also continued large-scale upgrades of its oil rigs, including purchasing 600 feet of heavyweight drill pipe for use in rotary steerable system testing.

II. Highlights of FY 2010 ESS&H Accomplishments

In FY 2010, FE identified a number of priorities that integrate ESS&H into all aspects of the project planning and execution processes. FE specifically targeted these priorities to ensure the continuous improvement of the organization.

This section summarizes FE accomplishments in FY 2010 related to the following priorities:

- Protecting workers and meeting DOE security and emergency response needs;
- Striving for "zero" injuries and illnesses;
- Eliminating environmental legacies and maintaining strong environmental and pollution prevention programs;
- Integrating safety into all activities as an integral practice;
- Achieving self-assessment and external certification of ESS&H programs;
- Building a strong ESS&H culture;
- Increasing on-site quality assurance; and
- Fostering a continuous learning environment.

Protecting Workers and Meeting DOE Security and Emergency Response Needs

FE continued to increase protection of its personnel and site infrastructure in an effort to identify and confront ongoing and emerging threats. During FY 2010, FE strengthened employee and site security by:

- Continuing to strengthen the security of FE facilities;
- Ensuring compliance with DOE regulations and policies; and

- Hosting organization-wide emergency response exercises, training, and drills, to prepare for potential security threats or emergency situations.

During FY 2010, SPR took a number of actions to reinforce site security. For example, in compliance with Homeland Security Presidential Directive-12 (HSPD-12), SPR completed over 1,000 background checks on contractors and subcontractors, particularly on those who work with sensitive information and/



SPR's confined space rescue team practices personnel rescue from a tank during the 2010 Emergency Response Team Academy in Beaumont, Texas.

or materials. In addition, SPR continued to install badge readers at facility access points and conduct security assessments. Both security upgrades reinforce SPR's capabilities to identify unauthorized personnel who are within a site's perimeter.

SPR also continued to place a high priority on emergency response preparedness. During FY 2010, SPR conducted four announced Preparedness Response Exercise Program (PREP) drills in accordance with the requirements of the Oil Pollution Act (OPA) of 1990. The announced PREP drills were evaluated by both third party independent evaluators and DOE. Each announced drill was attended by local, state and federal response partners.

SPR focused on emergency management activities designed to prepare for natural disasters, pandemics, and other large-scale emergencies. For example, during FY 2010, SPR conducted its annual hurricane exercise which focused on how to provide effective emergency management post-landfall. SPR utilized its redundant communications systems to ensure communication success during an emergency and its Continuity of Operations Plan (COOP). In addition, SPR conducted four communication tests of its recall system in case of an emergency and recertified over 100 Emergency Response Team Members through the Fire Academy.



SPR Emergency Response Team members participate in a personnel decontamination exercise at the ERT Academy.

During FY 2010, NETL focused on enhancing site infrastructure and complying with HSPD-12 badging requirements. In June 2010, NETL completed HSPD-12 badging across all sites for all of the initially targeted Federal and contract employees. In addition, all three sites (NETL-Pittsburgh, NETL-Morgantown, and NETL-Albany) installed an HSPD-12/Federal Information Processing Standards (FIPS 201) compliant physical access control system and surveillance system. This effort modernized the systems in use at these facilities and makes them compliant with federal mandates well in advance of scheduled transitions. NETL's



A NETL-Pittsburgh security officer conducts an under-vehicle inspection.

commitment to physical site security can further be demonstrated through an award of \$220,000 to NETL-Morgantown and NETL-Pittsburgh to update their access control systems and the installation of new proprietary keying for all locks at NETL-Albany to reduce the risk of under-trained employees entering labs and gaining access to chemicals.

NETL-Pittsburgh also completed a U.S. Department of Homeland Security (DHS)-led review and rating of physical security posture in order to compare NETL's security posture to numerous other Research and Development (R&D) facilities throughout the country. NETL scored well above average in every category and at the very top overall.



NETL-Pittsburgh security greets the Allegheny County Emergency Services Command Center.

Emergency management was addressed at NETL through continued emergency response training, tests, and improvements. NETL conducted a National Incident Management System (NIMS) compliance study and adopted a strategy to implement corrective actions and revise emergency response directives. The NETL-Morgantown site is specifically working to replace its old emergency response notification system. Bomb threat testing and procedure reviews and revisions were also priorities for NETL during FY 2010.



The Allegheny County Bomb Squad participated in the NETL-Pittsburgh annual emergency exercise.

During FY 2010, RMOTC improved its physical security system by issuing facility keypad access codes to all new employees and disabling terminated employees' keypad access codes. RMOTC also periodically changed its facility padlock combinations to ensure that only authorized personnel have access to all facilities.

RMOTC also developed and conducted a number of important emergency management training courses and an annual exercise. Each training course and exercise was completed with a lessons-learned debrief and an opportunity to target areas for improvement in the future. For example, Basic Emergency Care (BEC) personnel attended trainings on CPR/AED and participated in a vehicle extraction drill during continuing medical education training.



Basic Emergency Care (BEC) training at RMOTC.

Striving for "Zero" Injuries and Illnesses

FE's commitment to employee safety is demonstrated by its dedication to strive for zero accidents and injuries in the workplace. This has been accomplished by implementing programs to combat and mitigate employee error and equipment malfunction. These targeted programs focus on improving sites by:

- Conducting extensive safety training to refine employees' skills;
- Promoting employee health and wellness through preparedness and prevention;
- Improving worker safety protocols and procedures through proactive management, addressing both new and recurring safety issues; and
- Continuing to upgrade facilities and site infrastructure to ensure a safe work environment.

During late FY 2009 and early FY 2010, activities continued in response to the emerging threat of influenza. FE sites operated under a comprehensive, DOE-wide response plan that provides detailed actions given different levels of exposure. In response to the H1N1 outbreak, FE-HQ took a proactive approach to the threat by distributing frequent email tips and

newsletters on the importance of employee health and hygiene given the H1N1 outbreak and the possible threat of pandemic influenza.

During FY 2010, SPR initiated a “Fit for Duty” program to ensure that new hires are physically capable of safely performing their job tasks. When a new employee is chosen to fill a job with specific physical requirements, he or she is tested to ensure that the physical job qualifications are met.



K-9 Demonstration at Polk Elementary School, September 24, 2010

Additionally, the managed care process at SPR was expanded to include injury and illness reduction throughout the operations contractor and the security contractor. Managed care reduces recordable accidents by effectively providing immediate first aid intervention following an accident. This immediate response from a medical professional often results in a case being classified as receiving only first aid rather than a more serious recordable case. During FY 2011, SPR hopes to expand the program to cover DOE employees and an additional DOE subcontractor.

In order to limit the number of accidents at SPR, site ESS&H managers and construction management subcontractors will now be included in the review and revision of the Accident Prevention Manual. By including ESS&H managers (from the four storage sites), representatives of the corporate operations and

training departments, and construction management subcontractors, field problems will be resolved more accurately in an environment that fosters continuous learning through sharing knowledge and best practices. This coordination will improve DOE performance.

During FY 2010, NETL conducted a major safety exercise at each site as well as smaller training drills to ensure correct and efficient program operation. Major exercises were completed at the Albany, Pittsburgh and Morgantown sites during the summer of 2010.

NETL also implemented corrective actions as a result of a near-miss at the Albany site. While putting a loose access cover on a 480 volt electrical raceway back in place, an employee inadvertently brought the cover plate in contact with an internal electrical connector, resulting in arcing within the raceway. While the technician was not injured, the arcing did trip several circuit breakers. This near miss resulted in three assessments to find electrical hazards. Work has been initiated on mitigating the hazards found and will continue.

RMOTC placed a high value on decreasing the number of injuries and accidents and enhancing worker involvement in safety and health. This was notably successful given that RMOTC did not have any recordable cases throughout FY 2010. This commitment to protecting employees is demonstrated by RMOTC’s win of the EPA’s award for Perfect Bacterial Compliance. RMOTC also continues to address site safety during new employee orientation and training and the annual family safety picnic.

The DOE Office of Aviation Management also conducted an Aviation Safety Assessment to ensure aviation safety in RMOTC’s projects.

Maintaining Strong Environmental and Pollution Prevention Programs and Eliminating Environmental Legacies

FE is committed to maintaining robust environmental and pollution prevention programs

as well as cleaning up environmental legacies from past activities. FE sites have implemented programs to:

- Employ strong environmental protection and pollution protection management practices;
- Aggressively pursue pollution prevention and energy efficiency goals; and
- Prevent and remediate environmental legacies.

During FY 2010, President Obama signed Executive Order (EO) 13514 entitled Federal Leadership in Environmental, Energy, and Economic Performance. The EO establishes an integrated agency strategy for sustainability including reduced greenhouse gas emissions within the Federal government in order to lead by example and achieve a clean energy economy. FE sites responded actively to the requirements outlined in the EO. SPR provided intense and interactive support to DOE-HQ in developing the new DOE Strategic Sustainability Plan, which includes interim data call information and the completion of enhanced greenhouse gas reporting. In response to the EO, NETL developed a detailed web-based training course that analyzes the impact of EO 13514 requirements on the organization.

To demonstrate its continued commitment to environmental sustainability during FY 2010, NETL focused on increasing the total fuel consumption from non-petroleum sources by 10% annually. Commitment to renewable



RMOTC's annual Safety Day was held near Casper, WY in June 2010.

electric sources is also important to NETL: landfill gas usage comprised 19% of NETL's total energy usage.

NETL remains committed to pollution prevention activities such as recycling and environmentally preferable purchasing. During FY 2010, NETL increased its recycling numbers sharply, an increase aided largely by NETL-Pittsburgh's recycling of 4,000 tons of asphalt.

NETL's purchasing staff continues to focus on the requisition of office and construction materials with recycled content. During FY 2010, NETL focused on reducing its vehicle fleet's total consumption of petroleum products by 2% annually. NETL's actual fleet reduction was 2,318 gallons below the FY 2010 target.



Clarifier at the NETL-Morgantown site

NETL also participated in the Federal Electronics Challenge. NETL received the EPA's Federal Electronics Challenge Silver Level Award for its work on encouraging Federal facilities and agencies to purchase greener electronic products, reduce the impacts of electronic products during use, and manage obsolete electronics in an environmentally safe way.

During FY 2010, NETL received numerous awards for its environmental programs. For example, NETL was one of six organizations in the Pittsburgh area to receive the EnviroStar award, and the only organization to receive a three-star rating. This rating was based on



Landscaping outside a NETL-Pittsburgh building utilizes recycled cobblestone from a street.

NETL's efforts to improve its environmental management system, energy savings (energy saving light fixtures), mercury reduction, in-house recycling, participation in the Federal Electronics Challenge, and use of paints with either low or no volatile organic compounds (VOC). NETL also received the National Partnership for Environmental Priorities Program Recognition Award from the EPA for its recently reduced inventory of mercury by 140 pounds that was sent offsite to be recycled.

During FY 2010, SPR took a proactive approach to potentially environmentally friendly projects that are ready to be initiated across the sites. Members of the "Green Team," a multi-directorate team of professionals, discuss numerous green projects and design conceptual packages for each project with a description, review of available technology, and an initial cost estimate.

During FY 2010, SPR also procured environmentally preferable products and EPA-designated, recycled-content products. SPR's Affirmative Procurement/Bio-based Program was deemed successful because of its use of the Buy It Green (BIG) list to provide simple, centralized purchasing requirements and instructions to all SPR organizations.

At the Bayou Choctaw site, SPR implemented an Induction Lighting pilot project to save

energy, produce better color light, create little heat that might obscure security cameras, and reduce mercury waste. Because of the longer life span of these light bulbs, SPR hopes to have a high return on investment.

During FY 2010, SPR also submitted a Clean Texas Platinum Membership commitment to ensure environmentally sustainable practices between 2010-2013. These commitments include reducing toxins in materials produced by 10% in three years and reducing non-hazardous waste by 5% each year.

FE also has multiple efforts underway to prevent environmental legacies and clean up existing legacies. At NETL, the dredging of sedimentation ponds and repairing banks and eroded gullies allowed the site to reduce environmental impacts from construction activities and decrease violations. NETL will also continue remediation activities at its research sites by cleaning up chemicals from all labs and reducing waste generated long-term.



A magnetometer is used to find buried barrels at the NETL-Pittsburgh site.

Ongoing renovations at NETL require projects to move to new laboratories. Before moving to new labs, NETL designates responsible persons (RPs) who are encouraged to clean out their labs and dispose of old and unused chemicals before moving to the new location. The chemical containers that will be moved to the new location are scanned and used to verify



SPR recycling efforts.

the accuracy of the chemical inventory. NETL identified a list of 31 EPA Priority Chemicals that will eventually be removed from the site.

During FY 2010, RMOTC established areas for improvement to prevent environmental legacies and clean up existing problems. RMOTC promoted recycling of computer/electronic equipment and personal waste instead of removal to landfill, and developed a more cohesive plan to address hazardous waste. RMOTC also established and implemented a hazardous waste satellite accumulation area for commodities such as batteries and aerosol cans. This provides an area for hazardous waste accumulation before transportation to the hazardous waste storage yard.

RMOTC continued Environmental Management System training for all employees to better promote environmentally friendly decision making and activities.

During FY 2010, RMOTC also focused on using technology to promote alternative energy research, including a successful partnership to test the use of oilfield wastewater for geothermal electrical generation. RMOTC partnered with Casper College to install a 6 kilowatt wind turbine at the Teapot Dome oil field.

Achieving Self-Assessment and External Certification of ESS&H Programs

Internal and external ESS&H assessments, as well as third-party certifications, assist FE in identifying best practices, recognizing exemplary performance, and targeting areas in need of improvement. Assessment and recognition of ESS&H programs demonstrate FE's commitment to safety, security, and environmental soundness.



RMOTC conducts geothermal outreach training.

Across FE sites, International Organization for Standardization (ISO) 9001 and ISO 14001 continue to be priorities. During FY 2010, SPR maintained its ISO 9001 status and continued to ensure that nonconformities are identified and corrected in a timely manner. In June 2010, NETL conducted an ISO 9001 pre-assessment at the Morgantown and Pittsburgh sites. While the Albany site is already ISO 9001 certified independently, it must still go through the process with the Morgantown and Pittsburgh sites to be included in the same scope. NETL will continue to move forward with the ISO 9001 certification process.

FE sites also focused on either obtaining or maintaining ISO 14001 and Occupational Health and Safety Advisory Services (OHSAS) 18001 certifications. During June 2010, the NETL-Pittsburgh and NETL-Morgantown sites underwent ISO 14001/OHSAS recertification

audits, and in August 2010, the NETL-Albany site underwent an ISO 14001 recertification audit and an OHSAS 18001 registration audit. All three NETL sites were recertified to ISO 14001 and were registered to OHSAS 18001. NETL also conducted internal auditor training sessions resulting in 15 additional internal auditors being trained to the ISO 14001/OHSAS 18001 standards and introduced a revised computer based training program addressing ISO 14001/OHSAS 18001 for employees. In addition, SPR is preparing for external certification as an OHSAS 18001 company with the goal of certification in 2011. A gap analysis and an internal assessment of the safety and health management system done to the 18001 criteria will be completed.

External certifications and recognition help to identify areas of leadership and innovation at FE sites. For example, SPR's four storage facilities maintained Occupational Safety and Health Administration (OSHA) and DOE Voluntary Protection Program (VPP) participation as Star sites. The West Hackberry Security Officers VPP program was also recommended for Star status. During FY 2010, SPR was the recipient of the Office of FE Excellence in ESS&H Award, received the National Safety Council's (NSC) Occupational Achievement Excellence Awards at four of its sites, and won the Federal Electronics Challenge Silver Level Award.

At NETL, three independent, third party assessments were conducted on: electrical safety, packaging and transporting hazardous materials, and fire protection, resulting in several recommendations that are currently being implemented. NETL also conducted an internal self-assessment of the emergency response organization against National Incident Management System (NIMS) requirements, is currently implementing corrective actions to reorganize teams to use NIMS-compliant terms, and will follow-up with developing training during FY 2011.

During FY 2010, NETL was also the recipient of the EnviroStar award from the Allegheny County Health Department, the National Partnership for Environmental Priorities (NPEP) recognition award, and the Federal Electronics Challenge Silver Level Award. In addition, NETL won the U.S. Geological Survey (USGS) Directors Award for Exemplary Service to the Nation for providing accurate estimates of the leakage rate at the Deepwater Horizon oil spill and prestigious R&D 100 Awards from *R&D Magazine* for its in-house innovations.

During FY 2010, EPA conducted an assessment of impoundments/ponds and Resource



SPR's Federal Electronics Challenge Award.

Conservation and Recovery Act (RCRA) compliance. RMOTC is still awaiting the final report. RMOTC sites were also examined during an FE-HQ safety and health staff assistance visit (SAV). These visits reviewed the implementation of RMOTC's Integrated Safety Management Statement (ISMS) and Environmental Management System (EMS). The SAV found that RMOTC continues to reflect compliance with ISM objectives.

Building a Strong ESS&H Culture

During FY 2010, FE sites built on partnerships with other organizations, participated in community exercises and volunteering, and emphasized the importance of continuous training and development to provide employees

with a comprehensive understanding of operations, work culture, and performance expectations. While all sites designed programs focused on the needs of their employees, each site hosted events that included employees and their families.

SPR promoted health and safety by actively participating in multiple Energy Facility Contractors Groups (EFCOG) on the topics of industrial hygiene, industrial safety, and environmental issues. SPR also promoted safety and health by participating in community events such as acting as the President of the South Louisiana National Safety Council, presenting at the Lean Behavioral Process and the Behavioral Safety 2010 annual conference, and providing employees for OSHA VPP.

NETL continued to emphasize building a strong ESS&H culture among employees. In observance of Earth Day 2010, employees were encouraged to reduce the amount of paper used for printing and attend lectures, a “green-prepared” potluck, and an Earth Day Poster Contest for children. SPR also sponsors the Mickey Leland interns for 2010 to assist in the development of the safety and health leaders of the future and hosts an annual Earth Day picnic where families learned about renewable resource products.

NETL employees also participated in a monthly safety training program for technicians to promote environmental considerations in all phases of work. Specifically, topics such as



RMOTC's Christmas Toy Drive for kids.

waste minimization, recycling, and environmental aspects of digging permits were presented.

RMOTC maintained a strong ESS&H culture by including management in safety training and resolving safety issues. Lessons learned from other DOE sites and outside sources were shared with RMOTC personnel during morning meetings, as were near-hits so that they would not be repeated. RMOTC also incorporated the control of work process into all field jobs. Close attention was paid to employee wellness, such as Wyoming Health fairs personnel conducting blood draws at the field site.

Integrating Safety Into All Activities as an Integral Practice

Integrated Safety Management (ISM) offers a systematic method for integrating ESS&H into all steps of the work planning and implementation processes. ISM's approach incorporates seven verification criteria into all operations, helping maintain a standardized ESS&H process.

During FY 2010, each FE site received guidance and support on further developing their ISM programs. At NETL, FE-HQ conducted a site assistance visit (SAV), reviewing NETL's Integrated Safety Management Statement against the DOE ISMS in order to ensure that all requirements are addressed. FE-HQ conducted SAVs at all three NETL sites. Informal feedback indicated that NETL continues to improve its ISMS. SPR prepared an annual ISM review and update report for 2010 including a roll-up of all assessments conducted on the site during FY 2010. In the roll-up report, SPR identified that analysis, trending, and recommendations are more data-driven this year. Finally, FE-HQ also conducted a site visit at RMOTC, noting that the program continues to reflect the desire of management to provide employees with a safe and healthy workplace.

SPR continues to prevent accidents by revising its many plans and processes. This includes a revision of the human resources organizational

process and the finance budget formulation procedures to identify and analyze their potential impacts on ESS&H processes. In addition, SPR participated in the DOE ISM workshop and the National Safety Council (NSC) Executive Edge program to benchmark industry ISM practices. These presentations and training sessions focused on systems management at a senior level and encouraged integration of ESS&H into business systems.

At RMOTC, the ESS&H Performance Goals were adopted by all departments and tracking and trending of incidents for management were improved by updating the capabilities of the CATTs database. RMOTC also performs a Job Safety Analysis (JSA) for each required project.

Increasing Onsite Quality Assurance

Every FE task is subject to a rigorous, systematic quality assurance (QA) process that continuously validates its alignment with the organization's mission and reflects the highest standards of excellence. The QA process ensures employee and customer confidence in each product and service offered by FE.

During FY 2010, NETL reorganized to include a NETL Quality Manager who reports to the Office of Institutional Operations. NETL did not have a corporate Quality Manager prior to the reorganization. In addition, NETL sites also underwent an International Organization for Standardization (ISO) 9001 pre-assessment. The findings from the pre-assessment found that NETL has many of the elements of the standard in place. This information was presented to the Management Review Team who is recommending to senior management that NETL pursue ISO 9001 certification.

NETL also gained access to the lessons learned database so that employees have the opportunity to review lessons learned to limit repeated issues.

During FY 2010, SPR reworked the Assessment Tracking System (ATS),

incorporating enhancements that make it more user-friendly as well as increasing the system's value as an analytical tool. SPR also automated the On-Site Management Appraisal process to facilitate and manage the flow of information and findings during appraisals.

SPR continued the use of special teams and process improvement teams to create positive change throughout all business sectors. For example, the Green Building team supports the goals of EO 13423 and 13514 by incorporating sustainable design into new and reconstructed federal buildings. Additionally, the Personnel Security Improvement Team's streamlines and automates the "in-processing" of new hires. This effort has resulted in improved tracking, reporting, handling, and storage of personnel documentation. These efforts ensure that SPR maintains its high standards of excellence.

During FY 2010, RMOTC developed QA implementation procedures. RMOTC also developed a matrix correlating operations procedures to all job positions in order to ensure that all are accounted for. Management assessments also became a standard process throughout RMOTC.

Fostering a Continuous Learning Environment

To continuously improve performance, FE fosters a learning environment that emphasizes the importance of training, development, and the incorporation of best practices into operations

In order to foster a continuous learning environment, SPR implemented quality and oversight computer-based training for Federal SPR employees and applied oversight improvements and Assessment Tracking System enhancements identified by the Quality Council Process Improvement Teams.

SPR also expanded the population of Human Performance Improvement (HPI)-trained employees to better perform an analysis of

error-causing situations and created an HPI implementation team. The implementation team is currently working to implement HPI in business systems as well as safety and health. HPI is the systematic process of discovering and analyzing important human performance gaps, planning for future improvements in performance, designing and developing cost effective and ethically justifiable solutions to close performance gaps, implementing solutions, and evaluating the financial and non-financial results.

RMOTC's Technical Assurance Department conducted new employee orientation and training to familiarize new employees with site safety and operations. RMOTC also shares lessons learned from other DOE sites with personnel during morning meetings to ensure a strong learning exchange.



Command post at the NETL-Albany site during the annual emergency exercise.

During FY 2010, NETL continued development of a learning management system (LMS) for employees. NETL continues to use the DOE On-line Learning Center (OLC), but reporting problems and data quality have somewhat hampered these efforts. NETL will continue developing the LMS throughout FY 2011. NETL also conducted a number of training courses and exercises to ensure that its employees reflect the current safety needs and priorities of the organization.

III. Summary of ESS&H Performance

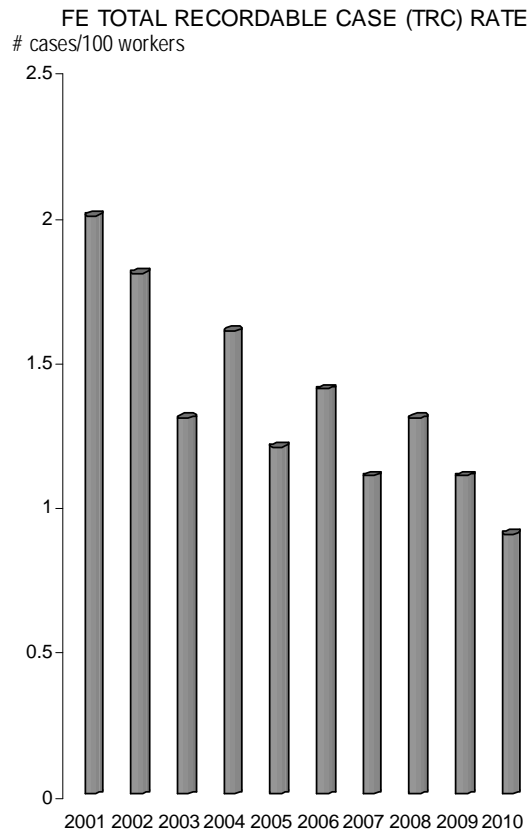
FE is committed to the goal of reducing and ultimately eliminating injuries, illnesses, and environmental releases. This section highlights progress made during FY 2010 to improve FE-wide ESS&H performance measures. Data related to FE's and DOE's health and safety performance represent all workers, including 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 and Processing System (ORPS). Data on environmentally preferable purchasing and hazardous and sanitary waste generation were obtained directly from FE sites. Appendix A summarizes site-specific ESS&H quantitative performance information, including comparisons of FE performance to DOE sites. Please note that all data included in this report are as of February 2, 2011.

Total Recordable Case Rate Lowest in the Past 10 Years

The Total Recordable Case (TRC) rate is based on the number of injuries and illnesses incurred by Federal and contract employees in a given year that are serious enough to result in medical attention, loss of consciousness, restriction of work activity, or time away from work. 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 1 year, which means that 9 of every 1,000 workers were injured at work or experienced some type of work-related illness.

In FY 2010, the TRC rate for FE was 0.9, which is the lowest rate in the past 10 years of recording with only 22 recordable cases, 15% lower than FY 2009. This is a significant accomplishment that contributes to the FE-goal of striving for zero injuries and illnesses. In addition, FE's TRC rate was significantly lower than the DOE-wide TRC rate of 1.1.

Figure 1



Number of injury and illness cases per 100 workers
Source: Computerized Accident/Incident Reporting System

During FY 2010, the TRC rate decreased from 1.6 to 1.3 (a 19% decrease) at SPR. NETL's TRC remained the same, 0.6. Of particular note, RMOTC had 0 recordable cases throughout all of FY 2010.

FE's 22 recordable cases are 15% fewer than in 2009 and about 54% fewer than in 2001, when the FE ESS&H Annual Report started reporting this data. The primary root cause of 12 of the

accidents was employee error followed by procedural error, design/material failure, and “other.”

Employee error was responsible for more than half of the recordable cases, and numerous accidents were the result of slips and falls or back strains/sprains due to lifting heavy items. As a result, FE has taken steps to reinforce existing safety training and awareness by addressing safety best practices in all-hands meetings, providing additional education on heavy lifting, resurfacing some slippery areas, and posting signs to remind employees to exercise caution in high-risk conditions. Following several incidents in which employees were injured during training, FE is also reinforcing the importance of warm-up and cool-down before any exercise and proper form and breathing techniques during exercise.

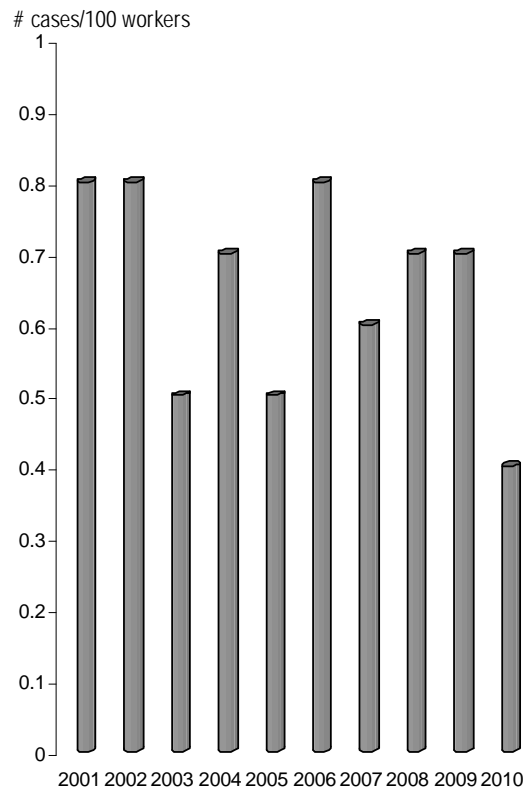
In addition, a subcontractor at SPR's Bryan Mound site was working inside an oil storage tank to wash down the floor when a quick-connect coupling on his supplied air breathing hose disconnected. The employee collapsed and was later pronounced dead. An autopsy report returned that the employee died due to asphyxia. SPR is currently implementing a number of corrective actions in addition to reviewing OSHA Confined Space regulations (29 CFR 1910.146).

Days Away, Restricted, or On-Job Transfer Case Rate Lowest in the Past 10 Years

FE's Days Away, Restricted, or On-Job Transfer (DART) case rate represents the number of work-related injuries that resulted in employees missing days of work, returning to work on restricted duty, or working in a different function normalized to hours worked. FE's performance in this category has serious consequences and cost implications because the organization loses the productivity of injured employees while they recuperate. In FY 2010, FE's DART case rate was 0.4, the lowest rate in the past 10 years.

During FY 2010, FE-HQ continued a 12-year trend of no accidents that resulted in lost

Figure 2
FE DAYS AWAY, RESTRICTED OR ON JOB TRANSFER (DART) CASE RATE



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

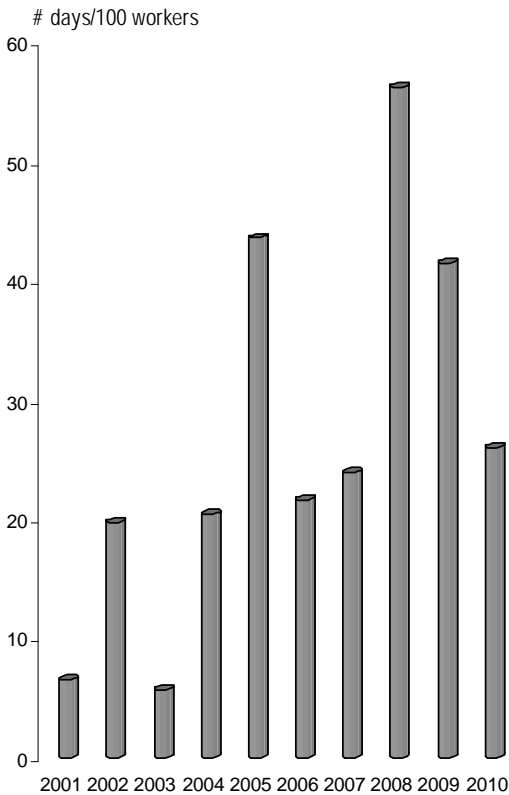
Source: Computerized Accident/Incident Reporting System

workdays. SPR and RMOTC significantly reduced their DART case rates to 0.6 and 0.0 respectively. NETL's DART case rate remained the same at 0.3. A total of only 11 accidents resulted in lost workdays or days on restricted duty or job transfer, a decrease of 35% from FY 2009.

Days Away, Restricted, or On-Job Transfer Rate Significantly Decreases

The DART rate is the actual number of lost workdays, days of restricted work activity, or job transfer resulting from these injuries normalized to the number of hours worked by 100 employees. This rate is used as an indicator of accident severity. FE's DART rate of 26.0 days lost per 100 workers is 37% lower than in FY

Figure 3
FE DAYS AWAY, RESTRICTED OR ON JOB TRANSFER (DART) RATE



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

Source: Computerized Accident/Incident Reporting System

2009 suggesting that both the number and the severity of cases decreased. FE had a total of 671 lost workdays, days on restricted duty, or transfer, in large part due to 5 of the 22 TRCs that resulted in more than 40 lost workdays, days on restricted duty or transfer.

During FY 2010, the DART rates for all three sites decreased significantly. NETL saw a 20% decrease to 12.4, RMOTC saw a 600% decrease from 6.0 in FY 2009 to 0.0, and SPR saw a decrease of 38% from 81.2 to 50.6.

At SPR, two of the three major accidents (i.e., those requiring more than 40 days of lost or restricted work activity) were the result of injuries to the knee during training. The first instance

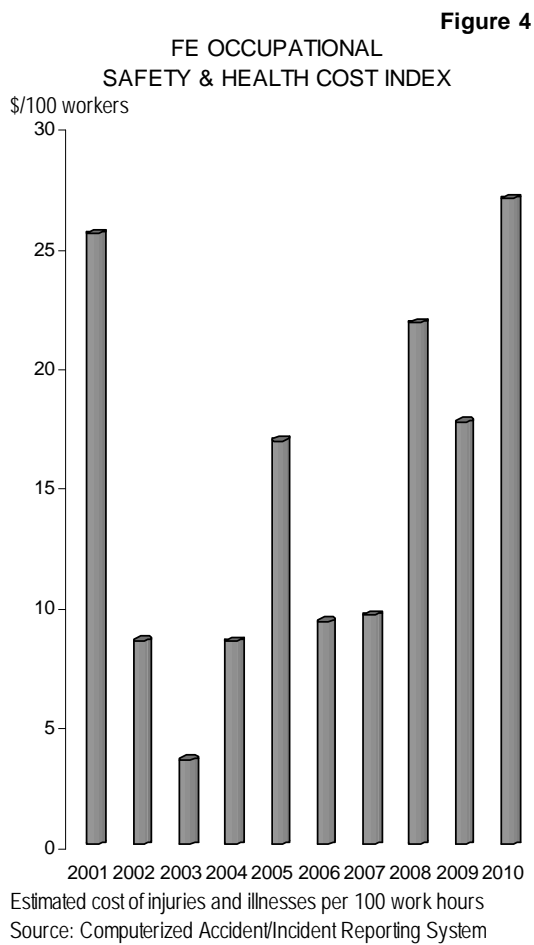
occurred during self-defense training when an employee performed a “straight-arm take down” and did not fully pivot his leg. This caused the employee to sustain a knee strain. The second injury occurred during an employee’s physical fitness training when his right knee gave away causing him to lose his balance and fall off of a treadmill. As a result of these accidents, SPR is examining safety practices to ensure that exercises and training reflect the importance of protecting the knees.

Lower back strains and sprains were also a common cause of major accidents. At NETL, an employee was lifting a 50-pound box, turned sharply, and sustained a lower back sprain. At SPR, an employee was shoveling when he felt pain in his lower back. The pain was caused by a lower back strain. To ensure that employees follow safety procedures, supervisors continue to instruct their employees on safe on-the-job practices. In addition, FE will investigate securing proper lifting equipment to alleviate lower back strain.

Occupational Safety and Health Cost Index Increases Significantly

The Occupational Safety and Health (OSH) Cost Index is a performance indicator that represents the normalized estimate of the costs of injuries incurred by FE sites. In FY 2010, FE’s cost index increased 53% from FY 2009. This increase can be largely attributed to an employee death at the Bryan Mound site of SPR during the fourth quarter of FY 2010. Without this death at the SPR site, the cost index would have been 7.61, the second lowest index score in the last ten years.

During FY 2010, RMOTC employees had zero days away from work or on restricted duty or job transfer, and therefore their cost index was 0.0. In addition, NETL’s costs decreased by about 23% as a result of decreases in both the number of days away from work or on job transfer. Lastly, during FY 2010, FE-HQ had no compensation costs for the eighth year in a row.



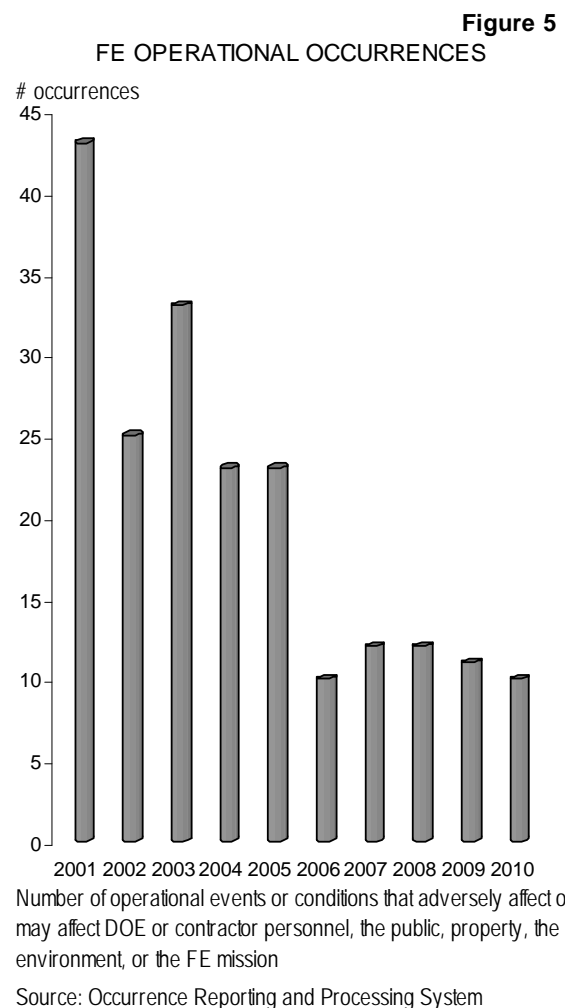
Operational Occurrences Tied for Lowest Number in the Past 10 Years

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 2010, there were 10 operational occurrences at FE sites, slightly fewer than the 11 occurrences in FY 2009. Only one other year (2006) had as low a number of operational occurrences as during FY 2010.

NETL and RMOTC each incurred four operational occurrences, a decrease of 33% and an increase of 33% respectively. SPR had two operational occurrences. Operational occurrences at FE were caused by unexpected

leaks of oil, turbid water, cooling water, or other waste; transportation of hazardous wastes to a non-hazardous disposal site; and an energized electrical circuit resulting in a near miss. Better communication among construction crews, additional employee training, and adherence to site safety plans should reduce the number of operational occurrences even further in FY 2011.

In addition, an SPR subcontractor collapsed during a Crude Oil Storage Tank cleaning operation. He was transported to a local hospital and was pronounced dead about two hours later. As a result of this accident, site personnel secured the tank area and noted local air quality ratings. FE conducted a thorough accident investigation and is implementing DOE recommendations.



Number of Environmental Spills and Releases Increase Slightly

Environmental releases represent the total number of spills, leaks, and discharges of hazardous substances, oil, and regulated pollutants into the environment that must be reported. During FY 2010, FE sites reported 7 environmental spills and releases. SPR had one environmental release. RMOTC and NETL both had three environmental releases/spills.

At RMOTC, a wellhead valve failed resulting in a small oil release; pumping fluid was released from a drilling rig mud tank; and the pump packing failed on a truck carrying diesel causing

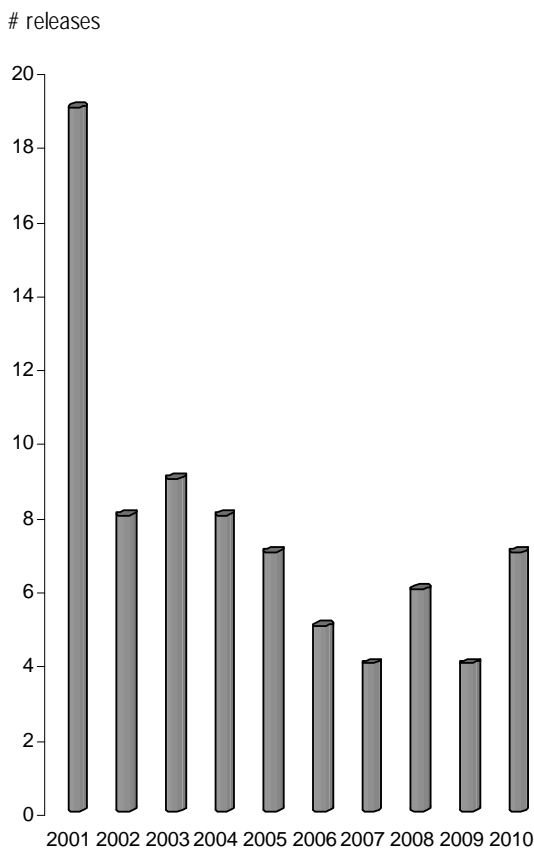
a diesel release in the parking lot. At NETL, hazardous waste was improperly disposed of, ethylene glycol was released, and a small amount of turbid water leaked into the storm water system. Finally, at SPR an open vent valve caused the release of brine into the ground near a pump pad.

One Regulatory Violation in FY 2010

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 2010, FE sites had one regulatory violation. The Wyoming Department of

Figure 6
FE ENVIRONMENTAL RELEASES



Number of spills, leaks, and discharges
Source: Occurrence Reporting and Processing System

Table 1

FE REGULATORY VIOLATIONS	
Fiscal Year	# of Violations
2001	2
2002	3
2003	3
2004	4
2005	3
2006	0
2007	1
2008	0
2009	1
2010	1

Source: Occurrence Reporting and Processing System with Field Site verification

Environmental Quality (WYDEQ) issued a notice of violation to RMOTC for releasing an estimated six barrels of crude oil and 2,000 barrels of produced water into an unknown tributary of the Little Teapot Creek. RMOTC dug additional retention pits on a slope above the drainage to prevent additional fluid washdown. All eight of the high water production geothermal wells were in the process of proactively being rebuilt when the spill occurred. At that time, five of the eight wells had been completed and the other three were planned to be completed by June 2010. In addition, RMOTC evaluated the integrity of all 120 core production wells to ensure installation of plugs for annulus valves to prevent discharge.

Number of Security Incidents Decreases

The security incidents performance metric refers to the total number of security incidents that are reportable under DOE Manual 470.4-1 Impact Measurement Index (IMI) criteria. The IMI severity level is based on a scale of 1-4 (1 the most severe and 4 the least severe).

Table 2

FE SECURITY INCIDENTS	
Fiscal Year	# of Incidents
2008	3
2009	3
2010	2

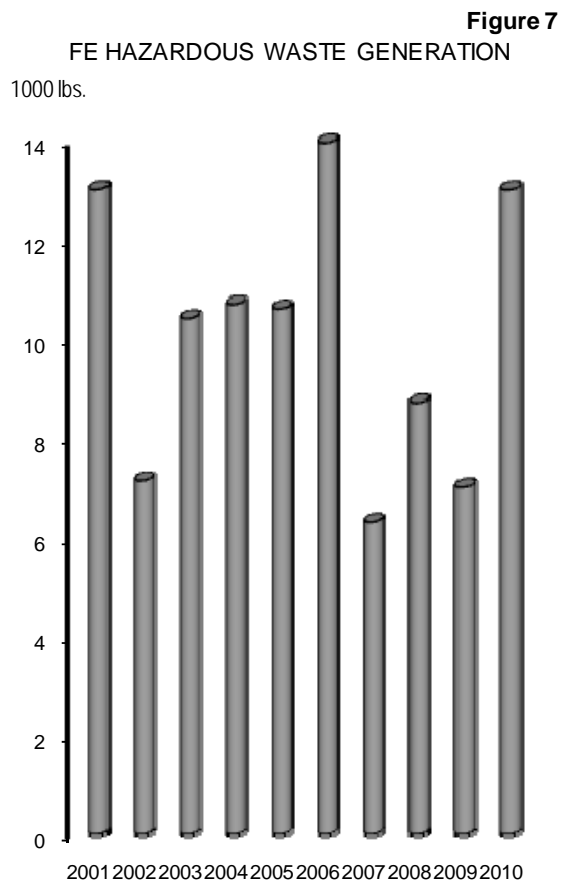
Source: Field sites

During FY 2010, there were two reportable security incidents at NETL, both with an IMI security level of 3. The first involved theft of government property and drug possession by an employee and the second included apparent surveillance of facilities/operations by a non-employed individual. As a result of the second incident, NETL increased both foot patrol and surveillance efforts.

Hazardous Waste Generation Increases

During FY 2010, the amount of hazardous waste generation increased across all FE sites. At RMOTC, 2,990 pounds of hazardous waste were generated during general field clean up activities during the summer of FY 2010. Hazardous waste from cleanup was disposed of offsite through a licensed contractor in a planned clean-up effort to minimize RMOTC’s environmental risk.

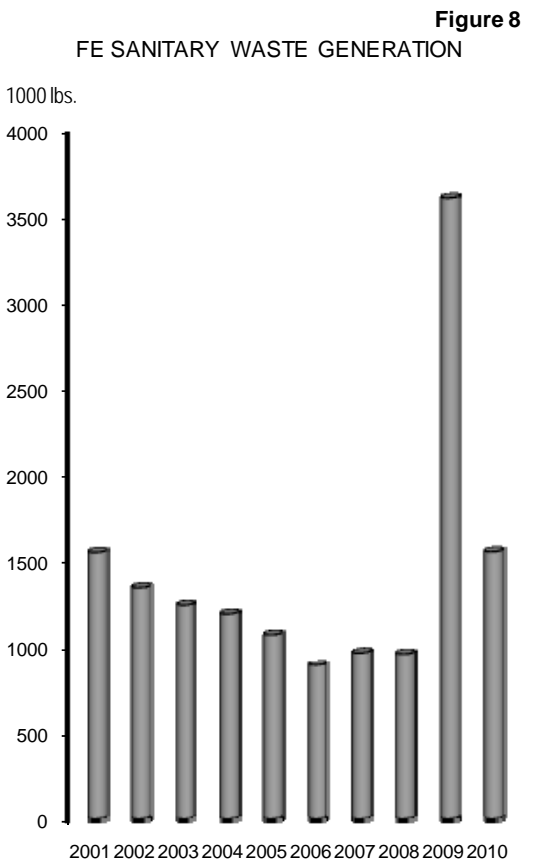
SPR generated a total of 249 pounds of hazardous waste, a 9% increase from the previous year. SPR’s hazardous waste is attributed to redistilled solvents, crude oil/toluene from the SPR laboratories, and 1,1,1-trichloroethane from the Instrument and Controls (I&C) shop. Currently, SPR is generating less than half its target level of hazardous waste, demonstrating SPR’s awareness and innovation in identifying ways to avoid waste generation.



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

Source: Field Sites

NETL increased its hazardous waste generation by 45% to 9,653 pounds resulting from 9,014 pounds of routine hazardous waste generation and 639 pounds from clean up activities. The increase in routine hazardous waste for NETL is due to an emphasis by the Office of Research and Development on maintaining appropriate levels of hazardous materials within the labs. This caused many researchers to dispose of hazardous materials that were no longer needed which resulted in an increase in routine hazardous wastes. While the percentage increase is 45%, the actual increase was only 3,863 pounds. NETL’s inventories and wastes are low, so any increase appears to be larger percentage-wise.



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

Source: Field Sites

Sanitary Waste Generation Decreases Significantly

Sanitary waste is defined as all waste generated, excluding EPA-regulated hazardous wastes and wastes that are recycled. In FY 2010, FE sites generated a total of 1.5 million pounds of sanitary waste, a significant decrease from FY 2009.

SPR generated 675,057 pounds of sanitary waste and NETL generated 706,561 pounds of sanitary waste, significant decreases for both of these sites, due in large part to high levels of recycling used materials during FY 2010. RMOTC's sanitary waste generation increased to 168,261 pounds due to the general field clean up to minimize RMOTC's environmental risk.

To reduce sanitary waste generation, the sites pursued aggressive recycling and reuse activities for office materials, scrap metal, soil, and most notably, asphalt at NETL (about 8.1 million pounds). NETL recycled 93% of all sanitary waste, SPR recycled 79% of all sanitary waste, and RMOTC recycled about 31% of its sanitary waste. These rates of recycling decreased the numbers in this category significantly for each of the sites.

FE Continues to Have Strong Environmentally Preferable Purchasing

EPA requires Federal agencies to purchase products made with recycled materials unless those products cannot be procured in a reasonable timeframe or if recycled products do not meet performance targets. FE's procurement of recycled materials ensures regulatory compliance and reflects its emphasis on environmental leadership.

During FY 2010, SPR and NETL successfully purchased 100% Environmentally Preferable Purchasing products that either met requirements for recycled content or were otherwise justified. SPR also saw the direct results of the SPR Standard Specifications through the increased procurement of environmentally preferable purchasing products in construction projects. For example, one construction project purchased over \$40,250 of recycled blasting grit and another bought almost \$53,000 of concrete containing fly ash, a significant achievement on procuring products made with recycled materials.

NETL purchases all green janitorial supplies with the exception of disinfectants, office furniture and equipment that focuses on recycled content, and electronic equipment that satisfies Environmentally Preferred Electronic Assessment Tool (EPEAT) standards. In addition, NETL uses cocoa-shell mulch and purchases ethanol (E85) for its fleet of alternatively fueled vehicles.

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

Key Challenges and Initiatives

During FY 2010, FE made progress in its ESS&H performance. However, FE continues to tackle challenges including on-going efforts to reduce environmental impact from FE operations, the need for increased security and emergency preparedness, and a continued focus on reducing injuries and illness. In addition, FE must confront long-term challenges such as planning for employee retirements, integrating proactive management processes to support high performance, and adapting to new technologies. This section provides an overview of FE's ESS&H challenges and the initiatives to be addressed during FY 2011, followed by a summary of site-specific initiatives.

Key Challenges and Initiatives

Protecting Workers and Meeting DOE Security and Emergency Response Needs

To serve the Nation by providing secure, reliable energy and research, FE must continue to strengthen its security efforts and emergency response programs. To protect its employees and facilities, FE will continue to: (1) modernize security infrastructure; (2) ensure current programs comply with the latest directives and standards; (3) offer basic and comprehensive security and emergency management exercises and training; and (4) implement processes designed to strengthen security and emergency response.

FE sites work in partnership with their communities. To that end, the sites will continue to strengthen relationships with local municipalities and institutions as well as state and Federal law enforcement. This collaboration helps to ensure seamless coordination on emergency response and security issues.

Eliminating Environmental Legacies and Protecting the Environment

During FY 2011, FE will continue to focus on mitigating existing legacies and ensuring activities do not create new environmental issues, impacting future generations. With the continued implementation of EO 13514, FE sites are required to provide frequent status reports. This ability to develop internal processes to support immediate needs demonstrates the programmatic flexibility, staff expertise, and innovation in ESS&H that FE sites are proud of. Each site will continue to respond to EO 13514 as efficiently and proactively as possible during FY 2011. To combat negative environmental effects, FE will focus on the following initiatives: (1) continuing to comply with the requirements of EO 13514 on ensuring sustainability and reducing greenhouse gases; (2) reducing hazardous and sanitary waste generation; (3) installing and upgrading pollution controls; (4) planning for ongoing cleanup of environmental legacies; and (5) integrating environmental concerns into construction activities in order to reduce pollution and waste. In addition, during FY 2011, all of the sites will focus on the identification of necessary chemicals to use onsite and chemical storage and proper disposal for those chemicals that are not designated as necessary.

Striving for "Zero"

FE continues to strive for zero accidents, work-related injuries and illnesses, regulatory enforcement actions, and reportable environmental releases.

During FY 2011, FE will: (1) promote employee awareness and understanding of safety standards and practices; (2) enhance employee safety training and exercises, particularly around helping employees recognize potential health and safety hazards on-the-job; (3) encourage employees to respond and communicate with supervisors when they

identify a potential hazard; and (4) foster a work environment that encourages knowledge-sharing and open communication with employees about their ESS&H concerns. Following the incident at the Bryan Mound site of SPR, FE will continue to implement DOE's corrective action plans to make the needed changes in safety procedures and employee coordination.

In FY 2011, FE will also focus on expanding and improving its behavioral safety processes, increasing the use of HPI with its newly founded HPI implementation teams, and continuing the implementation of industrial hygiene programs. FE will also reinforce existing safety training and awareness by addressing safety best practices in all-hands meetings and providing continued education on pertinent safety issues.

Effectively Implementing Integrated Safety Management

During FY 2011, FE will continue to prioritize its ISM processes during work planning and operations. FE-HQ will continue site assistance visits to analyze each site's ISM program, share best practices, and offer guidance and input to capitalize on ISM opportunities. The continued implementation of HPI, inclusion of management in supporting ESS&H priorities, and forums that support the importance of communicating lessons learned are designed to create and sustain a safer work environment.

Promoting an Organization of Continual Learning

The foundation of FE's ESS&H efforts is based on the notion that a well-informed workforce with a culture of continuous learning is best equipped to achieve its goals. In FY 2011, FE will continue fostering integration among the teams located at different sites. FE will also build upon previous efforts to promote health and wellness for employees and their families and continue to enhance its emergency management, security drills, and exercises to teach employees how to use updated

equipment and systems. In addition, as its workforce ages and employees near retirement, FE is focused on succession planning as well as thorough employee orientation and other learning programs that educate new personnel on ESS&H principles as they begin their careers at FE. In addition, with the continued development of a learning management system (LMS) at NETL, FE sites demonstrate their commitment to the importance of their employees' career development.

The QA Process

During FY 2011, FE will focus on aligning its programs and activities with FE's overall strategies, mission, and goals. Quality assurance efforts help verify and track FE's improvements and emerging challenges.

During the next fiscal year, newly trained auditors will provide additional verification of quality and compliance and new hires will receive instruction on QA processes during orientation. Efforts to validate plans and self-assessments, including the establishment of teams devoted to process improvement and QA implementation, are designed to improve assessment tracking systems and QA procedures. The use of teams ensures personnel across the organization have a stake in implementing QA processes.

Obtaining External Certification of ESS&H Programs

To ensure that employees and the public both have the highest confidence level in the reliability of FE's systems and processes, FE will retain external certifications and employ external, nationally recognized experts to carry out assessments. During FY 2011, FE will continue to maintain external certifications from OSHA, EPA, and ISO. In addition, FE will continue to voluntarily participate in third-party programs and apply for awards that demonstrate the strength of its programs.

Site-Specific Initiatives

National Energy Technology Laboratory (NETL)

- Continue modernization of NETL's security infrastructure through the integration of security, fire, gas alarm, and access control systems.
- Revise continuity program directives and emergency response program directives to reflect NIMS under NETL's reorganization.
- Conduct a major emergency response exercise with hazardous materials-based programs.
- Revise existing general employee emergency response training module.
- Upgrade fueling stations and sumps (sanitary, wastewater, and groundwater) at NETL-Pittsburgh.
- Complete buried drum clean-up below a NETL-Pittsburgh parking area.
- Continue to clean up chemicals from all labs, reducing overall waste generated.
- Identify a baseline of priority chemicals to reduce their use and place a special emphasis on green chemical alternatives.
- Continue integration of ESS&H practices and principles into construction activities to reduce waste.
- Maintain ISO 14001 certification and OHSAS 18001 registration.
- Implement a learning management system (LMS).
- Investigate the use of the DOE corrective action management program to replace the existing corrective action tracking system.

Rocky Mountain Oilfield Testing Center (RMOTC)

- Conduct required training including HAZWOPER training for emergency response and shipping and receiving personnel.
- Conduct a job safety analysis (JSA) for each field operations' project.
- Ensure proper secondary containment and signage on hazardous materials.
- Establish and maintain effective and sustainable employee-driven ESS&H teams that build on leadership commitment.
- Conduct one emergency exercise and one drill.
- Update site security plans and procedures.
- Implement tracking and reporting of high priority corrective actions.
- Implement process for control and operation of composting facilities.

Strategic Petroleum Reserve (SPR)

- Undertake strategic planning in response to expected retirement of aging workforce.
- Continue implementation of a "Fit for Duty" program.
- Continue the Managed Care Program by expanding it to all DOE employees and a DOE subcontractor.
- Enhance accident scene and medical response training for security police officers.
- Review all chemicals prior to use on site through the Qualified Products List (QPL) and continue to require approval of waste plans prior to any construction work on site to prevent the generation of hazardous

wastes.

- Implement tighter monitoring and controls of sanitary and construction waste as part of EO13514 implementation.
- Continue pollution and waste prevention efforts, incorporating both proactive training and innovative processes.
- Maintain external certification by OSHA and DOE VPPs by continuing Star status at each storage site.

Appendix A. SUMMARY OF FY 2010 PERFORMANCE MEASURES: PERCENTAGE CHANGE FROM FY 2009 PERFORMANCE

Metric	FE Total	FE HQ	SPR	NETL	RMOTC	DOE Total
Total Recordable Cases	22 -(15%)	0 (NC)	12 -(25%)	10 (25%)	0 -(200%)	1,508 -(6%)
Total Recordable Case Rate	0.9 -(18%)	0 (NC)	1.3 -(19%)	0.6 (NC)	0 -(240%)	1.1 -(15%)
# Days Away, Restricted or on Job Transfer Cases	11 -(35%)	0 (NC)	6 -(50%)	5 (25%)	0 -(100%)	686 (NC)
Days Away, Restricted or on Job Transfer Case Rate	0.4 -(43%)	0 (NC)	0.6 -(50%)	0.3 (NC)	0 -(120%)	0.5 -(17%)
# Days Away, Restricted or on Job Transfer	671 -(34%)	0 (NC)	479 -(40%)	192 -(10%)	0 -(500%)	30,875 (2%)
Days Away, Restricted or on Job Transfer Rate	26 -(37%)	0 (NC)	50.6 -(38%)	12.4 -(20%)	0 -(600%)	23 -(7%)
Occupational Safety and Health Cost Index	26.99 (53%)	0 (NC)	64.50 (93%)	5.52 -(32%)	0.00 -(240%)	12.11 (3%)
Estimated Injury & Illness Costs	\$1,393,000 (61%)	\$0 (NC)	\$1,222,400 (92%)	\$170,600 -(23%)	\$0 -(4000%)	\$32,521,400 (13%)
# Operational Occurrences	10 -(9%)	0 (NC)	2 (NC)	4 -(33%)	4 (33%)	1263 (1%)
# Environmental Releases	7 (17%)	0 (NC)	1 (100%)	3 -(25%)	3 (NC)	47 (42%)
# Regulatory Violations	1 (NC)	0 (NC)	0 (NC)	0 -(100%)	1 (100%)	36 (9%)
Lbs. Hazardous Waste Generated	12,892 (48%)	0 (NC)	249 (9%)	9,653 (45%)	2,990 (2990%)	Not Available
Lbs. Sanitary Waste Generated	1,549,879 -(56%)	0 (NC)	675,057 -(70%)	706,561 -(41%)	168,261 (106%)	Not Available
Hours Worked	5,161,346 (6%)	Not Available	1,895,098 -(4%)	3,088,675 (12%)	177,573 (7%)	268,495,080 (10%)
Near Misses	1 (100%)	0 (NC)	0 (NC)	1 (100%)	0 (NC)	124 (124%)

NC = No Change from FY 2009
Data included in this table was collected on February 2, 2011

Office of Environment, Security, Safety and Health

For more information about the U.S. Department of Energy's Office of Fossil Energy programs, please visit www.fossil.energy.gov, call 202-586-6503, or write:

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**Strategic Petroleum Reserve
Project Management Office**
U.S. Department of Energy
900 Commerce Road East
New Orleans, LA 70123
www.spr.doe.gov

**National Energy
Technology Laboratory**
U.S. Department of Energy
Morgantown Site
P.O. Box 880
Morgantown, WV 226507-0880
www.neftl.doe.gov

**Rocky Mountain Oilfield
Testing Center**
U.S. Department of Energy
907 N. Poplar, Suite 150
Casper, WY 82601
www.rmotc.doe.gov

or

Pittsburgh Site
P.O. Box 10940
Pittsburgh, PA 15236-0940

or

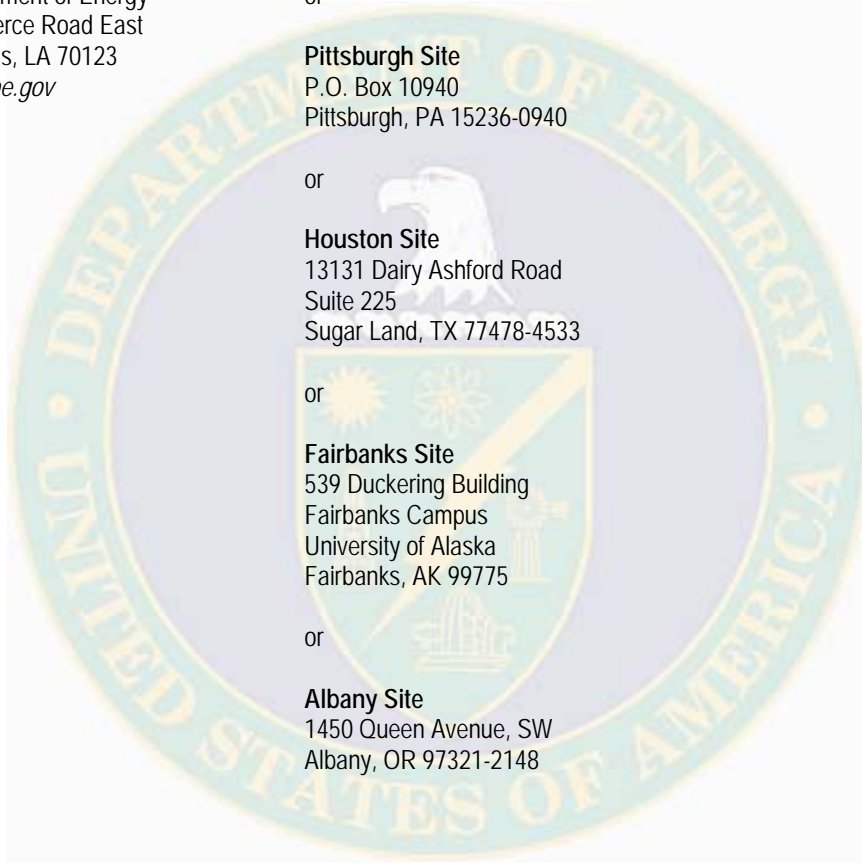
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Office of Environment, Security, Safety and Health

FE FY 2010 Site Awards

- Federal Electronics Challenge Silver Level Award – SPR
- National Safety Council's Occupational Achievement Excellence Award – SPR
- Office of FE Excellence in ESS&H Award – SPR
- EPA Perfect Bacterial Compliance Award – RMOTC
- EPA National Partnership for Environmental Priorities Program Recognition Award – NETL
- EnviroStar three-star rating – NETL Pittsburgh
- EPA Federal Electronics Challenge Silver Level Award – NETL
- EPA Perfect Bacterial Compliance Award – RMOTC
- US Geological Survey (USGS) Director's Award for Exemplary Service to the Nation – NETL
- R & D Magazine's *R & D 100 Awards* – NETL