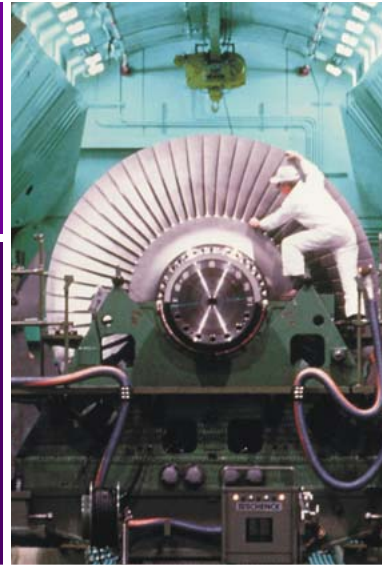




The Office of Fossil Energy: Striving for Environmental, Security, Safety and Health Excellence

Annual Report Fiscal Year 2004



Office of Environment,
Security, Safety and Health

Office of Fossil Energy Commitment to Environment, Safety and Health: FY 2004

We are committed to conducting our mission to achieve the greatest benefit for all our stakeholders, including our employees and the public, while actively adhering to the highest applicable standards for environment, safety and health (ES&H). We will continuously improve our practices through effective integration of ES&H into all facets of work planning and execution. We will make consistent, measurable progress in implementing this Commitment throughout our operations while striving to eliminate injuries, incidents, and environmental releases.

Implement Integrated Safety Management

- We will strengthen our mission by making ES&H an integral part of all mission activities. We will employ the Department's policies on Integrated Safety Management to provide an integrated standards-based approach for the integration of ES&H into all elements of program management.

Strive to Eliminate Injuries and Incidents

- We believe that injuries and occupational illnesses, as well as safety and environmental incidents, are preventable. We will strive to eliminate injuries and incidents, and will establish annual site-specific objectives to drive FE towards this goal.
- Should an incident occur, we will investigate to understand the cause, implement corrective actions, and apply lessons learned to prevent further incidents.
- We will assess the environmental impact of each facility we operate and will design, build, operate and maintain all of our facilities so they are safe and meet all applicable requirements.
- We will be prepared for emergencies and will assist our local communities to improve mutually supportive emergency preparedness capabilities.

Promote Environmental Protection and Pollution Prevention

- We will take all reasonable and responsible actions to prevent environmental releases, giving priority to those that may present the greatest potential risk to health or environment.
- We will reuse and recycle materials to minimize the need for treatment or disposal and to conserve resources. Where waste is generated, it will be handled and disposed of responsibly.
- Where past environmental practices have created conditions that require correction, we will responsibly correct them.

Adopt Highest Applicable Standards of Performance

- We will adhere to the highest standards that are applicable to the safe operation of our facilities and the protection of our workers, the public and the environment in which we operate.
- In addition to compliance with Federal, state and local environmental, safety and health requirements, we will engage in practices tailored to our work and the associated hazards to ensure the necessary protection.
- We will strive to identify all risks associated with work in the planning stage and implement strategies to achieve an acceptable minimum level of risk.

Ensure Management and Employee Accountability

- All FE managers will ensure that policies are in place, clear assignments of authority and accountability are established, and actions taken to achieve this Commitment.
- Compliance with this Commitment and applicable requirements is the responsibility of every Department of Energy employee, contractor and sub-contractor acting on our behalf and a condition of their employment or contract. The goals and expectations will be reflected in contractor incentives and Department of Energy personnel evaluations.
- FE management is responsible to educate, train and motivate employees to understand and comply with this Commitment and applicable requirements.
- We will allocate necessary resources to meet this Commitment and will do so in a manner that strengthens our mission. We will share ES&H expertise and information across programs to ensure cost-effective performance improvement.

Encourage Worker Participation

- Active worker participation is considered essential to meet this Commitment. Workers must be involved in reviewing work activities, identifying associated risks and implementing corrective measures.
- Workers will be given access to ES&H information, encouraged to report unsafe acts without retribution, encouraged to provide input to ES&H policy and to stop work when hazardous conditions or circumstances place workers in imminent danger.

Facilitate Public Participation

- We will have open discussion with our stakeholders on our work and its impacts on their environment, safety and health.
- We will build alliances with governments, policy makers, businesses, professional societies, academic institutions and advocacy groups to develop sound policies and practices that improve environment, safety and health.

Address from the Secretary

December 2004



Fossil fuels—coal, oil and gas—provide more than 85 percent of all the energy consumed in the United States and are essential for our Nation's economic and energy security. The Department's Office of Fossil Energy (FE) plays a critical role in meeting America's growing energy demand by ensuring a secure, low-cost and environmentally sound source of fossil energy.

The President's National Energy Policy gives FE the lead in making possible greater reliance on our most abundant energy resource, coal. FE conducts the \$2 billion program-combination of the President's Clean Coal Power Initiative and the FutureGen Initiative whose linked goals are eliminating pollutants, ending the emissions behind global warming concerns and making coal a source of transportation fuel and other products. They seek zero-emissions and technology breakthroughs. And they support the environmental- and energy-security goals of the President's Clear Skies, Global Climate Change and Hydrogen initiatives. The Hydrogen Initiative introduces a new energy base for the economy that supports climate-change activity and reduces our growing dependence on foreign oil. FE's forward-reaching efforts include low-cost extraction of hydrogen from coal as part of FutureGen.

In oil and gas, FE is working on new exploration, development, and production processes that can keep U.S. fields producing into the future. At the President's direction, FE is filling the Strategic Petroleum Reserve to 727 million barrels to ensure against severe disruption of oil supplies. FE also manages the Northeast Home Heating Oil Reserve, another program to prevent severe disruption.

These functions are critical to our Nation's energy security, and it is imperative that we carry them out in a manner that protects our workers, the public, and the environment. I am proud to report on the continued progress that FE has made in delivering on the Department's commitment to perform this energy security mission in a secure, safe, and environmentally responsible manner.

FE is leading the way in effectively integrating security and safety into daily work activities. Security and emergency management programs have been enhanced to meet heightened security conditions in the post 9-11 era. Accident/injury rates remain low. In the environmental area, FE is on track to achieve the Department's 2005 goals for pollution prevention, and Executive Order requirements for implementing Environmental Management Systems. FE's environmental footprint continues to shrink. In addition, the Office has earned prestigious recognition and certifications from external regulators and environmental organizations including: the Occupational Safety and Health Administration's (OSHA) Voluntary Protection Program (VPP); the U.S. Environmental Protection Agency's (EPA) National Environmental Performance Track; and the International Organization for Standardization (ISO) 14001.

FY 2004 was another outstanding year for FE. I take great pride in the many achievements highlighted in this report and the dedicated FE management and workers whose daily conviction and extraordinary effort are reflective of their loyalty to our Nation and to our energy security mission.

Spencer Abraham
Secretary
Department of Energy

A Letter from the Principal Deputy Assistant Secretary

December 2004



It is my pleasure to share with you the Office of Fossil Energy's 2004 Annual Report on Environment, Security, Safety and Health (ESS&H). President Bush and Secretary Abraham have tasked the Office of Fossil Energy (FE) with a key role in meeting the energy security needs of this Nation. Through our aggressive and innovative research initiatives, and the effective operation of the Strategic Petroleum Reserve, the Northeast Home Heating Oil Reserve, and the Naval Petroleum Reserves, we are ensuring a stronger energy and economic future for America. In the successful pursuit of this critically important mission, we remain committed to ensuring the protection of our workers, the communities where we work, and the environment.

Our commitment to ESS&H is a core value of our business strategy and has been unwavering. In this report, I am proud to highlight the remarkable progress that we made in 2004, the challenges encountered, and our outlook for the future. We should all be very proud of the achievements and of the contributions that all of the FE employees have made in continuing to perform our mission in a manner that is protective of our workers, the public and the environment. Security remains one of our top priorities, and in the last year, we maintained our enhanced security and emergency preparedness posture, further improved our infrastructure, and bolstered our training and coordination efforts with local first responders and law enforcement agencies.

While making security a top priority, we also maintained low accident rates, with our performance ranking among the "best of the best" in the Federal Government and private sector. Our sites are increasingly being recognized as superior performers by external organizations, including EPA, OSHA, and the International Organization for Standardization (ISO 14001). We lead the way in the Department by implementing Environmental Management Systems at most of our sites a year ahead of the President's Executive Order requirement. We expanded our efforts in energy conservation and pollution prevention. We continued to foster the exchange of innovative practices by sponsoring DOE's Second Integrated ES&H Synergy Workshop, where representatives from the Department shared information, lessons learned, and practical approaches to address common ES&H problems.

In the year ahead, we plan to build upon our success. Our sites will leverage their collective strengths and experience to achieve further reductions, beyond the already low number of safety incidents, injuries, and notices of violation, to reach our goal of zero. We will continue to eliminate environmental legacies associated with environmental contamination from historic operations at our sites, and will expand our efforts in pollution prevention and energy conservation. We will achieve ISO 14001 certification or equivalent, at all of our field sites. We will expand our worker fitness and wellness programs as part of our proactive injury prevention program. We will continue to maintain heightened security at our sites through infrastructure improvements, exercises and drills, and employee training.

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

A handwritten signature in black ink, appearing to read "Mark R. Maddox".

Mark R. Maddox
Principal Deputy Assistant Secretary
Office of Fossil Energy

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I. Introduction

Strong environmental, safety, security, and health (ESS&H) performance is essential for the Office of Fossil Energy (FE) to successfully achieve its mission of responding to the technological challenges of the nation's energy security and environmental initiatives. To fulfill this mission, we must ensure the highest levels of security at our facilities and provide our employees a safe work environment. As a Federal agency responsible to the public, we must be regarded as exemplary environmental stewards by the communities in which we work and a valuable partner in preparing and responding to local emergencies. In addition, to continue our successful partnerships with industry leaders on cutting-edge research and development (R&D) projects, we must meet or exceed industry's highest ESS&H standards.

Continuing to follow the mandate from Secretary Abraham to maintain the highest levels of security at our facilities, FE has increased physical security measures to enhance the protection level for FE personnel, property, and sensitive information, and heightened overall employee security awareness. The emphasis on security, however, functions hand-in-hand with our continued commitment to strong ES&H programs, as laid out in the Office of Fossil Energy's Commitment to Environment, Safety, and Health. This pledge to strong ESS&H programs is reiterated in our recently issued 2005 ES&H Performance Goals (see Appendix A). Our Commitment Statement and Performance Goals serve as our strategic vision for performing our mission in a manner that protects our workers, the public, and the environment, namely to: integrate ES&H into all program activities; strive to eliminate injuries and incidents; promote environmental protection and pollution prevention; adopt the highest applicable standards of performance; ensure management and employee accountability; encourage worker participation; and facilitate public participation, while at the same time, ensuring the highest levels of protection of the physical assets of our sites.

This report summarizes our performance in fiscal year (FY) 2004 in responding to the Secretary's commitment to enhance security and accomplish

our mission in a secure, safe, and environmentally responsible manner. The report includes information on the Strategic Petroleum Reserve (SPR); the National Energy Technology Laboratory (NETL); the Albany Research Center (ARC); the Naval Petroleum Reserves, including the Rocky Mountain Oilfield Testing Center (RMOTC); and FE Headquarters (HQ).

Chapter II highlights our key ESS&H accomplishments in FY 2004. Chapter III presents quantitative results of our FE-wide performance for key ES&H performance indicators. Chapter IV outlines some of our key challenges in striving to improve our performance and presents our key initiatives for FY 2005.

The FE Sites

The FE workforce includes more than 2,500 employees, including Federal employees, contractors, and subcontractors. The FE Headquarters offices are in downtown Washington, District of Columbia, and in Germantown, Maryland. The organization also has field offices in Morgantown, West Virginia; Pittsburgh, Pennsylvania; Tulsa, Oklahoma; New Orleans, Louisiana; Casper, Wyoming; Bakersfield, California; Albany, Oregon; and Fairbanks, Alaska.



NETL's FutureGen project.

FE is responsible for several high priority Presidential initiatives. One of these is the implementation of the Administration's \$2 billion, 10-year initiative to develop a new generation of environmentally sound clean coal technologies, including the \$1 billion FutureGen project to develop a pollution-free plant capable of co-producing electricity and hydrogen. In addition, FE

is responsible for the nation's Strategic Petroleum Reserve and Northeast Home Heating Oil Reserve, both key emergency response tools available to the President to protect Americans from energy supply disruptions.

NETL is FE's lead R&D center. One of the 15 national laboratories within the DOE complex, NETL is unique in that it functions as both an in-house science and technology research center and as an administrator of nearly 700 contracts involving partnerships between DOE and industrial, academic, and other governmental stakeholders. These partnerships result in commercially viable technical solutions to energy and environmental problems. With sites located in Morgantown, West Virginia; Pittsburgh, Pennsylvania; Tulsa, Oklahoma; and Fairbanks, Alaska, NETL is a multi-purpose, DOE-owned and operated laboratory with the primary mission of ensuring that U.S. fossil energy resources can meet the increasing demand for affordable energy without compromising the quality of life for future generations. NETL's key functions are to shape, fund, and manage external research, development and demonstration projects, to conduct on-site science and technology research, and to support energy policy development and best business practices within the Department.

Key programs at NETL include the development of advanced coal, natural gas, and oil technologies. 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. In addition to the President's Clean Coal Power Initiative and the FutureGen Initiative, work at NETL supports the environmental and energy security goals of the President's Clear Skies, Global Climate Change, and Hydrogen Initiatives. In addition, in the area of national security, NETL conducts R&D, technology transfer, and training in electricity generation and delivery, fuel processing and storage, and pipeline delivery systems.

The SPR is a DOE-owned, contractor-operated complex of four field sites. It serves as the nation's first line of defense against an interruption in

petroleum supplies with an emergency supply of crude oil stored in underground salt dome caverns along the coastline of the Gulf of Mexico. Headquartered in New Orleans, Louisiana, the Project Management Office (PMO) of 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. Today, with the capacity to hold 705 million barrels, SPR is the largest emergency oil stockpile in the world. Together, the facilities and crude oil represent more than a \$21 billion national investment (\$4 billion for facilities and \$17 billion for oil). At today's oil prices of approximately \$50/barrel, the value of this oil could be estimated at \$33 billion. In managing SPR, FE's overriding objective is to maintain the readiness of the oil stockpile for emergency use at the President's direction. In addition, SPR manages the Northeast Home Heating Oil Reserve. Established in 2000, this Reserve is comprised of 2 million barrels of emergency fuel oil, stored in commercial tank farms in the Northeast, which provides a supply of fuel oil for Northeast homes and businesses should the heavily oil-dependent region be hit by a severe heating oil supply disruption.



Prover Loop on Meter Skid at SPR's Bryan Mound.

ARC is a DOE-owned and -operated materials research laboratory located in Albany, Oregon. Researchers address fundamental mechanisms and processes; melt, cast, and fabricate up to one ton of materials; completely characterize the chemical and physical properties of materials; and

deal with the waste and by-products of materials processes. For more than half a century, ARC has established recognized expertise and capabilities in wear and corrosion, melting and casting, and materials development. ARC researchers provide analyses and solutions to industrial problems that bridge the gap between laboratory studies and “real world” applications.



ARC is one of the few places in the world where alloy development, melting, casting, fabrication, physical and chemical analyses and performance testing (wear, erosion, and various forms of corrosion) can be performed in one place because of specialized facilities.

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 giant Elk Hills Naval Petroleum Reserve #1 field in California, was sold in 1998. Although no longer operated by FE, we are required to conduct a comprehensive environmental assessment and remediate any pre-sale contamination identified by the assessment, which is expected to take years to complete. An adjacent field, the Buena Vista Hills Naval Petroleum Reserve #2, is now leased to commercial companies by the Department. However, the Department plans to transfer the lands to the Bureau of Lands Management of the Department of Interior in the near future.

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

providing a test site for exploration, drilling, and production technology techniques and equipment, both for the Federal Government and for private-sector producers, service companies, and equipment manufacturers. The field test site is a 10,000-acre operating oilfield offering a full complement of associated onsite facilities and equipment. There are approximately 1,200 well bores and approximately 600 producing wells, in 9 producing reservoirs ranging in depth from 500 to 5000 feet. Existing producing wells, non-producing wells, and sites for drilling new wells are all available to field test partners. National laboratories and Government organizations field test theoretical laboratory assumptions in a real-world setting and universities demonstrate the real-life application in the field of the theory taught in the classroom.



Toby Yates, Derrick Hand, prepares to unlatch the tongs on the drill string on DOE Rig No. 2 while tripping out of the hole during drilling operations at RMOTC.

II. Highlights of FY 2004 ESS&H Accomplishments

The Office of Fossil Energy (FE) identified a number of key corporate-wide ESS&H challenges facing the organization at Headquarters and in the field at the conclusion of 2003. We committed to allocating the necessary resources and attention to these issues to ensure continuous improvement in our ESS&H programs. In this chapter, we summarize our progress in FY 2004, which has been significant. Our focus has been on:

- Fostering a Learning Organization
- Striving for Zero Accidents
- Eliminating Environmental Legacies and Establishing Strong Environmental Programs
- Promoting Employee Wellness
- Protecting our Workers and Meeting DOE Security Needs
- Participating in External Certification and Recognition Programs

Overall, FE continuously has improved our programs through: intensive efforts to empower our employees to recognize hazards and recommend program improvements that will reduce risks; refinements to our policies and procedures; further improvements to our facilities and infrastructures; and initiatives designed to take advantage of best practices available throughout the Department and private sector.

FE Continues to Demonstrate its Commitment to Fostering a Learning Organization

A key strategy for increasing efficiency and reducing costs, while achieving our ESS&H performance goals, is to supplement site-specific expertise with ideas and expertise from others in FE, other Department programs, academia, and the private sector. In addition, instilling a culture of continuous learning at all of our sites is an essential element for improving overall performance.

FE made significant progress this year in fostering a learning organization by sharing information across the FE complex using summits, workshops, award programs, benchmarking, resource sharing, and a host of other techniques that involved not only FE sites but also other programs in the Department.



Dan McCollum of NETL conducts EMS training session at RMOTC.

We began the year by hosting a Departmental Safety Summit in January 2004. Senior DOE management and staff, including the former DOE Under Secretary, the former Assistant Secretary for FE, and the Assistant Secretary for Energy Efficiency and Renewable Energy (EE), met in Washington, DC, to review prior year performance, discuss ongoing challenges, and identify strategies and perceived barriers to achieving ES&H excellence in 2004. Several strategies were developed to identify cost-effective approaches for addressing corporate-wide challenges to ES&H success, including: achieving zero accidents; preventing injury in an aging workforce; fostering a learning organization; achieving external certifications and recognition of our ES&H programs; applying a systematic business case approach to ES&H management; and linking environmental management systems (EMS) with sustainability. Headquarters and site managers shared lessons learned on how to effectively utilize our existing resources and expertise to improve ES&H performance. Participants also addressed approaches to effectively incorporate safety into all aspects of work, ensure line management accountability, identify root causes for problematic performance, and make better use of near miss information to proactively improve performance.

Building on the momentum of the Departmental Safety Summit, FE sponsored a follow-up Second Integrated ES&H Synergy Workshop in May 2004, hosted by FE's SPR PMO in New Orleans. The workshop was attended by ES&H managers and staff from several DOE organizations including FE, EE, the Office of Nuclear Energy (NE), the Office of Environmental Management (EM), and the Office of Environment, Safety and Health (EH). Participants shared information on best practices and lessons learned and focused on strategies and tools for achieving DOE ES&H performance goals; establishing effective EMS; enhancing performance while reducing ES&H costs; improving performance through behavior-based approaches; and effectively gathering and using incident reporting information. A composite of best practices was developed to facilitate subsequent information sharing among the programs.



Principal Deputy Assistant Secretary for Fossil Energy Mark Maddox (right) signs a Technical Career Intern Program agreement with Dr. Hank Foley, Associate Vice President for Strategic Initiatives of Pennsylvania State University.

In addition to corporate-level workshops dedicated to fostering a learning organization, site-specific information exchanges also were pursued. For example, the SPR DOE Project Manager sponsored a one-day Safety Summit attended by DOE managers from the New Orleans PMO and senior managers from the contractor (DynMcDermott) that manages all four SPR field sites. The participants shared best practices related to topics such as Integrated Safety Management (ISM), electrical safety, lockout, the Voluntary Protection Program, the use of safety statistics, recent changes in recordkeeping, and special safety considerations in a maturing workforce. Through these corporate-wide and site-specific workshops attended by a range of individuals from senior management to field technicians, we raised the awareness of both the

ESS&H challenges facing the organization, and the availability of best practices and technical expertise to address these challenges in a timely, cost-effective manner.

FE HQ also undertook a number of other initiatives aimed at sharing information and adopting best practices, including sponsoring our *Excellence in ESS&H Award*; enhancing our Best Practices database on the FE intranet so that employees can submit best practices electronically or review innovative practices online; and holding monthly conference calls with HQ and field ES&H managers to discuss emerging ESS&H issues.

As an example, for the tenth consecutive year, FE HQ sponsored the *Excellence in ESS&H Award* program, showcasing best practices in the FE organization. The Excellence Award program provides a forum for sharing innovative best practices FE-wide. In addition, the program recognizes individuals or teams who significantly have improved the efficiency, improved the quality, and reduced the costs of FE's ESS&H programs. To date, more than \$100 million of cost savings have been associated with the nominated projects.

Employee training continues to be a high priority for FE to ensure we are a "learning organization" and that all employees are fully aware of the hazards in their workplace and ways that they can reduce the risks of accidents. Many training activities were accomplished in FY 2004. For example, at HQ, significant effort was targeted at emergency response. Training was provided to employees in first-aid, CPR, and emergency evacuation procedures utilizing escape masks. Due to the potential threat from terrorist activities, escape masks were made available to all DOE HQ employees in Washington, DC.



RMOTC's Clarke Turner at EMS Awareness Training.

In the field, training efforts focused on a broader array of ESS&H topics, as well as improvements in the delivery of training. Topics included: SPR's hydrogen sulfide (H₂S) training for more than 200 Federal, contractor, and subcontractor employees to provide them with a detailed understanding of how to minimize the risks of exposure in a new process; commercial driver's license training at RMOTC to improve vehicular safety; expansion of SPR's safety videotape *The Active Force of Protection* (required of all Federal, contractor, and subcontractor staff working at the field sites) to include expanded coverage of EMS, environmental compliance, and security topics; EMS training at RMOTC and ARC to bolster staff understanding of the contributions of the EMS to improved ES&H performance; and training at NETL to improve emergency response to novel threats.



A scene from the ARC 2004 emergency response exercise After Action Review. ARC's Steve Matthes, Andy Swanson, Kevin Lapp, Rick Wilson, and members from 10 other emergency response agencies.

We improved the delivery of training at HQ and FE field sites through the increased use of computer-based training to more efficiently and effectively train employees on basic ESS&H requirements. For example, annual security awareness training at HQ now is completely electronic. At NETL, there has been an increase in the use of computer-based training for ESS&H functions such as security and cyber-security. The computer-based training provides information to all employees as well as targeted employees whose jobs may require more specific training. NETL also has improved its ES&H Training System by updating the employee interface software, revamping its electronic job-hazard survey, and improving reports provided to supervisors. These

reports now provide more meaningful and accurate information on each employee's training status, which enables supervisors to identify more accurately ES&H training needs. All these efforts have resulted in a more knowledgeable workforce.

FE used a number of techniques to keep the workforce informed, and to alert them to significant ESS&H issues as they arose in the Department. Safety alerts were transmitted electronically to FE HQ and field organizations, highlighting emerging safety concerns. Actions also included poster campaigns, such as that used by SPR on electrical safety and driving safety, which highlighted the issues and drew attention to employees about the need for performance improvement. NETL's Grapevine allows its employees to submit questions, suggestions, and comments on ESS&H topics to management via electronic mail. Responses are posted to NETL's intranet for all employees to read.

To leverage our existing talents and in turn reduce our overall ESS&H costs, FE HQ's ESS&H Office played a key role in identifying cross-cutting opportunities and needs at our field sites where sharing expertise and lessons learned will produce the greatest return on investment. FE HQ, in cooperation with other Departmental programs including EE, EH, EM and the Office of Security and Safety Performance Assurance (SSA) provided technical assistance on topics including: job hazard analysis, groundwater contamination and monitoring; radiation protection; beryllium exposure; and EMS/ISO 14001 implementation and certification.



ARC's ISO 14001 assessment audit team (left to right): Rick Wilson and Steve Matthes of ARC, and Ken Kekich, an independent ISO 14001 auditor.

FE Sites Continue to Strive for “Zero” Accidents

Accident rates were low in FY 2003. However, to achieve our goal of zero accidents in the workplace in FY 2004, we recognized the need to continue with our improvement initiatives by moving beyond the establishment of appropriate requirements, procedures, and management systems, and moving forward with a focus on worker involvement in ensuring a safe work environment.

FE saw positive results from implementing programs geared at reducing accidents to zero. Sites that have implemented robust behavioral safety programs have seen reductions in the number of accidents and severity of accidents. Efforts placed on encouraging workers to take responsibility and accountability for ES&H performance are having positive impacts.

Our analysis of prior accidents and incidents in FE suggested that the majority of problems were associated with a failure to recognize and control workplace hazards and “at risk” behaviors. We pursued several activities in FY 2004 to improve safety, including: better hazard recognition and analysis; improved reporting of near misses and close calls; and improvements in our infrastructure and site conditions to eliminate or reduce risks to our employees and the environment.

A key component of any sound ESS&H program is the recognition of hazards associated with the work, and the identification and implementation of appropriate hazard controls to reduce or eliminate the risks to the workers, public, and environment. FE continues to improve hazard identification processes as part of its accident and incident prevention programs. Examples of improvements in hazard recognition include actions taken by NETL to modify its Safety Analysis and Review Systems (SARS). These improvements have resulted in a more systematic approach to hazard identification with more formal and rigorous requirements, as well as an improved method of linking NETL’s environmental aspects to the operational controls necessary to control those aspects. SPR has focused attention on enhancing its behavioral safety program, which has

contributed to health and safety improvements in those areas where it has been implemented. These improvements have been accompanied by cost savings over the past several years. In FY 2004, SPR upgraded and expanded its program to address targeted high-risk or high-incident areas such as vehicular accidents, security incidents, and environmental pollution in hopes of realizing similar performance improvements. The program has shown results (e.g., 33% reduction in vehicular accidents in FY 2004 over the previous year).



RMOTC received Secretarial award for perfect safety record.

RMOTC has put in place a number of employee programs designed to enhance awareness of hazards and provide greater incentives for workers to take responsibility and accountability for reducing accidents. The RMOTC Spotlight Award program presents non-monetary awards to employees who have identified potential hazards associated with their jobs and recommended improvements. A similar program—the ME program—requires that employees periodically assess their own performance, job, work space, and the environment by evaluating their habits, considering their role in the creation of unsafe conditions, and thinking about how his/her actions can adversely affect other employees, equipment and facilities, and the environment. Success is evident—in the last two years, the site has experienced only two lost workday cases.

A robust program for reporting and acting upon near misses also is critically important to ensure that potential hazards and accidents are identified before they result in an accident. Training was conducted for ES&H managers to enhance awareness of the importance of near miss

information, and the need to ensure accurate reporting. To ensure that employees understand what incidents should be reported, FE developed a consensus definition with practical, easy to understand examples of “near misses” that identifies a broader range of potential serious incidents. A number of site-specific actions also have been undertaken, including SPR’s Close Call program, based on best practices in private industry and other Government organizations. The SPR program encourages all Federal and contractor employees to report potentially hazardous conditions to improve employee hazard recognition and to control identified hazards before they can cause an accident.

Improvements to our sites’ infrastructure and facility conditions continued to be a high priority to reduce the risks to our employees. ARC continued its facility improvement program by replacing outdated electrical equipment, upgrading ventilation systems, and removing sources of mercury. In addition, ARC recently removed and recycled about 7,000 pounds of unused pallets that were in poor condition and posed a potential safety hazard. NETL has also completed a number of facility upgrades at both the Morgantown and Pittsburgh sites. These upgrades involve removing or encapsulating asbestos from buildings and ventilation systems to reduce the site-wide risk of potential exposure to asbestos. In addition, NETL has completed the design work for renovating its chemical handling facility at its Pittsburgh site. These renovations will improve handling and storage of waste materials and chemicals.



Renovations to NETL Pittsburgh’s Chemical Handling Facility.

Due to a recurring high level of serious electrical occurrences throughout the Department,

Secretary Abraham instituted a Complex-wide Electrical Safety Campaign in 2004. FE’s Principal Deputy Assistant Secretary Mark Maddox directed all FE sites to evaluate their electrical safety procedures and ensure effective electrical safety operations. In July 2004, all FE sites provided reports on their electrical safety programs and identified necessary steps to continuously improve electrical safety and ensure that procedures for authorizing electrical work by outside contractors were effectively reviewed and overseen.

ARC increased their emphasis on electrical hazards during safety inspections, improved standard operating procedures by including detailed lock-out/tag-out instructions, and upgraded electrical components. ARC will continue this effort into FY 2005 with additional electrical safety training, easy Intranet access to electrical safety lessons learned, and continuing to upgrade electrical components.

NETL has instituted a new Near Miss Reporting Program emphasizing electrical hazards. In addition, NETL revised their lock-out/tag-out procedures, enhanced work planning processes to better identify electrical hazards, and made lessons learned on electrical accidents and risks available to key personnel. RMOTC established August 2004 as Electrical Safety Month and provided comprehensive training to all staff on electrical safety. SPR instituted an Arc Flash Safety Team to ensure compliance with new fire protection requirements, initiated an electrical safety poster campaign to alert employees, and revised employee electrical safety training packages. At FE headquarters, all FE personnel received a safety alert warning them of potential electrical hazards associated with the office environment. End of the year results indicate that these activities are producing the desired result—only two electrical safety near misses were reported by FE during FY 2004.

FE Sites are Eliminating Environmental Legacies and Maintaining Strong Environmental and Pollution Prevention Programs

As a result of decades of operations, residual environmental contamination exists at several

onsite and offsite locations. Cleanup of these sites is a key priority for FE as part of our commitment to reduce our environmental footprint and minimize, to the extent possible, the potential for future liabilities from these past activities. FE sites are continuing to make strong progress and have nearly completed restoration of a number of sites previously used for R&D activities. In addition, FE HQ has developed an inventory of these legacy sites and is considering options for implementing more cost-effective approaches for remediation and post-closure activities.

Our field sites also are strengthening onsite environmental programs to reduce spills, minimize environmental releases, and reduce to a minimum the potential for future environmental liabilities, through environmental policies updates, environmental assessments, facility infrastructure upgrades, and good housekeeping practices. FE continues to be a leader in pollution prevention activities within the Department, taking advantage of recommendations offered by pollution prevention opportunity assessments.

As examples of FE's progress in cleanup, NETL has nearly completed remediation of two of its three remediation sites in Wyoming that have been underway for years. Groundwater remediation continued at the Hoe Creek Underground Coal Gasification Sites II and III, utilizing air sparge/bioremediation systems for contaminant removal. Hydrocarbon contaminant levels have been reduced by approximately 99% and groundwater has been returned to its original class of use. Contaminants are nearing non-detect values.

The Hoe Creek II site was shut down for most of FY 2004 in order to monitor for any contaminant rebound in the groundwater. Based on the sampling results, regulatory approval for remediation cessation is expected within the next 18 months. In anticipation of completion, NETL has already begun to plug and abandon more than 20 of the 300 monitoring wells at the site. In compliance with the Office of Surface Mining and Wyoming Department of Environmental Quality regulations, the wells are being grouted to ground surface and the area is graded and surfaced to contour. As required by regulation, after the wells

are plugged and the area is reclaimed, NETL will maintain a vegetative cover for 10 years prior to the final release from the terms of their R&D license.



NETL successfully remediated groundwater and restored the vegetation cover at Rocky Mountain I Site, Hanna, Wyoming.

Hoe Creek III will continue air sparge and bioremediation operations, and will undergo a shut down period in FY 2005. It is anticipated that after a one-year stability monitoring period, the groundwater remediation will also be nearing completion and well plugging and reclamation activities will then be initiated.

Cleanup activities are nearly complete at the Hanna, Wyoming, site where underground coal gasification testing was conducted in the late 80's. Over the past 15 years, NETL has completed remediation of the groundwater and the 10-year revegetation program required by the Office of Surface Mining regulations. Sampling and analysis during the past two years indicates that the vegetative cover is now greater than that which existed on the site prior to disturbance, thus allowing NETL to request release from their reclamation performance bond and termination of their R&D license #15. Release from all obligations under the terms of the bond is expected in FY 2005.

At the Rock Springs Oil Shale Retort and Remediation site, the sampling results indicate that the levels of hydrocarbon contaminants have been reduced by more than 90%. NETL expects that the microbial studies currently underway will indicate that the levels of contamination are sufficiently low to stop active remediation efforts and allow the microbes to deplete the remaining contamination



Monitoring facility at NETL's Rock Springs field site.

SPR engaged in bioremediation and contaminated soil excavation activities at the St. James Terminal this year. After soil clean up has been completed, SPR will retain ownership of the terminal, but future contamination from Shell Oil's operation of the facility, if any, will be Shell's responsibility.



ARC's Steve Curfman, Geoff Brown (Oregon DEQ), and Jim Rice (groundwater consultant) discuss installation of passive soil gas sampler.

ARC continued its efforts to improve the accuracy and cost-effectiveness of its groundwater monitoring program by employing low stress sampling techniques. After one year of testing using an innovative low-stress sampling protocol, the monitoring results indicate reduced levels of onsite contamination and no evidence of offsite migration, suggesting that costly remedial investigation or restoration measures will not be needed. With approval of the Oregon Department of Environmental Quality and the Oregon Department of Human Services, the site has revised its groundwater monitoring plan to

minimize sampling frequency to biannual (from quarterly), minimize the number of wells required to be sampled, and minimize the analytical parameters required to be tested in the remaining wells. In addition, ARC is investigating potential impacts of beryllium research activities conducted in the 1960s and 1970s to assure all areas were properly remediated.

RMOTC has submitted a closure plan to the Wyoming Department of Environmental Quality for its industrial Solid Waste Disposal Facility and is awaiting final closure status.

NPRC is continuing to fulfill its environmental cleanup obligations as specified under the terms of the sales agreements between DOE, Occidental, and ChevronTexaco. The agreement requires DOE to conduct a comprehensive environmental assessment of NPR-1 and remediate any identified presale contamination. DOE also is required to conduct limited archaeological data recovery at NPR-1, and to release the results of this effort to the public. DOE is working closely with the California EPA, Department of Toxic Substances Control on this multi-year project. In 2004, NPRC continued to negotiate plans for completing a formal risk assessment of NPR-1 with the Department of Toxic Substances Control, Occidental, and ChevronTexaco. In addition, NPRC completed an interim remediation action to remove surface soil containing burned ash contaminated with lead from Drill Site 26 in Ford City, California. Three large landfills at NPR-1 have been included in the DOE/Army Corps of Engineer interagency agreement, and planning and procurement activities are in-progress.

NPR-2, for the most part, is leased to various oil companies under 17 lease agreements that are administered by NPRC. NPRC's responsibilities include overseeing and supporting lessee compliance with environmental and cultural resource laws and regulations. In 2004, NPRC reviewed compliance with NEPA, the Endangered Species Act, and the National Historic Preservation Act for 21 separate projects submitted by the lessees. In FY 2004, NPRC also completed an ASTM Phase I environmental assessment of NPR-2, pursuant to an initiative to

transfer administrative control of NPR-2 to the Department of Interior, Bureau of Land Management.

FE sites continue to demonstrate strong environmental stewardship in all of their onsite activities. As an example, because the 4.3-mile long raw water supply pipeline for the West Hackberry facility is nearing the end of its operational life, the SPR must construct a similar parallel pipeline to ensure operational continuity. To support this federal action, the SPR prepared the West Hackberry Raw Water Intake Pipeline Replacement Environmental Assessment (EA), and accompanying mitigation action plan in full compliance with all applicable NEPA requirements and policies. As part of the process, the SPR consulted with all appropriate agencies, including the Louisiana Department of Wildlife and Fisheries, and the SPR Environmental Advisory Committee met with the EA preparation team to review the approach and offer input. The EA (EA-1497) was approved on August 31, 2004, and the resulting Finding of No Significant Impact (FONSI) was signed by the SPR Project Manager on September 3, 2004. The final document, which includes both the approved EA and FONSI, was distributed to Headquarters on September 23, 2004.



SPR maintenance operator Sherill Menard taking an oil sample at West Hackberry.

Given the significant funding that is required to address contamination caused by past practices, FE continues to strive to implement sound environmental practices and aggressive pollution prevention programs to minimize potential environmental releases now and in the future. NETL is pursuing a variety of pollution prevention

practices. For example, NETL is continuing to upgrade its wastewater treatment facility at Pittsburgh to enhance its operability and to reduce the likelihood of exceeding its permitted discharge levels. NETL has also recently revised its Environmental Policy to place a stronger emphasis on resource conservation and resource management.

RMOTC is conducting extensive field demonstrations of advanced detection technologies for remote sensing of natural gas leaks that would be a great step forward in enhancing environmental protection, safety, and reliability of the pipeline system. Using detection technologies from mobile platforms ranging from satellites, winged aircraft, helicopters, and an unmanned autonomous vehicle, RMOTC is evaluating the readiness of these technologies to rapidly and accurately monitor large sections of natural gas infrastructure for leaks.



Energy Champions Bernie Avon and Joe Kanosky of NETL were honored during the 25th Annual DOE Energy Management Awards. From L to R: Skye Schell (Acting Program Manager FEMP), Bernie Avon (NETL), Joe Kanosky (NETL), and David Garman (Assistant Secretary EERE, Acting Under Secretary of Energy).

FE recognizes the environmental benefits and the potential cost savings that can be realized from strong energy efficiency and pollution prevention programs. For example, representatives from NETL were honored by the Department as "Energy Champions" in 2004 for their efforts to implement energy-efficient technologies and practices at NETL, resulting in savings of more than 1,000,000 kwh and \$50,000 annually. In addition, our sites met or exceeded DOE's pollution prevention and energy-efficiency goals through strong waste management, recycling,

affirmative procurement, and energy-efficiency programs, often using innovative approaches and best practices. For example, SPR has developed an innovative approach for processing current crude oil inventory through a mobile degasification unit that substantially reduces hydrocarbon emissions at receiving terminals and facilities (e.g., hydrocarbon emissions from a 60 million-barrel distribution of oil could be reduced by as much as 600 tons).



ARC collected and recycled approximately 7,000 pounds of unusable and unsafe pallets.

FE continues to look for pollution prevention opportunities, and in FY 2004, FE sites took advantage of recommendations from pollution prevention opportunity assessments. In addition to maintaining their substantial recycling programs, SPR pursued several projects including the replacement of lead acid batteries for electric vehicles with glass fiber optima batteries that have less lead and last twice as long. ARC reduced onsite wastes through cleanup and removal of all radiological wastes, excess chemicals, and hazardous materials. Several of ARC's areas that had been controlled for radiological use were cleared for unlimited use, reducing the potential for long-term liabilities. ARC continued its recycling of cardboard, paper, aluminum cans, batteries, as well as other materials. They also completed several energy-efficiency upgrades, including installing meters on priority electrical equipment and replacing transformers. A Center-wide effort in pollution prevention training and awareness has further motivated staff to modify their behaviors. RMOTC conducted a pollution prevention assessment through a program funded by the Wyoming Department of Environmental Quality, and currently is pursuing several recommendations.

FE Emphasizes the Importance of Employee Wellness Programs

We recognize that poor overall health and fitness can increase the chance of injury and the severity of an injury should it occur. Lack of fitness can contribute to cumulative trauma disorders to the back, neck, knees, and shoulders, which typically comprise the majority of all workers' injuries and workers' compensation costs and a significant amount of lost work time. For example, a carpal tunnel injury requiring surgery can result in six weeks away from work or on restricted duty. Therefore, integrating employee wellness initiatives into our FE programs through specific activities, information exchange and training will help us to reduce healthcare costs and lost productivity due to employees being unable to come to work or work as productively.

FE HQ and the sites have emphasized employee wellness programs, adopting many of the initiatives offered throughout the Department and the private sector. For example, at FE HQ, all employees are eligible to use the Fitness Center that is staffed by certified personal trainers and offers access to strength, conditioning, and cardiovascular machines. Similar programs exist at NETL, SPR, and ARC.



Using the weight room at NETL-Pittsburgh is a busy lunchtime activity.

NETL established a Wellness Committee to coordinate and promote wellness-related activities across the Laboratory. NETL is planning to have its Workplace Wellness Program certified with the Wellness Council of America. The onsite contractor at NETL initiated a new walking program in FY 2004 that encouraged people to "Walk 100 Miles in 100 Days." SPR implemented

the “Step for Life” wellness program to encourage office staff to maintain a healthy lifestyle by walking 10,000 steps a day. Employees at these sites were given pedometers and on-line recordkeeping to encourage participation in the program.

Access to wellness information also is on the increase. For example, SPR established an electronic monthly newsletter that focuses on education on common health and wellness issues that may affect an individual’s mental or physical health and productivity. It also educates employees about their Employee Assistance Program, which is one of their benefits. These outreach programs are striving to promote new and exciting ways to help employees lead more productive and healthy lives, both on and off the job.

FE Continues to Make Protecting our Workers and the Public a Top Priority through Enhanced Security and Emergency Preparedness

Since September 11, 2001, protecting our workers and the surrounding communities has been a high priority for our program. Over the past several years, we have moved from our intensive efforts to upgrade the security and protection of our facility infrastructure and build up our security and emergency management programs to our current activities, which are focused more on maintaining our strong programs and continuously improving them. Our key actions have focused on updating our security and emergency management procedures and manuals; training employees and conducting exercises; coordinating with local first responders and other emergency personnel; and continuing to enhance our security/emergency management infrastructure (e.g., alarm systems, guards/fences).

At FE HQ, we have coordinated training and exercises for emergency responders and employees; provided employees access to escape hoods; developed and exercised our HQ Continuity of Operations (COOP) plan; conducted fire drills and evacuations; and issued an updated FE HQ Security Handbook to all employees. In addition, representatives from FE HQ played key

roles in the filming of the Department’s HQ Occupant Emergency training videos for employees, fire wardens, monitors, and assistants.



FE HQ staff played key roles in the filming of the Department’s HQ Occupant Emergency training videos.

FE field sites have updated their site-wide security plans, which serve as the foundation for their protection strategy. SPR continued to strengthen its formal relationships with local emergency response organizations and law enforcement agencies. NETL’s Emergency Response Organization (ERO) upgraded its Safety and Analysis Review System package and has reviewed its training and response strategies to ensure that both the SARS and the training are adequate to address all potential hazards. NETL also continued to provide for first responder certifications for members of the ERO medical support team.



Incident command staff in the ARC emergency response center responds to a simulated gas attack during an exercise. ARC personnel include (left to right) Greg Slavens, Al Hartman, Rick Wilson, Steve Matthes, Dave Maurice, George Dooley, Glenn Rondeau, and Andy Swanson.

All of our sites have conducted numerous coordinated drills and exercises with other agencies and emergency responders in their communities over the past year. For example,

RMOTC conducted the “TERREX” exercise and ARC conducted a weapons of mass destruction exercise with multiple outside local law enforcement and emergency response organizations. ARC continues to maintain strong partnerships with the local emergency response organizations and school districts to share equipment and labor resources in the event of an emergency and anticipate establishing formal agreements in the near future.

SPR conducted more than 10 drills and exercises at all of its sites. Emergency management exercises are conducted routinely at all SPR sites to prepare control room operators, shift foremen, and qualified individuals for their responsibilities in an emergency. Frequent exercises provide event-driven scenarios to test how a site and its emergency response organization will react in the event of a real emergency.



SPR's Big Hill security drill.

In addition to drills and exercises to prepare for an emergency response, FE was called upon to respond to actual emergencies in FY 2004. For example, FE responded to the physical disruption of offshore oil production and imports in the Gulf Region caused by Hurricane Ivan's destruction. Secretary Abraham directed SPR to provide a limited quantity of crude oil to help relieve physical shortages of crude oil supplies. In the fall of 2004, several million barrels of oil were provided to Gulf Coast refineries to protect American consumers against supply disruptions.

Infrastructure enhancements also have been pursued in FY 2004. NETL installed an emergency notification/public address system at the Pittsburgh facility as part of a fire alarm system upgrade. Implementing the system in this manner saved NETL \$440,000 over installing a separate

emergency notification system. Upgrades for access control and surveillance systems also have been initiated at NETL's Morgantown and Pittsburgh sites. RMOTC has completed additional security upgrades for critical buildings and in various “higher” security areas throughout the site.



Two City of Albany emergency medical technicians transport ARC's Paul Jablonski, who was playing the role of a Lewisite gas victim, during a full-scale ARC emergency response exercise.

FE Sites Demonstrate their ESS&H Leadership through Third-Party Certifications and Recognition of ES&H Programs

Third-party certifications and external recognition programs demonstrate FE's commitment to ESS&H programs that go beyond compliance and incorporate best available practices. Pursuing these certifications also allows our sites to reach out to external organizations through third-party audits, inspections, and reviews to gain insights on approaches for implementing strong ESS&H programs. Receiving external recognition and prestigious awards in ESS&H also serves to: bolster employee morale by recognizing our employees' strong contributions to our programs; offer opportunities to share best practices and lessons learned; and enhance our reputation with our local communities by implementing model ESS&H programs.

FE's ES&H Commitment Statement explicitly states that we will adopt the highest applicable standards of performance. Senior management consistently has supported our sites' efforts to obtain third-party certifications and made external certifications of our programs at all of our sites

(e.g., ISO 14001, VPP) a key goal for FY 2004. All of our sites made significant progress in their pursuits of third-party certifications and many of them have won several prestigious ES&H awards.

In our pursuit to have all of our sites become ISO 14001 certified, NETL successfully completed its first surveillance audit in March 2004 (with only 1 nonconformity) after attaining ISO 14001 certification in August 2003. SPR began their fifth year of the ISO 14001 EMS third-party certification of management and operation. Two surveillance audits by a third-party registrar were conducted and no nonconformances were identified. ARC continued to progress in its pursuit of ISO 14001 certification with a number of activities including development of the Albany Management System (AMS), several internal audits, significant training efforts, and development of additional procedures. An external pre-certification audit was conducted in November 2004 yielding positive results and the Center expects to receive ISO 14001 certification in early 2005.



NETL-Pittsburgh earned the "Quality" Safety Performance Award for its accident-prevention accomplishments. Accepting on behalf of NETL (left to right): front row, Danny Bellay and Dan Bozym; back row: Regis Louder, Andy Sivak, Ed Palko, and Jerry Simkonis.

Regarding safety, SPR continues to be the only site in the Department with OSHA Voluntary Protection Program (VPP) certification. SPR's field sites have earned participation in both the OSHA and DOE VPP programs. Two of the sites (Bayou Choctaw and West Hackberry) have successfully completed their third-year recertification and the other two are expected to receive their recertification in FY 2005. In addition, in 2004, Bryan Mound and Big Hill were the first sites to

achieve Certified National Leader status from the Texas Commission on Environmental Quality.

Our sites continue to receive awards for their strong ES&H performance from other Federal organizations, State regulators, professional societies, local communities, and the Department. For the eighth consecutive year, NETL earned the "Quality" Safety Performance Award from the Western Pennsylvania Safety Council, a chapter of the National Safety Council, in recognition of its accident-prevention accomplishments in occupation safety. This award is given to the Western Pennsylvania organizations within representative "Standard Industrial Classification Codes" who maintained the lowest OSHA Lost Workday Case Rates.

Also, for the twelfth consecutive year, NETL's Pittsburgh site support contractors received the outstanding achievement award from the Western Pennsylvania Safety Council. In recognition of NETL's model pollution prevention practices and programs, the Allegheny County Health Department (ACHD) in Pittsburgh, PA, recognized its voluntary system of pollution prevention practices with a three-star award, the highest award under the ACHD Enviro Star Program. Finally, NETL received a Departmental energy-efficiency award for implementing energy-efficiency projects and improving overall utility management that resulted in savings to the Department of more than 1,000,000 kwh and \$50,000 annually.



Elias George and Bruce Webster display the Enviro Star Award awarded by the Allegheny County Health Department (ACHD) to NETL for its Environmental Management System.

The SPR continues to earn national recognition as a leader in ES&H performance as demonstrated through its receipt of numerous awards and continued participation in recognition programs. Perhaps most notable was their White House Closing the Circle honorable mention award for achieving a positive EMS return on investment. SPR also received OSHA and DOE VPP Certifications and superior performance awards from both organizations; State of Louisiana Environmental Management Award for three sites; DOE Pollution Prevention Award; and renewed charter membership in EPA's Performance Track Program. This past year, SPR's Big Hill and Bryan Mound facilities became the first two facilities in Texas to be named Clean Texas Certified National Leaders, the highest recognition in the state for environmental performance. This Texas program is integrated fully with the EPA Performance Track program, of which SPR is a Charter member. In addition, DynMcDermott, the operating contractor for SPR sites, was selected as 1 of 13 nation-wide finalists for the Malcolm Baldrige National Quality Award Program.



2004 FE ESS&H Excellence Award to SPR: Front Row (left to right): Dan Kelley, DOE, Asst Project Manager; Rosella Mayeux, DOE, Safety & Occupational Health Specialist; Suzanne Broussard, DM, Manager, Occupational Safety & Health; Bill Vierling, DOE, Director ES&Q Division. Back Row (left to right): Jim Carlson, DM, Industrial Safety Lead; Will Woods, DOE Safety Engineer; Bob Keen, DM, Industrial Hygienist; William "Hoot" Gibson, DOE, SPR Project Manager. Not Pictured: Kirkland Jones, DM Director, Environmental, Safety & Health

This year, Secretary of Energy Abraham bestowed two FE sites, ARC and RMOTC with Secretarial Awards for achieving perfect safety records. ARC has not experienced a lost workday case since 1999.



ARC Director George Dooley presents ARC Safety Engineer Steve Curfman with an FE ESS&H Excellence Award.

Last, but certainly not least, FE selected teams from two sites, ARC and SPR, as recipients of the 2004 *Office of Fossil Energy Excellence in Environment, Security, Safety and Health Award*. This year, there was an unprecedented number of nominations in a variety of different categories including behavioral safety, environmental cleanup, pollution prevention and recycling, and management practices. On November 16, 2004, Principal Deputy Assistant Secretary Mark Maddox presented this year's Environmental Excellence award to ARC for their success for implementing an effective onsite groundwater characterization program and determining that offsite migration of contaminants to the neighboring community was not occurring. The Safety Excellence award was presented to SPR for their success in reducing vehicular accidents and security force injuries through the application of behavioral observation processes that identify hazards and appropriate controls. These achievements contributed to significant cost savings and performance improvement in safety and environmental protection.



Principal Deputy Assistant Secretary Mark Maddox presents one of this year's ESS&H Excellence Award to Connie Lorenz, FE-7 Environmental Manager.

III. Summary of ES&H Performance

FE is committed to carrying out our national energy security mission while making consistent, measurable progress toward eliminating injuries, illnesses, and environmental releases. This section demonstrates the progress that we made in FY 2004 in improving our FE-wide ES&H performance using results from key quantitative ES&H indicators. Data related to FE's and DOE's safety and health performance represents all workers, including Federal, contractor, and subcontractor, where available. Safety and health data 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), and data on affirmative procurement and hazardous and sanitary wastes generation were obtained directly from FE sites. Appendix B summarizes site-specific ES&H quantitative performance information, including comparison of FE performance to DOE overall and to DOE VPP sites.

Total Recordable Injuries and Illnesses Rate Remains Low

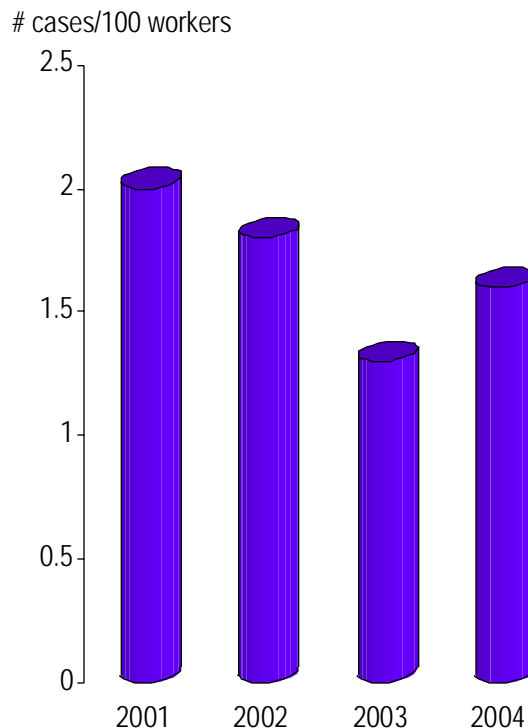
The FY 2004 Total Recordable Case (TRC) rate on an FE-wide basis was 1.6, a value that is relatively low when compared to other Departmental programs and the private sector. The TRC rate includes injuries and illnesses incurred by Federal and contractor employees that are serious enough to result in medical attention, loss of consciousness, restriction of work activity, or time away from work. The TRC rate accounts for the number of injuries and illnesses that occurs 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 1.6 indicates that 16 of every 1,000 workers were injured at work or had a work-related illness.

TRC rates varied across the FE sites. ARC reduced its TRC rate to 0 from last year's rate of

1.1, and for the sixth consecutive year, FE HQ and NPRC had no reportable cases. NETL had a slight increase to a 1.4 TRC rate. RMOTC experienced only two recordable cases in 2004. The most significant increase occurred at SPR, with a TRC rate of 1.9 in FY 2004, representing an increase of 46% from FY 2003. This increase was attributed to SPR's guard force accidents and injuries associated with field training exercises and other types of physical training that attempt to replicate realistic "force on force" situations. In response, SPR undertook a number of initiatives, including staff changes, some organizational realignment, increased management emphasis on safety, and implementation of behavioral safety processes to security activities. During the last quarter of FY 2004, SPR reversed this trend with a 1.2 total recordable case rate.

Figure 1

FE TOTAL RECORDABLE CASE (TRC) RATE



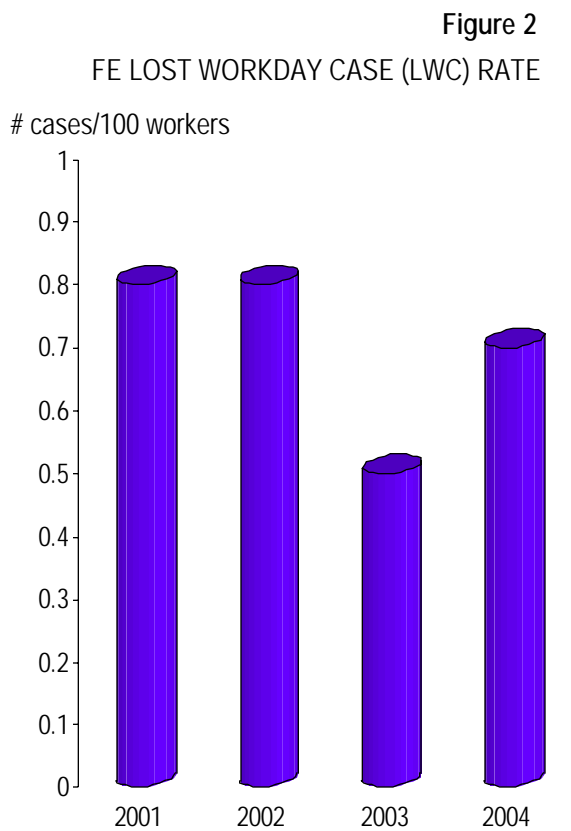
Number of injury and illness cases per 100 workers

Source: Computerized Accident/Incident Reporting System

The root causes of the 38 total recordable cases for FE were: (1) improper work planning and work control, (2) poor design of work area or equipment, and (3) inadequate employee training and

alertness. FE has already begun to enhance safety training and awareness at its sites, particularly among high-risk workers (e.g., SPR's guard force). Continuing the safety awareness and training programs (including frequent refreshers) and implementing behavioral safety programs, along with frequent equipment inspections should decrease further TRCs.

Lost Workday Case Rate Continues to be Among Lowest in Similar Industries

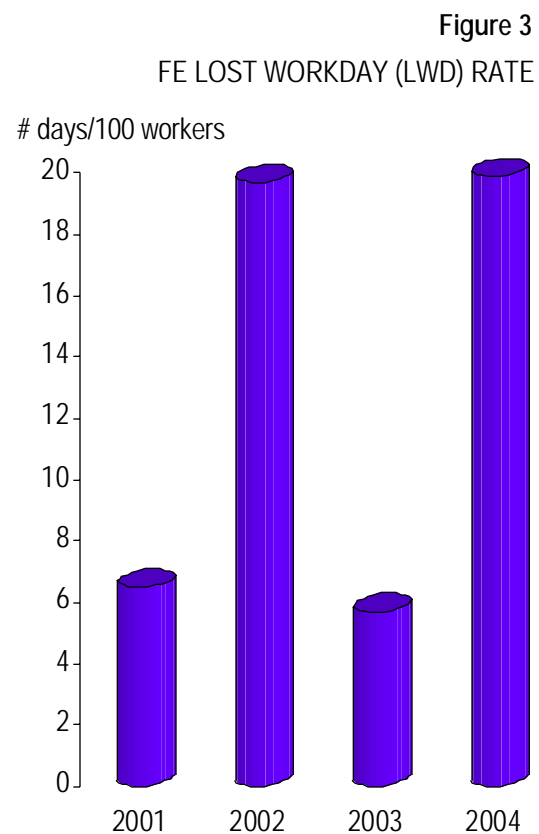


Number of cases resulting in lost workdays or workdays with restricted duty per 100 workers
Source: Computerized Accident/Incident Reporting System

In FY 2004, FE's Lost Workday Case (LWC) rate was 0.7. LWCs represent the number of work-related injuries resulting in employees missing days of work or returning to work on restricted duty. This category of injuries has the most serious consequences and cost implications for FE. Other personnel must complete the injured worker's assignments while the worker recuperates, or completion of the work is delayed

until the worker returns. As with TRC, the LWC rate is normalized to hours worked. A rate of 0.7 indicates that 7 of every 1,000 workers suffered a work-related injury or illness which resulted in a lost workday or day of restricted duty. For FY 2004, the FE-wide LWC rate of 0.7 was due to the 16 cases that resulted in lost workdays. ARC, NPRC, and FE HQ continued a 5-year trend of no accidents that led to lost workdays. Most notable was NETL, which achieved a significant decrease of 63%, a rate of 0.3, the lowest rate for NETL in 20 years. This value is significantly lower than other DOE National Laboratories (e.g., compared to DOE's Office of Science Laboratories rate of 0.85 for FY 2003, or 0.7 for the first three quarters of FY 2004).

Lost Workday Rate Increases



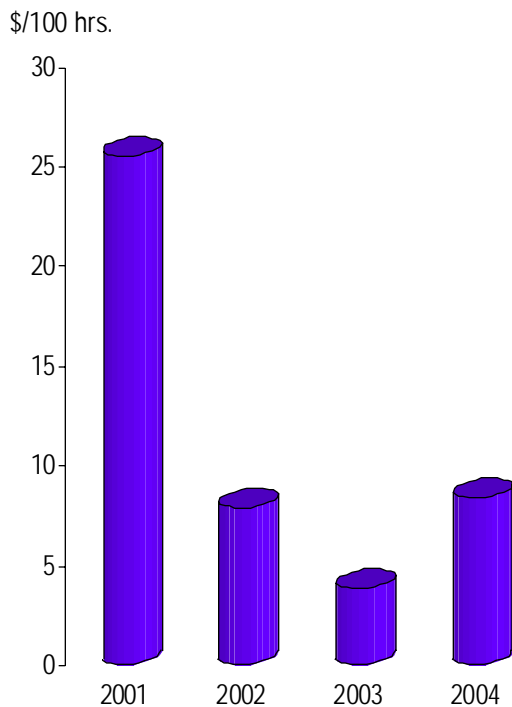
Number of lost workdays or workdays with restricted duty per 100 workers
Source: Computerized Accident/Incident Reporting System

FE's Lost Workday (LWD) rate more than tripled in FY 2004 as a result of a few accidents that

resulted in a large number of lost workdays, primarily at SPR. The Lost Workday rate is the number of lost workdays normalized for the number of hours worked by 100 employees. ARC, NPRC, and FE HQ had no LWDs, and NETL decreased its LWD from 10 in 2003 to 7.9 in 2004, for a 21% decrease. RMOTC's LWD rate jumped from zero to 50.9 as a result of one of its two lost workday cases involving a significant number of lost workdays. The large increase in FE's overall LWD rate was a result of 2 accidents at SPR that resulted in extensive lost time. The FE total number of workdays lost in FY 2004 was 478 of which 73% were associated with SPR operations.

Safety and Health Cost Index Doubles

Figure 4
FE OCCUPATIONAL
SAFETY & HEALTH COST INDEX



Estimated cost of injuries and illnesses per 100 work hours
Source: Computerized Accident/Incident Reporting System

The total FE-wide Occupational Safety and Health Cost Index more than doubled in FY 2004, despite NETL's success in reaching its historic low Occupational Safety and Health Cost Index. The

cost index performance indicator represents the normalized estimate of the costs of FE's injuries that were incurred by the FE sites. While the estimated injury and illness costs were twice what they were in FY 2003, FY 2003 was FE's lowest rate in more than 5 years. FE's FY 2004 cost index of 8.39 is 11% lower than the DOE cost index.

The most significant reason for the increase in the Occupational Safety and Health Cost Index is the increased severity of the relatively few accidents at SPR and one accident at RMOTC.

Vehicle Accident Costs Decrease by 29%

The total costs for vehicular accidents decreased by 29% in FY 2004. This has continued a downward trend in vehicular accident costs for the past several years. Because of the extensive amount of driving that some FE personnel do as a routine part of business operations, the number and costs of vehicle accidents are important indicators of safety and performance at the sites.

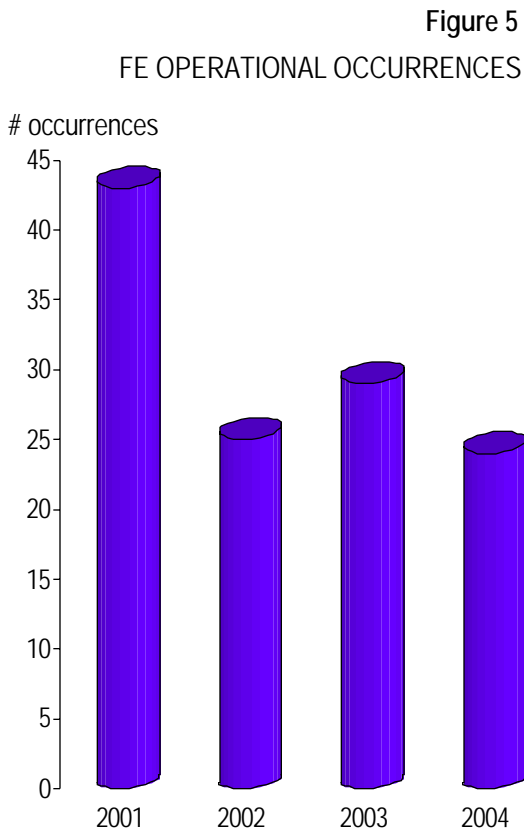
SPR cut its number of vehicle accidents in half from 6 in FY 2003 to only 3 in FY 2004, in part as a result of expanding their behavioral safety program to vehicular safety. RMOTC incurred 3 accidents in FY 2004, and NETL incurred one incident, primarily as a result of operator inattention or distraction. Focused vehicular operation training and a driver safety awareness campaign should help to decrease further vehicle accidents.

Number of Operational Occurrences Falls to Historic Low

In FY 2004, there were 24 Operational Occurrences at FE sites, the lowest number of occurrences since at least 1990. The operational occurrences performance metric represents the number of operational events or conditions that adversely affect or may adversely affect DOE or contractor personnel, the public, property, the environment, or the DOE mission.

Experience at the sites was mixed. ARC remained steady with 0 operational occurrences in FY 2004. SPR greatly improved performance over last year,

decreasing their number by 57% to 6 operational occurrences in 2004 from 14 occurrences the previous year. RMOTC had 12 such occurrences in FY 2004, which is a 20% increase from FY 2003. The major causes of FE's operational occurrences in FY 2004 were related to the defective or failed equipment and improper equipment or tools. Preventive maintenance and regular equipment inspections should help resolve such issues.



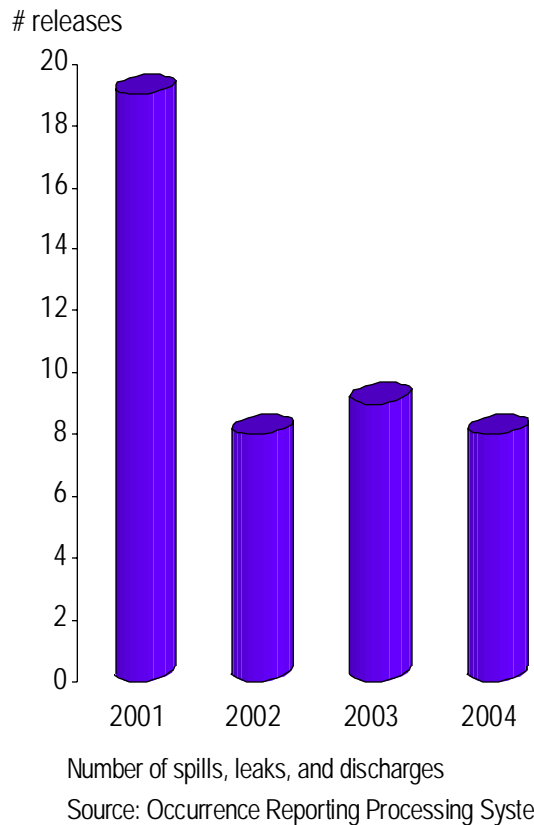
Number of operational events or conditions that adversely affect or may affect DOE or contractor personnel, the public, property, the environment, or the FE mission
Source: Occurrence Reporting Processing System

Number of Environmental Spills and Releases Remains Low

FE sites reported only 8 environmental spills and releases in FY 2004, 1 less than in FY 2003. Environmental releases represent the total number of spills, leaks, and discharges of hazardous substances, oil, and regulated pollutants to the environment. RMOTC had 5 releases, the same

as last year. NETL increased from 0 to 1 release in 2004. SPR decreased their number of releases by 50% with 2 releases in FY 2004. Most of the releases involved a small spill of diesel fuel, and a discharge of brine water.

Figure 6
FE ENVIRONMENTAL RELEASES



Number of Environmental Regulatory Violations Remains Low

In FY 2004, FE received 4 regulatory violations. Two of these occurred at NETL, and the other 2 occurred at RMOTC. 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. The 2 notices at RMOTC were Notices of Violation (NOVs); the first outlined deficiencies within the RMOTC site Spill Prevention Countermeasure and Control (SPCC) Plan, while the second was in regard to a positive test for Total Coliform Bacteria, encountered during routine monthly

sampling of the potable water at the Gas Plant and the Science Center Plant. RMOTC has implemented better review, oversight, and training of those responsible for the SPCC plan. Meanwhile, the contamination responsible for the second violation has been eliminated. NETL received 2 NOVs, both associated with failure to meet local limits for wastewater discharge. An investigation into the cause of this contaminant remaining in the NETL treated wastewater effluent was conducted. Suggested improvements to the operating procedure were provided to the staff operating the wastewater treatment facility.

waste generated from year to year fluctuates depending on the particular projects being conducted.

Meanwhile, NETL decreased the amount of hazardous waste generated by 29% from FY 2003. During FY 2003, more than 90% of the hazardous waste generated by NETL was from routine R&D process operations and analytical support. In FY 2004, the reduction in hazardous waste generated was due to less R&D activity involving projects that generate hazardous wastes and strong waste minimization/pollution prevention initiatives.

Table 1

FE REGULATORY VIOLATIONS	
Fiscal Year	# of Violations
2001	3
2002	3
2003	3
2004	4

Source: Occurrence Reporting Processing System with Field site verification

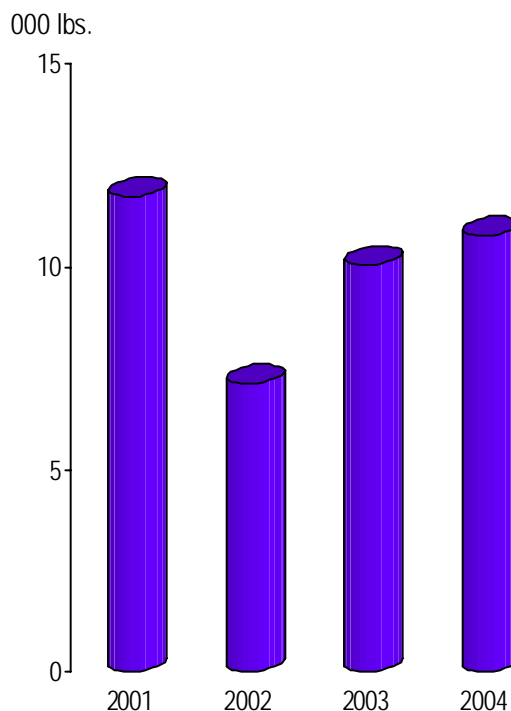
Hazardous Waste Increases by 3%

FE generated 10,747 pounds of hazardous wastes (wastes defined as hazardous under EPA's RCRA regulations) during FY 2004, representing a 3% net increase over FY 2003. While SPR and ARC both increased their hazardous waste generation by 54% and 62% respectively, these increases were balanced by a decrease in hazardous waste generation at NETL. RMOTC, NPRC, and FE HQ continued to generate no hazardous waste this year.

Approximately 80% of the hazardous wastes generated at SPR was from "routine" sources, such as crude oil analysis, spent and expired reagents, and replacement of fluorescent lamps that are classified as hazardous waste by the State of Texas. At ARC, more than half of the hazardous waste generated in FY 2004 was a result of aggressive cleanup efforts to clean out an unused furnace refractory, reduce onsite chemical inventories from old projects that are no longer needed, and dispose of mercury left over from old devices and analytical equipment. In addition, because of the nature of the R&D projects conducted at ARC, the amount of hazardous

Figure 7

FE HAZARDOUS WASTE GENERATION



Source: Field sites

Sanitary Waste Decreases by 4%

FE generated 1.2 million pounds of sanitary wastes in FY 2004, which is a 4% reduction from last year. Sanitary waste is defined as all wastes generated, excluding RCRA hazardous wastes and recycled wastes. Again, site-specific experience varied with ARC decreasing its

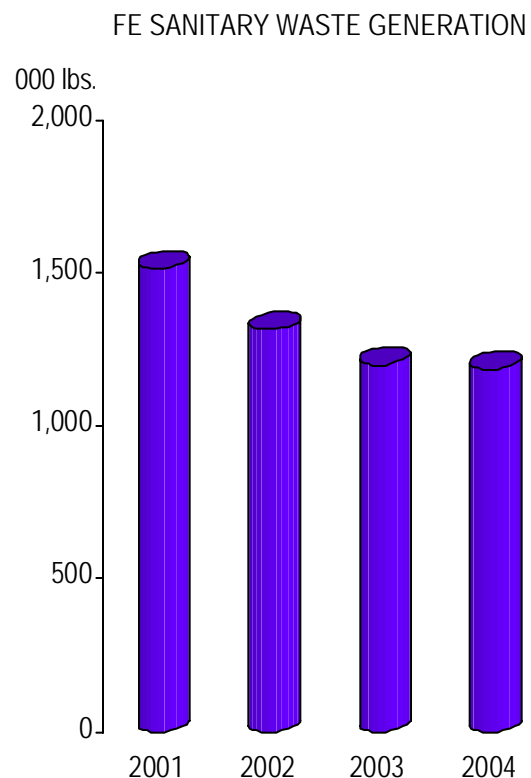
generation by 47%, while NETL increased generation by 27% and RMOTC increased its generation of sanitary waste five-fold. ARC has nearly completed the cleanup efforts that have resulted in significant amounts of sanitary waste in the past years, and as a result, there was less sanitary waste requiring disposal this year. At RMOTC, the large reported increase in sanitary waste is attributed to a number of factors. First, to be in compliance with air quality standards, RMOTC is no longer able to incinerate its trash, thus adding to the amount of sanitary waste requiring disposal. Second, RMOTC has more projects on the property that generated more wastes. Finally, the site has revised its approach for monitoring and tracking waste generation to improve the accuracy of its estimates.

All of the FE sites continue to actively pursue recycling and reuse programs for office materials (e.g., office paper, mixed paper, toner, and ink cartridges), batteries, and scrap metal. Our sites also have established a broad range of other site-specific recycling and reuse programs. For example, SPR recycles its exploration and production waste and has recycling programs for batteries, used oil, and construction debris. ARC's recycling and reuse programs also include pallets and wood, parts washer fluid and CFC coolants, and yard wastes. As part of its recycling and reuse efforts, NETL is examining ways to reduce sludge weight from its wastewater treatment facility by dewatering the sludge and reducing the quantity generated. RMOTC recycles used oil and antifreeze and old cellular telephones.

Success on 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, nonpaper office products, vehicular, transportation, and landscaping. EPA allows Federal agencies to exclude from their 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. All of the sites have continued to improve their affirmative procurement "green" purchasing programs.

Figure 8



Source: Field sites

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

We are proud of the progress made over the last year in demonstrating a level of ESS&H performance comparable to or better than the best in the Government and private sector. Yet, despite our accomplishments, our job is not done. We will continue our efforts to establish the highest levels of security and emergency preparedness and a continuous improvement, zero accident and occurrence program. This section summarizes some of the ESS&H challenges that our organization faces on an Office-wide basis, and the initiatives we plan to pursue in the year ahead to continue to improve our performance. A summary of site-specific initiatives for FY 2005 also is presented below.

KEY CHALLENGES AND INITIATIVES

Striving for “ZERO”

DOE's ultimate ES&H goal is zero accidents, work-related injuries and illnesses, regulatory enforcement actions and reportable environmental releases. The Office of Fossil Energy's Commitment to Environment, Safety and Health establishes a framework to make consistent, measurable progress towards this goal. For FY 2005, we have established FE-wide ES&H goals (see Appendix A) and site-specific performance measures to drive performance improvement and maintain excellence. Our annual numerical performance targets are to achieve total recordable cases rates and lost workday case rates of less than 1.25 and 0.5, respectively. Over the last several years, continuous and significant progress has been made. In FY 2004, however, we exhibited an upturn in accident rates associated with workers in specific high-risk functions. We believe that accidents are preventable, and we will redouble our efforts in the year ahead to be proactive and ensure that potential risks are evaluated and controlled adequately, while we adhere to the highest standards that are applicable to safe operation. We also have established a goal to increase the trend of reporting near misses so that we can take proactive and preventative actions. As we move

forward, we will be focusing attention on high-risk worker behavior, and targeting these activities for safety improvement. We also will foster a work environment that encourages free and open communication of ESS&H concerns. Workers are our most important resource for preventing potentially unsafe practices.

Eliminating Environmental Legacies

Progress has been made on addressing residual environmental contamination at offsite and onsite locations. Over the last year, we developed an inventory of legacy sites and we will be evaluating options for implementing more cost-effective approaches to remediation and post-closure activities. We will continue to reduce and eliminate any environmental, health, and safety risks associated with these locations. Remediation activities will focus on: (1) cleanup of NPRC, as part of DOE's obligations under a privatization agreement with the State of California; (2) further investigation of groundwater contamination at ARC in cooperation with Oregon's Department of Environmental Quality; (3) further restoration activities at RMOTC; and (4) ongoing restoration, monitoring and closeout at sites where FE previously conducted research, development and demonstration projects such as Hanna, Rock Springs, and Hoe Creek, Wyoming. We will continue to work in close partnership with affected communities and the Federal and state regulatory agencies. Our goal is to eliminate the historic environmental legacies and to ensure, through effective environmental management, that current operations do not result in future legacies.

We also have established several numerical environmental performance targets for FY 2005, including: (1) receive zero notices of violation from Federal and state regulatory agencies; (2) reduce sanitary waste from routine operations by 75%, recycle 45% of sanitary wastes from all operations, and reduce hazardous waste by 90%, using 1993 levels as a baseline; and (3) achieve 100% purchase of EPA-designated recycled-content products where cost effective and where desired performance can be achieved.

Pursuing Injury Prevention and Physical Fitness

The potential for injuries and illnesses increases with poor overall physical fitness. Lack of fitness can contribute to cumulative trauma disorders to the back, knees, shoulder, and neck, which commonly comprise more than half of all workers compensation costs. However, of major concern is that general fitness is rarely a component of an injury prevention programs, even though it affects the health of our workers, increases healthcare costs, and contributes to decreased productivity. In the year ahead, we will build upon existing worksite fitness programs at HQ and in the field. We will provide instruction to increase employee's knowledge about fitness and health. Integrating safety and fitness into our daily routine will have a huge potential for cost savings, not only in reduced compensations costs and health cases, but also in having a more fit and productive workforce.

Protecting our Workers and Meeting DOE Security Needs

FE must be prepared to counter the evolving homeland security threat with improved protection capabilities. We will strive to achieve better efficiency and effectiveness in our security programs, with specific emphasis on protection of our sensitive information, our employees, and our physical infrastructure, equipment, and assets. Infrastructure upgrades along with increasingly sophisticated drills and exercises involving a range of threats and responses, including bio-chemical responses, will be pursued. In addition, in recognition of the potential for accidents and injuries associated with field training exercises and other types of physical training or qualification, we will identify safety practices that allow us to achieve the proper balance between fewer accidents versus realistic "force-on-force" training.

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

We will focus on establishing and maintaining rigorous assessment programs that provide sufficient confidence that program goals for ESS&H are being achieved, that corrective actions

are being addressed, and that opportunities for improvement are being identified. The assessment part of an effective ESS&H program serves to provide reasonable assurance that unknown factors do not exist in either the physical workplace or the management systems that govern work that can contribute to injury or loss. In the year ahead, we will use a combination of assessment approaches, including: (1) internal site self-assessments; (2) assessments utilizing representatives from both onsite and from offsite locations including other parts of FE and DOE; and (3) assessments utilizing experts from outside the Department. The keystone of our approach will be effective self-assessment, which puts accountability and responsibility at the appropriate organizational level.

In addition to our emphasis on self-assessment, we will continue to use external, nationally recognized experts to carry out independent assessments to validate and certify that our management systems meet applicable laws and regulations. This approach will provide the cornerstone upon which trust and accountability will be built throughout our system. This approach is not only a good business practice, but it also builds and fosters positive relationships with our customers and stakeholders, including the communities where we work. We will continue to pursue and maintain external certifications of our ES&H programs by organizations such as OSHA, EPA, and the International Organization for Standardization (ISO). Since achieving ISO 14001 certification in 2000, SPR sites remain the only DOE organization to achieve OSHA Voluntary Protection Program certification, and one of the few to become a charter member of EPA's National Environmental Performance Track. In addition, NETL became only the eighth DOE site to achieve ISO 14001 in 2003. In 2005, we expect NETL and SPR to maintain their certification and for ARC to successfully achieve certification. By achieving certification, we are meeting President Bush's Executive Order 13148 requirements to establish fully documented and auditable environmental management systems by December 2005. In addition, we are achieving external recognition of our programs from the public and regulators through this effort, as well as achieving further performance improvements.

Fostering a “Learning Organization”

Although there may be unique site-specific ESS&H challenges, the majority of our significant issues appear to be crosscutting in nature and affecting all of our sites. In the year ahead, we will continue our efforts to leverage the technical expertise that exists throughout the FE organization and foster the practice of learning from other organizations, and adopting effective ideas in pursuit of continuous improvement. In the past year, we have demonstrated that it is more efficient and cost effective to supplement site-specific expertise and knowledge with demonstrated best practices from others in FE, DOE, and the private sector.

We will continue recent initiatives such as the Office of Fossil Energy/Office of Nuclear Energy/Office of Energy Efficiency and Renewable Energy (FE-NE-EE) Integrated ES&H Synergy Workshops, and sponsor the next workshop in the spring of 2005. Representatives from the three Departmental Headquarters programs and respective field sites will meet to discuss effective practices to enhance ES&H performance. In addition, electronic access to demonstrated ESS&H best practices from FE, DOE, and private organizations will be provided through FE's Best Practice database. FE will sponsor the 11th Annual Excellence in Environment, Security, Safety and Health Award program to recognize and honor DOE personnel for outstanding contributions toward ESS&H performance improvements. The program will continue to showcase dramatic ESS&H improvements using techniques that are potentially applicable to other DOE organizations. The award program provides the opportunity not only to honor the outstanding efforts of our workers, but also to transfer these best practices to other FE organizations. We also will pursue expanding the program beyond FE to other parts of the Department.

SITE-SPECIFIC INITIATIVES

Strategic Petroleum Reserve (SPR)

- Maintain ISO 14001, OSHA Voluntary Protection Program (VPP), and EPA National

Environmental Performance Track Certification.

- Maintain enhanced security posture, upgrade physical security infrastructure, and reduce safety incidents among the guard force.
- Expand the “Close Call” program by improving hazard recognition and remediation among Federal, contractor, and subcontractors before accidents happen.
- Establish incentivized “Superstretch” goals for reduction of incidents, injuries, and near misses.
- Complete Hazard and Operability Study (HAZOPS) revalidation recommendations, reducing the risk to which employees are exposed.
- Emphasize case management to reduce unnecessary lost workdays.
- Continue to work with the OSHA VPP to identify best practices from industry.
- Expand wellness programs to include a higher percentage of workers.
- Continue emergency response team training, exercises, and drills.
- Maintain and expand Behavior Safety Program to high-risk functions/workers.

National Energy Technology Laboratory (NETL)

- Maintain ISO 14001 certification.
- Enhance incident reporting, including near miss identification, and conduct employee awareness training.
- Complete renovations to Chemical Handling Facility at NETL-Pittsburgh.
- Upgrade and automate the Wastewater Treatment Facility at NETL-Pittsburgh to avoid potential exceedances of regulated discharges.
- Remove/encapsulate asbestos for NETL buildings.
- Conduct site-wide emergency response exercises.
- Continue environmental remediation/close out activities at Hanna, Hoe Creek, and Rock Springs, Wyoming.

- Address the deficiencies in the emergency notification system at NETL-Morgantown, and upgrade gas alarm systems.

Albany Research Center (ARC)

- Achieve ISO 14001 certification.
- Implement site-wide recycling programs and reduce the inventory of legacy non-routine chemicals.
- Replace outdated equipment to reduce hazards to employees and the environment.
- Pursue hazard/risk reduction through various projects including the replacement of propane forklifts with electric forklifts and minimization of propane tank storage volume site-wide, and replacement of antiquated high voltage electric equipment.
- Enhance incident reporting and institute an aggressive lessons learned program.
- Review and replace outdated analytical procedures with more environmentally friendly procedures.
- Maintain security and emergency response capabilities and continue to conduct emergency response drills/exercises involving local responders.
- Maintain site-wide Wellness Programs.

- Identify any necessary onsite groundwater investigation/interim measure activities and work closely with the state regulators to define a path forward.
- Demonstrate compliance with DOE's radiation and beryllium protection requirements.

Rocky Mountain Oilfield Testing Center (RMOTC)

- Achieve external certification for implementing environmental management system.
- Complete the wetlands delineation for NPR-3.
- Perform increased oversight of RMOTC Partner and Contractor activities.
- Expand behavioral safety programs.
- Continue restoration activities including close out of the Industrial Solid Waste Disposal Facility.
- Revise the sites Spill Prevention and Control Countermeasures (SPCC) Plan.
- Evaluate Potable-Water pipeline option to minimize potable-water risks.
- Replace aging flowlines to minimize oil spill risks.
- Continue to promote an effective recycling program.

Appendix A. Summary of FE's 2005 ES&H Performance Goals

FE PERFORMANCE GOALS	FE TARGET	DOE DRIVER
1. Reduce the Number of Safety Incident Cases	Achieve TRC of < 1.25.	DOE Policy 450.7, Environment, Safety and Health Goals DOE O 440.1A, Worker Protection Management for DOE Federal and Contractor Employees
2. Reduce the Number of Lost Work Day Cases	Achieve LWC of < 0.5.	DOE P 450.7 DOE O 440.1A
3. Integrate EMS into ISM at each Site	Achieve EMS third-party verification by December 2005.	Executive Order 13148, Greening the Government Through Leadership in Environmental Management DOE O 450.1, Environmental Protection Program
4. Comply with External ES&H Regulations	No Notices of Violation (Federal, state, others).	DOE Order 450.1 DOE P 450.4 Safety Systems Management DOE P 450.7 DOE O 440.1A
5. Enhance Incident Reporting	Increase trend of reporting all ORPS-reportable near misses.	DOE O 231.1, Environment, Safety and Health Reporting DOE P 450.7
6. Enhance Worker Involvement in Safety	Implement a key initiative to enhance worker involvement in safety, such as performing human factors training or conducting behavior safety assessments.	DOE Policy 450.4 DOE O 440.1A
7. Prepare for Emergencies	Conduct necessary employee training and site emergency exercises.	DOE Order 151.1B Comprehensive Emergency Management System DOE P 450.7
8. Share Lessons Learned/Best Practices	Achieve sharing and adoption of best practices across FE complex.	DOE P 450.7
9. Reduce Waste Disposal/Generation	Achieve the Executive Order/DOE Pollution Prevention/Energy Efficiency targets for FY 2005 (e.g., by 2005, reduce sanitary waste from routine operations by 75%, recycle 45% of sanitary wastes from all operations, and reduce hazardous waste by 90%, using a 1993 baseline). Minimize waste disposal through source reductions, reuse, and recycling.	Executive Order 13101, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition EO13148 DOE P2/E2 Goals DOE O 450.1
10. Achieve Affirmative Procurement	Achieve 100% purchase of EPA-designated recycled-content products where cost effective and where desired performance can be achieved.	E.O. 13101 DOE P2/E2 Goals DOE O 450.1
11. Enhance Pollution Reduction	Reduce/eliminate discharges of hazardous, toxic, and radioactive materials into the environment.	E.O. 13101, 13123, 13148, 13149 DOE P2/E2 Goals DOE O 450.1
12. Achieve "External ES&H Certifications"	Achieve membership/certification/verification in at least one oversight program consisting of offsite reviewers (such as DOE EMS, OSHA VPP, EPA NEPT, ISO 14001, etc.).	E.O. 13148 DOE O 450.1 DOE P 450.4
13. Reduce Recordable Vehicle Accidents	< 3 accidents for every 1 million miles driven.	DOE O 440.1A
14. Maintain/Enhance Worker Health and Fitness	Implement wellness programs to integrate safety and fitness into daily routine.	DOE O 440.1A
15. Develop/Maintain ES&H Outreach	Participate in ES&H advisory committees, national/state/local voluntary programs, conferences/workshops, and/or Web sites for dissemination of ES&H information.	DOE P 450.4

Appendix B. SUMMARY OF FE 2004 PERFORMANCE MEASURES: PERCENTAGE CHANGE FROM FY 2003 PERFORMANCE

Metric	FE Total	FE HQ	SPR	NETL	ARC	RMOTC	NPRC	DOE Total	DOE VPP Sites*
Total Recordable Cases	38 (19%)	0 (NC)	20 (25%)	16 (14%)	0 (-100%)	2 (100%)	0 (NC)	2,176 (-14%)	279 (-31%)
Total Recordable Case Rate	1.6 (23%)	0 (NC)	1.9 (46%)	1.4 (17%)	0 (-100%)	2.8 (75%)	0 (NC)	1.6 (-16%)	0.9 (-31%)
# Lost Workday Cases	16 (33%)	0 (NC)	10 (233%)	4 (-56%)	0 (NC)	2 ***	0 (NC)	922 (-15%)	116 (-31%)
Lost Workday Case Rate	0.7 (40%)	0 (NC)	1 (233%)	0.3 (-63%)	0 (NC)	2.8 ***	0 (NC)	0.7 (-13%)	0.4 (-27%)
# Lost Workdays	478 (227%)	0 (NC)	348 (1238%)	93 (-23%)	0 (NC)	37 ***	0 (NC)	34,589 (-29%)	5,806 (-22%)
Lost Workday Rate	19.9 (249%)	0 (NC)	33.1 (1405%)	7.9 (-21%)	0 (NC)	50.9 ***	0 (NC)	25.2 (-29%)	18.4 (-24%)
Occupational Safety and Health Cost Index	8.39 (136%)	0 (NC)	12.67 (521%)	4.79 (-13%)	0 (-100%)	16.23 (927%)	0 (NC)	9.51 (-30%)	6.59 (-24%)
Estimated Injury & Illness Costs	\$402,800 (123%)	\$0 (NC)	\$266,800 (496%)	\$112,400 (-15%)	\$0 (-100%)	\$23,600 (1080%)	\$0 (NC)	\$26,065,800 (-30%)	\$4,171,000 (-22%)
Estimated Vehicle Costs (e.g., boats and cars)	\$14,886 (-29%)	\$0 (NC)	\$7,625 (-63%)	\$2,603 ***	\$0 (NC)	\$4,658 ***	\$0 (NC)	\$337,792 (-19%)	\$119,873 (-57%)
# Vehicle Accidents (including boats and cars)	7 (17%)	0 (NC)	3 (-50%)	1 ***	0 (NC)	3 ***	0 (NC)	94 (-25%)	39 (-51%)
# Operational Occurrences	24 (-17%)	0 (NC)	6 (-57%)	6 (20%)	0 (NC)	12 (20%)	0 (NC)	1,672 (-18%)	851 (-9%)
# Environmental Releases	8 (-11%)	0 (NC)	2 (-50%)	1 ***	0 (NC)	5 (NC)	0 (NC)	105 (-9%)	28 (-35%)
# Regulatory Violations	4 (33%)	0 (NC)	0 NC	2 (-33%)	0 (NC)	2 ***	0 (NC)	Not Available	Not Available
Lbs. Hazardous Waste Generated	10,747 (3%)	0 (NC)	1,333 (54%)	4,702 (-29%)	4,712 (62%)	0 ***	0 (NC)	Not Available	Not Available
Lbs. Sanitary Waste Generated	1,188,120 (-4%)	0 (NC)	437,997 (-2%)	525,773 (27%)	195,650 (-47%)	28,700 (474%)	0 (NC)	Not Available	Not Available
Hours Worked	4,798,669 (-6%)	487,084 (-2%)	2,105,143 (-12%)	2,346,331 (-2%)	201,770 (10%)	145,425 (15%)	28,248 (Not Available)	274,087,688 (0%)	63,249,886 (3%)
Near Misses	4 (-60%)	0 (NC)	0 (-100%)	1 ***	0 (NC)	3 (-50%)	0 (NC)	283 (1%)	93 (-8%)

Numbers in parentheses represent change from FY 2003

***FY 2003 number equaled zero

NC = No Change from FY 2003

^a This value only represents Q1 to Q3 data; Q4 data is not yet available in CAIRS

* DOE VPP Sites include sites associated with INEEL, the Hanford Site, and SPR, as well as Fluor Fernald, Inc., Kansas City Plant, Nevada Test Site, West Valley Nuclear Services Company, Westinghouse Savannah River Company, Washington TRU Solutions, Inc., Bechtel SAIC Company, LLC., and ORISE

Office of Environment, Security, Safety and Health

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Office of Environment, Security, Safety and Health

FE FY 2004 Site Awards

- FE Excellence in Environment, Security, Safety, and Health Award – SPR, ARC
- DOE Secretarial Awards for achieving perfect safety records – ARC, RMOTC
- DOE VPP Star – all four SPR sites
- OSHA VPP Star – all four SPR sites
- OSHA Region VI "Superstar among Stars" Award – Bayou Choctaw, West Hackberry, SPR
- OSHA Region VI "Star among Stars" Award – Big Hill, Bryan Mound, SPR
- Certificate of Achievement for the Best Safety project, 58th Annual Quality Congress, Final Round Team Competition – SPR
- Western Pennsylvania Safety Council "Quality" Safety Performance Award – NETL
- White House Closing the Circle Honorable Mention Award for Achieving a Positive EMS ROI – SPR
- DOE P2 Award for Achieving a Positive EMS ROI – SPR
- DOE Energy Management Award – NETL
- Louisiana Environmental Management Award – Bayou Choctaw, New Orleans, West Hackberry, SPR
- Allegheny County, PA Health Department three star Enviro Star Award – NETL
- "National Leaders" in the "Clean Texas-Cleaner World" program – SPR
- Finalist for the Malcolm Baldrige National Quality Award Program – DynMcDermott, SPR