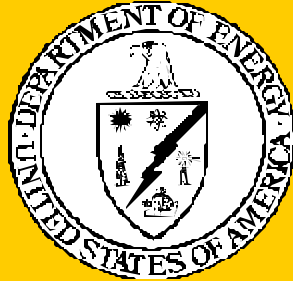


2004 Annual Report



U.S. Department of Energy

Office of Price-Anderson  
Enforcement

Nuclear Safety  
Enforcement Program

May 2005

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This document may be obtained from the following source:

Available via the Internet from the Department of Energy (DOE) Office of Price-Anderson Enforcement home page: <http://www.eh.doe.gov/enforce/>

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# 1. ANNUAL REPORT HIGHLIGHTS

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## Introduction

This report describes the activities and accomplishments of the U.S. Department of Energy (DOE or Department) Price-Anderson Amendments Act (PAAA) Nuclear Safety Enforcement Program covering the period January 1, 2004, to December 31, 2004. This report also highlights program improvements planned for 2005.

A small, dedicated staff in the Office of Price-Anderson Enforcement (OE) administers DOE's nuclear safety Enforcement Program. Cooperative efforts between OE and DOE Field and Program Offices through their PAAA Coordinators continued to contribute strongly to the success of the program during 2004. Procedural requirements, processes and policies for the Enforcement Program are contained in Title 10 of the *Code of Federal Regulations (CFR) Part 820 (10 CFR 820)*, and its Appendix A. DOE enforces two substantive nuclear safety rules: 10 CFR 830 (Subpart A, *Quality Assurance* and Subpart B, *Safety Basis Requirements*) and 10 CFR 835, *Occupational Radiation Protection*. Other requirements, such as the *Information Requirements* provision in 10 CFR 820.11, may be enforced under the PAAA. Also, under 10 CFR 708 *Contractor Employee Protection*, DOE may take enforcement action against contractors that have retaliated against employees for raising nuclear safety concerns. A description of DOE's Enforcement Program is provided in Appendix A to this report.

The goal of DOE's Enforcement Program is to promote proactive behavior on the part of DOE and NNSA contractors to continuously improve nuclear safety performance. Consequently, the enforcement program provides substantial incentives to those contractor organizations that identify, report and aggressively correct nuclear safety performance issues. Coupled with these incentives is a credible deterrent to noncompliance with DOE nuclear safety regulations. Thus, DOE expects its contractors to (1) implement measures to ensure that their

activities comply with these nuclear safety requirements, (2) self-identify and report noncompliances to DOE, and (3) correct noncompliances in a timely manner. When voluntary compliance fails, DOE has a number of enforcement tools available to ensure compliance, including the authority to issue a Notice of Violation (NOV) with civil penalties to a contractor indemnified under the Price-Anderson Amendments Act.

During 2004, the Enforcement Program continued to address problems in work processes, radiation protection, safety basis adherence, contractor self-assessment and quality improvement. In 2004, DOE issued nine NOVs to DOE contractors for significant violations of DOE nuclear safety requirements. Of the possible amount of \$3,025,000 in penalties, DOE mitigated a total of \$330,000 in several cases, which resulted in \$2,695,000 in penalties. DOE waived \$770,000 in one case, due to the statutory exemption for specific not-for-profit contractors. This resulted in \$1,925,000 in civil penalties being collected in 2004. Where violations involve quality improvement, a maximum of 25 percent mitigation may be granted. This is because a quality improvement violation inherently involves the failure to take effective corrective actions despite prior opportunities to do so. Figures 1-1 and 1-2 summarize the 2004 enforcement actions and civil penalties, and compare statistics with previous years. A summary of selected enforcement actions conducted in 2004 are contained in chapter 2. Full reports of all of the Enforcement Actions conducted in 2004 are available on the OE web site.<sup>1</sup>

During 2004, contractors voluntarily reported 229 nuclear safety noncompliances in DOE's Noncompliance Tracking System (NTS) for review by OE (Figure 1-3). In addition, OE performed a 100 percent review of all

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<sup>1</sup> Office of Price-Anderson Enforcement web site (<http://www.eh.doe.gov/enforce>)

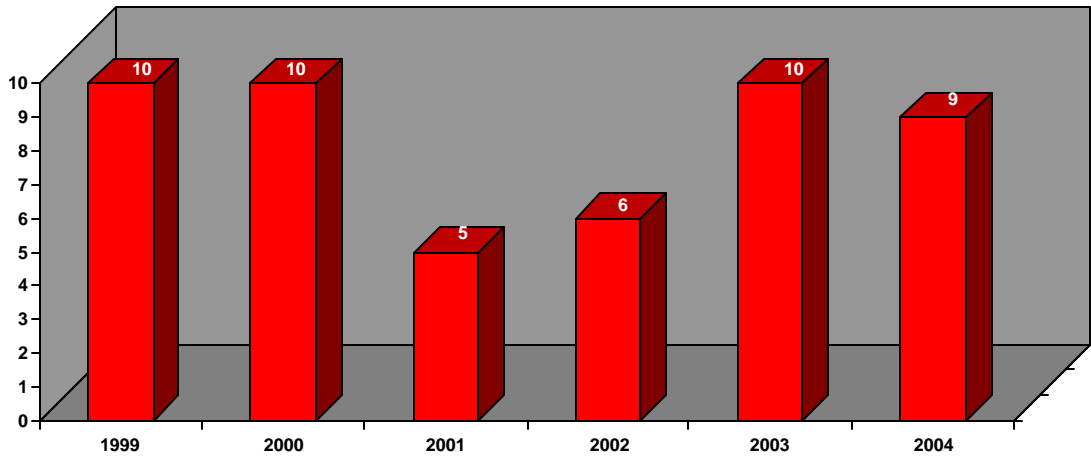
occurrence reports. In addition, DOE reviewed other sources of operational information that were not reported in the NTS (e.g., reports by the Defense Nuclear Facility Safety Board, Inspector General, Office of Independent Oversight and Performance Assurance) for potential PAAA applicability. In 2004, OE focused on compliance failures in contractor assessment activities and corrective action management processes, pursuing the goal established by OE of transitioning by the end of FY 2008 from the current DOE complex driven by reaction to safety events to one which is driven to find precursor issues through excellence in performance assessment, thereby preventing serious events from occurring.

In 2004, OE also issued eight enforcement letters to contractors (Figure 1-4) and completed ten PAAA program reviews at selected sites. Further details on OE activities in 2004 are described in chapter 4 of this report.

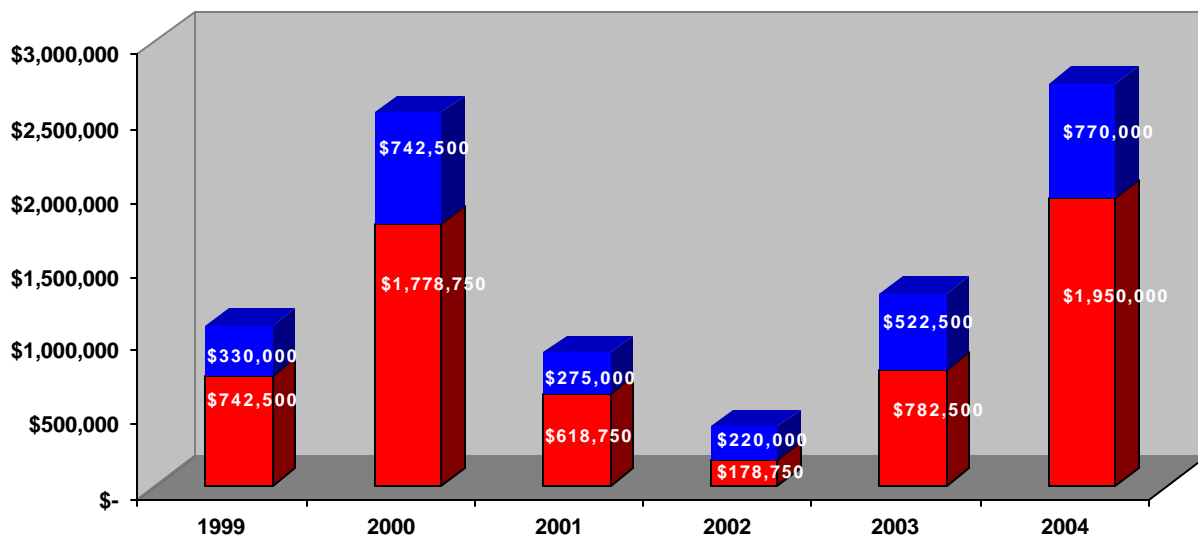
While all of these activities will be continued in 2005, OE will emphasize program activities that steer contractors toward identifying problems through assessments instead of waiting for events to occur, improving corrective action management processes and improving the nuclear safety mindset of DOE workers. Furthermore, OE will continue to conduct PAAA program reviews using a graded approach and will draft an enforcement implementation guide for the proposed worker safety and health rule. Details on these and other activities planned for 2005 are contained in chapter 5.



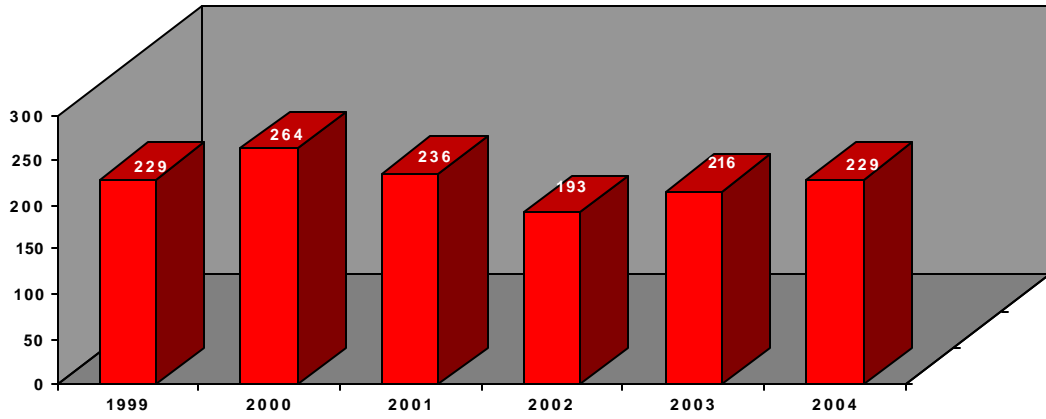
**Figure 1-1: Enforcement Actions**



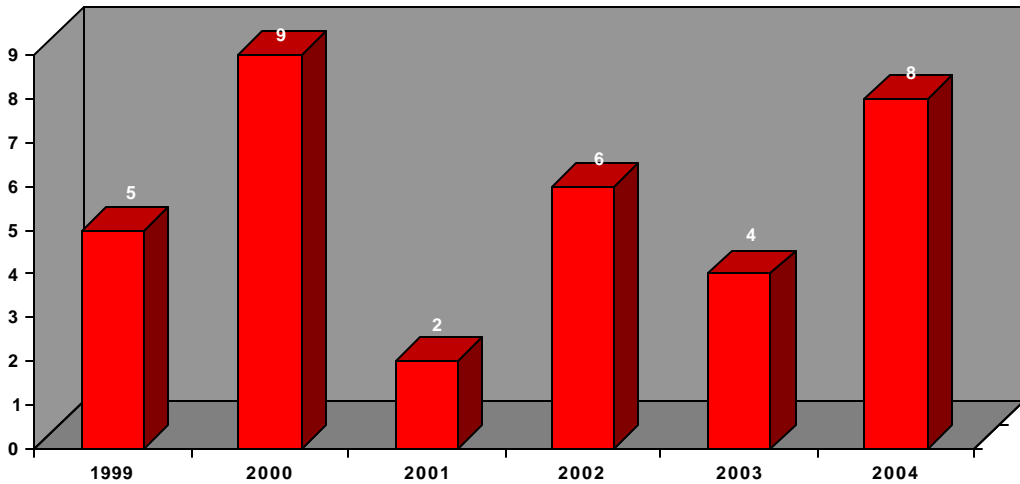
**Figure 1-2: Civil Penalties**



**Figure 1-3: NTS Reports**



**Figure 1-4: Enforcement Letters**



## 2. SIGNIFICANT ENFORCEMENT ACTIONS

### Introduction

In 2004, OE took several significant enforcement actions. Five of these actions are detailed below.

### **Kaiser-Hill Company Cited for Building 371 Glovebox Fire, Safety Basis Issues, and Radiological Events (EA-2004-02)**

The Rocky Flats Environmental Technology Site is a former nuclear weapons manufacturing facility located outside of Denver, Colorado. The site is currently undergoing site cleanup and closure by the Kaiser-Hill Company LLC (KH), the closure contractor for DOE.

On February 3, 2004, DOE issued an NOV to KH for violations associated with the May 2003 Building 371 glovebox fire, multiple Building 371 safety basis noncompliance issues, and two radiological events occurring in Building 371 and Building 776. The NOV included an associated civil penalty of \$522,500.

In May, 2003, a fire occurred inside a vertical glovebox undergoing decontamination and decommissioning (D&D) in Building 371. The fire started when trash and debris inside the glovebox ignited while workers were cutting a hole in the glovebox. The D&D workers attempted to extinguish the fire but were unsuccessful; the fire was eventually extinguished by the site fire department. The fire caused the spread of contamination to the area, generation of airborne radioactivity, and the uptake of radioactive material by several workers and firemen (resulting highest estimated exposure less than 50 millirem Committed Effective Dose Equivalent). Although the actual consequences of the event were limited, the potential consequences were viewed as extremely significant. Deficiencies were associated with work planning and hazard analysis, surveillance and control of combustibles, adequacy of assessments related to combustible controls, and fire response. Figure 2-1 shows the vertical glovebox after the fire, with the partially-burned debris raked out onto the floor.

Figure 2-1



The NOV also addressed multiple and recurring violations of the Building 371 safety basis and work process requirements. Specific violations related to KH's inadequate control of combustible liquids, the processing of unapproved campaign material in the Plutonium Stabilization and Processing System, and the failure to properly control and store potentially vulnerable Type 3013 containers.

The NOV also addressed violations associated with a Building 371 plutonium contamination event and a Building 776 airflow reversal event. Both events occurred in March 2003 and resulted in airborne contamination and the uptake of plutonium by workers (all resulting exposures were less than the DOE annual limit). Deficiencies in work planning and control as well as procedural compliance were identified in association with these events. DOE also noted that the KH investigation into the airflow reversal event was superficial, attributing the event to equipment failure rather than acknowledging or addressing underlying work planning issues.

The KH NOV included ten Severity Level II violations, including a specific citation against DOE's Quality Improvement requirements in recognition of KH's inadequate investigation of the airflow reversal event and the failure of corrective actions to address long-standing deficiencies in the Building 371 combustible control program. Civil penalty mitigation was limited to 50 percent mitigation for the violations associated with the March, 2003 plutonium contamination event, based on the contractor's comprehensive and timely corrective actions.

For the remaining events, no mitigation was applied due to their self-disclosing nature, incomplete causal analyses and ineffective corrective actions. KH acknowledged the violations and provided commitments on corrective actions to address the problems.

**Westinghouse Savannah River Company Cited for Unnecessary Radiation Exposure of FB-Line Personnel and Subsequent Falsification of Radiation Dose Records (EA-2004-03)**

FB-line, located at the DOE Savannah River Site, is engaged in characterizing plutonium and uranium-bearing materials that do not have sufficient pedigree to identify a path for final disposition. Westinghouse Savannah River Company LLC (WSRC) is the contractor that operates this facility.

On April 6, 2004, DOE issued an NOV to WSRC for violations associated with the unnecessary radiation exposure of three FB-Line personnel and the subsequent falsification of radiation dose records. The NOV included an associated civil penalty of \$206,250.

On July 29, 2003, two operators and a Radiation Control Inspector (RCI) were performing repackaging activities of cans of uncharacterized material. The workers were wearing Electronic Personal Dosimeters (EPD). However, the workers were not wearing lead jackets due to failures on the part of WSRC management to communicate that the cans were exhibiting a high dose rate and that lead jackets had been worn on the previous shift to minimize radiation exposure.

During the course of the 2 hour and 45 minute job evolution, the operators' EPDs frequently alarmed for both dose and dose rate. However, the operators ignored the alarms and completed the job.

Upon exiting the work area, the RCI recorded the reading from his EPD in the EPD log. The two operators, in consultation with a first line manager, recorded values in the log considerably less than that indicated on their EPDs. After being advised that their recorded results would have alarmed the EPD, they changed the values they recorded to a lower value.

The WSRC NOV detailed 7 Severity Level II violations, including a 10 CFR 820.11 violation for the falsification of radiation dose records by the two operators with the advice of the first line manager; 25 percent mitigation was provided for identifying and reporting the 10 CFR 820.11 violation and 50 percent mitigation was provided for corrective actions taken by WSRC for all violations with the exception of the quality improvement violation, for which no mitigation was granted. WSRC acknowledged the violations and provided commitments on corrective actions to address the problems.

**Los Alamos National Laboratory Cited for Radiological Overexposures, Work Control, Quality Improvement, Safety Basis, and Radiological Control Violations (EA-2004-05)**

The Los Alamos National Laboratory (LANL) is a multi-program national laboratory operated by the University of California for the DOE/National Nuclear Security Administration (NNSA). On June 21, 2004, at the recommendation of OE, NNSA issued an NOV to LANL for five separate deficiencies, each involving Severity Level 1 (the highest level) problems. LANL is exempt from civil penalty by statute. However, if LANL were not exempt, a civil penalty of \$770,000 would have been assessed based on the safety significance and the repetitive nature of the deficiencies.

On August 5, 2003, during pre-inventory material accountability activities in the TA-55 facility, two LANL workers received uptakes of radioactive plutonium that resulted in occupational exposures in excess of the DOE annual limit of 5 rem total effective dose equivalent (TEDE). Each exposure violation would generally be considered a Severity Level II (second highest level) event, based on the magnitude of the exposure. However, due to the long-standing nature of the underlying problems that led to this event, each violation was escalated to a Severity Level 1 violation.

The second violation involved significant work control deficiencies that led to and contributed to the significance of the radiological overexposures described above. These work control deficiencies included several instances of failure to comply with LANL's established work controls as well as a number of inadequate work control measures. These instances of failure to comply with work controls were

collectively considered a Severity Level 1 event due to their direct contribution to the worker overexposures and the event's high potential safety consequence. For the same reasons, the instances of failure to develop adequate work controls collectively represent a Severity Level 1 violation.

The Quality Improvement violations involved (1) failure to correct known deficiencies in residue container design; (2) failure to initiate a Nonconformance Report or other corrective action documentation to evaluate and resolve Plutonium-238 (Pu-238) residue container packaging degradation when found in one container a few months before the overexposure event described above; and (3) failure to identify and correct degraded storage cage seismic restraints. Collectively, these quality improvement violations were considered a Severity Level 1 violation due to their direct contribution to an event that had a high potential safety consequence.

The Safety Basis violations involved (1) failure to establish procedures to maintain seismic restraints; (2) failure to maintain storage cage seismic restraints in an operable condition; and (3) failure to store residue containers on the seismic rack, in violation of Technical Safety Requirements and DOE Safety Evaluation Report requirements. Collectively, these safety basis violations would generally be considered a Severity Level II event; however, they were escalated to a Severity Level 1 event based on the long-standing nature of the underlying problems that led to the event.

The Radiological Control violations were associated with the pre-inventory material accountability activities that led to the radiological overexposure events described above. Collectively, these radiological control violations would generally be considered a Severity Level II event, but they were also escalated to Severity Level 1 based on the long-standing nature of the underlying problems that led to the events.

A related event that was investigated involved a toxic vapor release and personnel chemical exposure with worker injury, but no radiological consequences occurred. The significance of this event is that the same programmatic deficiencies in work planning and work control

involved in LANL's nuclear work were also evident in this event.

The events described above had consequences that could have been much higher, but only a limited amount of the material was released. NNSA and OE expressed strong concern that LANL processes for Management and Independent Assessments failed to identify the problems leading up to the events or determine that the underlying work process, safety culture and safety basis implementation problems were long-standing. NNSA and OE determined that mitigation was not warranted for timely self identification and reporting or for effective corrective actions.

LANL acknowledged the violations described above. Subsequent to the issuance of the PNOV, LANL stopped all work at the laboratory to address issues related to its safety culture and other programmatic deficiencies, such as the ones described above. LANL has since declared a full resumption of work activities. NNSA and OE will continue to closely monitor the resumption of work activities and the effectiveness of corrective actions.

#### **Fluor Hanford, Inc. Hanford K Reactor Sludge and Water System Deficiencies (EA-2004-06)**

Fluor Hanford, Inc., (FHI) one of five prime contractors for the Hanford Site, performs site remediation work. One of FHI's responsibilities is the completion and operation of the K Reactor Sludge and Water System (SWS) which involves removing, packaging, and storing sludge that formed in one of the reactor facility's fuel storage pools. The sludge is composed of degraded fuel rods and other debris. On April 23, 2003, FHI initiated a preliminary operational readiness review of the sludge system with DOE to determine if the system was ready to operate. On April 27, FHI paused its review due to concerns raised by FHI and DOE Richland Operations Office (DOE-RL) personnel regarding the design of the SWS. Four days later, DOE-RL staff completed a surveillance of the SWS project and identified five significant quality assurance deficiencies. DOE-RL subsequently directed the contractor to conduct an "extent-of-condition" review of these deficiencies.

In August 2003, FHI submitted the first of several NTS reports that described programmatic quality assurance and safety basis deficiencies in the SWS. OE initiated a review of documentation describing these issues in November 2003 and, during January 2004, conducted an onsite investigation. Examples of the more significant nuclear safety noncompliances noted during the investigation were as follows:

- Management and personnel training deficiencies created a working environment that contributed to quality-related problems: (1) The SWS project was fast-tracked, resulting in key activities (e.g., hazards assessment, safety analysis, design, and fabrication) being performed in parallel, in turn leading to many design changes during construction. Due to schedule pressures, many approved changes did not comply with design procedures or include all necessary formal reviews to ensure adequacy; (2) insufficient personnel resources were committed to the project and personnel were frequently reassigned to other projects or replaced. Formal training for senior personnel, to ensure they were qualified and trained for their job responsibilities, was not implemented. Furthermore, there was turnover among senior-level staff with primary design authority for the project; turnover information was inadequate, and the new person received little or no training on the SWS; and (3) senior management created an atmosphere that discouraged the project team from raising quality-related problems for resolution.
- Quality improvement deficiencies have plagued the SWS project from the start. FHI's predecessor, Fluor Daniel Hanford (FDH), was issued an enforcement action and a Compliance Order in May 1999 for quality improvement deficiencies that affected the SWS. FDH was required to implement work control processes to ensure the following: nuclear facility and support system work activities would be properly supervised, work would be performed in accordance with established requirements and procedures, and an approved critique process would be used to ensure that deficient work activities would be evaluated and effectively corrected in a timely manner. FDH was furthermore directed to implement an effective deficiency tracking

system and a single, site-wide corrective action management and improvement process. However, neither FDH nor FHI effectively implemented these mandates. Thus, continuing and protracted quality assurance deficiencies led to the suspension of SWS project's preliminary operational readiness review in its early stages.

- Design control deficiencies included significant changes to the SWS's design after the initial 100 percent design was approved. These design changes were poorly managed and were subsequently determined not to comply with design requirements. In some cases redesigned components were incapable of performing their safety function as described in the project's approved safety basis documents. Often, design changes did not receive formal safety reviews and design verifications were not performed. Design reviews that were performed were not comprehensive.
- FHI did not effectively use an "Unreviewed Safety Question" (USQ) process as required. The USQ process requires a safety evaluation of a proposed situation, e.g., an equipment modification or a process change that had not been previously analyzed in the approved safety basis documentation. FHI, however, performed numerous, inadequate USQ evaluations and at other times avoided these evaluations by inappropriately applying exclusions.
- DOE requires information pertaining to a nuclear activity to be complete and accurate in all respects. Shortly before the operational readiness review began, FHI certified that the SWS was built as described in its safety basis documentation. Following the suspension of the review, FHI's subsequent investigation found that some safety-significant equipment had never been installed and other safety equipment was installed to the wrong specifications.

On July 14, 2004, DOE issued an NOV to FHI for the nuclear safety violations associated with the design, construction, and management of the SWS. The NOV contained five Severity Level I and three Severity Level II violations. Conditions that led to two of the Severity Level I violations were determined to be similar to conditions cited in DOE's May 1999



enforcement action against FDH. Thus, the civil penalties associated with these two particular violations were assessed using DOE's statutory per-day authority. This was the first time DOE escalated an enforcement action in this manner. None of the remaining violations were mitigated and the total civil penalty amounted to \$935,000.

#### **Washington TRU Solutions Cited for Transportainer Procurement Issues (EA-2004-08)**

Washington TRU Solutions LLC (WTS) is the primary contractor at the Waste Isolation Pilot Plant (WIPP) located near Carlsbad, New Mexico. The Central Characterization Project within WTS provides waste characterization services to several sites across the DOE complex.

On August 30, 2004, DOE issued an NOV to WTS for violations associated with the procurement of four transportainers from Diversified Metal Products (DMP). The NOV included an associated civil penalty of \$82,500.

In May of 2003, WTS assumed responsibility for managing the fabrication of the Characterization Repackaging Modular Unit, which is primarily made up of four transportainers, to be provided to Westinghouse Savannah River Company in support of its efforts to characterize and repack radioactive waste. WTS contracted with DMP to fabricate the transportainers in September 2003.

WTS failed to provide an adequate level of oversight of DMP prior to and during the fabrication of the transportainers, as evidenced by the following:

- WTS failed to prepare a quality assurance verification plan, specifying in-process inspection requirements, until fabrication was nearly complete.
- WTS failed to verify that DMP incorporated required customer hold points into its inspection plans.
- WTS did conduct one in-process inspection. However, the individual sent by WTS was not qualified to perform the inspection. In addition, WTS inappropriately waived inspection of two of the transportainers.

On November 3-4, 2003, prior to shipment of the transportainers from DMP to WTS, WTS inspected the transportainers and found numerous quality-related deficiencies. These deficiencies were to be corrected prior to shipment. On November 10, 2003, the transportainers were shipped to WTS. When WTS inspected the transportainers upon receipt, they found numerous quality-related deficiencies. Some of these deficiencies had been previously identified on November 3-4, 2003.

The NOV issued to WTS included two Severity Level II violations and one Severity Level III violation. Civil penalty mitigation was limited to 25 percent mitigation for the Severity Level II violations for corrective actions taken by WTS to prevent recurrence. There was no civil penalty assigned to the Severity Level III violation. WTS acknowledged the violations and committed to corrective actions to remedy the problems.

On October 28, 2004, OE issued an Enforcement Letter to DMP, primarily for its failure to fabricate the transportainers according to known and accepted specifications. The decision by OE to issue an Enforcement Letter in lieu of other more severe enforcement options was based on the fact that DMP inquired about the absence of customer hold points prior to fabrication and included one inspection hold point not specified by WTS.

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## 3. CASES REFLECTING ENFORCEMENT DISCRETION

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### Introduction

As discussed in more detail in chapter 4, OE refrains from pursuing formal enforcement action for a large number of nuclear safety issues that come to its attention. This option is generally exercised when an issue has lower safety significance and the contractor effectively identifies, reports, and corrects the problem. In a limited number of these cases, OE also issues an Enforcement Letter to draw contractor attention to nuclear safety matters of concern that require attention by contractor management to prevent a more serious situation.

In 2004, OE issued eight Enforcement Letters, copies of which are available on the OE web site. The following section summarizes four of these Enforcement Letters.

#### **Enforcement Letter issued to Bechtel National Incorporated for Concrete Work Deficiencies**

Bechtel National Incorporated (BNI) is the primary contractor for the construction of the Waste Treatment Plant (WTP) located on the Hanford site near Richland, Washington. Once completed, the WTP will vitrify the highly radioactive mixed waste currently residing in the underground tanks within the Hanford Tank Farms.

The Enforcement Letter highlighted eleven instances at the WTP during a 14-month period from August 2002 through October 2003 in which concrete work was not performed to established procedures and standards. Several of these deficiencies were associated with the concrete pour cards, which were signed off as complete, when in fact preplacements (i.e., rebar, dowel rods) were missing. The signoff requirement for these pour cards was rigorous, requiring signature of the craft personnel, Superintendent, Field Engineer, and Quality Control Engineer, to ensure that all preplacements were present and positioned according to drawing specifications.

On March 25, 2004, DOE issued an Enforcement Letter to BNI expressing its concern with these concrete work deficiencies in light of the fact that the WTP will be processing some of the nation's most hazardous waste. In light of this important mission, it is DOE's expectation that WTS be constructed in strict adherence to established procedures, specifications, and standards. OE limited its response to an Enforcement Letter, recognizing BNI's prompt identification and reporting of this programmatic issue and their recent root cause analysis and associated corrective actions.

#### **Enforcement Letter issued to Westinghouse Savannah River Company for an Employee Reprisal**

Westinghouse Savannah River Company LLC (WSRC) is the prime contractor at the Savannah River Site in Aiken, South Carolina. In October 2003, WSRC reported a noncompliance involving an employee reprisal in which the employee was terminated after raising safety-related issues, even though positions in his area of expertise were available elsewhere at the site. The investigation report prepared by the contractor was complete in all significant respects and indicated that the matter was taken seriously. Indeed, the report concluded that "...the allegation of reprisal is substantiated."

There was, however, one element of the report sent to OE that was a cause for concern - an assertion that the wrongful job termination was unintentional and not malicious. OE clarified in an Enforcement Letter in April 2004 that under no set of factual circumstances could a wrongful termination be described in that manner. However, OE also noted that the contractor handled the ultimate disposition of the matter correctly and reinstated the employee.

#### **Enforcement Letter issued to Kaiser-Hill Company, LLC for Noncompliances involving a Water Treatment System Breach and an Underground Foam Fire**

Kaiser-Hill Company, LLC (Kaiser-Hill) is a joint venture company established to address environmental, waste management, and special nuclear risk reduction challenges posed by the

Rock Flats Environmental Technology Site, located 16 miles northwest of Denver, Colorado. In August 2004 an enforcement letter was issued to Kaiser-Hill that addressed two separate events: an unauthorized breach of the water treatment system in Building 771 and a foam fire in Building 991. Both events represented significant breakdowns in the Rocky Flats safety program.

During 2003, decontamination activities in Building 771 included the use of a high pressure hydrolasing system for the removal of radioactive contamination from building and equipment surfaces. During routine use of the system, operators recognized a diminished flow condition. They accessed the internals of a large settling tank to identify and remove a suspected obstruction. The operators performed these work activities without Radiological Control Technician coverage and without proper clothing or respiratory protection as required by existing written procedures and the radiological work permit. Elevated air samples prompted follow-up bioassay, which subsequently identified six individuals who received intakes of radioactive materials ranging from 0 to 180 millirem committed effective dose equivalent (CEDE).

In a second incident, which occurred in February 2004, a polyurethane foaming agent was used to seal specific underground areas of Building 991. Smoke was observed emanating from small wall penetrations after an area was foamed. The foam manufacturer's use instructions recommended limited application depths and waiting periods between applications to allow the product to cure and avoid possible fires. The Kaiser-Hill investigation revealed that the operator applying the foaming agent had exceeded recommended application depths.

Initially, the company did not report the deficiencies associated with the Building 991 incident, taking the position that the building had been free-released from radiological controls at the time of the fire. In this situation, although Building 991 was considered non-radiological at the time of the fire, the same, inadequate work package was being used in several other nuclear applications of the foam. Discussions between OE and Kaiser-Hill personnel convinced them to reconsider their position and report the deficiencies.

OE chose to exercise enforcement discretion in addressing these issues by issuing an enforcement letter because Kaiser-Hill's new president made a personal commitment to improving nuclear safety performance, and Kaiser Hill conducted comprehensive investigations as well as developing and implementing a broad corrective action plan.

### **Enforcement Letter issued to BWXT Y-12 for Safety Basis Noncompliances**

BWXT Y-12 is the operating contractor for the NNSA at the Y-12 National Security Complex in Oak Ridge, Tennessee. In June, 2004, DOE/NNSA issued an NOV to BWXT Y-12 (EA-2004-04) which included a quality improvement citation for continuing safety basis compliance issues at Y-12. Y-12 safety basis compliance was an issue during the OE site investigation (October 2003) and the subsequent enforcement conference (January 2004). In August 2004, BWXT Y-12 submitted an NTS report documenting corrective actions associated with EA-2004-04.

DOE continued to monitor BWXT Y-12 performance in this area subsequent to issuing the NOV. Despite an overall reduction in the number of Operational Safety Requirement /Technical Safety Requirement (OSR/TSR) violations during 2004 as compared to 2003, BWXT Y-12 continued to experience recurring safety basis compliance deficiencies associated with the Criticality Accident Alarm System (CAAS). These deficiencies largely related to the failure to adequately post or control plant areas suffering from inadequate CAAS audibility.

In October 2004, BWXT Y-12 was issued an Enforcement Letter concerning the recurring safety basis violations related to the CAAS. In the letter, OE expressed concern that BWXT Y-12 had made insufficient improvement in this area in response to the site investigation and since enforcement action EA-2004-04. OE limited its action to an Enforcement Letter since BWXT Y-12's proposed corrective actions included evaluating alternative CAAS technologies and improvements to overall Conduct of Operations in addition to strengthening administrative controls. OE has continued to monitor BWXT Y-12 performance and has noted a reduction in the number of reported CAAS-related deficiencies.

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## 4. ACCOMPLISHMENTS & ACTIVITIES

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### Program Activity

#### Worker Safety and Health Rulemaking

In 2002, Congress directed DOE to promulgate regulations on worker safety and health to govern the conduct of contractors with Price-Anderson indemnification agreements in their contracts. Section 3173 of the National Defense Authorization Act amended the Atomic Energy Act to add section 234C (codified as 42 U.S.C. 2282c) that requires DOE to promulgate worker safety and health regulations that maintain “the level of protection currently provided to ... workers.” Section 234C makes an indemnified DOE contractor that violates the regulations subject to civil penalties. The maximum civil penalty for a violation is \$70,000 per violation per day. Section 234C also provides that DOE must choose between a contractual remedy and a civil penalty in each case and that both sanctions cannot be used for the same violation. The total amount of civil penalties and contract penalties under this rule collected from specific non-profit DOE contractors may not exceed the total amount of fees paid by DOE to the contractor in that fiscal year. On

December 8, 2003, the notice of proposed rulemaking (NPR) 10 CFR 851, *Worker Safety and Health*, was published for public notice and comment in the Federal Register. While public hearings were held and comments were received, DOE suspended the rulemaking on February 27, 2004, when DOE became aware that the Defense Nuclear Facility Safety Board (DNFSB) had concerns that required resolution.

As a result of its consultation with the DNFSB and consideration of other comments, DOE restarted the rulemaking process by issuing a NPR on January 26, 2005, that set forth a supplemental proposal, announced additional public hearings and provided the opportunity for further written comments. The comment period ended on April 26, 2005.

#### Measuring Nuclear Safety Performance

The PAAA Enforcement Program has always been viewed as a tool to promote proactive behavior by contractors to

improve nuclear safety performance. In 2003, OE initiated a project intended to evaluate and document the impact and benefits that the PAAA Enforcement Program is making on contractor nuclear safety performance. The first phase of the project involved a direct survey of fourteen DOE and NNSA sites that resulted in the documentation of over 50 specific nuclear safety improvement initiatives from the inception of the PAAA Enforcement Program to Mid-2003. A summary of this initial phase and its associated observations were published in the OE 2003 Annual Report.

Based on the results of the 2003 initial phase, OE determined that a more comprehensive approach to assessing nuclear safety performance in the DOE complex was needed for (1) tracking nuclear safety performance over time, (2) providing visibility of performance issues to senior line management, and (3) maximizing the efficient use of DOE's limited enforcement resources.

In 2004, OE significantly expanded on this initial phase and completed development of a new measurement and assessment process that involved (1) defining a Nuclear Safety Excellence Model, (2) establishing a process to determine performance changes over time relative to the Model, and (3) capturing the ways in which the PAAA Enforcement Program has impacted nuclear safety performance.

Provided below is a brief description of this new assessment process and some preliminary observations. It should be noted that DOE does not intend to use the results or conclusions drawn from OE's nuclear safety performance measuring process as a basis for issuing specific enforcement actions or in determining their outcomes. Consistent with established OE policies and case precedents, OE enforcement actions will continue to be based on the merits of each case.

## Nuclear Safety Excellence Model for a DOE Contractor

Before embarking on an assessment or measurement process, OE first described excellence in nuclear safety performance by capturing a succinct list of characteristics and behaviors exhibited by an organization that achieves a high standard of performance or “excellence level.” The list of characteristics and behaviors were then organized into four key nuclear safety attributes – Safe Operations, Strong Human Performance, Effective Operational Processes, and Strong Supporting Programs and Safety Features. See Figures 4-1 – 4-4

**Figure 4-1**

**Nuclear Safety Excellence Model**



**Figure 4-2**

**Safe Operations**

- ✦ No serious or potentially serious nuclear safety events including those with a loss of all criticality contingencies; no violation of a T SR safety limit; no significant fire or explosion; no significant personnel exposure, contamination, or loss of radioactive material; and no unplanned offsite releases or personnel contamination requiring medical assistance
- ✦ Only rare occurrences of other important events with close call or lesser nuclear safety consequences, –events with a loss of one or more criticality controls; other violation of TSR or DSA; actuation of an SSC; other fires or explosions; other area or personnel contamination; exposure, and loss of radioactive material events

**Figure 4-3**

**Strong Human Performance**

- ✦ Management demonstrates effective leadership and a commitment to nuclear safety – by setting priorities; promoting desired safety culture; supporting teamwork and trust; facilitating communication; monitoring performance; and making balanced decisions
- ✦ Personnel exhibit a sound nuclear safety culture-safety is the highest priority and viewed as everyone’s responsibility; workers comply with procedures or stop work; identify problems to management, and exhibit a questioning attitude
- ✦ Contractor personnel are well qualified – Training & Qualification Programs are established and implemented; workers perform only work for which they are qualified and training is up -to-date

**Figure 4-4**

**Effective Operational Processes**

- ✦ Broad and effective efforts to identify safety and quality problems (performance assessment, surveillance, inspection, worker issues)- most deficiencies are self identified in assessments and by workers
- ✦ Effective resolution/correction of problems – no recurring deficiencies, timely corrective actions
- ✦ Excellence in work management & conduct of operations – work is planned and authorized, hazards are identified and controlled, work is completed in accordance with controls, and stopped when controls are inadequate

**Figure 4-5**

**Strong Supporting Programs & Safety Features**

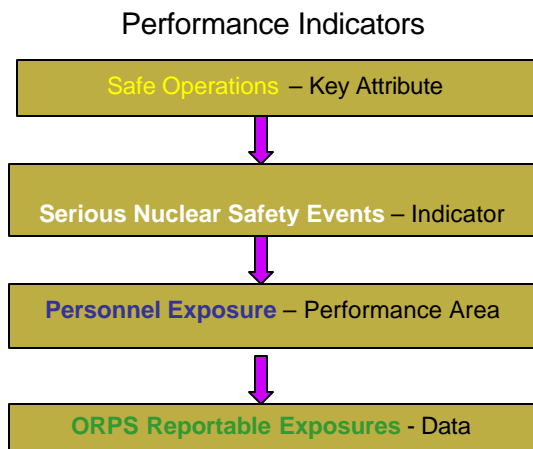
- ✦ A sound safety basis and compliance with safety basis requirements – DSA, TSR/OSR, USQ
- ✦ Sound criticality safety controls and compliance with those controls
- ✦ A well-defined radiological protection program and compliance with its requirements
- ✦ Effective controls for and compliance with other Quality Assurance program elements- e.g. design and procurement control; documents and records control; and inspection and acceptance testing
- ✦ Compliance with explosive safety requirements,
- ✦ Sound design and excellent material condition and reliability of safety features, as well as facilities and equipment that could impact or challenge safety –

In order to ensure that OE developed a description that led to a reasonably comprehensive model reflecting a broad level of operational experience, OE reviewed existing industry performance indicator and organizational safety culture resources. Specific resources included Institute of Nuclear Power Operations (INPO) and International Atomic Energy Agency (IAEA) Guidance, existing DOE Nuclear Safety Policy, NRC performance reporting information, and nuclear industry business plans and surveys.

### Measuring Performance Improvement Complex-Wide

In order to track performance across the complex, OE developed a set of performance indicators linked to each attribute and related performance area within the Nuclear Safety Excellence Model. A broad set of performance indicator source data and information including ORPS, NTS, and additional site specific information was used in developing an indicator set. The following example illustrates the process.

Figure 4-6

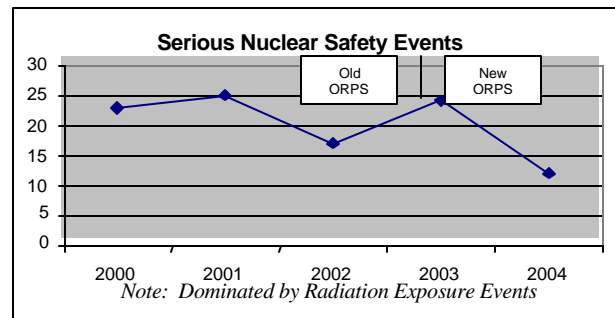


During 2004, OE completed the development of an initial indicator set and began analyzing the data. However, some additional site specific information is being collected and integrated into the process.

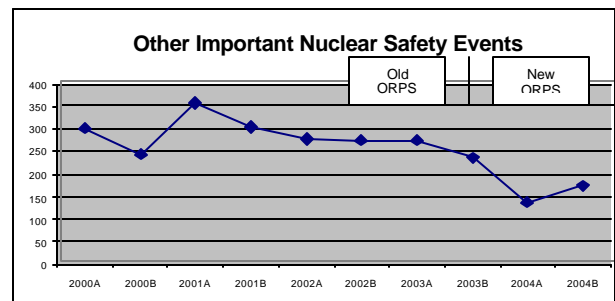
### Preliminary Observations

Provided in the Graphs are performance trends for the initial set of OE indicators. Also included is a preliminary set of observations for the DOE Complex. See Graphs 4-1 – 4-7

Graph: 4-1

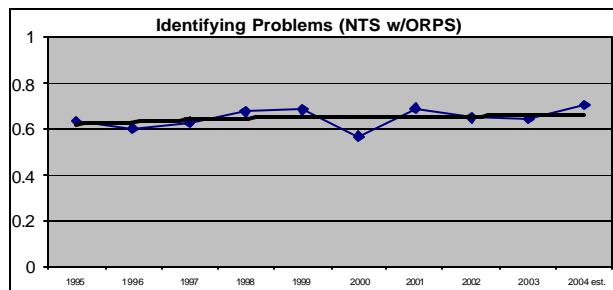


Graph: 4-2



Note: Dominated by SB Noncompliance, Spread of Contamination, and Personnel Contamination Events

Graph: 4-3

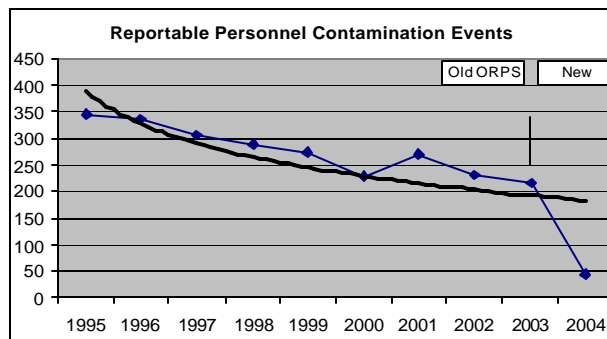




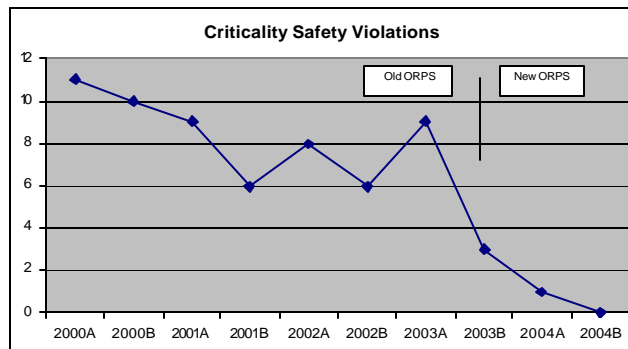
**Graph: 4-4**



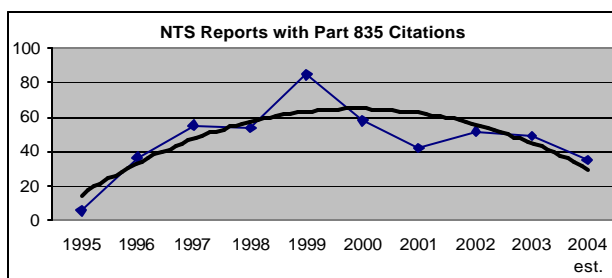
**Graph: 4-5**



**Graph: 4-6**



**Graph: 4-7**



**Observations**

1. For Serious Nuclear Safety Events, there was no clear indication of improvement. The drop in 2004 was likely due to changes in reporting criteria.
2. Serious Nuclear Safety Events were dominated by radiation exposure events.
3. There was no clear improvement in the frequency of Other Important NS Events. The apparent decline in 2003B and 2004A was due to changes in reporting criteria, primarily personnel contamination and AB noncompliance.
4. Other Important NS Events were dominated by AB Noncompliance, Personnel Contamination, and Spread of Contamination events.
5. The fraction of NTS reports based on self-identified problems vs. event-related did not appear to improve.
6. There was no clear indication of improvement in the frequency of Safety Basis Violations.
7. The frequency of Criticality Safety Infractions appeared to improve from 2000 to present, although since mid-2003 changes in reporting criteria affected the values.

**Program Reviews**

In 1999, OE initiated a series of PAAA program reviews to evaluate the effectiveness of contractor programs for identifying and reporting potential nuclear safety noncompliances. OE continued this initiative during 2004, issuing ten PAAA program review letters and associated reports that documented the results of the completed reviews.

PAAA program reviews were conducted in accordance with published criteria and included an evaluation of contractor processes for identifying, screening, reporting and trending noncompliances. OE transmitted the results of the review by letter to the involved contractor

and DOE line management, and posted a copy of each letter on the OE web site to provide a lessons-learned opportunity for other DOE contractors.

During the course of these reviews, OE evaluated particular events or problems that were not reported to DOE via the NTS. In some cases, OE identified potential compliance problems, e.g., in contractor processes for procurement control or the resolution of quality problems. While the intent or focus of program reviews was not to search for potential enforcement actions, a limited number of nuclear safety noncompliances found by OE during these program reviews can lead to enforcement actions.

PAAA program reviews give OE better insight into the contractor's understanding and implementation of nuclear safety management and reporting practices. The reviews also provide contractors an additional opportunity to review OE's PAAA program expectations. OE recognizes that contractor PAAA programs and the people who manage the programs will change over time. Since several years have passed since the initial reviews of the major DOE contractors were completed, OE began its second round of PAAA program reviews in 2004. OE used a graded approach to schedule the reviews, so that contractors with programs that were originally found to be less than adequate were visited first.

While only a limited number of second-round PAAA program reviews were conducted, OE determined that some contractor PAAA programs have improved while others have exhibited a degree of complacency. Limited reviews of contractor performance assessment programs began in 2004. In general, OE is still dissatisfied with the significant number of event-driven NTS reports. Contractors must become more proactive in identifying, tracking and trending noncompliance issues through more effective management and independent assessment programs, so that precursor issues can be addressed before they result in significant safety events.

### **Table Top PAAA Program Reviews**

In 2004, OE conducted the first "table top" PAAA program reviews. OE conducted table top

program reviews of the University of California at Lawrence Berkeley National Laboratory and Foster Wheeler Environmental Corporation. The purpose of the table top program reviews was to evaluate DOE contractors whose scope of DOE activities is less extensive than DOE's larger prime contractors. Table top program reviews should be an efficient use of DOE and contractor resources and, in effect, constitute a graded approach to conducting program reviews.

In contrast to the number of documents requested during a full program review, fewer documents were requested for the table top reviews. After the requested documents were reviewed, a conference call was held with the contractor so that the contractor could answer any questions OE might have concerning the contractor's PAAA program. OE then generated a report that documented the results of the table top review.

Table top PAAA program reviews should prove to be an effective and efficient method for evaluating the programs of sub-tiered DOE contractors. OE intends to continue their use in the future.

### **Training**

For the last few years, OE conducted annual training for DOE PAAA coordinators. This training typically included a one-day introductory training session for new DOE contractor coordinators, and a two-day course for experienced DOE PAAA coordinators.

This annual training was deferred from December 2004 (normally conducted in December each year) to April 2005, to align with the Energy Facility Contractors Group (EFCOG) PAAA working group meetings and to efficiently use both personnel and financial resources. The 2005 training highlighted PAAA-related actions taken during 2004 and the status of ongoing initiatives.

### **Web Site**

OE maintains an Internet Web site (<http://www.eh.doe.gov/enforce>) to provide information to Federal and contractor communities and the general public. Relevant Federal regulations, standards, Office of General Counsel interpretations, program



operating procedures, enforcement actions, enforcement letters, press releases, enforcement guidance, program review letters, the most recent Annual Report, and workshop information are available on the web site. OE routinely updates information on the web site to enhance communication with contractors and the public on enforcement activity and to promote lessons-learned across the DOE Complex. The OE web site was accessed over 85,000 times in 2004, demonstrating that the site is a vital avenue of communications for the DOE nuclear safety program.

## **Enforcement Activity**

### **Cases Considered and Closed Without Action**

In 2004, OE reviewed information from a number of different sources to identify potential noncompliances with nuclear safety requirements. OE reviewed each of the 229 issues that contractors reported into the NTS, all occurrence reports, and issues that came to OE's attention from other sources, such as DOE and contractor audits and assessments or DNFSB staff reports. OE closed a total of 147 NTS reports in 2004. This total included NTS reports that had been reported in prior years, but which had remained open until all the corrective actions associated with the reports were completed.

OE reviewed NTS reports and other sources of information related to potential noncompliance and focused on the safety significance of each issue. In each review, OE considered the degree to which the contractor demonstrated aggressive self-identification, reporting, and corrective action. The majority of the issues were closed without an enforcement action as a result of the low safety significance assigned to the issues and because contractors took prompt and proper actions to identify, report, and correct problems. When OE was not satisfied with contractor actions with regard to a safety significant issue, it conducted a more comprehensive review. Table 4-1 lists the number of NTS reports filed by DOE contractors in 2004.

## **Enforcement Letters**

In situations where OE exercises enforcement discretion and does not issue an NOV, OE may decide that conditions warrant some form of notice to the contractor. For example, there may have been a precursor event or the contractor's actions to identify or resolve problems may have been weak. In these cases, OE may issue an enforcement letter to a contractor to communicate OE's concerns and encourage the contractor to address problems presented. In 2004, OE issued eight enforcement letters, which are available on the OE web page. Summaries of four of these enforcement letters were provided in chapter 3.

**Table 4-1**

<b>SITE</b>	<b>CONTRACTOR</b>	<b>Number of 2004 NTS Reports</b>
Miamisburg Closure Project	Babcock & Wilcox of Ohio, Inc.	1
Pacific Northwest National Laboratory	Battelle Memorial Institute	7
Idaho National Laboratory	Bechtel BWXT Idaho, LLC	11
River Protection Project	Bechtel National Inc.	1
Richland Site	Bechtel-Hanford, Inc.	6
Oak Ridge and Paducah Sites	Bechtel-Jacobs Company, LLC	11
Nevada Site	Bechtel-Nevada	3
East Tennessee Technology Park	BNFL, Inc.	3
Brookhaven National Laboratory	Brookhaven Science Associates	3
Pantex Plant Site	BWXT Pantex	7
Y-12 National Security Complex	BWXT Y-12	17
Separations Process Research Unit	CH2M Hill	1
River Protection Project	CH2M Hill Hanford Group, Inc.	9
Fernald Closure Project	Fluor Fernald, Inc.	5
Richland Site	Fluor Hanford Inc.	35
Rocky Flats Environmental Technology Site	Kaiser-Hill Company, LLC	19
Sandia National Laboratory	Lockheed Martin Corporation	8
Thomas Jefferson National Accelerator Facility	Southeastern University Research Assoc. (SURA)	1
Los Alamos National Laboratory	University of California	24
Lawrence Livermore National Laboratory	University of California	18
Argonne National Laboratory – East	University of Chicago	2
Argonne National Laboratory – West	University of Chicago	3
Oak Ridge National Laboratory	UT Battelle, LLC	11
Savannah River Site	Westinghouse Savannah River Company LLC	23

## **Notices of Violation**

In 2004, OE initiated formal enforcement actions in nine cases in which the actual or potential safety significance was high. In these cases, the Department issued NOVs to document significant violations of nuclear safety requirements and clearly communicate DOE's expectations to the contractor. The letters that transmitted the NOVs also urged the contractors to correct the behaviors and practices that led to the violations and to aggressively promote cultures in which the contractors identify and correct problems before serious conditions result. The nine NOVs imposed monetary civil penalties totaling \$2,695,000, of which \$770,000 was waived due to a statutory exemption for not-for-profit contractors. Summaries of four of these NOVs from 2004 were provided in chapter 2.

Table 4-2 summarizes the enforcement actions issued in 2004. Table 4-3 also summarizes how civil penalties were mitigated in some cases.

## **Enforcement-Related Orders**

OE can use other enforcement tools to resolve a case and effect desired contractor actions. OE can issue Special Report Orders, Consent Orders, and Compliance Orders. A Special Report Order requires a contractor to provide specific information to DOE that demonstrates compliance with nuclear safety rules. Consent Orders enable DOE to settle a case with a contractor, thereby avoiding a resource-intensive investigation by DOE and an extended enforcement action process. The Secretary of Energy may issue a Compliance Order when it is necessary to direct the contractor to take specific actions in order to remedy a serious violation of nuclear safety requirements. Enforcement Guidance Supplement (EGS) 00-04 and EGS 03-01 describe the conditions for using the Consent Order and Compliance Order, and they are available on the OE web site. During 2004, no enforcement-related orders were issued.

**Table 4-2**

EA No.	Contractor	Type	Severity Level	Date Issued	Civil Penalty Amount
EA-2004-01	Bechtel BWXT Idaho, LLC (Idaho)	PNOV	II	1/20/04	\$41,250
EA-2004-02	Kaiser-Hill Company, LLC (Rocky Flats)	PNOV	II	02/03/04	\$522,500
EA-2004-03	Westinghouse Savannah River Company LLC (Savannah River)	PNOV	II	04/06/04	\$206,250
EA-2004-04	BWXT Y-12 (Y-12)	PNOV	II	06/07/04	\$82,500
EA-2004-05	University of California (LANL)	PNOV	I	06/21/04	\$770,000*
EA-2004-06	Fluor Hanford Inc (Richland)	PNOV/FNOV	I & II	07/14/04	\$935,000
EA-2004-07	Fluor Fernald Inc (Fernald)	PNOV	III	08/09/04	0
EA-2004-08	Washington TRU Solutions LLC (WIPP)	PNOV	II & III	08/30/04	\$82,500
EA-2004-09	UT Battelle (ORNL)	PNOV	II	11/18/2004	\$55,000
					\$1,925,000

\*Civil penalty waived due to statutory exemption.

**Table 4-3**

EA No.	Penalty Before Mitigation/Waiver	Number of Violations/Severity Level	Mitigation	Mitigated Amount	Civil Penalty Amount
EA-2004-01	\$55,000	1/II	25%	\$13,750	\$41,250
EA-2004-02	\$550,000	9/II 1/II	0% 50%	\$27,500	\$522,500
EA-2004-03	\$385,000	5/II 1/II 1/II	50% 75% 0%	\$178,750	\$206,250
EA-2004-04	\$110,000	1/II 1/II	50% 0%	\$27,500	\$82,500
EA-2004-05	\$770,000	7/I	0%	\$0	*\$770,000
EA-2004-06	\$935,000	2/I @ 2 days 3/I 3/II	0% 0% 0%	\$0	\$935,000
EA-2004-07	\$0	2/III	N/A	N/A	\$0
EA-2004-08	\$110,000	2/II 1/III	25% 0%	\$27,500	\$82,500
EA-2004-09	\$110,000	2/II	50%	\$55,000	\$55,000
<b>TOTAL</b>	<b>\$3,025,000</b>	<b>-</b>	<b>-</b>	<b>\$330,000</b>	<b>\$2,695,000</b>

Note: Excluding EA-2004-07, in which no penalty was assessed, and EA-2004-05, for which the penalty was waived, just under 15 percent of the penalty amounts were mitigated.\* - \$770,000 penalty amount was waived.

## NTS Revisions

According to 10 CFR 820 contractors can be given up to 50 percent mitigation of a civil penalty in a Notice of Violation for timely identification, prompt reporting, and comprehensive correction of nuclear safety noncompliances. DOE encourages its contractors to report their noncompliances into the Noncompliance Tracking System (NTS). The reports and their corrective actions are tracked to closure by the submitting contractor, field office, program office and OE staff. A new database is being built to accommodate the demands of future reporting.

The present NTS Version 2 has been in operation since 2000. The NTS presently resides on a Lotus Notes platform, and it is not sufficient to handle nuclear safety noncompliance reporting and the worker safety reporting that will be required by 10 CFR Part 851 Worker Safety and Health Program when it becomes a final rule. Therefore, OE began the process to develop a totally new NTS, a robust system that will reside on a DOE platform and will house both nuclear safety and worker safety noncompliances.

During 2004, OE hired a company to develop a requirements document. The company interviewed many NTS users to ensure that their concerns would be addressed in the new system. Concerns included the inability to enter comments on a report, the malfunction of the special reports section, and the disability of the system to allow users to review all pertinent documents without accessing an archive database. A company will be hired to develop a new NTS, which is planned to be implemented in late CY 2005.

The new system will be derived from commercially-available, third-party software for convenient future access to any available software option. The new system will add functionality and faster response times, including improved capabilities for searching, reporting and trending.

## Assessment Guide

Two years ago, OE established the goal of transitioning the Department from one which reacts to and takes corrective action based upon safety events, to one that prevents such events by achieving excellence in performance

assessment, including independent, management and self-assessment activities. Achieving excellence in this area will result in the discovery of precursor issues that can be addressed before they result in significant safety events. In turn, finding and correcting these precursor problems and preventing safety events would avoid, for DOE and its contractors, the significant costs associated with facility shutdowns and stand downs, project delays, external investigations, lost work days, and the adverse publicity that results in diminished public confidence in the agency and those it employs. While the case for doing whatever is necessary to reach this standard of excellence in performance assessment is clear, many contractor organizations have primarily used responses to events to drive their quality improvement programs. Clearly, DOE needs to do better, given the present statistics that show that roughly 70 percent of all NTS reports received by OE over the past several years have been event-driven reports. OE has challenged the contractor community to achieve the goal of discovering at least 70 percent of all safety issues through their assessment processes rather than through events by the end of FY 2008. Ultimately, the percentage of assessment-driven issues found and corrected needs to be even higher than that 70 percent short-term goal. Reaching that goal would be a significant achievement for the contractor community and, in OE's view, represents the single most important step we can take as a Department to ensure, long-term, a safe environment for our workers, as well as safety for the public living near our sites.

To aid in the transition from an event-driven to an assessment-driven Department, OE asked the EFCOG Price-Anderson Working to draft a document that addresses three issues:

- What are the principles of an excellent assessment program?
- What are the obstacles and issues across the DOE Complex that are preventing us from getting to that standard of excellence?
- What are the steps that can be taken by the contractor community to start to overcome the identified obstacles and issues?

The result of this cooperative effort between the Working Group and OE was an Assessment

Guide, issued in October 2004. OE applauds the contractor team for their work that resulted in the publication of this guide, and OE views it as a significant step forward in beginning to seriously address the issues associated with the need for improvements in performance assessment programs across the Complex. The guide can be accessed at the following web address:

<http://www.efcog.org/workgroups/paaa>.

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## 5. CONCERNS, CHANGES AND IMPROVEMENTS

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### Introduction

Experience gained from the DOE's Enforcement Program during the first nine years led to some important lessons learned. This chapter discusses Enforcement Program concerns, improvements and initiatives planned for 2005 and beyond.

### AREAS OF INCREASED FOCUS BY THE OFFICE OF PRICE-ANDERSON ENFORCEMENT

#### Lack of Satisfaction with Nuclear Safety Performance

The purpose of the DOE Enforcement Program is to promote and protect the health and safety of the public and workers by encouraging DOE contractors to develop and maintain aggressive and effective compliance assurance programs. These programs should provide for the prompt identification, reporting and correction of noncompliances with DOE's nuclear safety requirements. Just as important, programs should strive for excellence in performance assessment as the mechanism for discovering safety issues that need to be addressed before they result in reportable safety significant events.

A number of positive changes around the complex are contributing to pockets of improvement in nuclear safety performance. For example, UT Battelle has made some very positive steps in improving the safety culture at Oak Ridge. In addition, Kaiser Hill management at Rocky Flats has made a number of positive changes in the conduct of operations at that site that demonstrate a real commitment to safety performance improvement. Westinghouse Savannah River Company used laudable lessons learned practices when it reviewed an enforcement action from another site dealing with the use of respirators and, as a result, investigated its own practices, in the process discovering and correcting similar issues at Savannah River.

However, despite these positive developments, OE has become increasingly concerned about the number of recurring violations we are seeing

across the Department. Almost every enforcement case over the past couple of years has involved recurring issues of some kind. Thus, it is OE's perception that as a Department, there has been little improvement in nuclear safety performance and, in the words of one of the INPO principles of a strong nuclear safety culture, contractors have not embraced organizational learning very well. Contractors in general have simply not effectively applied lessons learned from their operational experiences to their nuclear safety programs.

The fact that OE is seeing so many recurring issues leads to the conclusion that there remain fundamental inadequacies in corrective action management across the complex, either because the appropriate corrective actions are not being taken to prevent recurrence of events, or because corrective actions when appropriate are not being sustained. If corrective actions are not adequate to prevent recurrence, it must be also concluded that causal analysis processes are not being implemented effectively, and that extent-of-condition reviews either are not being done or the scope of those reviews is too narrow. In addition, as is emphasized many times in this report and as OE has discussed in various forums over the past two years, recurring issues point to the critical need to improve performance assessment processes to discover issues before they lead to safety events, let alone recurring safety events.

Inadequacies in contractors' corrective action management processes (event investigation, causal analysis, and corrective action identification and implementation) and assessment processes (management and independent) most directly affect their ability to learn from operational experience. Over the last few years, OE has placed particular emphasis on corrective action management and assessment processes during its investigations and reviews. Specific breakdowns in these processes were highlighted in associated letters and reports. OE continued to observe the same type of breakdowns in DOE contractor corrective action management and assessment programs as in the past.



The fifth core element of Integrated Safety Management is to provide feedback and continuous improvement. It appears that this core element is not being adequately implemented by many contractors.

OE has encouraged contractors to improve in these areas. However, it is evident that contractors must strive for more effective results and that OE will need to consider additional actions to encourage needed improvements. Therefore, OE will explore all options available, to include the expanded use of enforcement authority in those cases where the current issues and a contractor's historical record demonstrate a profound failure to learn from operational experience. In this regard, contractors should expect that the trend begun in 2004 to use escalated action and the statutory per day authority will continue in appropriate cases. In addition, OE is considering whether to initiate compliance audits at sites where recurring violations continue to occur, including where events recur that were clearly preventable through appropriate performance assessment practices.

OE is not the only DOE element that drives improvements in nuclear safety performance within the Department. Other DOE headquarters offices, field elements, and the National Nuclear Security Administration have important roles. OE will continue to work with its colleagues to promote improvements in contractor corrective action management and assessment programs, and in nuclear safety performance in general, within the Department.

### **Investigation/Causal Analysis/Corrective Actions**

Following on the above discussion, during the course of its investigations into potential nuclear safety noncompliances, OE routinely evaluates the scope of the contractor's investigation and causal analysis associated with an identified deficiency. This evaluation also assesses the adequacy of the contractor's corrective actions. When contractors effectively investigate and analyze root causes and implement comprehensive corrective actions, they can prevent the recurrence of noncompliances. In the event of a noncompliance, these effective practices may also provide OE a basis to mitigate civil penalties or apply enforcement discretion.

OE continues to identify deficiencies in contractor performance of extent-of-condition reviews, root cause analyses, and implementation and sustainability of corrective actions. OE has identified the following general weaknesses as a result of its observations during multiple investigations and enforcement actions:

- Failure to conduct an extent-of-condition review to evaluate the scope of an identified deficiency.
- Failure to address all discrepant conditions and/or underlying causes in the causal analysis. OE has noted multiple instances where causal analyses stop at apparent causes or easily identified failure conditions (i.e., failure to follow procedures), rather than exploring the underlying issues.
- Failure to adequately address behavioral or "people" issues in the causal analysis and corrective action plan. Instead, causal analyses typically over-emphasize process, procedure, or engineering issues.
- Failure to develop and implement corrective actions that address the underlying problems identified in the causal analysis.
- Failure to sustain implemented corrective actions over time.
- Failure to adequately evaluate effectiveness of corrective actions.

In order to address these deficiencies and promote overall improvements in contractor PAAA programs, OE launched two initiatives. First, OE will be producing an Enforcement Guidance Supplement entitled "Contractor Investigation, Causal Analysis and Corrective Actions." Second, the EFCOG PAAA Working Group, in cooperation with OE, is developing guidance for conducting extent-of-condition evaluations. Details on both of these initiatives are presented later in this section of this report. It is anticipated that both documents will be issued in 2005.

Over the past few years, OE has been dissatisfied with contractor corrective action management performance. As indicated

previously, poor contractor performance in this area indicates that underlying problems have not been identified or corrected. As a result, OE will continue to analyze contractor's corrective action management performance during 2005 investigations and program reviews.

### **Management and Independent Assessments**

In 2001, OE issued an EGS that addressed various deficiencies in the areas of management and independent assessment. This EGS described OE's overall emphasis in this area, outlined the types of problems or deficiencies that would be viewed as potential violations, and summarized how OE would evaluate a contractor's assessment function during an enforcement evaluation or investigation.

In 2004, OE continued to focus on contractor assessment performance during noncompliance investigations, PAAA Program Reviews, and through OE Director communications with contractor and DOE management. OE is concerned about the lack of effectiveness in contractor management assessment programs. Several examples from enforcement actions taken in 2004 prove this point. In the first case, numerous management assessments were conducted at a DOE nuclear facility. However, the lack of quality in most of the assessments prevented the contractor from detecting obvious precursors that, if properly identified and corrected, would have precluded an event. In another instance, a management assessment was conducted to verify the effectiveness of a new combustible loading procedure. However, the assessment failed to recognize deficiencies in the oversimplified surveillance form for glovebox inspections. A follow-up assessment of the glovebox combustible control program uncovered a number of gloveboxes that contained combustible material, which is considered a hazard, but was not a violation according to the oversimplified surveillance inspection form for gloveboxes. A DOE surveillance covering the same timeframe determined that 37 percent of inspected gloveboxes were in violation of the procedure for combustible materials.

Over the past few years, the Director of OE has emphasized the importance of shifting from an "event-driven" to an "assessment-driven" culture. As discussed in chapter 4 in the discussion on the EFCOG Assessment Guide, excellent

performance assessment programs provide contractors many benefits, to include prevention of events that cause facility shutdowns, postponed projects, safety stand downs, lost work days, investigations, loss of future work and loss of public confidence. Common deficiencies noted by OE include a scope of assessment that is much too narrow, a lack of objectivity, organizational stovepiping, an auditor checklist mentality, and a failure to conduct an extent-of-condition review for identified deficiencies. Recently, it has been noted that the training and qualifications of contractor managers who conduct management assessments is inadequate. While assessors who conduct independent assessments are usually trained and qualified according to accepted standards, managers who conduct management assessments and first-line supervisors who are asked to assess their own work areas are not usually trained or qualified. OE believes this lack of formal training is a leading contributor to a general lack of quality contractor management assessments.

OE is not satisfied with contractor assessment performance. Persistence in repeating the same problems year after year indicates that underlying causes have not been identified or addressed. As a result, OE will continue to scrutinize contractor assessment programs during investigations and reviews conducted in 2005, and take enforcement action for assessment program weaknesses where appropriate.

### **Nuclear Safety Culture**

INPO defines safety culture as "an organization's values and behaviors, modeled by its leaders and internalized by its members that serve to make nuclear safety the overriding priority." This definition is further amplified by the following set of eight principles:

1. Everyone is personally responsible for nuclear safety.
2. Leaders demonstrate commitment to safety.
3. Trust permeates the organization.
4. Decision-making reflects safety first.
5. Nuclear technology is recognized as special and unique.
6. A questioning attitude is cultivated.
7. Organizational learning is embraced.
8. Nuclear safety undergoes constant examination.

In 2004, OE again noted a number of noncompliances that demonstrated the eight principles outlined above were not embraced and worker behavior that clearly suggested that nuclear safety was not the overriding priority in performing nuclear work activities.

OE is not satisfied with actions taken by contractors to enhance the nuclear safety mindset of its workers over the past few years. This lack of improvement in the nuclear safety culture indicates that contractors are not properly addressing the underlying causes and taking appropriate actions. Consequently, OE will continue to emphasize nuclear safety culture issues during its investigations and reviews of potentially significant conditions in 2005. In this regard, senior managers should take an introspective look at whether, as INPO urges, they have really demonstrated by their behavior (as opposed to talked about) their personal commitment to nuclear safety as an overriding priority.

## **ENFORCEMENT PROGRAM ACTIVITIES**

### **Worker Safety Regulation and Enforcement**

As stated in chapter 4 of this report, on January 26, 2005, DOE published the supplemental NOPR, 10 CFR 851, *Worker Safety and Health Rule*, for public notice and comment. When the Rule becomes final, a new enforcement program will encourage improvements in worker safety and health programs relating to non-nuclear workplace hazards. Enforcement will begin one year after publication of the final rule.

During 2005, OE will work with Department officials to establish the infrastructure necessary to affect an efficient enforcement process. A series of technical meetings and workshops are envisioned to facilitate implementation of the OSH enforcement policy. Necessary work products will include revisions to the NTS to accommodate Occupational Safety and Health (OSH)-specific data collection needs, guidance on recommended reporting thresholds, and procedures for processing OSH violations. OE is anticipating the need for several additional personnel to assist in implementing the OSH enforcement program.

### **Enforcement Contribution to Improvements in Nuclear Safety Performance**

As stated in chapter 4 of this report, OE significantly expanded its efforts in measuring nuclear safety performance in 2004. OE will continue working on this project in 2005 by (1) developing a final set of performance indicators consistent with its Nuclear Safety Excellence Model, (2) collecting additional site-specific inputs and, (3) issuing a semiannual report that summarizes recent observations and provides supporting indicator data. OE will use these observations to keep senior line management informed of important performance trends, promulgate additional lessons learned and enforcement guidance, and assess whether changes are needed in its enforcement approach or activities.

### **Extent-of-Condition Guide**

In the Fall of 2004, the Office of Price-Anderson Enforcement and the PAAA Committee of the EFCOG, formed a committee to address the methods used by contractors to assess extent-of-condition issues when evaluating a PAAA issue. The purpose was to encourage some uniformity among contractors when addressing such issues. It is the consensus of the working group that only a limited number of events are unique and, therefore, events found in one area of a site are likely to be relevant to work issues elsewhere at a site. Paying attention to precursor events and applying the lessons learned throughout the complex can be crucial to the success of the program to move from an event-driven safety program to an assessment-driven safety program. An important part of this effort was the development of a common definition of "extent-of-condition." It has been agreed that extent-of-condition is generally defined as being the generic implications of an issue, deficiency, weakness, or problem, i.e., the potential or actual applicability of an issue, deficiency, weakness, or problem to exist in other activities, projects, programs, facilities or organizations.

### **Enforcement Guidance Supplements**

In 2005, OE anticipates issuing an EGS on the subject of Investigations, Causal Analysis, and Corrective Actions, since recent OE investigations have highlighted deficiencies in these areas. The new EGS will provide guidance

on observed deficiencies as a potential lessons-learned opportunity for the DOE contractor community.

### **Lifting of Exemptions from Civil Penalties for Not-for-Profits**

HR 4200, enacted into law in November 2004, extended the effectiveness of the Price-Anderson Amendments Act from December 31, 2004 to December 31, 2006. Congressional committee hearings in the prior session of Congress devoted time to the issue of removing the civil penalty exemption clause, which applies to certain not-for-profit entities, from the Price-Anderson Amendments Act. In this extension of the Act, Congress did not incorporate that proposal. However, legislation is currently being considered by Congress that would remove the exemption.

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## 6. OE PERSONNEL CHANGES

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2004 was a year of accelerated change for the Office of Price-Anderson Enforcement (OE). With retirements both last year and this year, OE brought in additional staff to manage its work. In addition, OE continued to develop its base of expertise in preparation for enforcing the requirements associated with the proposed worker safety and health rule, 10 CFR 851, as described in chapter 4 of this report. OE sought to acquire additional safety professionals with broad and extensive knowledge of worker safety and health requirements and enforcement. We were fortunate to find additional expertise within EH.

Ron Collins came to OE from the NNSA where he last served as Federal Project Director for the Pit Disassembly & Conversion Facility (PDCF), a DOE and NNSA Level IV Federal Project Director responsibility. Ron is a Senior Enforcement Officer in OE monitoring contractor enforcement programs and performing investigations. He holds and maintains the Project Management Professional certification (PMP). Ron has extensive line management experience in managing large first-of-a-kind nuclear projects. His experience base also includes Quality Assurance management and development of national consensus standards and earlier DOE QA Safety Rule and Order development. Within DOE, Ron has worked in development and execution of Tiger Team Training, Conduct of Operations Orders and Training, Technical Leadership Development Program (Intern Program) development and implementation, Nuclear Emergency Search Team program management, Loss of Fluid Test Reactor program management, Facility and Site management with significant involvement in program and project management oversight. While working in Defense Programs (DP) within NNSA, Ron developed and implemented highly effective program and project management tools and mentored other DP programs in applications of those tools.

Ron's career began in the Navy Nuclear Submarine program where he served as a qualified Nuclear Line Officer with operational, nuclear propulsion, nuclear weapons and other

unique responsibilities over a twelve year span. As a Navy Nuclear Submarine Line Officer, he received extensive training in nuclear engineering and operations. He has also earned the Certified Financial Planner (CFP) designation. Following the Navy, Ron served as Senior Resident Inspector in the Nuclear Regulatory Commission and worked in the commercial nuclear power industry as Product Manager, Nuclear Safety and Management Consultant. Ron holds a B.S. in Electrical Engineering from University of New Mexico and Executive Management MBA from Claremont Graduate School. Currently, he is a volunteer instructor teaching the Project Management Institute's Certification Review Course for those aspiring to become Project Management Professionals. Previously, he served on a team to develop the first Organizational Project Management Maturity Model (OPM3) for the Project Management Institute. OPM3 is an international consensus standard for developing and assessing project management maturity within organizations.

Leslie Bermudez began work with OE in April, 2004, and was recently reassigned to OE. Since coming to DOE in 1992, Les has served as a Safety Engineer in EH, most recently in the Office of Facility Operations Support. He also managed DOE's Federal Employee Occupational Safety and Health (FEOSH) Program, helping to establish policy and providing guidance DOE-wide to the federal workforce.

Prior to working with the DOE, Les was a Compliance Safety and Health Officer, Technical Support Civil/Safety Engineer, and Acting Assistant Regional Administrator for Technical Support in the Occupational Safety and Health Administration (OSHA)'s Atlanta Regional Office over a period of 13 years. In addition to conducting hundreds of safety and health inspections and numerous fatality investigations, Les participated in OSHA's standards development process and was a guest instructor at the OSHA Training Institute.

Les holds a B.S. in Civil Engineering from the University of Puerto Rico and an M.S. in Environmental and Waste Management from the University of Maryland. He is a Certified Safety



Professional and a Registered Environmental Manager. Les currently lives with his wife and two teenagers in Germantown, MD.

In November, 2004, Phil Wilhelm was reassigned to the Office of Price-Anderson Enforcement to assist in preparations for enforcement of the proposed worker safety and health rule. Phil brings a wide range of experiences in worker safety and health policy and regulatory liaison. Over the course of fourteen years he served in the Office of Regulatory Liaison and the Office of Worker Health and Safety. He was the co-author of DOE Order 440.1 "Worker Protection Management for DOE Federal and Contractor Employees" which established safety and health requirements for DOE contractors. In addition, he performed safety and health inspections and management reviews at various DOE sites. He was intimately involved in the Department's external regulation pilot activities, OSHA/NRC audits of the Office of Science laboratories, and privatization initiatives. Phil was the primary staff interface with the OSHA on regulatory issues.

Prior to joining DOE in 1991, Phil worked for several companies performing a variety of environment, safety, health, engineering, financial and management consulting. Phil served on active duty in the Navy as a surface warfare officer and combat systems instructor. He retired from the Navy reserves after finishing a tour at the Pentagon with the Office of the Secretary of Defense. Phil holds a B.S. in Oceanography from the U.S. Naval Academy and a Masters in Business Administration from Bryant College. Phil is married, has 5 children and resides in White Hall, Maryland.

After 20 years of federal service, the Office of Price-Anderson Enforcement announces the retirement of Susan Adamovitz, one of the office's widely-respected senior investigators in radiation protection. Susan began her career as a research chemist in private industry and then transferred to university and state programs involved in environmental and worker radiation protection programs. She began her federal career in 1984 with the Nuclear Regulatory Commission (NRC) in Atlanta, Georgia, serving as a senior inspector for nuclear power plants, research reactors and fuel facilities in the areas of worker radiation protection, plant chemistry and radiochemistry, radiological waste systems, radiological effluent and environmental

monitoring, and decommissioning activities. Additionally, she was responsible for the operation of NRC's fixed and mobile radiological laboratories in Region II. In 1991, she transferred to DOE, Office of Nuclear Safety, where she served as a team leader for numerous radiological control evaluations and assessed contractor implementation of the nuclear safety rule, 10 CFR 835. In 1995, Susan was asked to join the Office of Price-Anderson Enforcement, where she played a critical role in developing and implementing DOE's nuclear safety enforcement program. This position involved the development and implementation of procedures and regulatory guidance, training DOE and contractor employees in the enforcement process and advising senior DOE management on the regulatory applicability of the nuclear safety rules and enforcement outcomes. Additionally, she led numerous teams in the investigation and enforcement of nuclear safety rules at DOE sites. Susan and Jim, her husband of 31 years, are building their retirement home on Hilton Head Island, South Carolina.

## **ACRONYMS**

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<b>CFR</b>	Code of Federal Regulations
<b>DNFSB</b>	Defense Nuclear Facility Safety Board
<b>DOE</b>	Department of Energy
<b>EFCOG</b>	Energy Facility Contractors Group
<b>EGS</b>	Enforcement Guidance Supplement
<b>EH</b>	Office of Environment, Safety and Health
<b>ES&amp;H</b>	Environment, Safety and Health
<b>INPO</b>	Institute of Nuclear Power Operations
<b>LLC</b>	Limited Liability Company
<b>NNSA</b>	National Nuclear Security Administration
<b>NOV</b>	Notice of Violation
<b>NTS</b>	Noncompliance Tracking System
<b>OE</b>	Office of Price-Anderson Enforcement
<b>ORPS</b>	Occurrence Reporting & Processing System
<b>OSH</b>	Occupational Safety and Health
<b>PAAA</b>	Price-Anderson Amendments Act
<b>USC</b>	United States Code



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## APPENDIX A: ENFORCEMENT PROCESS

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### Introduction

The DOE PAAA Enforcement Program is a congressionally mandated program to apply sanctions to its contractors for unsafe actions or conditions that violate nuclear safety requirements for protecting workers and the public. DOE provides positive incentives for contractors to strive for an enhanced nuclear safety culture through attention to compliance with requirements, self-identification of problems, reporting noncompliances to DOE, and initiating timely and effective corrective actions. The PAAA Enforcement Program is part of DOE's overall Safety Management Program, which focuses on line management responsibility for safety, comprehensive requirements, and competence commensurate with responsibilities, and independent oversight and enforcement.

This section provides an overview of the DOE PAAA Enforcement Program for those readers who may not be familiar with the Price-Anderson process. Further details on the process may be obtained from the DOE Enforcement Program procedures referred to within this section or by logging onto the Office of Price-Anderson Enforcement web site at <http://www.eh.doe.gov/enforce>.

### Background

The 1988 Price-Anderson Amendments Act<sup>1</sup> extended indemnification to DOE operating contractors for the consequences of a nuclear incident. At the same time, Congress required DOE to initiate an enforcement program and provided authority to assess civil penalties against those contractors that violate nuclear safety rules. The PAAA, in effect, required DOE to establish an internal self-regulatory process. By amendment enacted in December 2002, the effective period of the PAAA was extended until December 31, 2004. In December 2004 legislation again extended the effective period of PAAA until December 31, 2006.

DOE's procedural rules for its Enforcement Program are published in 10 CFR Part 820. Appendix A to that rule sets forth DOE policy on how it intends to enforce its nuclear safety rules. Enforcement actions may include issuance of NOVs and, where appropriate, civil monetary penalties.

Implementation of the enforcement program required formal promulgation of rules in accordance with the Administrative Procedure Act, to assure the opportunity for public notice and comment. To date, substantive rules in several areas of nuclear safety have been released as final rules - Nuclear Safety Management (10 CFR 830), which includes subpart A, Quality Assurance Requirements, and subpart B, Safety Basis Requirements, and Occupational Radiation Protection (10 CFR 835). Additionally, DOE rules on Contractor Employee Protection (10 CFR 708), and Accuracy of Information (10 CFR 820.11) have been identified as nuclear safety requirements that are also enforceable.

DOE's first enforcement action was issued in April 1996.<sup>2</sup> Since then DOE has routinely applied its Enforcement Program by issuing Program Review Letters, Enforcement Letters, Consent Orders, and Notices of Violation, and where appropriate, by imposing civil penalties. The Secretary of Energy is also authorized to issue Compliance Orders to particular contractors where the need to resolve a safety issue is immediate and apparent. One such order has been issued to date.

### Administration

The Department's Enforcement Program is administered by a relatively small staff in OE at DOE Headquarters, linked with PAAA Coordinators in Field and Program Offices, and supported by technical experts from both Headquarters and field elements. The program is structured to use existing resources across DOE to assist in evaluating

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<sup>1</sup> 42 U.S.C. 228a

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<sup>2</sup> EA 96-01, Pacific Northwest National Laboratory

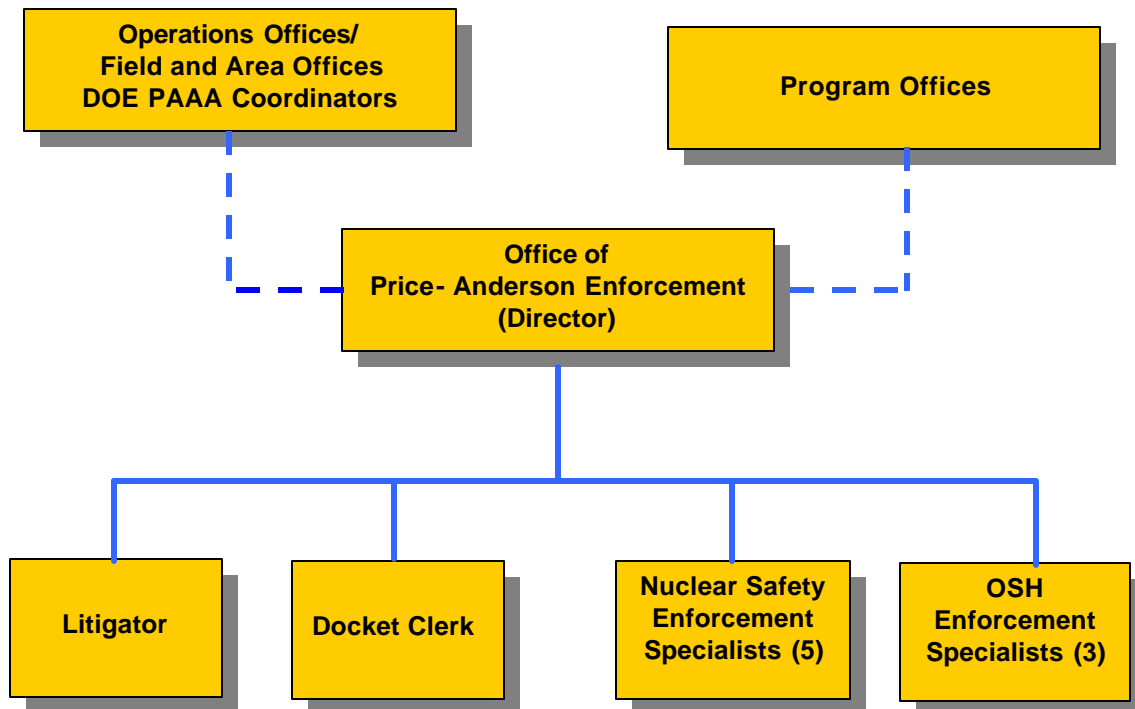
noncompliances and the adequacy of corrective actions. However, the program relies on the independent judgment of OE personnel to assure that enforcement remedies across the DOE complex are consistently and fairly applied.

The OE team includes the Director, nine enforcement staff (including a litigator), a docket clerk, two administrative assistants; two consultant technical experts; and over 50 field and program office coordinators, assisted by numerous other DOE technical specialists. Figure A-1 illustrates the DOE enforcement organization network.

**Figure A-1**

**Office of Price-Anderson Enforcement Organizational Structure**

(Note: Dotted lines show matrix support integration)



## Noncompliance Identification and Reporting

DOE expects contractors to implement appropriate steps to ensure that their activities comply with nuclear safety requirements. DOE also expects contractors to self-identify noncompliances. Contractors are permitted to track and close noncompliances below the Department's reporting thresholds using their own tracking system. These noncompliances are subject to periodic review and audit by DOE Field Office Coordinator personnel. DOE expects that noncompliances meeting the reporting thresholds set forth in its guidance documents<sup>5</sup> will be reported into the Department's NTS. Most cases are closed at this stage without an investigation, based on positive contractor initiative and/or low safety significance coupled with completion of actions to correct the noncompliance condition and prevent recurrence.

Noncompliances are also identified independently through DOE Field Office input, Headquarters reviews, the DNFSB activities, DOE PAAA Coordinators, DOE's Office of Independent Oversight and Performance Assurance, or through reviews conducted by OE staff. Contractor and DOE employees with noncompliance issues may also directly contact OE staff confidentially or contact the site DOE PAAA Coordinator. OE staff, with input from Field and Program Office management, decides which noncompliances have the requisite level of safety significance to warrant an investigation.

An investigation usually involves review of documentation from the contractor, assistance from DOE Field Office personnel, and in most cases, onsite visits to gather facts about the noncompliance, conduct interviews, and understand contractor actions in response to the noncompliance.<sup>4</sup> If, in the course of the investigation, DOE concludes that the contractor is not responsive to informal requests for information, a Special Report Order may be

<sup>3</sup> DOE's reporting thresholds are contained in *Operational Procedures, Identifying, Reporting and Tracking Nuclear Safety Noncompliances* under Price-Anderson Amendments Act of 1988. Additional guidance may be found in Enforcement Guidance Supplements issued by OE.

<sup>4</sup> Pursuant to 10 CFR Part 820, the Director, OE, may obtain information or evidence for the full and complete investigation of any matter related to a DOE nuclear activity, including classified, confidential, and controlled information.

issued (pursuant to the authority set forth in 10 CFR 820.8) to obtain the required information. Failure to comply with such an Order could result in enforcement sanctions set forth in the rule. DOE also is empowered to issue subpoenas if necessary to obtain required information.

Results of the investigation are documented in an Investigation Summary Report, which is provided to the contractor.

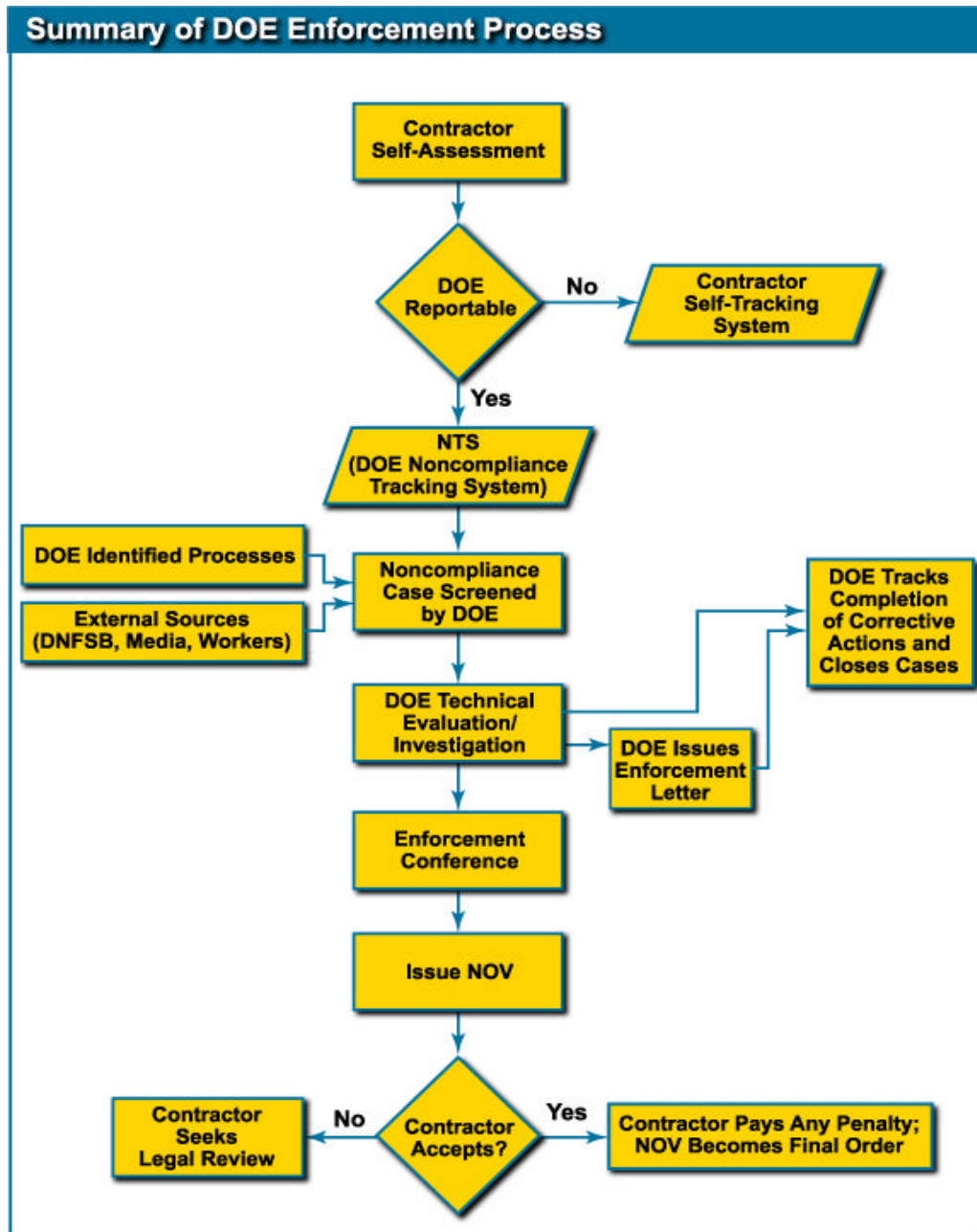
## Enforcement Decisions

The primary consideration in determining whether to take enforcement action is the actual or potential safety significance of a violation coupled with a determination of how aggressively the contractor identified, reported, and corrected the problem. The potential for mitigation of enforcement actions in particular cases provides a positive incentive for contractors to implement the desired proactive behavior leading to improved safety performance.

OE staff works closely with DOE Field and Program Office management in making decisions about what enforcement actions are appropriate based on the findings of the investigation. If appropriate, an Enforcement Conference is held with senior contractor management, along with DOE Field and Program Office management, to review the circumstances of the noncompliance, the mitigating factors, and the timeliness and adequacy of corrective actions. As described in Appendix A to 10 CFR 820, DOE classifies the violation as either Severity Level I (most significant, with actual or potential significant consequences to workers or the public), Severity Level II (significant lack of attention or carelessness which could lead to adverse impact to the public or worker), or Severity Level III (greater than minor significance), based on an assessment of the unique facts of each case. DOE's process and the regulatory authority for enforcement actions are embodied in a regulation (10 CFR 820, Procedural Rules for DOE Nuclear Activities,), supplemented by the Enforcement Policy (Appendix A to 10 CFR 820)

and OE procedures.<sup>5</sup> Figure A-2 graphically depicts the enforcement process

**Figure A-2**



<sup>5</sup> Operational Procedures for Enforcement, Enforcement DOE Nuclear Safety Requirements Under Price-Anderson Amendments Act of 1988, June 1988.

Following an investigation and, if required, an Enforcement Conference, DOE may pursue a path that includes any of the following, based on the facts and significance of the noncompliance:

- No further action
- Enforcement Letter
- NOV with no civil penalty
- NOV with a civil penalty
- Compliance Order.

An Enforcement Letter may be used when DOE concludes that a particular noncompliance is not at the level of significance warranted for issuance of Preliminary NOV, but it is an issue of concern to DOE. The letter puts the contractor on notice that the problem warrants additional attention and needs to be corrected in a comprehensive manner. The Enforcement Letter notifies the contractor that DOE will close the noncompliance report when verification is received that appropriate corrective actions have been implemented.

In the event that false information has been provided to DOE, or evidence has been destroyed or is incomplete, the Department may refer the matter to the Department of Justice for further investigation.

Decisions concerning the severity level, appropriate enforcement action, and magnitude of any civil penalty are dependent on safety significance, initiative by the contractor in identification and reporting, and timeliness and effectiveness of corrective actions. With appropriate identification, reporting, and corrective actions by the contractor, the Department can waive all or part of the civil penalty and, in some cases, refrain from further action entirely. Civil penalties are limited by statute to a maximum of \$110,000 per violation per day.<sup>6</sup> Base civil penalties for Severity Level I violations are set at 100 percent of the statutory limit per violation per day (i.e., \$110,000). Base civil penalties for Severity Level II violations are set at 50 percent of the statutory limit (i.e., \$55,000) per violation per day, and for Severity

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<sup>6</sup> On October 2, 1997, Part 820 was amended to increase the maximum civil penalty from \$100,000 to \$110,000 per violation. This increase was accomplished in accordance with the Debt Collection Improvement Act of 1996.

Level III violations are set at ten percent of the statutory limit (i.e., \$11,000) per violation per day.<sup>7</sup>

The PAAA statute provides an exemption from civil penalties for certain not-for profit contractor entities, and 10 CFR Part 820 extended this exemption to all not for-profit DOE contractors that are educational institutions. However, DOE is authorized to issue NOVs to all such not for-profit contractors. Additionally, certain activities are excluded from DOE's nuclear safety requirements and from enforcement action by DOE. These activities include matters regulated by the Nuclear Regulatory Commission or under the authority of the Director, Naval Nuclear Propulsion Program.

In response to an NOV, contractors are required to document specific actions taken and planned to prevent recurrence of similar events. The contractor has several options available in responding to the findings. They can admit to the violations and pay any civil penalty, if applicable, or deny the violation and seek redress through an escalating series of steps set forth in the rule. They can also request a decrease in the amount of civil penalty while admitting the violation. Settlement can occur at any point in the process.

Another vehicle authorized by the nuclear safety procedural rules is the Consent Order. In 10 CFR 820.23, DOE is authorized to issue Consent Orders in appropriate cases. A Consent Order is an agreement signed by DOE that stipulates the (1) conclusions of fact and/or law, (2) monetary remedy to be paid by the contractor, and (3) corrective actions to be taken by the contractor. DOE may elect to use such an approach to resolve a case if the contractor reported the issues in a timely way; investigated the issues thoroughly; and resolved the issues in a timely and comprehensive manner. Equally important, the contractor must have a history of reliably addressing its nuclear safety problems in a timely and comprehensive manner.

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<sup>7</sup> On November 7, 1997, DOE amended its General Statement of Enforcement Policy to simplify the method by which these civil penalties are calculated. (The previous policy based a civil penalty on the type of nuclear facility where the violation occurred.) Under the new policy civil penalties are based primarily on the safety significance of the violation without regard to the type of nuclear facility or activity involved in the violation.

The Consent Order approach benefits the contractor by rapidly resolving the issues underlying the nuclear safety problem and has the potential for lower penalties than would have been experienced from a full DOE investigation and enforcement action. If the contractor fails to comply with the terms of the Consent Order, DOE retains the right to proceed with a traditional enforcement action.

Another tool available to DOE is the Compliance Order, issued pursuant to DOE's authority under subpart C of 10 CFR 820, sections 820.40 - 820.43. A Compliance Order is a Secretarial directive requiring a contractor to take certain specified actions to remedy a problem or to come into compliance within a specified time frame. The specific actions directed in a Compliance Order are related to nuclear safety requirements and thus, are independently enforceable under 10 CFR 820. Failure to perform the actions specified could lead to issuance of an NOV with civil penalties, if applicable. Compliance Orders are used sparingly, but would apply when the following elements are present:

- Conditions indicate problems of substantial safety importance or a broad programmatic breakdown.
- A significant safety condition exists that must be promptly corrected or prevented.
- A contractor has had sufficient opportunity to correct the condition but has not acted promptly.

- DOE needs additional assurance that the contractor will correct the condition in a timely manner.

For all types of enforcement proceedings, the contractor's commitment to complete corrective actions in accord with its schedule becomes part of the enforcement proceeding record. Commitments on the completion of corrective actions are entered into and tracked in the NTS system. Field Office personnel verify completion of all corrective actions before a case is closed.

Information on a particular enforcement proceeding is available to the public once a case is final. The Docket Clerk maintains records at DOE Headquarters.<sup>8</sup>

DOE's approach to enforcement involves some relatively innovative methods to maximize human resources and to better motivate contractor ownership of compliance and safety. This approach is expected to result in a more effective and efficient regulatory process that, in conjunction with other elements of the DOE Safety Management Program, will improve the health and safety of the public and workers engaged in DOE activities.

Further guidance on DOE's PAAA enforcement process may be found in *Operational Procedures for Enforcement, Enforcement of DOE Nuclear Safety Requirements under Price-Anderson Amendments Act of 1988, June 1998*. Guidance is also found in 10 CFR Part 820, *Procedural Rules for DOE Nuclear Activities (subpart B)*, and its Appendix A, *General Statement of Enforcement Policy*.

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<sup>8</sup> Office of the Docket Clerk, Office of Price-Anderson Enforcement (EH-6), room 3041, 20300 Century Boulevard, Germantown, Maryland 20874-1290; (301) 903-0112.