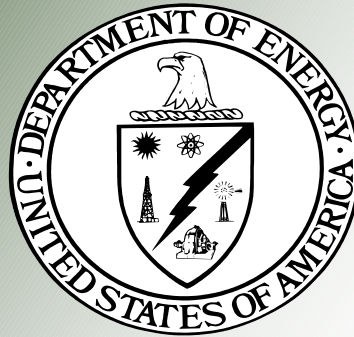


2002 Annual Report



U.S. Department of Energy

Office of Price-Anderson
Enforcement

Nuclear Safety
Enforcement Program

July 2003

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This document may be obtained from the following source:

Available via the Internet from the DOE Office of Price-Anderson Enforcement
Home Page: <http://www.tis.eh.doe.gov/enforce>

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1. ANNUAL REPORT HIGHLIGHTS

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, 2002, to December 31, 2002. This report also highlights program improvements planned for 2003.

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 2002. Procedural requirements, processes and policies for the Enforcement Program are contained in Title 10 of the *Code of Federal Regulations*, 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, DOE may take enforcement action against contractors that are found to 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 improve nuclear safety in the DOE complex by providing incentives for voluntary compliance with nuclear safety requirements coupled with a credible deterrent to noncompliance. 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.

During 2002, the Enforcement Program continued to address problems in work processes, radiation protection, safety basis, and quality improvement. In 2002, DOE issued six NOVs with civil penalties totaling \$453,750 to DOE contractors for significant violations. Of this amount, \$220,000 was waived due to the statutory exemption for specific not-for-profit contractors. Figures 1-1 and 1-2 summarize the 2002 enforcement activities and civil penalties, and compare performance across prior recent years. Specific details on each of the enforcement actions are contained in chapter 2. Copies of the complete Enforcement Actions are also available on the OE website.¹

Also during 2002, contractors self-reported 193 nuclear safety noncompliances into DOE's Noncompliance Tracking system (NTS) for review by OE. OE reviewed 531 additional nuclear safety issues that were not reported into the NTS for potential Price-Anderson applicability, but were identified through other means (occurrence reports, assessments, etc.). Figure 1-3 displays this information with the enforcement actions taken during 2002, graphically illustrating that a large number of nuclear safety issues are reviewed by OE, and that only a small percentage of the issues reviewed result in an Enforcement Letter or an Enforcement Action during the course of a typical year. Also in 2002, OE focused increased attention on compliance failures of contractor assessment activities, future implementation of 10 CFR 830 Subpart B requirements, and weapons quality assurance.

¹ Office of Price-Anderson Enforcement website (<http://tis.eh.doe.gov/enforce>)

Figure 1-1: Summary of 2002 Enforcement Activity

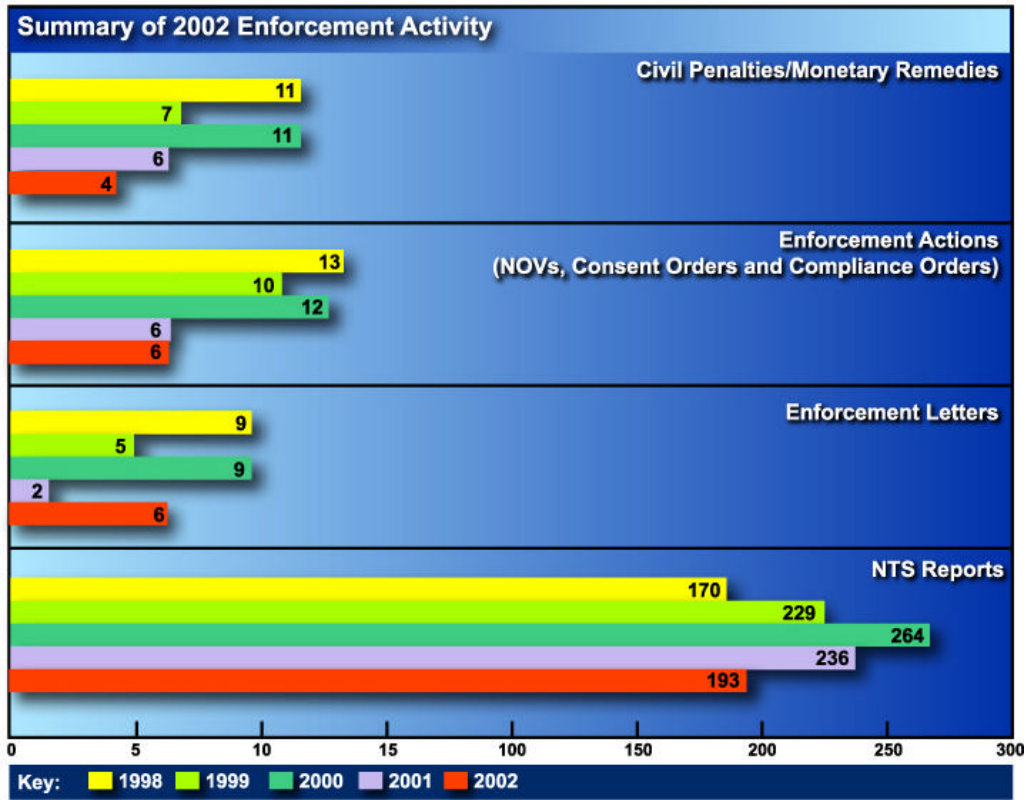
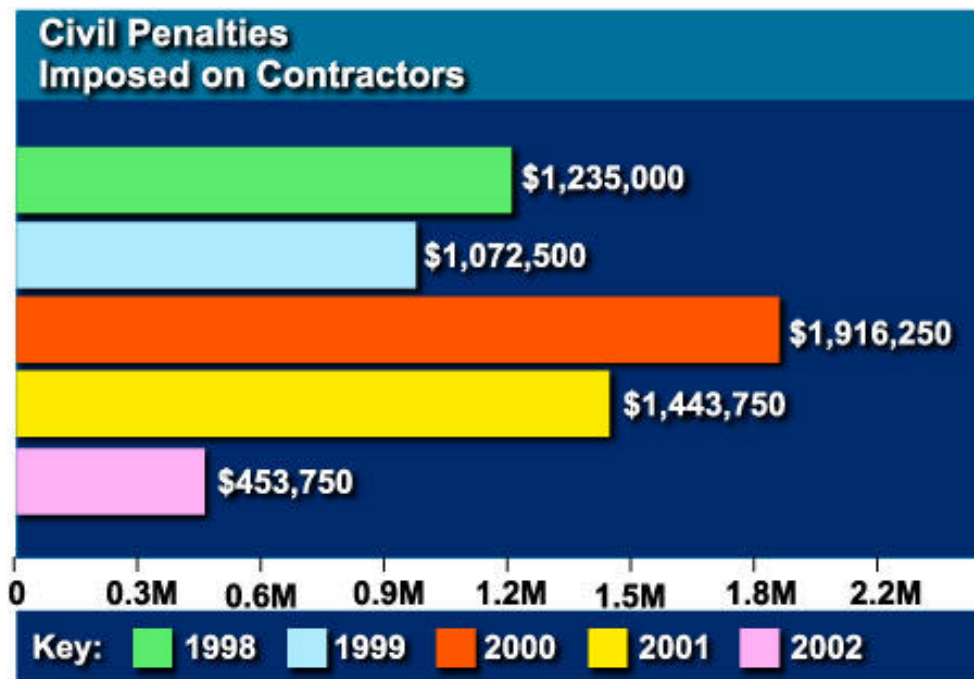


Figure 1-2: Civil Penalties Imposed on Contractors

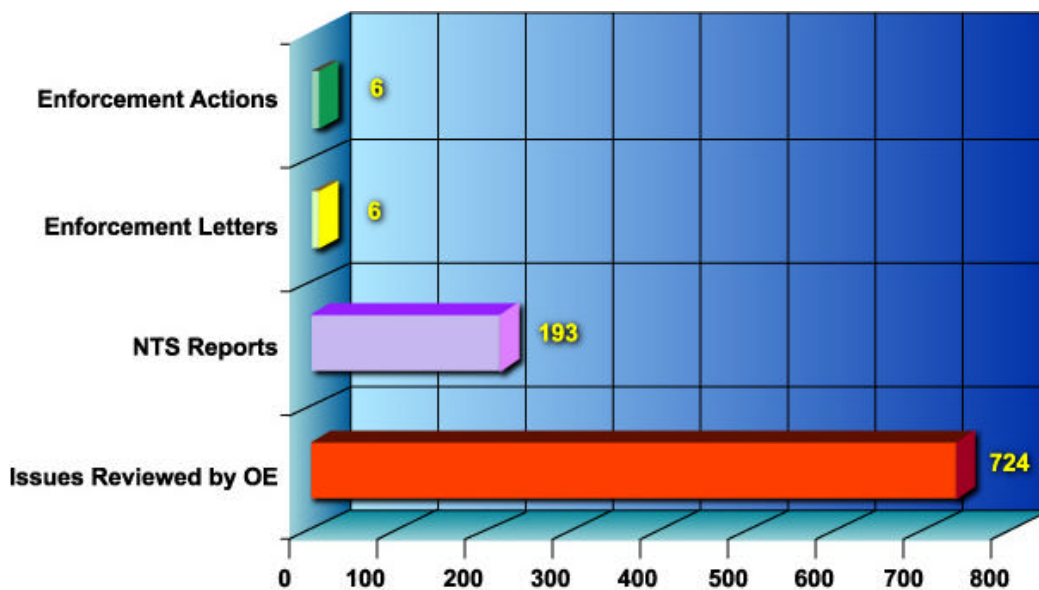


Other OE 2002 activities included issuance of six Enforcement Letters to contractors; completion of four PAAA program Reviews at selected sites; and issuance of an Enforcement Guidance Supplement. Further details on OE activities in 2002 are described in chapter 4 of this report.

In 2003, OE will continue much of the same program activities as in 2002, but also intends to place increased focus on the following: contractor's root cause analysis work;

evaluations of extent of condition and development of corrective action plans; shift from event-driven to assessment-driven problem identification; commencement of a second round of PAAA Program Reviews of major contractors; beginning desk-top reviews of smaller contractor PAAA screening and reporting programs; developing an Enforcement Policy for forthcoming worker safety rules; and updating the Enforcement Program Operational Procedures. Details on activities planned for 2003 are contained in chapter 5.

Figure 1-3: Enforcement Activities and Issues Reviewed During 2002



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2. SIGNIFICANT ENFORCEMENT ACTIONS

Introduction

In CY 2002, OE took several significant enforcement actions. These actions are detailed below.

Fluor Fernald Cited for Radiation Protection and Quality Improvement Deficiencies (EA-2001-06)

The Fernald Environmental Management Project (FEMP) is a former uranium processing facility located in southwest Ohio which is currently undergoing environmental remediation. Fluor Fernald is the operating contractor. The Waste Pits Remedial Action Project (WPRAP) began operations in 1999 and is responsible for the remediation of the waste pits area at FEMP. Figure 2-1 illustrates the layout of the WPRAP facility. Figure 2-2 illustrates some of the activities taking place in the WPRAP facility.

Figure 2-1: WPRAP Area



On January 4, 2002, DOE issued an NOV to Fluor Fernald related to Radiation Protection and Quality Improvement violations associated with the WPRAP. The NOV included an associated civil penalty of \$55,000.

Radiation protection weaknesses were disclosed by the identification of unanticipated airborne radioactivity levels in a WPRAP trailer in August 2000. The elevated airborne radioactivity levels

associated with the operation of the WPRAP thermal dryer. Specific deficiencies included the failure to monitor for airborne radioactivity in the trailer and the lack of effective design features or administrative controls to limit radiation exposure to personnel occupying the trailer. As a result, 23 individuals received unplanned radiation exposures ranging from approximately 30 to 330 millirem (mrem).

These exposures were within DOE occupational limits but were of significance since they were unmonitored and unplanned.

The NOV also cited examples of implementation deficiencies in Fluor Fernald's processes to identify, correct, and prevent recurrence of quality problems. The WPRAP project had experienced a prior elevated airborne

Figure 2-2: Loading Soil into Railcar at WPRAP



radioactivity event in December 1999; however, the potential for elevated airborne radioactivity conditions in the trailer was not recognized. A DOE review of the WPRAP project completed in September 2001 identified additional examples where problems identified during the course of contractor conduct of operations surveillances were not formally entered into the site corrective action system for resolution.

The civil penalty provided no mitigation for timely self-identification since the violations were either

long-standing or identified by DOE. DOE noted, however, that once the violations were identified, Fluor Fernald promptly reported the deficiencies into DOE's Noncompliance Tracking System. DOE also noted that Fluor Fernald had proactively reported other radiation protection and conduct of operations concerns at WPRAP, and was already undertaking corrective actions. Fifty percent mitigation was provided for both violations in recognition of Fluor Fernald's timely and comprehensive corrective actions. Fluor Fernald acknowledged the violations identified in the NOV and paid the civil penalty.

Westinghouse Savannah River Cited for Work Process and Radiological Control Violations (EA-2002-01)

The DOE Savannah River Site is located 12 miles south of Aiken, South Carolina and processes and stores nuclear materials in support of national defense and non-proliferation efforts. The site also develops and deploys technologies to improve the environment and treat nuclear and hazardous wastes. The site is operated by the Westinghouse Savannah River Company (WSRC).

On March 19, 2002, DOE issued an NOV to WSRC for nuclear safety violations associated with ten different adverse events occurring during 2001. The following is a summary of the adverse operational events:

- Seven events involved violations of facility safety basis requirements established by WSRC and approved by DOE, either through a failure to comply with facility Technical Safety Requirements (TSR) or a failure to maintain safety related equipment as described in the facility Authorization Basis.
- Three events involved radiological and work control deficiencies resulting in personnel contaminations and (in one event) worker uptake of radiological material. Maximum worker exposure received during the event was 600 mrem. This is well below the DOE annual exposure limit of 5000 mrem, but significant due to its unplanned nature.

DOE's investigation also identified concerns with the effectiveness of the WSRC quality improvement process. DOE's review of the safety basis violation events identified several common deficiencies occurring across several

facilities. These included inadequate documentation of safety significant equipment status, inadequate logkeeping, and inadequate shift turnover practices. DOE was unable to identify any similar crosscutting reviews performed by WSRC to evaluate potential generic weaknesses at Savannah River nuclear facilities. DOE also found that WSRC's performance monitoring of facility TSR violations was in error, and under-represented the actual number of TSR violations by an average factor of three.

The NOV included three Severity Level III violations; two for deficiencies in work processes, and the third for failure to implement effective measures to maintain radiation exposure as low as is reasonably achievable (ALARA). No civil penalty was assessed. In assigning the severity level of the violations, consideration was given for WSRC's self-identification and reporting of the work process violations and for the comprehensive corrective actions related to all of the deficiencies. In its response, WSRC acknowledged the violations.

Bechtel BWXT Idaho Cited for Work Control and Quality Improvement Deficiencies (EA-2002-02)

The Idaho National Engineering and Environmental Laboratory (INEEL) is a science-based, applied engineering national laboratory supporting DOE missions in environment, energy, science and national defense. The INEEL is operated for DOE by Bechtel BWXT Idaho, LLC (BBWI).

On June 12, 2002, DOE issued an NOV to BBWI for violations of DOE nuclear safety rules relating to breakdowns in the contractor's work processes. These violations occurred during drum-venting activities at the Radioactive Waste Management Complex (RWMC) and during a cooling pump change-over at the Advanced Test Reactor. BBWI was also cited for violations of the quality improvement provisions of 10 CFR Part 830 because the contractor had not corrected quality assurance deficiencies previously identified in a December 2000 Enforcement Letter issued by OE.

In the occurrence at the RWMC, personnel had entered the containment silo (where drum-venting activities take place) to clear a misfed filter. After the misfed filter was cleared, the

system automatically went into operation and vented a drum before the personnel could exit the silo. Figure 2-3 illustrates the mechanism used to remotely vent and handle a drum. The activity resulted in violations of the contractor's formal safety controls, which require the evacuation of personnel while drum-venting operations are in progress, operation of the Air Sweep System, and securing of the silo door during operation. Although this event did not result in an actual exposure to the personnel who had entered the silo, the event could have led to matters of consequence.

Figure 2-3: Drum Venting Equipment



In the event at the Advanced Test Reactor, BBWI personnel initiated a Lockout/Tagout activity in preparation for changing a coolant pump without first receiving an approved work order and without using approved procedures to ensure that necessary safety measures were established.

The NOV included a Severity Level II violation and associated civil penalty for the drum-venting incident. In determining the amount of the civil penalty, DOE granted mitigation to the contractor in recognition of its corrective actions and it reduced the proposed civil penalty of \$55,000 to \$41,250. The NOV also included two Severity Level III violations associated with the Advanced Test Reactor event and quality improvement deficiencies respectively. The contractor admitted the violations and paid the civil penalty.

Fluor Hanford and Bechtel Hanford Cited for Violations Associated with Non-Destructive Assay Work Activity (EA-2002-03 & EA-2002-04)

The DOE Hanford site, a former plutonium production complex located in southeastern Washington State, is engaged in the management and cleanup of legacy wastes. DOE contractors at the site include Fluor Hanford, Inc., (FHI) and Bechtel Hanford, Inc., (BHI).

DOE issued an NOV and civil penalty of \$137,500 to FHI on August 12, 2002, for violations associated with non-destructive assay (NDA) work. Also, on August 9, 2002, DOE issued an NOV with no civil penalty to BHI for violations associated with BHI's acquisition support for NDA technical services. In this case, both FHI and BHI were prime contractors to DOE for work at Hanford.

The FHI NOV and civil penalty stemmed from NDA work performed by FHI and the results provided to BHI. The NDA data provided by FHI was to be used by BHI to aid in characterization of waste as either low-level or transuranic. Low-level waste is buried at the Hanford site and waste characterized as transuranic is shipped to the Waste Isolation Pilot Plant in New Mexico.

In May of 2001, FHI determined that NDA data provided to BHI over the previous two years was in error on the nonconservative side by a factor of between six and seven. The error occurred due to the use of an incorrect (inverted) calibration factor in the calculation of the NDA data. Upon discovery, the data was reviewed and the waste box with the greatest suspected level of radioactivity was exhumed from the Hanford site low-level waste burial facility. Subsequent analysis determined that the contents of this box were slightly below the Hanford site low-level waste burial regulatory limit.

The FHI NOV cited deficiencies with the following: (1) improper calibration and control of NDA equipment; (2) inadequacies in software quality assurance; (3) failure to implement a measurement control program for the portable

NDA equipment; (4) failure to correct in a timely manner previously identified and related NDA problems; (5) failure to perform independent assessments of NDA activities; and (6) failure to report and disposition the NDA data discrepancies in a timely manner. DOE grouped these deficiencies into two Severity Level II work process violations and one Severity Level II quality improvement violation.

DOE determined that once the NDA data discrepancies were made known to senior management, FHI promptly reported the noncompliances to DOE, conducted a thorough investigation, and undertook comprehensive corrective actions. Consequently, DOE granted twenty-five percent mitigation of the maximum Severity Level II civil penalty for the two work process violations. DOE granted no mitigation for the quality improvement violation because of the long-standing nature and multiple missed opportunities for identification of the NDA problem.

The BHI NOV cited a violation of the Work Processes requirements of 10 CFR 830.120. Specifically, although BHI required the NDA service provider FHI to develop formal procedures for the NDA work, they failed to perform an adequate review of the developed procedures. Consequently, deficiencies and omissions in the procedures were not identified. BHI also failed to formally document their review, as required by their quality procedures. These deficiencies were categorized as a single Severity Level III violation; no civil penalty was assessed.

BHI admitted its cited violation. FHI also admitted its cited violations, but requested further mitigation of the civil penalties. DOE considered FHI's request for further mitigation and determined that further mitigation was not warranted. FHI accepted DOE's determination and paid the \$137,500 civil penalty for the three Severity Level II violations.

Los Alamos National Laboratory Cited for Unauthorized Nuclear Facility Activities (EA-2002-05)

The Los Alamos National Laboratory (LANL) is a multi-program national laboratory operated by the University of California for the DOE/National Nuclear Security Agency (NNSA). On

December 17, 2002, at the recommendation of OE, NNSA issued an NOV to the University of California for violations involving the unauthorized and unanalyzed storage of transuranic waste at LANL. Transuranic waste is a byproduct of NNSA weapons activities and contains radioactive materials potentially harmful to workers or the public if it is not properly controlled. LANL is exempt from civil penalty by statute. However, if LANL were not exempt, a civil penalty of \$220,000 would have been assessed, based upon the safety significance of the violations involved in this case.

LANL created the unauthorized storage conditions when it began to move transuranic waste in April of 1996 into a building and nearby outdoor pad that were not specifically designed nor prepared for the storage of such radioactive materials. LANL failed to properly analyze the hazards associated with the storage activities as well as develop appropriate safety controls to protect the workers and the public prior to placing the transuranic waste in these locations. LANL also failed to obtain NNSA approval for these actions, which was required due to the quantity of radioactive material involved.

Also, of significant concern to OE and NNSA was that the unauthorized and unanalyzed storage conditions continued from April 1996 to June 2001 without LANL identifying the associated deficiencies. In June 2001, when the deficiencies came to light, LANL failed to fully investigate the extent of the conditions site-wide and the failures in management systems to identify the deficiencies for a period of five years, and thus did not develop associated corrective actions for these failures. NNSA cited LANL for two Severity Level II violations for failure to implement LANL's own established work controls in not having a proper safety basis document and TSRs, and for failures to analyze hazards and develop nuclear safety controls. Also, NNSA cited LANL for two Severity Level II violations in the quality improvement area for failure to identify these quality problems for over five years and failure to fully investigate, determine the causes, and address the breakdowns in management processes once the deficiencies were found.

NNSA determined mitigation was not appropriate or justified in establishing the civil penalty due to LANL's failures to promptly identify, investigate, and correct the

noncompliance conditions. As noted, the civil penalty has been waived because LANL is exempt by statute. LANL acknowledged the violations and provided commitments on corrective actions to address the problems.

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3. CASES REFLECTING ENFORCEMENT DISCRETION

Introduction

As discussed in more detail in chapter 4, OE refrains from pursuing formal enforcement action for the large majority of nuclear safety issues that come to its attention. This discretion is generally exercised in recognition of a lower safety significance of the issue, coupled with effective contractor actions in identifying, reporting, and correcting the problem. In a subset of cases where discretion is exercised, OE 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 CY 2002, OE issued six Enforcement Letters, copies of which are available on the OE website. The following section summarizes several of these Enforcement Letters.

Enforcement Letter Issued to Brookhaven Science Associates for Noncompliances Involving Radioactive Sources

Brookhaven Science Associates (BSA) manages Brookhaven National Laboratory (BNL) in conducting environmental science and energy technology research for DOE. During 2001, BSA reported three separate issues involving noncompliances with quality assurance and/or occupational radiation protection provisions of DOE's nuclear safety requirements at BNL. These issues are set forth as follows:

- On January 19, 2001, BSA reported that a radioactive neutron source in an unlabeled package had been moved from a posted High Radiation Area (HRA) to a radiologically controlled area (without HRA posting) and left there for 11 months. Personnel working in the area of the neutron source were unaware of the hazard associated with the neutron source.
- BSA reported a repetitive problem on June 22, 2001, after it identified four similar noncompliances with the contractor's

procedure for purchase, receipt and delivery of radioactive sources.

- On August 3, 2001, BSA reported that personnel moved a radioactive source to a facility without adequate control, and it subsequently found that the source exceeded the facility threshold limit.

OE reviewed the contractor's corrective actions for the noncompliances and determined that the corrective actions appeared adequate to correct the problems and prevent recurrence. OE determined that these noncompliances met the discretionary criteria not to undertake enforcement action and issued an Enforcement Letter to BSA on January 16, 2002. The letter indicated OE would continue to monitor BSA actions to address noncompliances in this area.

Enforcement Letter Issued to Fluor Federal Services for Submitting Inaccurate Test Records

Fluor Federal Services, Inc., (FFS) provides project management, engineering, construction and procurement services to prime contractors at DOE's Hanford site, including for Pacific Northwest National Laboratory (PNNL).

In late 2001, Fluor began a project to replace the main electrical switchgear and ventilation system controls at a PNNL facility. Two FFS electricians and a supervisor initiated the process to gain unescorted access to perform this electrical work. This process required completion of a computer-based training course, including testing. Due to computer design problems with the course, the test had to be completed using a hardcopy answer sheet.

The FFS supervisor completed the computer-based training course and the written examination. He made a copy of his unsigned test answer sheet and placed the completed unsigned copy on his desk. The two FFS electricians claimed they completed the computer-based class and experienced difficulty

in printing the answer sheet. The two found the unsigned completed answer sheet on the supervisor's desk, made copies and used the completed answer sheet to take the test. In taking the test, they provided the same answers to the questions as the supervisor, including two incorrect answers.

The two electricians signed the copied answer sheets and submitted them to FFS management. FFS management transmitted the answer sheets to PNNL as part of a documentation package designed to obtain unescorted access for the two electricians to the PNNL facility. PNNL staff questioned the validity of the two photocopied answer sheets, conducted a review of this matter, and reported the matter into the NTS as a noncompliance with 10 CFR 820.11. 10 CFR 820.11 requires that any information pertaining to a nuclear activity provided to DOE or maintained for inspection by DOE shall be complete and accurate in all material respects.

OE considered the actions of FFS in submitting questionable answer sheets to PNNL to be a matter of some consequence since DOE and its contractor operating PNNL relied on this documentation in granting unescorted access to PNNL facilities. However, since the incident involved lower level members of the workforce, and the workers did not in fact enter the facility unescorted, OE elected to issue an Enforcement Letter to FFS, requiring that FFS verify the actual implementation and effectiveness of its corrective actions for this matter.

Enforcement Letter Issued to Kaiser-Hill for Plutonium Uptake at Rocky Flats

Building 771 of the Rocky Flats Environmental Technology Site is undergoing decontamination and decommissioning. On October 5, 2001, two Radiological Control Technicians (RCT) were tasked to survey and clean up paint chips and dust along a wall in one of the rooms in the

building to prepare the area for painting. The RCTs were not wearing respirators and had been informed by the Radiological Operations Supervisor to expect only low levels of radioactive contamination. Approximately 10 minutes after the RCTs had completed their surveys and left the room, a radiological continuous air monitor alarmed in an adjacent room.

Rocky Flats personnel initially determined that no special bioassay was needed based on work indicators. However, one of the RCTs requested nasal smears be taken since the air monitor alarmed in an adjacent room to where they had worked. The nasal smears showed alpha contamination. Bioassay results for the two RCTs identified doses of 1600 mrem and 240 mrem committed effective dose equivalent, which are within DOE's occupational dose limit of 5000 mrem per year. Nonetheless, these were unplanned exposures which could have been larger but for fortuitous circumstances. As such they are of concern to DOE, and the conditions that allowed these to occur should be corrected.

OE's review of the event identified several nuclear safety noncompliances in the preparation and planning for this work, including:

- Reliance on survey information that had questionable applicability to the area where the work was to be conducted. A prior survey taken on September 24, 2001, showed the highest level of contamination was 180 disintegrations per minute per 100 centimeters squared (dpm/100cm²). However, OE's review identified that the survey conducted on September 24 did not evaluate radiological conditions along the wall in the room where the October 5 work was to be conducted. Surveys taken on September 18 and 19 were applicable to the work and showed contamination levels as high as 12,000 dpm/100cm². These surveys were not used to identify the potential radiological conditions and to properly prepare and protect the workers.

- Failure to provide adequate monitoring for airborne radioactivity to ensure compliance with the radiological work permit for this activity. In performing the work on October 5, 2001, the RCTs were not wearing respirators and a portable radiological air monitor was not set up to monitor the workers' breathing zone. Fixed airhead sampler results for the period September 28 through October 5 identified airborne contamination almost five times the work suspension limit in the radiological work permit for this activity.
- The initial response to the event improperly determined no special bioassay was needed for the RCTs despite an air monitor alarm indicating airborne radioactivity. Rocky Flats personnel, in evaluating workplace indicators for follow-up bioassay, did not take into account the dilution factor for the air monitor alarm in an adjacent room.

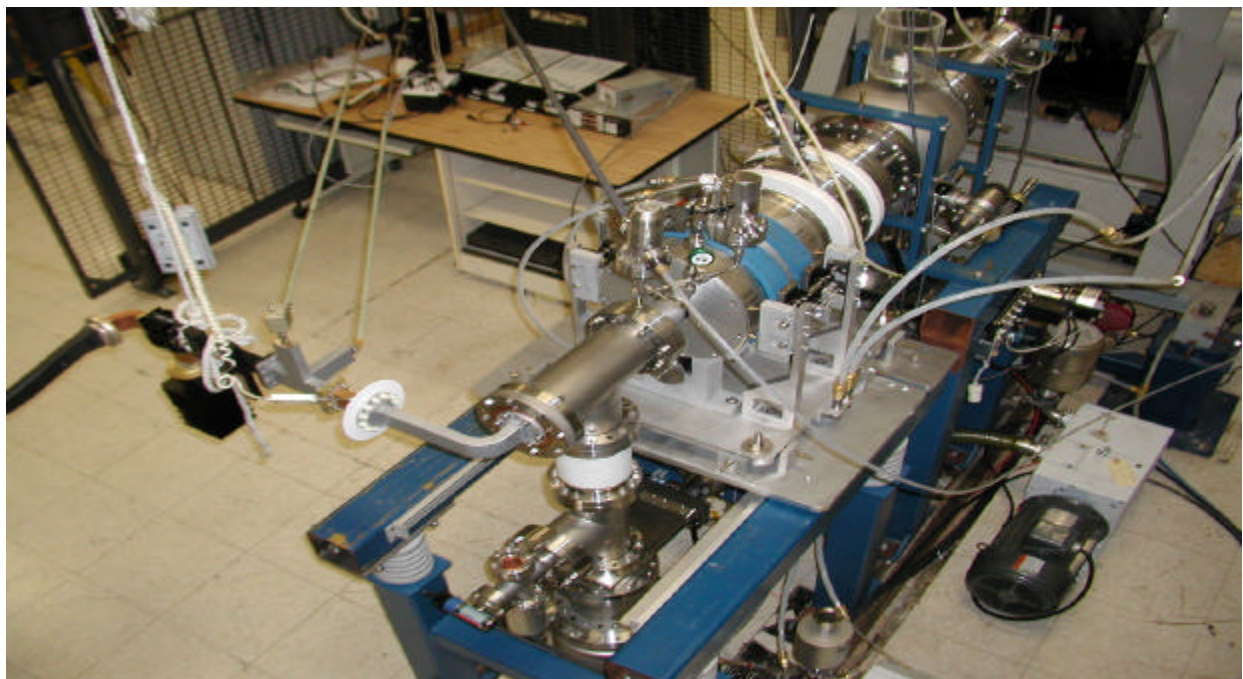
OE issued an Enforcement Letter on June 19, 2002, to address these noncompliances in not maintaining radiological exposures ALARA as required by 10 CFR Part 835. The letter stated OE would continue to

monitor implementation of corrective actions and consider further enforcement action if the problems were not adequately corrected.

Enforcement Letter Issued to Oak Ridge National Laboratory for Unanticipated Exposure

The Oak Ridge National Laboratory (ORNL) is a multi-program science and technology laboratory managed for the DOE by UT-Battelle, LLC. On May 31, 2002, DOE issued an Enforcement Letter to ORNL related to an event in December 2001, involving the startup testing of an electron cyclotron resonance (ECR) source at an ORNL facility. The ECR source is a plasma device designed to provide highly-charged ions at low velocities. Figure 3-1 shows a typical ECR. Due to inadequate review and controls associated with startup testing, unanticipated radiation fields were generated that resulted in unplanned radiation exposures to five employees. The maximum radiological exposure received was minor (35 mrem as compared to the DOE annual limit of 5,000 mrem), but the exposure to workers could have been higher.

Figure 3-1: Electron Cyclotron Resonance Source



Upon identification of the exposure hazard, ORNL management initiated a management review and dose reconstruction. Deficiencies were identified associated with failures to comply with ORNL's own procedures for experiment review, management review and oversight of work activities, hazard communication, and training.

Although DOE concluded that violations of nuclear safety requirements did occur in association with the event, the contractor investigation into the event was found to be detailed and comprehensive. Organizational and management concerns potentially contributing to the event were acknowledged by senior line management. Corrective actions developed in response to the event were judged to be comprehensive. DOE therefore concluded that further investigation was not warranted and that issuance of an Enforcement Letter was appropriate.

Enforcement Letter Issued to Bechtel BWXT Idaho for Noncompliances in Waste Characterization and Shipping

The Idaho National Engineering and Environmental Laboratory is operated for DOE by Bechtel BWXT Idaho (BBWI). BBWI manages solid transuranic and low-level radioactive waste generated at the site, and also loads and ships transuranic waste to the DOE Waste Isolation Pilot Plant (WIPP).

During July 2002, DOE investigated multiple events occurring during 2001-2002 involving transuranic waste characterization, handling, and shipping deficiencies by BBWI at the RWMC. Most notable of the events was a March 2002 event in which an incorrect payload of transuranic waste drums was shipped to the WIPP site. Figure 3-2 illustrates a typical shipment about to leave RWMC for the WIPP.

The DOE investigation of the 2001-2002 events identified multiple instances of failure to comply with and/or inadequacy of BBWI operating procedures. Although concluding that violations of nuclear safety rules did occur, DOE noted the following:

- The violations were of low safety significance.

Figure 3-2: TRU Waste Shipment from RWMC



- BBWI had recognized its continuing problems in the procedural compliance area and had undertaken corrective actions, including a significant overhaul of operating procedures.
- Contractor corrective actions in response to the March 2002 event were found to be timely and comprehensive.
- Contractor and local DOE assessments performed subsequent to March 2002 indicated improved performance.

DOE consequently concluded that issuance of an Enforcement Letter would be the appropriate action in this case. An Enforcement Letter was issued to BBWI on August 29, 2002.

4. ACCOMPLISHMENTS & ACTIVITIES

Program Activity

New Director of the Office of Price-Anderson Enforcement

In July of 2002, Stephen M. Sohinki assumed the responsibilities of DOE's Director of the Office of Price-Anderson Enforcement (OE). Mr. Sohinki came to OE after most recently serving as the Director for NNSA's Office of Strategic Materials and Transportation in the Office of Defense Programs. Mr. Sohinki has previously served with the Nuclear Regulatory Commission on two Commissioners' staffs and in the Office of General Counsel, as well as working with two nuclear utility companies. At DOE, he was the first Director of the Office of Price-Anderson Enforcement when the Office was formed in 1990, and prepared the initial drafts of the Price-Anderson Enforcement Policy and Price-Anderson Procedural Rule (Part 820) before moving to Defense Programs.

Since assuming his new position, Mr. Sohinki has conducted many sessions with DOE and contractor managers to communicate his enforcement philosophy, areas of concerns, and plans for the coming year. Areas that will be the object of the OE's focus in 2003 are described in chapter 5 of this report.

Price-Anderson Reauthorization

In December 2002, legislation was enacted (National Defense Authorization Act for Fiscal Year 2003 - H.R. 4546) that amended the Atomic Energy Act of 1954 [42 U.S.C. 2210(d)(1)(A)] to extend the indemnification provisions for DOE contractors until December 31, 2004. The legislation also added requirements for DOE to establish and enforce worker occupational safety regulations as described below. All other nuclear safety and indemnification provisions remain unchanged. Other legislation is being prepared in 2003 that may further extend the indemnification provisions and make other changes as well. Based on the legislation that has been enacted, the DOE Price-Anderson Program, including

enforcement provisions, will continue in its current form.

As noted, H.R. 4546 requires DOE to promulgate regulations for occupational safety and health (OSH) at DOE facilities operated by contractors indemnified under the Atomic Energy Act. This legislation also provides a dual method of enforcing its requirements. They can either be enforced through a regulatory framework or by contract administration. The maximum civil penalty for a violation set forth in the statute is \$70,000 for each violation. Contractors will not be subject to both civil and contract penalties for the same violation. H.R. 4546 does not exempt any DOE contractor from enforcement of worker safety violations, although the amount of the civil penalties imposed in any year are limited to an amount not to exceed the total fees paid by DOE to the contractor in that year. DOE is required by this legislation to promulgate the worker safety regulations within one year of the legislation, with an effective date of one year after promulgation. Plans for OE support in 2003 to this rulemaking effort are discussed in chapter 5.

Decline in Contractor NTS Reporting

DOE provides strong incentive for contractors to aggressively assess their own performance and report to DOE conditions that are found to be in noncompliance with nuclear safety requirements. The mechanism that has been established for this proactive reporting effort by contractors is the DOE Noncompliance Tracking System (NTS)¹, via reports that detail the noncompliances that occurred and the steps being taken by contractors to expeditiously correct the noncompliance condition and to prevent recurrence. Such initiative by contractors to self-identify, report and correct

¹ Operational Procedure for Enforcement, *Identifying, Reporting, and Tracking Nuclear Safety Noncompliances under Price-Anderson Amendments Act of 1988*, June 1998.

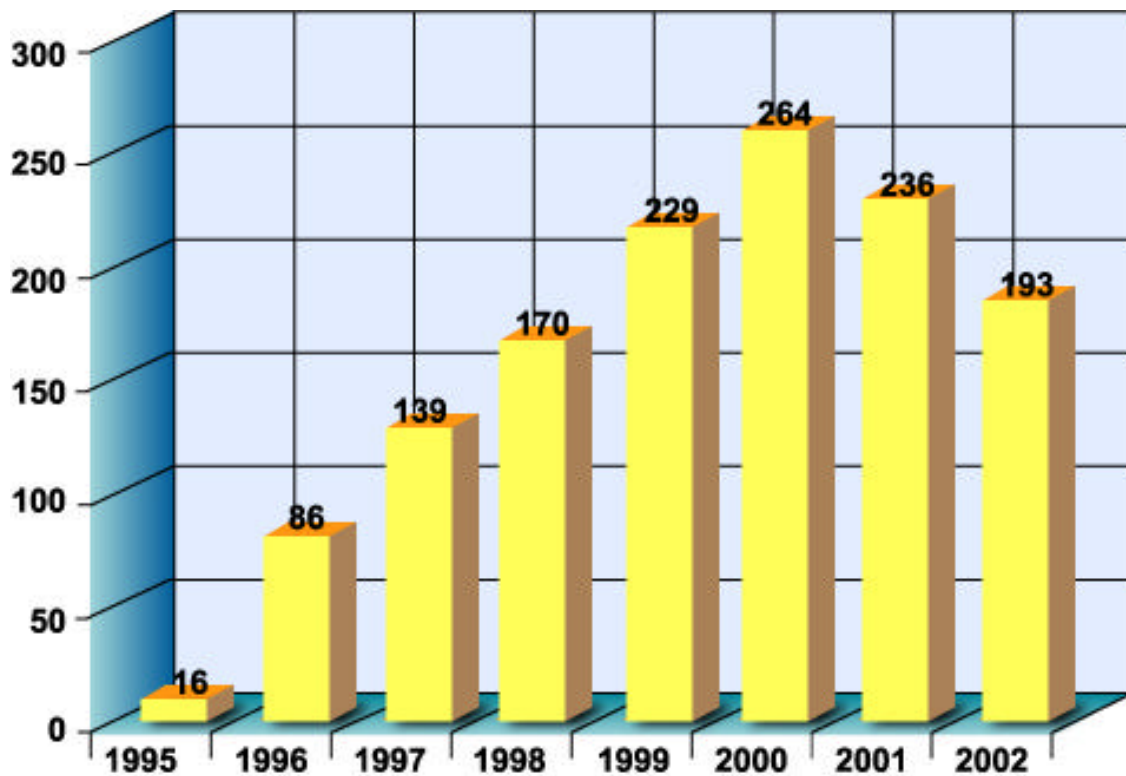
noncompliances with nuclear safety requirements enhances nuclear safety and avoids the need for large numbers of inspection personnel to provide regulatory oversight and policing of contractor activities. This process has been in place since 1995, and is well-established throughout the contractor community and with DOE Field and Program Offices.

In the past two years, DOE has noted a substantial decline in NTS reports to DOE by contractors, as shown in Figure 4-1. From 1995 to 2000, reporting into the NTS gradually increased as contractors became more aware of their obligations and implemented better programs to screen problems and report into the NTS in accordance with DOE's reporting

thresholds. NTS reporting peaked in 2000 with 264 noncompliances reported; subsequent reporting has steadily declined, with 236 NTS reports in 2001 and 193 reports in 2002. Based on observations conducted during site Program Reviews, OE believes this decline is due, in part, to a reduced emphasis on reporting by specific contractors, and should not be attributed to an overall improvement in nuclear safety performance across the complex.

OE is concerned with this downward trend and will pay particular attention to this issue in 2003. Additionally, OE will look into this area as part of its planned continuation of PAAA Program Reviews as noted in the *Program Reviews* section below.

Figure 4-1: Number of Reports Submitted to the NTS (1995 – 2002)



As noted in DOE's Enforcement Policy², DOE may exercise discretion and not take enforcement action or may mitigate enforcement action where problems have been identified in a timely manner through contractor initiative, have been reported to DOE, and timely and comprehensive corrective actions have been taken. Formal contractor reporting of applicable noncompliances into the NTS is key to these steps, and the failure of a contractor to report will decrease the extent to which discretion is exercised or penalties mitigated. Such failures by contractors could even lead to increased scrutiny of certain contractors for conditions that represent potential violations of nuclear safety requirements.

Enforcement Guidance Supplement

DOE's enforcement procedures³ provide the opportunity for OE to periodically issue clarifying guidance regarding the processes used in OE enforcement activities. The vehicle OE uses is the Enforcement Guidance Supplement (EGS). During 2002, DOE issued one EGS related to Bioassay Program Accreditation.

EGS 02-01- Enforcement Position Relative to 10 CFR 835 Bioassay Accreditation

10 CFR 835, *Occupational Radiation Protection*, requires that DOE contractor internal dose monitoring programs be accredited in accordance with the DOE Laboratory Accreditation Program (DOELAP) for Radiobioassay by January 1, 2002. Due to DOELAP delays associated with the performance testing portion of the accreditation process, several sites that had applied for and were working towards accreditation had not fully completed accreditation by the milestone date in 10 CFR 835. These contractors had expressed concerns to DOE regarding potential enforcement in this area.

In response to these concerns, OE issued EGS 02-01 to clarify OE's enforcement position relative to Bioassay Program accreditation. The EGS acknowledged that failure to meet the January 1, 2002, accreditation milestone represented a noncompliance with 10 CFR 835, since the regulation made no provision or allowance for applicants partway through the process. In the EGS OE indicated their intent, however, to utilize discretion in not taking enforcement action against sites that had submitted timely accreditation applications and were working through the process on January 1, 2002. This enforcement discretion did not extend to unaccredited sites that had not submitted applications to DOE by January 1, 2002.

The full text of EGS 02-01 is included in Attachment B. EGSs issued in prior years are available on the OE website.

Program Reviews

In 1999, OE initiated a series of PAAA Program Reviews to evaluate contractor programs for the identification and reporting of potential nuclear safety noncompliances. During 2002 OE continued with this initiative, issuing four PAAA Program Review letters documenting the results of completed reviews. OE intends to complete the initial round of Program Reviews at all major DOE contractors during 2003.

PAAA Program Reviews are conducted in accordance with published criteria⁴ and include an evaluation of contractor processes for identifying, screening, reporting and trending noncompliances, and for the tracking and completion of corrective actions associated with those noncompliances. Review results are transmitted as Program Review letters to the involved contractor and DOE line management, and are also uploaded to the OE website to provide a lessons-learned opportunity for other DOE contractors.

During the course of these reviews, OE evaluates particular events or problems that were not reported to DOE via the NTS. In some cases, OE has identified potential compliance problems, such as in processes for procurement

² 10 CFR Part 820, Appendix A, *General Statement of Enforcement Policy*, August 17, 1993.

³ Operational Procedure for Enforcement, *Enforcement of DOE Nuclear Safety Requirements Under Price-Anderson Amendments Act of 1988*, June 1998.

⁴ EGS 00-02: *Price-Anderson Amendments Act (PAAA) Program Reviews*

control or quality problem resolution. In a limited number of cases, nuclear safety noncompliances found by OE have led to an enforcement action, although that is not the focus nor intention of such reviews.

Program Reviews give OE better insight into contractor understanding of and initiatives in nuclear safety management. Additionally, contractor programs and management change over time. For these reasons, OE plans to continue the Program Review initiative after the completion of the initial round of major contractor reviews during 2003.

Training

OE undertook several training activities in 2002 related to Price-Anderson requirements and the enforcement program, including the following:

1. Conducted a one-day intensive introductory session on Price-Anderson nuclear safety regulations, identification and reporting of noncompliances, fundamentals of the nuclear safety enforcement process, and expectations and responsibilities of Coordinators. This occurred in late November and was provided to both new DOE and contractor PAAA Coordinators.
2. Conducted a two-day training course for DOE PAAA Coordinators. The course provided information on enforcement techniques, program changes, compliance expectations, enforcement action case reviews, reporting issues, and communication and coordination between Department offices and sites.
3. Provided materials on the OE website from both of the above modules, so that other Coordinators could conduct self-training and refresher reviews.

These training activities ensure quality and consistent support by Coordinators, facilitate lessons learned across the complex for individual adverse events and problems that resulted in enforcement actions, and support collective identification and development of initiatives to improve DOE's PAAA Program.

Awards

In 1996 the Department established the Price-Anderson Coordinator of the Year Award to recognize individual DOE PAAA Coordinators

for leadership and contributions to the Enforcement Program. Awards have been made each year since then. In 2002, Brian Fiscus of the DOE-Richland Operations Office and Gerald Schlapper of the NNSA-Los Alamos Area Office received this award (See Figures 4-2 and 4-3). The Director of OE presented the awards to these individuals at the November 2002, two-day DOE PAAA Coordinators training session for their efforts in monitoring their respective contractors to ensure that potential Price-Anderson issues are properly screened, reported, and corrective actions taken.

Figure 4-2: Stephen M. Sohinki and Brian Fiscus



Figure 4-3: Stephen M. Sohinki and Gerald Schlapper



Website

OE maintains an Internet Web site (<http://tis.eh.doe.gov/enforce>) to provide information to Federal and contractor

communities and to 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 recently published Annual Report, and workshop information are all available on the website. OE routinely posts this information on the website to enhance communication with contractors and the public on enforcement activity and information, and to promote lessons-learned across the DOE Complex. The OE website was accessed over 70,000 times in 2002, demonstrating that the site is a critical communications link in the DOE nuclear safety program.

ENFORCEMENT ACTIVITY

Cases Considered and Closed Without Action

In 2002, OE reviewed 724 issues for potential noncompliance with nuclear safety requirements. This number included 193 issues that contractors reported into the NTS and 531 other issues that came to the attention of OE from other sources, such as contractor occurrence reports, DOE and contractor assessments, or Defense Nuclear Facilities Safety Board staff reports. Additionally, OE closed a total of 165 NTS reports in 2002. This total included NTS reports that had been reported in prior years, but which remained open until all the corrective actions associated with the reports had been completed.

OE conducted reviews of the NTS reports and other sources of potential noncompliances and focused on the safety significance of the issues, as well as the degree to which the contractor demonstrated aggressive self-identification, reporting, and corrective action. The majority of issues were closed without an enforcement action because the contractor took proper actions to identify, report, and correct the problems and because of low safety significance of the issue. When OE is not satisfied that appropriate actions had been taken in a safety significant matter, it conducts a more comprehensive review.

As previously discussed above, DOE has noted a substantial decline in NTS reporting in the past two years. OE will be focusing attention on this area in 2003, through additional Program Reviews and increased focus and follow-up on contractors who are reporting at significantly reduced levels. Table 4-1 lists the number of NTS reports filed by each contractor in 2002.

Enforcement Letters

In some cases, although OE may exercise discretion in not taking enforcement action such as issuance of an NOV, it may conclude that conditions were such that some notice to the contractor is important. Such situations may involve a precursor event, or weak actions by the contractor in identifying or resolving the nuclear safety problem. In such cases, OE may issue an Enforcement Letter to communicate concerns and provide clear guidance on areas the contractor needs to address. In 2002, OE issued six Enforcement Letters, copies of which are available on the OE web page. Summaries of several of these Enforcement Letters from 2002 are provided in chapter 3.

Table 4-1

CONTRACTOR	Number of 2002 NTS Reports
Argonne National Laboratory – East	3
Argonne National Laboratory – West	2
Bechtel BWXT Idaho, LLC	20
Bechtel-Hanford, Inc.	4
Bechtel-Jacobs Company, LLC	10
Bechtel National River Project	3
Bechtel-Nevada	5
Brookhaven National Laboratory	3
BNFL, Inc.	3
Babcock & Wilcox of Ohio, Inc.	4
BWXT Pantex	6
BWXT (Y12)	24
CH2M Hill Hanford Group, Inc.	11
Energy Technology Engineering Center	1
Fermi Lab	2
Fluor-Daniel Hanford	19
Fluor Fernald, Inc.	2
IT – Nevada	1
Kaiser-Hill Company, LLC	7
Kansas City Plant	1
Los Alamos National Laboratory	16
Lawrence Berkeley National Laboratory	2
Lawrence Livermore National Laboratory	6
Oak Ridge National Laboratory	10
Pacific Northwest National Laboratory	8
Sandia National Laboratory	4
Westinghouse Electric Corp. – WIPP	3
Westinghouse Savannah River Company	12
West Valley Nuclear Services	1

Notices of Violation

In 2002 OE initiated formal enforcement action in six cases where the actual or potential safety significance was sufficiently to warrant action. In these cases, the Department issued NOVs to clearly communicate DOE's expectations and to document significant violations of nuclear safety requirements. DOE transmitted the NOVs via letters that included a strong message about the Department's expectations for contractors to correct the behaviors and practices that led to the violations and for them to aggressively focus on promoting a culture that self-identifies and corrects problems before they result in serious conditions. The six NOVs imposed penalties totaling \$453,750, of which \$220,000 was waived due to statutory exemption for not for profit contractors. Table 4-2 summarizes the enforcement actions issued in 2002.

Enforcement-Related Orders

The Office of Price-Anderson Enforcement has several other tools available to it to effect desired actions by contractors or resolution of a case. These include Special Report Orders, Consent Orders, and Compliance Orders. A Special Report Order is a vehicle to require that certain information be provided to DOE to demonstrate compliance with nuclear safety rules. Consent Orders are used as a means of resolving a case with a settlement with the contractor, in lieu of pursuing a resource-intensive investigation by DOE and extended enforcement action process. A Compliance Order may be issued by the Secretary of Energy to require that certain actions be taken to remedy a serious violation of nuclear safety requirements. Conditions for use of the Consent Order and Compliance Order are described in EGS 00-04, available on the OE website. During 2002, no enforcement related orders were issued.

Table 4-2

EA No.	Contractor	Type	Severity Level	Date Issued	Civil Penalty Amount
EA-2001-06	Fluor-Fernald	PNOV	II	1/4/02	\$55,000
EA-2002-01	Westinghouse Savannah River Company	PNOV	III	3/19/02	\$0
EA-2002-02	BWXT-Idaho	PNOV	II & III	6/12/02	\$41,250
EA-2002-03	Fluor-Hanford	PNOV	II	8/12/02	\$137,500
EA-2002-04	Bechtel-Hanford	PNOV	III	8/9/02	\$0
EA-2002-05	Los Alamos National Laboratory	PNOV*	II	12/17/02	\$220,000

* Civil penalty waived due to statutory exemption.

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5. CHANGES AND IMPROVEMENTS

Introduction

Experience gained through the implementation of the DOE's Enforcement Program during its initial seven years has led to some important lessons learned. This chapter discusses Enforcement Program improvements and initiatives planned for 2003 and beyond.

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

Investigation/Causal Analysis/Corrective Actions

During the course of its investigations into potential nuclear safety noncompliances, OE routinely evaluates the scope and depth of the contractor's investigation and causal analysis associated with an identified deficiency. As part of this evaluation, OE also assesses the adequacy of the contractor's corrective actions. An effective investigation and analysis of root causes by the contractor, coupled with the implementation of comprehensive corrective actions, can prevent recurrence of noncompliances, and can also serve as the basis for mitigation of potential civil penalties, or the application of enforcement discretion by OE.

On a number of occasions, however, OE identifies deficient contractor performance in the areas of root cause analysis and corrective action implementation. Based on observations from multiple investigations and enforcement actions, OE has identified the following general weaknesses in investigation, causal analysis, or corrective action implementation that appear applicable to a number of contractor programs:

- 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 identifiable 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 over-emphasizing process, procedure, or engineering issues.
- Failure to develop and implement corrective actions addressing the underlying problems identified in the causal analysis.
- Failure to evaluate effectiveness of corrective actions.

OE concerns with contractor performance in these areas will be highlighted in communications with DOE and contractor management and during the OE sponsored PAAA Contractor training. OE also plans to issue an EGS addressing the above concerns during 2003.

Management and Independent Assessments

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

During 2002 OE focused on contractor assessment performance during the course of noncompliance investigations and through OE Director communications with contractor and DOE management. As an example, during 2002 OE undertook an enforcement action against a contractor for the unauthorized storage of nuclear material at a facility that was not classified as a nuclear facility. The unauthorized storage and corresponding violation of authorization basis requirements should have

been a readily discoverable condition through a variety of mechanisms, including the contractor's management and/or independent assessment programs. However, the contractor's assessment functions failed to discover these problems over a five-year period. Once the problem was identified, the contractor also failed to address the issue of why the problem persisted so long as part of their investigation. Additional recent examples exist where OE has taken enforcement action for programmatic work process deficiencies resulting in an event in which the broad deficiencies should have been identified during properly focused assessment activities.

During discussions with DOE and contractor management in 2002 and early 2003, the OE Director has emphasized the importance of shifting from an "event-driven" to an "assessment-driven" culture for the identification and correction of nuclear safety deficiencies. Achieving excellence in performance assessment provides contractor management numerous positive benefits from a business perspective, including potentially less stand-downs, less lost workday cases, less investigations, and improved public confidence. Common deficiencies noted by OE with respect to contractor assessment programs include a scope of assessment that is too narrow, lack of objectivity, stovepiping, checklist mentality by auditors, and failure to conduct an extent of conditions review for identified deficiencies.

During 2003 OE will continue to place emphasis on assessment issues during its investigations and reviews of potentially significant conditions.

Safety Basis Submittal Performance

10 CFR 830 Subpart B required contractors to submit updated Safety Basis Documentation for Hazard Category I, II, and III nuclear facilities for DOE approval by April 10, 2003. To have demonstrated compliance with this requirement, a contractor either needed to submit documentation in accordance with the regulation or have an exemption in place approved by the appropriate DOE Program Office. The DOE facilities requiring updated Safety Basis as well as the status of required contractor submittals or exemptions are being officially tracked in the DOE Safety Basis Information System (SBIS) maintained by the DOE EH Office of Nuclear and Facility Safety Policy (EH-53).

In May of 2003, OE in coordination with EH-53 reviewed submittal data as tracked in the SBIS system to determine whether contractors submitted the required Safety Basis documents or had approved exemptions in place. The OE review did not identify any instances where a DOE contractor failed to meet the above requirements. During 2003, OE plans to continue its regulatory focus on DOE contractor performance relating to implementation and compliance with approved Safety Basis work controls and requirements of 10 CFR 830 Subpart B.

ENFORCEMENT PROGRAM ACTIVITIES

PAAA Program Reviews

Chapter 4 provides an overview of the process used by OE in conducting PAAA Program Reviews and the status of reviews conducted to date. By mid-2003, OE expects to have completed PAAA Program Reviews for all the larger DOE contractor organizations.

Although initially intended to be a one-time or baseline review process, OE has found that significant benefits would be derived from the routine and continuing performance of Program Reviews. As noted in chapter 4, contractors and contractor programs may change significantly over time. The performance of routine reviews would also allow OE to focus on particular areas of emerging concern, such as the decline in NTS reporting discussed in chapter 4. Accordingly, OE has determined it appropriate to make Program Reviews a routine function of the office, and in late 2003 expects to begin a second round of Program Reviews. An additional initiative related to smaller contractor PAAA Programs is discussed below.

Smaller Contractor Program Reviews

During 2003 OE also plans to initiate a more limited Program Review for the 15 or 20 smaller DOE contractors who are required to maintain Radiation Protection Programs and Quality Assurance Plans but whose scope of operations do not warrant a full-scale Program Review. The structure of these limited reviews has not been finalized, but is expected to involve a more limited information request, and subsequent

review of the material by OE and the DOE site office. A site visit is not typically anticipated for these more limited reviews. It is expected that these reviews will also be closed using a Program Review Letter that will be posted on the OE website.

NTS Reporting Thresholds

DOE is currently working on a significant revision to the Occurrence Reporting & Processing System (ORPS) reporting criteria that is scheduled for implementation in August 2003. Since in part, NTS noncompliance reporting expectations are based on certain specific categories of ORPS-reportable events with potential nuclear safety implications, OE is monitoring the progress of this effort and the potential changes to the ORPS reporting criteria. OE is currently comparing the revised ORPS criteria to those currently being used by OE as the basis for noncompliances associated with certain adverse events being reported into the NTS, and will consider the necessary steps to maintain appropriate NTS reporting thresholds. OE's noncompliance reporting guidance¹ may need to be revised given changes in ORPS reporting criteria.

Cost Segregation EGS

Under the Major Fraud Act of 1988 [41 USC 256(k)], contractors are not reimbursed for costs associated with any criminal, civil, or administrative proceeding commenced by the United States or a State if the proceeding relates to a violation of a Federal Regulation. For DOE, the Major Fraud Act is implemented in Federal Acquisition Regulation 48 CFR 31.205-47 and various Department of Energy Acquisition Regulations (DEAR). The DOE Office of General Counsel (GC) has determined that contractor costs associated with PAAA investigations and enforcement actions fall under the provisions of the Major Fraud Act limiting cost reimbursement, and as such contractors are required to segregate costs associated with such activities. The key point in time for contractors to begin segregating PAAA proceeding costs is when an investigation is

commenced by OE. OE has instituted a policy to assure formal notification of a contractor by letter when OE commences an investigation. Contractor costs in supporting the investigation by OE, including those costs associated with any subsequent Enforcement Conference and Enforcement Action, are to be segregated as specified in contract provisions. Jurisdiction to determine allowability of costs resides with the DOE Contracting Officer. OE intends to issue an EGS on this subject during 2003 to help assure contractors are aware of their obligations in this regard and familiar with OE's formal notification policies.

Update Operational Procedures

OE has released two principal documents to provide guidance to contractors and DOE personnel involved in the PAAA Enforcement Program. These are:

1. *Operational Procedure for Enforcement: Identifying, Reporting, and Tracking Nuclear Safety Noncompliances under Price-Anderson Amendments Act of 1988*, June 1998.
2. *Operational Procedure for Enforcement: Enforcement of DOE Nuclear Safety Requirements under Price-Anderson Amendments Act of 1988*, June 1998.

The first document provides guidance on steps expected of contractors to identify nuclear safety noncompliances from the range of problems and deficiencies that are routinely found, criteria for matters that should be reported into the DOE's NTS system, and expectations for managing the resolution of those matters that are below NTS reporting thresholds. The second document provides guidance on how DOE will implement the enforcement process, including review and evaluation of noncompliance problems, conduct of investigations and enforcement conferences, and issuance of the various types of enforcement actions. Since these documents have not been revised recently, and much supplemental guidance in the format of EGS's has been issued, it is anticipated that these guidance documents will be updated in the near future to incorporate the full set of guidance that is available to contractors and DOE personnel.

¹ Operational Procedure for Enforcement, *Identifying, Reporting, and Tracking Nuclear Safety Noncompliances under Price-Anderson Amendments Act of 1988*, June 1988.

Safety Significance – More Structured Approach to Enforcement Decisions

DOE's Enforcement Policy² establishes the enforcement process, and the various contributing factors that DOE considers in its enforcement decisions. DOE is preparing material for internal use by the OE staff to aid in evaluating and screening safety significance as part of its routine evaluations of potential noncompliance matters from various sources including those reported into the NTS. Additionally, this effort will address the various other factors that are to be considered as described in the Enforcement Policy, such as: (1) how the problem was identified; (2) timeliness of identification and corrective actions; (3) whether it was self-reported; (4) if it is repetitive; (5) involves issues of falsification; (6) management involvement; and (7) other contributing factors. The purpose of this initiative is to ensure a comprehensive and consistent review and screening in deciding cases that should be investigated, as well as appropriate considerations in enforcement deliberations.

Enforcement Contribution to Improvements in Safety

During late 2002 OE initiated a project to evaluate and document the impact and benefits that the PAAA Enforcement Program is making to nuclear safety. The Office will continue working on this project during 2003, and will be utilizing various site-specific and generic examples of safety benefits, related statistical information, and qualitative perspectives from contractor and DOE Program Office and Field Office personnel in documenting the results of the evaluation.

Worker Safety Regulation and Enforcement

As noted in chapter 4, legislation passed in December 2002³ extending the nuclear incident

indemnification provisions for DOE contractors also added requirements for DOE to establish and enforce worker safety regulations. The legislation requires DOE to promulgate regulations for occupational safety and health at DOE facilities operated by contractors indemnified under the Atomic Energy Act of 1954. DOE is required by the legislation to promulgate the worker safety regulations within one year of the legislation, with an effective date of one year after promulgation.

Based on the above mandate, OE is currently supporting GC in developing worker safety and health regulations and a supporting Enforcement Policy. Both the regulation and the Enforcement Policy will be issued for public comment prior to final promulgation.

ANTICIPATED CHANGES IN EXTERNAL FACTORS

Possible Further Extension and Changes in PAAA

As noted in chapter 4, legislation was passed late in 2002 (National Defense Authorization Act for Fiscal Year 2003 - H.R.4546) that amended the Atomic Energy Act of 1954 [42 U.S.C. 2210(d)(1)(A)] to extend the PAAA indemnification provisions until December 31, 2004, for DOE contractors, and added requirements for DOE to establish and enforce worker safety regulations. All other nuclear safety and indemnification provisions remain unchanged.

Other legislative actions are being considered during 2003 that may further extend the indemnification provisions and may potentially repeal the statutory exemption from civil penalties for certain not-for-profit contractor entities. As of June 2003, such legislation was still under development and it is premature to predict what, if any, changes will take place.

² 10 CFR Part 820, Appendix A, *General Statement of Enforcement Policy*, August 17, 1993.

³ National Defense Authorization Act for Fiscal Year 2003 – (H.R.4546). Amended the Atomic Energy Act of 1954 [42 U.S.C. 2210(d)(1)(A)]

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ACRONYMS

ALARA	as low as is reasonably achievable
BHI	Bechtel Hanford, Inc.
BNL	Brookhaven National Laboratory
BSA	Brookhaven Science Associates
BBWI	Bechtel BWXT Idaho, LLC
CFR	Code of Federal Regulations
CY	Calendar Year
DEAR	Department of Energy Acquisition Regulations
DOE	Department of Energy
DOELAP	DOE Laboratory Accreditation Program
dpm/100cm²	disintegrations per minute per 100 centimeters squared
ECR	electron cyclotron resonance
EGS	Enforcement Guidance Supplement
FEMP	Fernald Environmental Management Project
FFS	Fluor Federal Services, Inc.
FHI	Fluor Hanford, Inc.
GC	Office of the General Counsel
HRA	High Radiation Area
INEEL	Idaho National Engineering and Environmental Laboratory
LANL	Los Alamos National Laboratory
mrem	millirem
NDA	non-destructive assay
NNSA	National Nuclear Security Administration
NOV	Notice of Violation
NTS	Noncompliance Tracking System
OE	Office of Price-Anderson Enforcement
ORNL	Oak Ridge National Laboratory
ORPS	Occurrence Reporting & Processing System
OSH	occupational safety and health
PAAA	Price-Anderson Amendments Act
RWMC	Radioactive Waste Management Complex
RCT	Radiological Control Technician
TSR	Technical Safety Requirement
WIPP	Waste Isolation Pilot Plant
WPRAP	Waste pits Remedial Action Project
WSRC	Westinghouse Savannah River Company

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APPENDIX A: ENFORCEMENT PROCESS

Introduction

The Department of Energy (DOE) Price-Anderson Amendments Act (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, 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 website at <http://www.tis.eh.doe.gov/enforce>

Background

The 1988 Price-Anderson Amendments Act¹ 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. The effective period of the PAAA was recently extended until December 31, 2004, by amendment enacted in December 2002.

¹ 42 U.S.C. 228a

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 NOV's 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, two substantive rules have been released as final rules-10 CFR 830 (which includes subpart A, *Quality Assurance Requirements*, and subpart B, *Safety Basis Requirements*) and 10 CFR 835, *Occupational Radiation Protection*. Additionally, DOE Rules on Workplace Substance Abuse Programs, Contractor Employee Protection, and Accuracy of Information have been identified as nuclear safety requirements that are also enforceable.²

DOE's first enforcement action was issued in April 1996.³ 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.

Administration

The Department's Enforcement Program is administered by a relatively small staff in the Office of Price-Anderson Enforcement (OE) at DOE Headquarters, linked with PAAA Coordinators in Field and Program Offices, and supported by technical

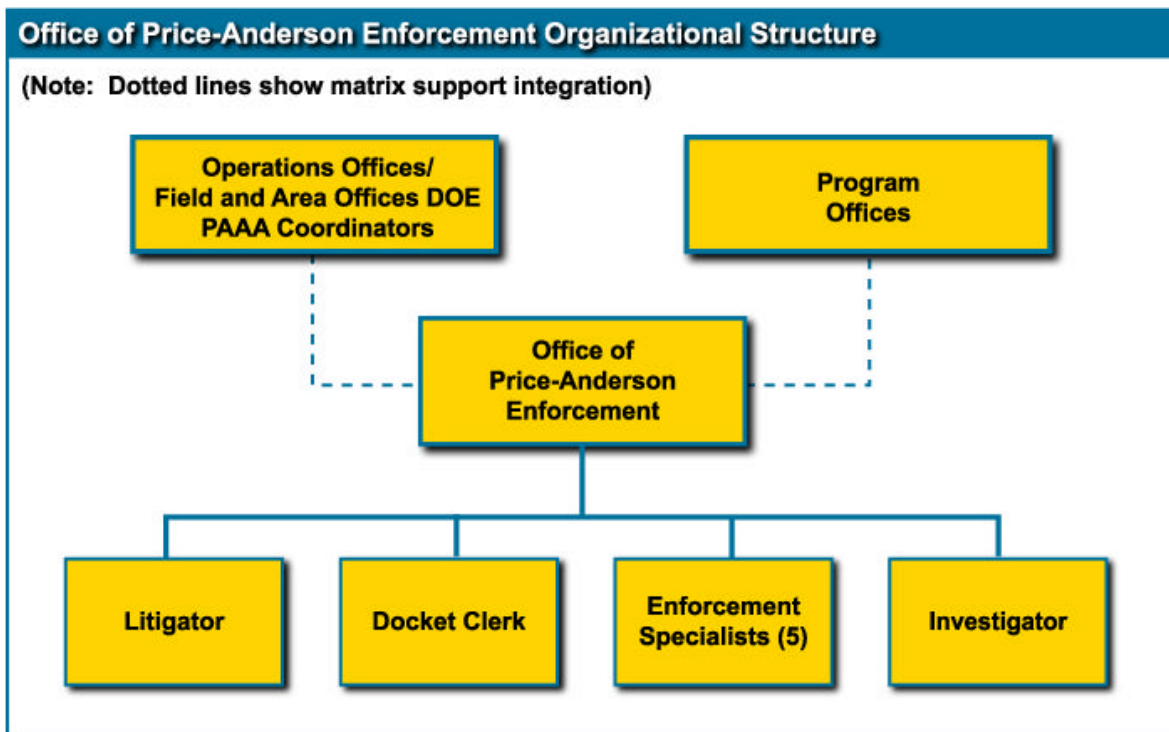
² 10 CFR 707, 10 CFR 708 AND 10 CFR 820.11, respectively.

³ EA 96-01, Pacific Northwest National Laboratory

experts from both Headquarters and field elements. The program is structured to use existing resources across DOE to assist in evaluating noncompliances and the adequacy of corrective actions. However, the program relies on the independent judgment of OE personnel to assure that resolutions across the DOE complex are consistently applied.

The OE team includes the Director, seven enforcement staff (including a Litigator and Investigator), a Docket Clerk, an Administrative Assistant; 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



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 documents⁴ will be reported into the Department's Noncompliance Tracking System (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 Defense Nuclear Facility Safety Board (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.⁵ 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 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 safety culture.

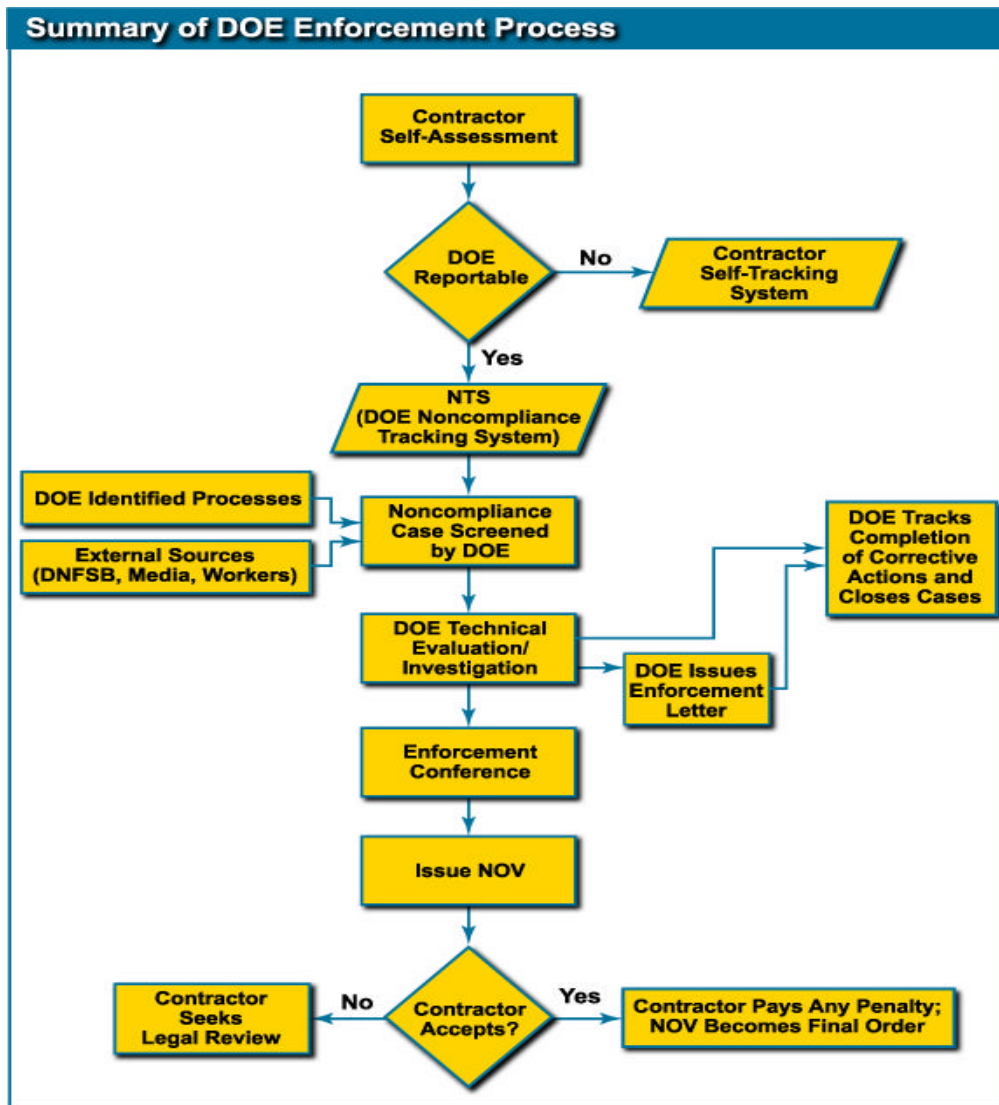
OE staff work closely with DOE Field and Program Office management in making decisions about what enforcement actions are appropriate based on the findings of the investigation. If appropriate, an Enforcement Conference is held with senior contractor management, along with DOE Field and Program Office 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

⁴ 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.

⁵ 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.

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.⁶ Figure A-2 summarizes the enforcement process.

Figure A-2



⁶ *Operational Procedures for Enforcement, Enforcement of 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
- Notice of Violation with no civil penalty
- Notice of Violation 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 is required to 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.⁷ Severity Level I violations are set at 100 percent of the statutory limit per violation per day (i.e., \$110,000). Severity Level II violations are set at 50 percent of the statutory

⁷ 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.

limit (i.e., \$55,000) per violation per day, and Severity Level III violations are set at ten percent of the statutory limit (i.e., \$11,000) per violation per day.⁸

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

⁸ 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.

reliably addressing its nuclear safety problems in a timely and comprehensive manner.

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 on 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.⁹

DOE's approach to enforcement involves some relatively innovative methods to avoid human resource-intensive inspection forces 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*.

⁹ Office of the Docket Clerk, Office of Price-Anderson Enforcement (EH-6), room 3041, 20030 Century Boulevard, Germantown, Maryland 20874-1290; (301) 903-0112.

APPENDIX B: ENFORCEMENT GUIDANCE SUPPLEMENT

*Enforcement Guidance Supplement
EGS:02-01
Appendix E- Operational Procedures
for Enforcement*



Department of Energy
Washington, DC 20585

February 21, 2002

**MEMORANDUM FOR: DOE PAAA COORDINATORS
CONTRACTOR PAAA COORDINATORS**

FROM: R. KEITH CHRISTOPHER *R. Keith Christopher*
DIRECTOR
OFFICE OF PRICE-ANDERSON ENFORCEMENT

SUBJECT: Enforcement Guidance Supplement 02-01:
Enforcement Position Relative to 10 CFR 835 Bioassay
Accreditation

Section 1.3 of the Operational Procedures for Enforcement, published in June 1998, provides the opportunity for the Office of Price-Anderson Enforcement (OE) to periodically issue clarifying guidance regarding the processes used in its enforcement activities. OE typically issues such guidance in the form of Enforcement Guidance Supplements (EGSs), which provide information or recommendations only and impose no requirements or actions on Department of Energy (DOE) contractors.

Various process delays associated with the Department of Energy Laboratory Accreditation Program (DOELAP) for radiobioassay have resulted in sites not meeting the implementation dates specified in 10 CFR 835. Sites have expressed concern to the Office of Worker Protection Policy and Programs (EH-52), which administers the DOELAP Program, regarding potential enforcement action. This EGS describes OE's enforcement position relative to such noncompliances.

Background

10 CFR 835.402(d)(1) requires that internal dose monitoring programs implemented to demonstrate compliance with 835.402(c) shall be "...accredited, or excepted from accreditation, in accordance with the DOE Laboratory Accreditation Program for Radiobioassay." 10 CFR 835.101(f) identifies that compliance with the 835.402(d)

requirements for radiobioassay program accreditation shall be achieved no later than January 1, 2002.

The DOELAP Radiobioassay accreditation process consists of several steps, including site application, performance testing, onsite assessment, Oversight Board evaluation, and accreditation. Over the past year, DOELAP has experienced problems with the performance testing process, which have resulted in delays in accreditation. Consequently a number of DOE sites seeking radiobioassay program accreditation are currently “in process,” i.e., they have submitted their applications but have not yet received their final accreditation certificates. Contractors have questioned whether this situation:

1. represents a 10 CFR 835 noncompliance;
2. is reportable as such to the Noncompliance Tracking System (NTS); and
3. may be subject to enforcement.

Enforcement Position

With respect to internal dose monitoring programs implemented to demonstrate compliance with 10 CFR 835.402(d), the failure to have such programs accredited as of January 1, 2002, does represent a technical noncompliance with 10 CFR 835.101(f). The regulation makes no allowance for applicants currently undergoing the accreditation process.

As with other identified PAAA noncompliances, contractors should identify and track the noncompliance on their local PAAA tracking systems. Contractors should also evaluate the noncompliance for reportability to the NTS consistent with their procedures. OE does not believe, however, that 835.101(f) noncompliances resulting from delays in the accreditation process warrant NTS reporting, barring any other associated programmatic or repetitive noncompliances.

Furthermore, OE also sees no benefit in pursuing enforcement actions against sites that have acted in good faith but have ended up in a “technical noncompliance” situation due to delays in the bioassay accreditation process. Accordingly, OE will utilize its enforcement discretion by not taking enforcement action against sites who have submitted applications for DOELAP radiobioassay accreditation and, as of January 1, 2002, were still working through the accreditation process.

This enforcement discretion does not extend to unaccredited sites that did not submit applications to DOE by January 1, 2002. Sites in this situation should screen the identified noncompliance and evaluate for NTS reportability consistent with their PAAA procedures.

OE will continue to maintain communication with EH-52 regarding the status of and backlog associated with the DOELAP radiobioassay accreditation process. Questions on the above enforcement position should be directed to Tony Weadock of this office at 301-903-4283. Questions on the DOELAP accreditation process should be directed to Robert Loesch, DOELAP Program Manager, EH-52, at (301) 903-4443.

As applicable, Enforcement Guidance Supplements will be incorporated in later revisions of the DOE Enforcement Handbook and will be made available on the Office of PAAA Enforcement web page (<http://tis-nt.eh.doe.gov/enforce/>).