

1999 Annual Report



U.S. Department of Energy

**Office of Enforcement
and Investigation**

**Price-Anderson
Nuclear Safety
Enforcement Program**

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1999 Annual Report Price-Anderson Nuclear Safety Enforcement Program

Office of Enforcement and Investigation
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1. ANNUAL REPORT HIGHLIGHTS

Introduction

This annual report summarizes the activities and accomplishments of the Department of Energy (DOE) Price-Anderson Amendments Act (PAAA) Enforcement Program in calendar year 1999 and highlights improvements planned for 2000.¹ Appendix A of this report provides an overview of the Enforcement Program for those who are not familiar with the overall process.

The DOE Office of Environment, Safety and Health's (EH) Office of Enforcement and Investigation (EH-Enforcement) implements the DOE Enforcement Program and receives input from coordinators and technical advisors in the Department's Field and Program Offices. Figure 1-1 provides a summary of the Department's 1999 enforcement activities.

DOE enforces two substantive nuclear safety rules, Quality Assurance (10 CFR

830.120) and Occupational Radiation Protection (10 CFR 835). Other requirements, such as the Information Requirements provision in 10 CFR 820.11, may be enforced under the PAAA. DOE may also take enforcement action under 10 CFR 708 against contractors that retaliate against employees for raising nuclear safety concerns.

The DOE Enforcement Program issued ten Notices of Violation (NOV) to DOE contractors in this reporting period. All ten NOVs cited significant violations, and seven of them imposed civil penalties that totaled \$1,072,500.² During 1999, 229 potential nuclear safety noncompliances were reported into the Noncompliance Tracking System (NTS) for review by EH-Enforcement. EH-Enforcement reviewed 617 additional issues that had not been reported into the NTS for potential Price-Anderson applicability. Figure 1-2 summarizes this information and information on reviews from prior years. The civil

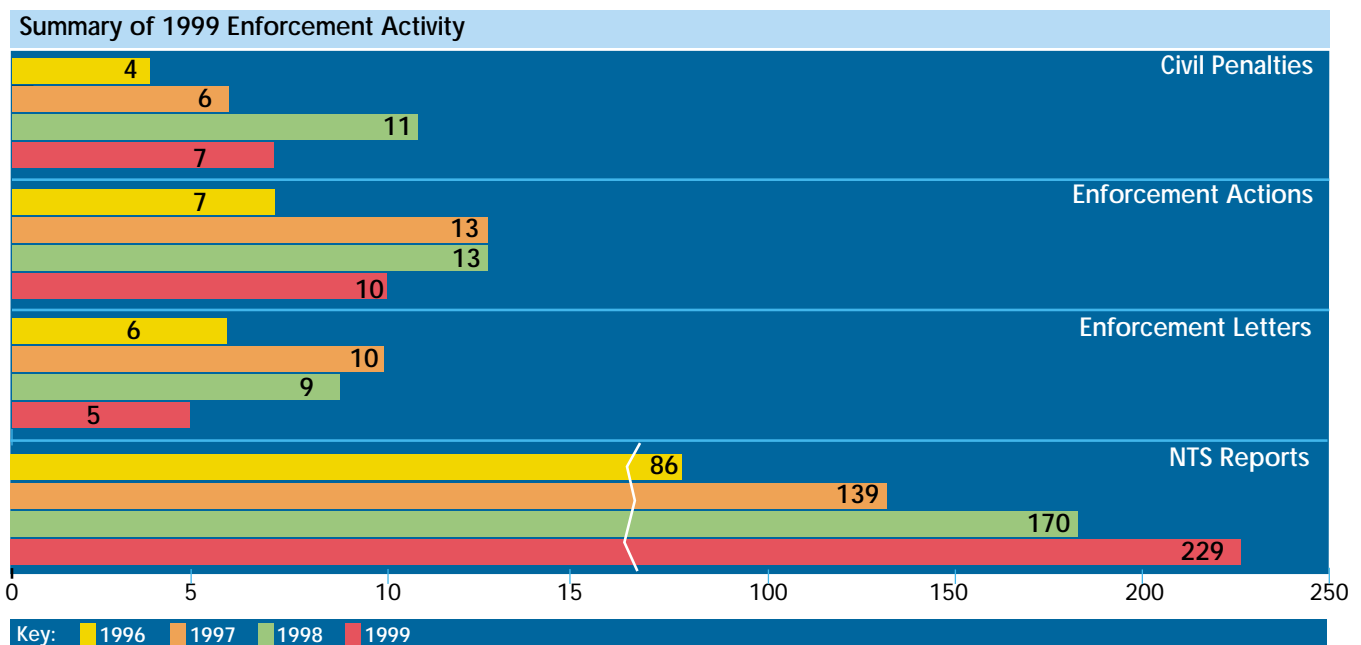
penalties imposed on contractors by the Department for violations are shown in Figure 1-3.

Significant Enforcement Actions

Significant enforcement actions during 1999 include the following.

- DOE issued a Compliance Order in addition to an NOV with a civil penalty, to Fluor Daniel Hanford Inc. (FDH), the managing contractor of the Hanford site in Washington State. The magnitude of recurring nuclear safety problems, coupled with repeated and long-standing failures to comply with quality assurance regulatory requirements by contractors working at the Hanford Spent Nuclear Fuel Project, led the Secretary of Energy to issue the first Compliance Order under the PAAA. This Compliance Order

Figure 1-1



¹ The Price-Anderson Amendments Act of 1988 (P.L.) No. 100-408 requires DOE to enforce compliance with its nuclear safety requirements.

² Of the \$962,500 total civil penalties, \$220,000 were waived due to the statutory exemption for specific not for profit contractors.

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directed FDH to make improvements and correct the problems by specific dates. The Hanford Spent Nuclear Fuel Project involves stabilizing and moving spent nuclear fuel from an aging facility to newer storage facilities. DOE issued the NOV and Compliance Order after investigators found that contractors working on the project repeatedly failed to follow procedures designed to protect workers and members of the public from potential radiological harm. On December 9, 1999, the Secretary determined that FDH successfully implemented the terms of the Compliance Order and on December 13, 1999, he terminated the Compliance Order.

Civil Penalty: \$330,000

- DOE issued NOVs, with civil penalties, to the operators of the Idaho National Engineering and Environmental Laboratory (INEEL) in Idaho and the Rocky Flats Environmental Technology Site (RFETS) in Colorado. The NOVs were issued for poor quality control in the procurement of nuclear waste containers purchased from a subcontractor and for related quality control violations. Lockheed Martin Idaho Technologies Company (LMITCO), the operating contractor at INEEL, purchased 556 of these nuclear waste containers, all of which were determined to be defective. Kaiser-Hill Company (KHLL), operator at RFETS, purchased 69 of the containers and all of these were defective as well. Contractors at both sites filled some of the containers with nuclear waste before it was determined that they failed to meet procurement specifications. The contractors failed to assure that a qualified contractor would perform fabrication. Additionally, the contractors failed to implement an adequate inspection and acceptance program for these items or failed to properly control nonconforming items. **Civil Penalty to LMITCO: \$220,000**
Civil Penalty to KHLL: \$82,500

- DOE issued an NOV, with a civil penalty, to the Los Alamos National Laboratory (LANL) in New Mexico for continuing failures to conduct work according to the Laboratory's established nuclear safety procedures. In one case these failures caused a worker at the laboratory to receive an unplanned and uncontrolled radiological exposure. In another case, these failures led to a work area being contaminated with radioactive material.

Civil Penalty: \$220,000
(waived due to statutory exemption)

- DOE issued an NOV, with a civil penalty, to the Mason & Hanger Corporation, operator of the Pantex Plant in Amarillo, Texas, for violations associated with a fire in a nuclear weapons disassembly facility. DOE investigators determined that the fire directly resulted from the failure of Mason & Hanger to establish and implement proper work controls that would have prevented a fire.

Civil Penalty: \$82,500

Enforcement Letters

DOE issued five Enforcement Letters to contractors in 1999. Enforcement Letters communicate a particular positive message or concern to a contractor and may require that the contractor implement and report corrective actions. EH-Enforcement evaluated additional cases for potential enforcement action and determined that enforcement action was not warranted in these cases based on contractor initiative in identifying, reporting, and correcting the noncompliances. DOE also conducted seven Price-Anderson screening and reporting program reviews to review the contractor's processes for identifying, screening, and reporting potential violations of nuclear safety rules and for managing corrective actions for the noncompliances identified.

Figure 1-2

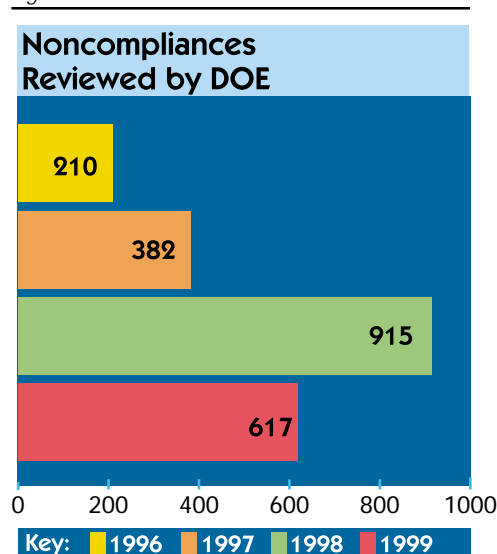
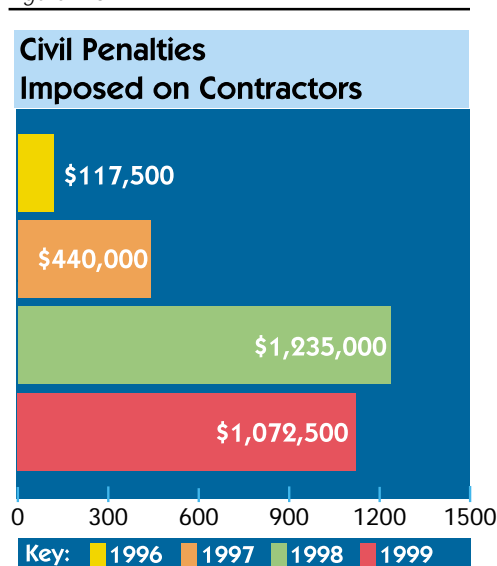


Figure 1-3



2. SIGNIFICANT ENFORCEMENT ACTIONS

Compliance Order And Fine for Quality Assurance Breakdowns At Hanford

The Secretary of Energy issued the Department of Energy's (DOE) first Compliance Order on May 26, 1999, to Fluor Daniel Hanford (FDH), the integrating contractor at the Hanford, Washington, site. The Compliance Order directed FDH to make specific improvements and corrections to quality assurance breakdowns within a schedule described in the Compliance Order. DOE also issued a Notice of Violation (NOV) to the contractor and imposed a civil penalty of \$330,000, the largest fine issued to date under DOE's Price-Anderson Amendments Act (PAAA) Enforcement Program.¹ The Compliance Order resulted from long-standing and recurring failures of FDH to meet quality assurance requirements.

Events leading to the Compliance Order and NOV included a joint investigation conducted in April through August 1998 by the Office of Enforcement and Investigation (EH-Enforcement) and the DOE Richland Field Office, and an October 22, 1998, Enforcement Conference, chaired by the Director of EH-Enforcement, to discuss the violations with the contractor. The majority of quality problems investigated by DOE occurred at the Spent Nuclear Fuels Project (SNFP). This project was assigned a high priority and was undertaken to prevent potential contamination of the Columbia River from leaking [] pools at the K-Basins facility. Duke Engineering and Services Hanford was the subcontractor primarily responsible for the SNFP.

At the Enforcement Conference, FDH acknowledged the problems raised by DOE and acknowledged that the problems were widespread beyond the SNFP and K-Basins. DOE decided that, in lieu of

immediate enforcement action, it would give FDH 120 days to demonstrate substantial progress to correct the long-standing problems. DOE exercised this discretion based in part on FDH making key management changes and on FDH commitments to undertake a comprehensive quality assurance improvement program with compensatory interim actions. DOE cautioned FDH that the Department would consider escalated enforcement action if the problems were not corrected and if the actions committed to were not completed.

In April 1999, DOE conducted a supplemental investigation to evaluate the contractor's progress. DOE concluded the following: (1) FDH had not taken several actions to which they had committed in the improvement program; and (2) FDH had not demonstrated adequate progress in implementing many other commitments made to DOE. DOE also found that, despite actions taken, the problems that were the basis for the Enforcement Conference continued to occur. To compound the problems, DOE determined that information FDH provided regarding a separate investigation was not accurate and complete, which independently constituted a violation of 10 CFR 820.11 (Information Requirements).

On May 26, 1999, DOE issued an NOV that included a civil penalty of \$330,000. The NOV cited the quality assurance violations and the accuracy of information violation. Additionally, because of the contractor's poor track record in following through on commitments, DOE concluded it did not have confidence that an NOV and civil penalty would be sufficient to ensure that the nuclear safety rule violations would be corrected. Accordingly, the Secretary of Energy took the additional step of issuing a Compliance Order. Under the Compliance Order, each

failure to fulfill a commitment by the contractor would have constituted a separate violation of the PAAA.

DOE determined that mitigation was not warranted for any of the violations described in the NOV because (1) the violations were identified from self-disclosing events or were identified by the DOE Field Office and (2) the corrective action process was not timely or adequate. FDH did not contest the NOV and paid the full civil penalty.

The Compliance Order that DOE issued to FDH on May 26, 1999, remained in effect until December 13, 1999, when the Secretary of Energy concluded that DOE was satisfied that all terms of the Compliance Order had been met. DOE continues to monitor contractor performance in this area.

Procurement Issues at Idaho, Rocky Flats, and Hanford

In 1999, EH-Enforcement focused considerable effort on increasing awareness in the DOE complex of quality assurance breakdowns in the procurement and receipt inspection processes. EH-Enforcement became concerned about deficiencies in this area and in related areas of design control, work processes, and quality improvement after it learned that a large number of nuclear waste containers fabricated by a vendor and supplied to two DOE contractors had structural problems, including bad welds. These defects were not discovered until some of the containers were filled with nuclear waste. Further assessments by EH-Enforcement identified recurring problems in the DOE complex with procurement of items and services that are important to safety. DOE investigations led to the issuance of NOV's and civil

¹ EA-1999-04

Significant Enforcement Actions

penalties to three contractors. Investigations into the activities of other contractors continue.

On August 18, 1999, DOE issued NOVs to Lockheed Martin Idaho Technologies Company (LMITCO), operator of the Idaho National Engineering and Environmental Laboratory in Idaho, and the Kaiser Hill Company L.L.C. (KHLL), operator of the Rocky Flats Environmental Technology Site in Colorado. DOE cited both contractors with violations pertaining to their procurement of items important to safety and with other violations of quality assurance requirements.²

DOE conducted investigations into activities at LMITCO and determined that a number of violations occurred between 1995 and 1998 relating to quality assurance. In the case for which the company was cited, LMITCO purchased 556 standard waste boxes to use for the interim storage of [] radioactive waste and for the eventual shipment to and long-term storage of the nuclear waste at the Waste Isolation Pilot Plant in Carlsbad, New Mexico. LMITCO discovered structural integrity problems with the boxes (e.g., poor welds) only after contractor personnel filled 29 of the boxes with waste. LMITCO subsequently determined that all 556 boxes were inadequate for use. None of the boxes was shipped offsite.

In a related case, LMITCO contracted with another vendor to fabricate 48 nuclear fuel storage buckets to use in the movement and handling of [radioactive material]. During vendor fabrication of the buckets, LMITCO learned that the vendor did not have an adequate quality assurance program and removed the vendor from the approved supplier list for future procurements. However, LMITCO continued to permit the vendor to fabricate the buckets and subsequently accepted the buckets from the vendor. LMITCO eventually inspected the [] buckets and determined that 41

of 48 buckets had welds that failed to meet design specification.

DOE imposed a civil penalty of \$220,000 against LMITCO. DOE determined that mitigation was not warranted because LMITCO received prior notice on several occasions from the DOE Field Office on weaknesses in the company's quality improvement processes. LMITCO paid the full civil penalty for the violations related to procurement and design.

Similarly, DOE investigated KHLL procurement activities at Rocky Flats. KHLL purchased 69 nuclear waste containers from the same vendor as LMITCO. The boxes were to be used to store nuclear waste until it could be shipped to the Waste Isolation Pilot Plant. KHLL filled nine of the boxes with nuclear waste before discovering that they were defective. KHLL determined that none of the 69

boxes was usable for their intended purpose. As in the LMITCO case, none of the boxes left the site.

DOE issued a civil penalty against KHLL for \$82,500. DOE mitigated a portion of the potential penalty in recognition of a KHLL initiative to identify quality problems in other purchases after identifying the nuclear waste container problems. KHLL accepted the NOV and paid the full civil penalty.

The figures below show the Standard Waste Box (SWB) and illustrate some of the defects in these boxes. Figure 2-1 shows a person standing beside an SWB, which demonstrates the size of the waste container. Figure 2-2 is a close-up view of a SWB lid-to-container gasket damaged during shipment from the manufacturer to Rocky Flats. Figure 2-3 is a close-up view of an SWB exterior weld. This weld has

Figure 2-1



Note: Shows a 5' 2 1/2" person for waste container size comparison.

² EA-1999-06 issued to KHLL, EA-1999-07 issued to LMITCO.

Significant Enforcement Actions

lack of penetration, cracks, and weld spatter. The subcontractor attempted, unsuccessfully, to paint over these defects. An attempt to paint over these defects was unsuccessful. Rust is also visible on painted over weld spatter areas near the weld.

In a case involving procurement issues with another DOE contractor, DOE cited FDH on May 26, 1999, for violations of the design, procurement, work process, and quality improvement provisions of the Quality Assurance Rule at the DOE Hanford site. DOE found in one instance that FDH allowed a subcontractor that did not have an approved quality assurance program to provide nuclear facility design work. In another instance, a subcontractor fabricating nuclear facility components did not have an acceptable quality program, but was allowed to continue work for almost a year before the problems were corrected. DOE fined FDH \$110,000 for these violations. FDH accepted the NOV and paid the civil penalty.³

Figure 2-2

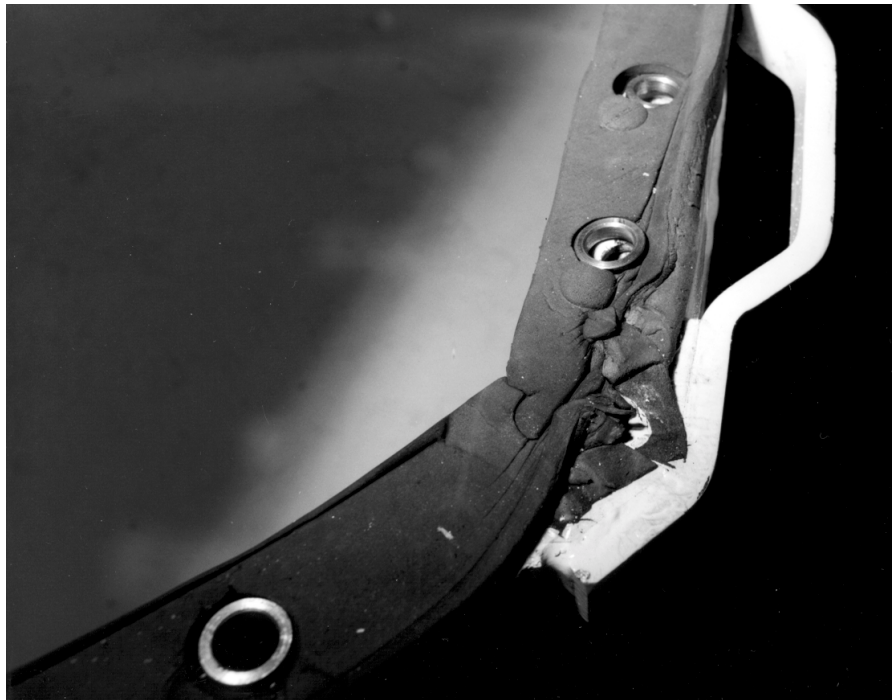
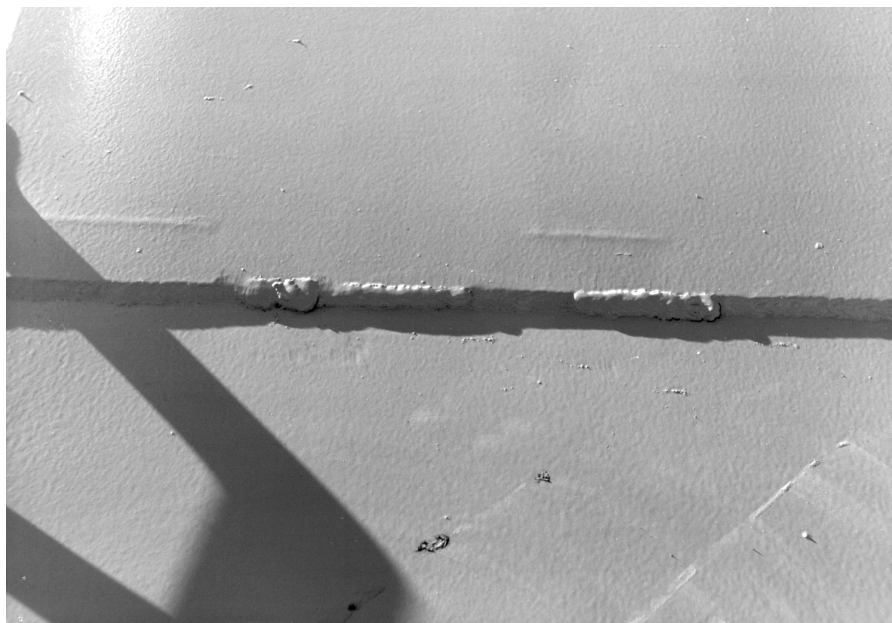


Figure 2-3

Fire at Pantex

On December 29, 1998, at the Pantex Plant, an isopropyl alcohol fire occurred in [a building] during cleaning operations on a weapon component. Inadequate controls to mitigate the fire hazard posed by the isopropyl alcohol were determined to be the root cause of the event. However, the failure to adhere to existing procedural controls was a significant contributing cause as well.

EH-Enforcement began a PAAA Program Review at the Pantex facility to evaluate the Mason & Hanger Corporation (MHC) program for proactively identifying PAAA noncompliances, reporting appropriate noncompliances to DOE, and comprehensively correcting problems associated with noncompliance conditions. While performing the review, EH-Enforcement personnel became aware that the fire in



³ Reference the narrative under "Compliance Order and Fine for QA Breakdowns at Hanford" for additional information pertaining to the violations cited in EH-1999-04.

Significant Enforcement Actions

[the building] was in fact a significant event. EH-Enforcement reviewed the circumstances and potential consequences of the fire during a site visit on February 24 and 25, 1999, and issued an Investigation Summary Report.

Subsequent to an Enforcement Conference, DOE concluded that violations of the Quality Assurance Rule (10 CFR 830.120) occurred. On July 30, 1999, DOE issued an NOV to MHC and imposed a civil penalty of \$82,500. The NOV described inadequacies in the work controls and the failure to comply with existing procedures as matters that contributed to the fire event. The hazard posed by isopropyl alcohol was identified in the facility fire hazards analysis issued in 1996, based on a previous alcohol fire that had occurred at the Pantex Plant. However, the contractor had not adequately implemented actions to either eliminate the hazard by substituting an alternative cleaning agent or mitigate the potential for a fire through explicit administrative and procedural controls. No procedural controls were established that would either minimize the amount of alcohol used or ensure adequate ventilation to preclude the accumulation of concentrated vapors, nor were controls established to preclude electrostatic discharge as an ignition source.

DOE issued an NOV as two Severity Level II violations, with a proposed civil penalty of \$82,500. In determining the severity level of these violations, DOE considered the multiple violations involved and the potential consequences of a fire in [a cell]. After considering the escalation and mitigation factors set forth in the Enforcement Policy, the proposed civil penalty for each violation was reduced by 25 percent to \$41,250. In reducing the civil penalty, DOE recognized the aggressive investigative actions undertaken by MHC in uncovering the violations related to this event and the causes of the event. DOE concluded that further mitigation for these violations was not appropriate because (1) the event was self-disclosing and the underlying problem was not identified by MHC before the event and (2) the

corrective action plan initially proposed by MHC did not address the broader implications of the problems disclosed by this event, requiring DOE input to sufficiently address these areas.

DOE was also concerned with this event because the hazard was identified through a previous operational event at the Pantex Plant. Although DOE and MHC previously held discussions on an alternative cleaning agent, MHC management failed to proactively resolve the issue or implement adequate controls to prevent or mitigate the consequences of a fire. DOE's expectation, as reflected in its nuclear safety regulations and the Enforcement Policy, is for its contractors to take ownership of safety in their activities and identify and correct safety weaknesses.

MHC paid the civil penalty in full but requested that DOE reconsider the severity level of the violations associated with this event maintaining that the potential consequences of the event were modest. DOE considered these arguments but concluded that its original findings appropriately considered both the probability and potential consequences of the event. Thus, on October 8, 1999, DOE closed this matter through issuance of a Final Notice of Violation, denying the request from M&H to reduce the severity level.

Unplanned Exposure and Uptake at CMR, Los Alamos

On September 3, 1999, DOE issued an NOV to Los Alamos National Laboratory (LANL) for work control and radiological monitoring deficiencies. The violations led to a worker receiving an unplanned, uncontrolled radiological exposure and intake of [a radioactive material] in November 1998 at the Chemistry and Metallurgy Research (CMR) facility.

DOE concluded that violations of 10 CFR 830.120 (Quality Assurance Rule) and of 10 CFR 835 (Occupational Radiation Protection Rule) occurred. The violations

involved multiple failures to (1) conduct approved work activities in accordance with established LANL procedures and work controls, (2) adequately monitor for radioactive material, (3) post and control access to radiological areas, and (4) implement effective corrective actions. The failure to comply with LANL work control procedures and the failure to stop work when conditions were outside the work controls were similar to CMR work control problems that led to the September 1997 stand-down of all normal operations within CMR. After the September 1997 stand-down, the CMR management goal for restart of normal operations included ensuring that (1) CMR activities were properly authorized and implemented using an appropriate work control process and (2) the workforce understood and adhered to the work control requirements. CMR recovery and restart for this previous stand-down were achieved on April 17, 1998.

CMR experienced another event on June 25, 1999, when a glovebox overpressurization led to a glove rupture and extensive radioactive [] contamination throughout the affected room. Fortunately, CMR workers were not in the room at the time of the glove rupture; therefore, they were not exposed to the radioactive material. The LANL analysis of this event identified a breakdown in the "programmatic work process," including "a lack of formal documentation and failure to follow established and approved work processes at the CMR facility." DOE was particularly concerned that LANL had not implemented effective corrective actions for these recurring, similar problems.

DOE classified several violations separately as Severity Level II problems. These violations involved (1) work process problems, (2) inadequate instrumentation and monitoring of work areas for radiation, (3) inadequate radiological postings and access control for radiological areas, and (4) inadequate processes to prevent recurrence of quality problems. In determining the severity level of these violations, DOE grouped the various

Significant Enforcement Actions

examples of problems in each of these areas collectively and considered their programmatic and recurring nature, resulting in four Severity Level II citations.

LANL is exempt from civil penalty by statute. However, because of the safety significance of these violations, DOE noted that it would have proposed a civil penalty of \$220,000 (\$55,000 for each Severity Level II violation) if LANL were not exempted. DOE concluded that no mitigation was warranted for self-identification, timely reporting, or implementation of effective corrective actions to prevent recurrence of the violations. Specifically, LANL failed to identify the recurring programmatic nature of these violations and report them into the EH-Enforcement Noncompliance Tracking System (NTS) in a timely manner. The November 1998 CMR work control event involved multiple recurring failures to effectively plan, authorize, implement, and control work activities, and the event was not reported into the NTS until months after EH-Enforcement initiated an investigation. LANL originally placed the noncompliances associated with this event into the local tracking system as a non-NTS reportable item. Additionally, LANL's corrective actions to authorize and control work activities implemented as a result of CMR's work stand-down were not adequate to prevent recurrence of similar deficiencies as evidenced by the November 1998 [] and the June 1999 [radioactive] contamination events.

The NOV required LANL to submit its corrective actions to preclude recurrence of the problems that led to this event and to enter those actions and target completion dates into the NTS to track completion and closure.

Control of Radiological Material Weaknesses at Sandia

On May 21, 1999, DOE issued an NOV to Sandia National Laboratories (SNL) for two Severity Level III problems. The DOE evaluation identified two recurring

programmatic concerns. These concerns included repetitive, long-term problems with failure to control radioactive material and with failure to properly document, use, and implement technical work documents; specifically, radiological work permits.

Between March 9 and March 11, 1999, EH-Enforcement performed an onsite review of the SNL PAAA program for screening, tracking, and reporting noncompliances with the nuclear safety rules. A separate program review letter was issued to address the observations and concerns regarding the program that were identified during the review. In the process of performing this evaluation, EH-Enforcement reviewed PAAA noncompliances reported in the SNL self-tracking system and actions taken by SNL to correct the noncompliances. DOE found that multiple radiation protection violations had occurred and that the contractor had not recognized these as representing a programmatic problem.

The first problem described in the NOV involved a series of events with inadequate identification and control of radioactive materials. Specifically, events occurred that included instances of (1) radioactive material being released from a controlled area and sent to an uncontrolled area without adequately determining contamination levels, (2) radioactive material or containers labeled as "radioactive" discovered in uncontrolled areas, and (3) the unplanned and initially unknown spread of contamination outside of radiological areas.

The second problem described in the NOV involved recurring issues with the use of and compliance with radiological work permits (RWP) during 1997 and 1998. Several occurrences were cited in the NOV, including the use of RWPs with incomplete approvals or documentation; continued use of expired RWPs; and failure to comply with work control requirements in the implementation of RWPs. Additionally, EH-Enforcement noted similar findings in an audit conducted between February 5-19, 1999, by

the DOE-Kirtland Area Office and DOE-Albuquerque Operations Office. Thus, the problems with use of and compliance with RWPs were not addressed by the contractor for months after they were identified and brought to the attention of the contractor.

DOE determined that mitigation was not warranted since the contractor had prior notice of the problems and failed to implement programmatic comprehensive solutions to those problems. DOE had issued an enforcement action (EA-1997-07) to SNL in August 1997, which included a Severity Level III violation for failure to control and properly label radioactive material and a Severity Level II violation for deficiencies in the use of Technical Work Documents, including RWPs. Corrective actions associated with these violations were reported to DOE as completed in May 1997. DOE was concerned that corrective actions for EA-1997-07 were not sufficient to prevent recurrence of these similar areas of noncompliance. DOE also considered the inadequate analysis by SNL to identify recurring, programmatic issues and the lack of reporting these issues into the NTS. Had SNL identified the programmatic problem involved, conducted a critical analysis of the problem, reported it into the NTS, and initiated comprehensive corrective actions, this enforcement action would likely not have been taken.

In determining the severity level of these violations, DOE grouped the various examples of problems in each of the two areas collectively and considered their programmatic and recurring nature. When evaluated independently, each occurrence represented a low level of safety significance; however, collectively the occurrences indicated recurring problems in the implementation of SNL Radiation Protection Program requirements. DOE required SNL to report and track closure of its corrective actions for this enforcement action in the NTS.

3. DEFERRED ENFORCEMENT ACTIONS

Introduction

The Department of Energy (DOE) has the discretion to defer enforcement action under certain circumstances. DOE's use of this discretion serves as an incentive to contractor participation in the desired safety management culture. In 1999, DOE chose to exercise this discretion in a number of instances. In many cases, the Department deferred enforcement action because the contractor took the initiative in identifying and reporting noncompliances and in implementing comprehensive corrective actions. In other cases the Department took no action because of the relatively low safety significance of the noncompliance. The following cases are examples of instances in which DOE chose to defer enforcement action. In each case, because the problem was sufficiently important or had the potential to result in a more serious condition, DOE issued Enforcement Letters to the contractor. These letters transmitted the Department's view of the seriousness of the problem and emphasized that DOE expected the causes to be corrected to preclude recurrence.

Brookhaven Radiation Therapy Facility Radiation Area Controls

Brookhaven Science Associates (BSA) contracted with Stony Brook University Hospital (SBUH) to operate the Radiation Therapy Facility (RTF) located at Brookhaven National Laboratory (BNL). DOE evaluated the facts and circumstances concerning an event that occurred at RTF on March 16, 1998. The event involved (1) failure of one of the two microswitches that serve as a redundant interlock for the door to the linear electron accelerator and (2) improper conduct of operations action following identification of the failure.

The RTF is a high radiation area during patient treatment sessions, and operational redundant interlocks are required to minimize the possibility of unplanned radiation exposure to facility personnel. When RTF personnel discovered that one of the microswitches had failed, SBUH personnel called a service representative. Subsequently, the RTF attending physician (an SBUH employee) exceeded the scope of his authority and authorized the service representative to bypass the malfunctioning microswitch [] to allow continued operation of the accelerator. Furthermore, SBUH personnel did not provide timely notification of either the failure of the microswitch or its subsequent bypass to BSA. In fact, BSA did not become aware of the event until March 18, 1998, two days later.

Based on its evaluation of this incident, DOE concluded that the entry control requirements of 10 CFR 835 (Occupational Radiation Protection Rule) were violated at RTF. In the Enforcement Letter, DOE indicated that the actual safety significance of the violations was low because one interlock on the door to the linear electron accelerator room still functioned. However, the letter also stated that the lack of effective communication between SBUH and BSA regarding the regulatory obligations of SBUH when conducting radiological activities was a concern. DOE informed SBUH that the Department could issue an enforcement action against them under the evaluation criteria described in the DOE Enforcement Policy (10 CFR 820, Appendix A).

A decision was made to defer enforcement action against SBUH in this case because DOE believed that it was more appropriate to hold the primary contractor accountable for ensuring that subcontractors perform activities in accordance with established requirements.

Argonne National Laboratory – West, Quality Improvement Breakdowns

In September 1999, EH-Enforcement conducted a review of Argonne National Laboratory – West (ANL-W) PAAA program activities. The review focused primarily on the ANL –W process for screening noncompliances for applicability under the Price-Anderson Amendments Act (PAAA) and reporting and tracking these items in either the NTS or internal tracking processes, as appropriate.

In conducting the PAAA program review, EH-Enforcement found weaknesses in the contractor's implementation of the Quality Improvement provisions of 10 CFR 830.120. These weaknesses represented noncompliances with the provisions of the Quality Assurance Rule, including (1) lack of formal processes for the resolution of all identified safety related problems, (2) lack of formal cause determinations for significant safety-related quality problems, and (3) lack of effective corrective actions to prevent recurrence of such problems. Additionally, EH-Enforcement noted weaknesses with the lack of processes to identify common problems or trends across the multiple databases used and with the timeliness of corrective actions.

ANL-W uses multiple processes for the tracking and disposition of safety-related quality problems. Most of these processes are not formally controlled by a procedure for quality problem resolution, making their use, in effect, optional. Site processes have not required broad reviews across all quality problem processes to evaluate potential trends or recurring conditions, and unlike other sites in the DOE complex, ANL-W procedures require formal cause determinations only for unusual or emergency events reported

Deferred Enforcement Actions

to the Occurrence Reporting and Processing System (ORPS). Consequently, formal cause determinations are not routinely performed for any significant ANL-W deficiency that did not originate as an event. EH-Enforcement also found that corrective action completion dates were routinely being missed without justification. These weaknesses collectively indicated a lack of management emphasis on nuclear safety and importance on the

identification and correction of quality problems.

DOE issued a letter to ANL-W on November 15, 1999. This letter addressed the findings of the PAAA Program Review concerning the Quality Improvement noncompliances. The noncompliances in this area were not associated with any severe or potentially serious event; thus, DOE chose not to take enforcement

action. However, DOE expects correction of these noncompliances and weaknesses in a timely manner, and used the Enforcement Letter to notify the contractor of this expectation. The Enforcement Letter stated that failure to effectively implement the Quality Improvement requirements of 10 CFR 830.120 could result in a future enforcement action, if problems in the identified areas continue to occur.

4. ACCOMPLISHMENTS

Program Activity

Government Accounting Office Report

Between November 1998 and May 1999, the General Accounting Office (GAO) performed a review of the Department of Energy (DOE) Enforcement Program to determine, among other things, how the Department has enforced nuclear safety rules. In June 1999, GAO issued *DOE's Nuclear Safety Enforcement Program Should Be Strengthened*, documenting GAO's conclusions and recommendations regarding the DOE Enforcement Program.

The GAO concluded that the Department's Enforcement Program appeared to be a good mechanism for increasing contractor awareness of, and accountability for, nuclear safety requirements. The GAO report also contained several conclusions regarding the Office of Environment, Safety and Health's Office of Enforcement and Investigation (EH-Enforcement). The report stated that EH-Enforcement (1) provided relatively independent review and oversight of contractor operations; (2) designed a process to ensure that results of investigations are objective and fact based; (3) required the contractor to implement its commitments for corrective actions before EH-Enforcement allows a noncompliance report to be closed; and (4) posted enforcement action details on the Internet so the contractor community and others would be aware of the types of problems that the Department considers to be significant.

GAO issued the following recommendations to strengthen the Department's nuclear safety Enforcement Program.

- Ensure that DOE field locations are properly following the Department's guidance in determining which facilities must comply with the nuclear safety rule on quality assurance.
- Eliminate the statutory exemption from

paying civil penalties for violations of nuclear safety rules for nonprofit educational institutions.

- Expediently complete the process of issuing enforceable rules covering important nuclear safety requirements.

EH-Enforcement responded to the first recommendation by issuing Enforcement Guidance Supplement (EGS) 99-01, *Enforcement of 10 CFR Part 830.120 (Quality Assurance Rule) for Facilities Below Hazard Category III*. The purpose of this EGS is to ensure that there is a clear message in the DOE complex that the Quality Assurance Rule applies to all facilities and activities not expressly exempted by the rule. With respect to the second issue, EH-Enforcement does not have the authority to institute a change with regard to eliminating the civil penalty exemption for nonprofit educational institutions absent a statutory change. This issue is under review by the DOE Office of General Counsel. With respect to the third issue, the process of issuing the balance of the nuclear safety rules is an ongoing action that is being developed elsewhere in the Department.

Compliance Orders

Under 10 CFR 820, subpart C, "Compliance Orders," the Secretary of Energy is authorized to issue Compliance Orders to DOE contractors to identify a violation of a nuclear safety requirement and mandate a remedy. A Compliance Order is issued when, at the Secretary's discretion, it is necessary to resolve immediate and egregious safety problems.

In May 1999, the Secretary issued the Department's first Compliance Order to Fluor-Daniel Hanford (FDH), integrating contractor at the Hanford site. The Compliance Order required FDH to implement corrective actions within a specified schedule. Chapter 2 of this report contains additional information about this action.

Engaging Field and Program Office Staff in the Price-Anderson Process

In the last few years, the Enforcement Program has made substantial strides in fulfilling its promise to ensure enhanced nuclear safety in the DOE complex. This is largely because of the cooperative effort between Field Office/Program Office personnel and EH-Enforcement personnel. The strong interactive effort between departmental elements and EH-Enforcement allows the Enforcement Program to function in an effective manner without the burden and cost of an extensive inspection team and in a manner that enhances management of contractor activities.

Some Field Offices are more involved in the enforcement process than others. Therefore, EH-Enforcement developed criteria to summarize the characteristics of Field Office involvement in supporting the Enforcement Program. Ratings of "Good," "Medium," and "Poor" were used to illustrate the varied levels of involvement. These criteria may be used by individual offices to self-evaluate performance and better structure a supportive arrangement. The criteria for each of these ratings are described in Table 4-1.

DOE contractors as a whole have taken an aggressive and effective approach to promote consistency and professionalism within the Contractor PAAA Coordinator program. The Energy Facility Contractors Group (EFCOG), a self-directed group of contractors, established a Price-Anderson Amendments Act (PAAA) Workgroup that meets to exchange information of common interest and of lessons learned to the Contractor PAAA Coordinators. The EFGOC often requests input from EH-Enforcement on Enforcement Program priorities and other PAAA issues that may be of importance to the contractor community to provide to its members at its workshops.

Accomplishments

Table 4-1

“Good” Rating	“Medium” Rating	“Poor” Rating
<ul style="list-style-type: none"> ❑ PAAA Coordinator is qualified and knowledgeable of Enforcement Policy and processes, has a good general knowledge of nuclear safety requirements, and has a demonstrated supportive senior management. ❑ Field element is proactive, has a questioning attitude regarding issues and their significance, and uses enforcement as an integral part of an overall safety management program. ❑ PAAA Coordinator demonstrates knowledge of thresholds for reporting regarding programmatic issues, negative trends, precursor events, and repetitive violations. ❑ Field Office personnel are objective in evaluating the safety significance of violations. ❑ PAAA Coordinator and his/her management routinely engage in open and candid communication with EH-Enforcement. ❑ Field Office personnel support and participate in investigations, reviews, and inquiries related to potential noncompliances and PAAA program weaknesses. ❑ Field Office management encourages rigorous review of underlying causes and comprehensive corrective actions by the contractor and performs timely confirmation of corrective action completion and verification of effectiveness. ❑ Few violations are disclosed by events, with most being identified through contractor self-assessment or Department oversight. 	<ul style="list-style-type: none"> ❑ PAAA Coordinator has basic knowledge of enforcement policy and process. Senior management emphasis is limited, but generally supports the Enforcement Program, when addressing event driven violations. ❑ Field element generally reacts only to events and does not analyze issues with respect to negative and programmatic trends, precursor events and repetitive violations. ❑ Field Office management views regulatory enforcement as primarily the responsibility of EH-Enforcement. ❑ Field Office personnel generally support reporting the most significant issues but are not aggressive in challenging the contractor's failure to report other issues that are above the Noncompliance Tracking System (NTS) reporting threshold. ❑ Evaluation of safety significance tends to focus on actual consequences, without assessment of potential consequences, but for fortuitous circumstances. ❑ Field Office is generally not engaged in fostering aggressive root cause analysis and conducts minimal assessment of completion of corrective actions or their effectiveness. ❑ Contact with EH-Enforcement staff is generally initiated by enforcement staff personnel. ❑ PAAA Coordinator generally does not participate in investigations or in review of potential noncompliances or PAAA program weaknesses, but will provide coordination support when asked. ❑ Most reported noncompliances are event driven. 	<ul style="list-style-type: none"> ❑ PAAA Coordinator has minimal understanding of policy and process and/or lacks any meaningful field management support to carry out his/her function as a Coordinator. ❑ Once engaged in an issue, the PAAA Coordinator is generally defensive of the contractor's actions. ❑ The PAAA Coordinator demonstrates little to no initiative to evaluate or report negative trends, programmatic or precursor issues. ❑ Significant violations generally go unreported. ❑ Field Office management does not identify or encourage reporting of event driven violations. ❑ Contact with EH-Enforcement staff is primarily at enforcement staff's initiative, and Field Office staff generally is defensive of contractor's actions despite facts of the case. ❑ Field Office management views regulatory enforcement primarily as the responsibility of EH-Enforcement and views enforcement as counter to other contractor oversight initiatives, and thus attempts to avoid any enforcement action. ❑ PAAA Coordinator provides little or no support for investigations or review of potential noncompliance or program weakness. ❑ Field Element conducts little to no validation of implementation of corrective actions or their effectiveness.

Accomplishments

Enforcement Guidance Supplements

In July 1999, EH-Enforcement issued two EGSs to provide guidance for applying the Enforcement Program to the Department and its contractors. The first is EGS 99-01, *Enforcement of 10 CFR 830.120 (Quality Assurance Rule) for Facilities Below Hazard Category III*, issued July 1, 1999. This EGS provides guidance for applying the Quality Assurance Rule (10 CFR 830.120).

In the 18 months before issuing the guidance document, EH-Enforcement identified numerous instances in which contractor organizations incorrectly exempted activities from Quality Assurance Rule applicability. The contractors made an assumption that a guidance document developed for safety analysis reporting, DOE Standard 1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*, was in some way relevant to Price-Anderson enforcement.

The guidance document made clear that the Quality Assurance Rule applies on a graded approach basis to all Department reactor and nonreactor nuclear facilities. Nonreactor nuclear facilities are defined as those that conduct activities or operations that involve radioactive and/or fissionable materials in such form and quantity that a nuclear hazard potentially exists to the employees or the general public. The Quality Assurance Rule includes those activities related to design, manufacture, and assembly of items for use with radioactive materials in such form or quantity that a nuclear hazard potentially exists, even when no nuclear material is present. The rule does not specify any minimum for such a hazard.

The Office of Enforcement and Investigations stated that it would defer enforcement actions for issues that fall under the scope of the EGS until January 1, 2000. This action was taken to allow sufficient time for contractors to modify processes

to ensure that they are in compliance with the Quality Assurance Rule throughout their sites. The guidance document stated that after January 1, 2000, any language in Quality Assurance Implementation Plans or in Quality Assurance Plans that attempts to limit the scope of regulatory authority in this area is null and void and will not restrict potential enforcement action.

On July 16, 1999, EH-Enforcement issued EGS 99-02, *DOE Enforcement Activities of Internal Dosimetry Program Requirements*. This EGS clarified internal dosimetry program requirements identified in the Quality Assurance Rule and the Occupational Radiation Protection Rule (10 CFR 835). To develop the guidance document, EH-Enforcement convened a working group of Field Office personnel and representatives from the Office of Worker Protection Programs and Hazards Management, which is the office responsible for the content and technical clarifications of 10 CFR 835.

The July 16, 1999, guidance document provided information on the following topics:

1. determination of prospective employees who are "likely to receive" an exposure of 100 millirem or greater per 10 CFR 835.402
2. application of Enforcement Policy in taking credit for respiratory protection in prospective determinations
3. use of contractor policies regarding personnel internal exposure to radioactive material
4. as low as reasonably achievable (ALARA) programs
5. clarification of enforcement regarding internal dosimetry programs

For purposes of enforcement, DOE is primarily concerned with the programmatic implications of repetitive and long-term bioassay program problems that have not been corrected by the contractor.

Both guidance documents (EGS 99-01 and EGS 99-02) are provided in Appendix

B. See that appendix for the entire EH-Enforcement discussion and guidance on these issues.

PAAA Program Reviews

During 1999, EH-Enforcement conducted PAAA screening and reporting process reviews at the Sandia National Laboratory, Waste Isolation Pilot Project (WIPP), Pantex Plant, Argonne National Laboratory – East, Argonne National Laboratory – West, Fernald, and Mound. These reviews included a look at each contractor's processes for identifying, screening, and reporting potential violations of nuclear safety requirements and for managing corrective actions for the identified noncompliances. EH-Enforcement provided each contractor with a Program Review Letter detailing observations, including any weaknesses identified by the review team.

Additionally, in the course of these reviews, the DOE review team evaluated particular events or problems that were not reported to DOE via the Noncompliance Tracking System (NTS) or were reported, but lacked an adequate description of the event. In some cases, DOE identified more significant compliance problems. This finding resulted in an Enforcement Letter to warn of the problems and, in some cases, led to DOE enforcement action. The Pantex, Sandia, and Argonne National Laboratory-East reviews evolved into investigations that led to Notices of Violations (NOV). In addition, the contractor at Pantex received a civil penalty.

DOE intends to continue conducting such reviews in the coming fiscal year. Program Reviews give DOE better insight into contractor understanding and initiative in nuclear safety management. They also better calibrate contractors to the Department's expectations and allow the Department to take enforcement action for potentially significant problems that were not properly identified or reported.

Accomplishments

Training

In December 1999, EH-Enforcement held a two-day training course for DOE PAAA Coordinators. The course provided information on enforcement techniques, program changes, compliance expectations, noncompliance case reviews, reporting issues, and communication and coordination between Department agencies, as well as on legal issues. In addition, EH-Enforcement held a half-day introductory course for newly appointed DOE PAAA Coordinators. This course focused on the background of the Enforcement Program; the nuclear safety rules; the enforcement process, expectations, and responsibilities of Coordinators; and procedures for using the NTS.

Awards

In 1996 the Department established the Price-Anderson Coordinator of the Year Award to recognize individual Department PAAA Coordinators for leadership and contributions to the Enforcement Program. Awards have been made each year since then. In 1999, Brian Fiscus of the Richland Operations Office and Bradley Eichorst of the Albuquerque Operations Office received the award. Mr. Fiscus had also been honored in 1996 for his achievements as a DOE PAAA Coordinator.

NTS System Upgrades and Changes

EH-Enforcement added a report to the NTS in 1999 that lists overdue corrective actions by NTS report. This change was made to enhance the ability of authorized NTS users to manage corrective actions and easily identify overdue actions. EH-Enforcement also changed its processes to require that contractors cited for violations report corrective actions into the NTS. In the past, EH-Enforcement allowed contractors to submit corrective actions via paper reports. This change enhances the ability of both the contractor and Field Office personnel to better manage corrective actions in response to NOVs.

Web-Site Enhancements

The Department maintains an Internet Web Site to provide information to Federal and contractor communities and to the general public.¹ Relevant Federal regulations, standards, Office of General Counsel interpretations, program operating procedures, NOVs, Enforcement Letters, Press Releases, the most recently published Annual Report, and workshop information are available on the Web Site. This year EH-Enforcement added a link to allow users to view the Program Review Letters.

Major Fraud Act and Disallowed Costs

Contractor legal defense costs incurred in connection with a criminal, civil, or administrative proceeding involving contractor violation of or noncompliance with a Federal regulation are subject to the reimbursement costs limitations of the Major Fraud Act of 1988, Pub. L. 100-700 (see 41 U.S.C. 256 (k)). See also 48 CFR Sec. 31.205-47 and 970.5204.61. The Major Fraud Act defines "proceeding" as "including an investigation." Accordingly, the initiation of a nuclear safety enforcement investigation by the Department commences a proceeding for purposes of Major Fraud Act applicability. Once a contractor receives notice that EH-Enforcement has begun an investigation, the contractor should begin segregating and tracking costs incurred in connection with the investigation.

In 1999, EH-Enforcement initiated a process to formally inform contractors that it has begun an enforcement investigation. Under this process, the EH-Enforcement staff member assigned to lead the investigation informs the contractor PAAA Coordinator in writing that an enforcement investigation has begun or will begin and specifies the date of commencement of the investigation.

Enforcement Activity

Cases Considered/Closed

In 1999, EH-Enforcement reviewed 846 issues for potential noncompliance with nuclear safety requirements. This number included 229 noncompliance reports filed by contractors as NTS reports and 617 issues that came to the attention of EH-Enforcement from other sources such as assessment reports or Defense Nuclear Facilities staff reports. Figure 4-1 illustrates the number of issues reviewed by EH-Enforcement, sorted by NTS reports and non-NTS reports. Additionally, EH-Enforcement closed a total of 151 NTS reports. This number included NTS reports that had been reported in prior years, but remained open until all the corrective actions associated with the reports were implemented.

EH-Enforcement's reviews of the NTS reports and other sources of potential noncompliances 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 vast majority of issues (over 90 percent) are closed without an enforcement action, due to proper actions on the part of the contractor in self-identification, reporting, and correction, or due to the low safety significance of the issue. If the Department was not satisfied that appropriate actions had been taken and it determined that the safety significance of the issue warranted further investigation, it conducted a more comprehensive review.

The increase in the number of NTS reports in 1999 (229) as compared to 170 in 1998 is considered to reflect a combination of more open reporting on the part of certain contractors and a better understanding of DOE's reporting expectations for certain other contractors. It is not believed to represent a weakened compliance problem in the DOE complex.

¹ The Internet address for the EH-Enforcement Web Site is <http://tis.eh.doe.gov/enforce>.

Accomplishments

Notices of Violation

EH-Enforcement initiated formal enforcement action in ten cases where the actual or potential safety consequences were sufficiently serious 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 behaviors and practices that led to the violations and to aggressively focus on a culture that self-identifies and corrects problems before they result in serious conditions. Seven of the NOVs carried civil penalties totaling \$1,072,500. Table 4-2 summarizes the enforcement actions issued in 1999.

Table 4-2

EA No.	Contractor	Type	Sev Lev	Date Issued	CP Amount
EA-1999-01	IT	PNOV	III	02/26/99	N/A
EA-1999-02	BSA	PNOV	II,III	04/15/99	\$27,500
EA-1999-03	SNL	PNOV	III	05/21/99	N/A
EA-1999-04	FDH	CPO PNOV	I, II	05/26/99	\$330,000
EA-1999-05	M&H	PNOV FNOV	II	07/30/99 09/22/99	\$82,500
EA-1999-06	KHLL	PNOV	II	08/18/99	\$82,500
EA-1999-07	LMITCO	PNOV FNOV	II, III	08/18/99 10/08/99	\$220,000
EA-1999-08	LANL	PNOV	II	09/03/99	\$220,000 (waived)
EA-1999-09	WVNS	PNOV	III	12/07/99	N/A
EA-1999-10	ANL-E	PNOV	III	12/14/99	\$110,000 (waived)

5. CHANGES AND IMPROVEMENTS

Introduction

The Department of Energy's (DOE) experience in the first 4 years of applying the Enforcement Program, as well as experience gained from many enforcement actions, has led to some important lessons learned. As in prior years, DOE continually reviewed its Enforcement Program and in 1999 instituted changes as noted in Chapter 4 to improve its effectiveness. The principal areas where changes and improvements in the Enforcement Program are planned for 2000 are discussed in this chapter.

Enforcement Guidance Supplements Followup in PAAA Program Reviews

DOE issued two Enforcement Guidance Supplements (EGS) in 1999, as discussed in Chapter 4, "Accomplishments." The two EGSs dealt with contractor failures to properly implement the requirements of DOE's nuclear safety rules and identified the approach that EH-Enforcement would take in these matters. EGS 99-01, *Enforcement of 10 CFR 830.120 (Quality Assurance Rule) for Facilities Below Hazard Category III*, pertained to failures by some contractors to apply the requirements of the Quality Assurance Rule (Part 830.120) to the full set of nuclear facilities as defined in the rule and confirmed by Office of General Counsel interpretation 1995-1. EGS 99-02, *DOE Enforcement Activities of Internal Dosimetry Program Requirements*, addressed problems found in contractor bioassay programs and DOE's expectations for contractors to evaluate their programs for such problems and promptly correct noncompliances.

DOE intends to follow up on contractor activities and compliance in these areas as part of ongoing Office of Environment, Safety and Health, Office of Enforcement and Investigation (EH-Enforcement)

activities. In the course of performing investigations of other matters or performing routine Price-Anderson Amendments Act (PAAA) Program Reviews, EH-Enforcement personnel will also review contractor actions in response to these EGS guidelines.

As noted in Chapter 4, DOE conducted seven PAAA Program Reviews in 1999 and intends to continue this program. Over the next 18 months, DOE expects to conduct PAAA Program Reviews of all other contractors who manage or operate nuclear or radiological facilities.

DOE will continue to apply a graded approach to enforcement. However, it will consider enforcement action when significant problems related to issues that were EGS topics are found. DOE will also consider enforcement escalation if the contractor has not taken aggressive and comprehensive action in response to these notifications.

Continued Focus on Procurement and Vendor Quality

Last year's annual report noted that EH-Enforcement identified problems involving contractor violations of Quality Assurance Rule procurement requirements. Several major areas of concern were identified, including (1) prime contractors failing to adequately qualify subcontractors for safety-related work; (2) contractors failing to follow their own procedures for establishing an approved suppliers list and for procuring critical materials from such vendors; and (3) contractors failing to adequately ensure that services and items procured will perform their intended safety function. These deficiencies resulted in failures of safety components while in service, as well as in the fabrication of safety-related components and systems that do not meet design specifications.

Adequate control and oversight of the procurement of services and items that involve the safety-related aspects of nuclear facilities and their components is very important to ensuring the overall safety of the nuclear facility, the safety of workers, and the protection of the public. Defective components or inadequate services may be difficult to detect once they are placed into service or when work is completed. During 1999, EH-Enforcement placed emphasis on investigating problems with contractor processes for procurement of safety-related services and items and continued to find significant weaknesses in this area. Because these problems continue to surface, EH-Enforcement will continue to pursue cases where it appears that significant procurement lapses have occurred that may lead to adverse events or equipment failures. Additionally, during routine PAAA Program Reviews, EH-Enforcement will review contractor implementation activities in this area and will initiate enforcement action when substantial problems are found. The Department intends this increased emphasis to encourage contractors to place more focus on proactively self-identifying problems in this area and on correcting them before adverse consequences occur.

Improved Field Office Involvement

DOE's Enforcement Program is founded on an approach that makes maximum use of existing resources and programs, and Field Office involvement and support are an integral part of this approach. Field Office personnel are most aware of conditions that represent potentially significant noncompliances, are most capable of judging corrective action adequacy, and are the most efficient in confirming that corrective actions have been completed. EH-Enforcement has no direct authority over the Field Offices. Thus, we have structured an arrangement based on

Changes and Improvements

professional cooperation, rather than management authority, to obtain the support and involvement of individual Field Offices.

EH-Enforcement provided each Field Office with an opportunity to designate a DOE PAAA Coordinator as the point of contact on PAAA issues for both EH-Enforcement staff and DOE contractors. Since implementing the Enforcement Program several years ago, EH-Enforcement has experienced substantial variation in program involvement among Field Offices. This variation appears to be related both to differences in the perceived role of the Field Office when interacting with the contractor on PAAA issues and to divergence among Field Office managers on the extent of desired involvement in the Enforcement Program. These differing perceptions manifest in differences in the level of active involvement among Field Offices in identifying noncompliances, participating with EH-Enforcement in conducting investigations, and confirming proper completion of corrective actions by contractors.

Although EH-Enforcement has noted marked improvement over the past few years, some Field Offices are less engaged in supporting the program or in uncovering compliance problems that may be candidates for enforcement review. In a few cases, offices that may have been more supportive in the past appear to have lapsed into a less supportive approach to the program. DOE has implemented several initiatives to provide more uniform cooperation. These initiatives include the following.

□ **Annual PAAA Coordinator Training Workshops for the Field and Program Offices.** The most recent training workshop was conducted in December 1999. The workshop focused on sharing information about various enforcement cases that occurred in the past year. DOE also solicited input from a senior manager in one of DOE's Field Offices to provide his perspective on the PAAA program, the benefits from this

regulatory program, and suggested improvements in the program

- **Continued Communication.** Emphasis continued to be placed on communication between senior EH management and individual Field Office management to better establish working relationships, increase the understanding of roles, and develop strategies for focusing on particular contractor problem areas.
- **PAAA Program Reviews.** These reviews were conducted at sites at which it appeared that EH-Enforcement did not have the full support and cooperation from a particular Field Office. The results of these reviews were positive in identifying significant compliance issues and correcting contractor and local DOE misunderstanding about compliance issues and expectations on reporting, as well as with regard to the value of discretely using the enforcement tool.

EH-Enforcement will continue the above initiatives in 2000. The expanded focus of PAAA Program Reviews and the plans to cover all sites in such reviews over the next 18 months are discussed above and in Chapter 4 of this report.

Increased Contractor Initiative in Identification and Reporting

As reported in prior annual reports, DOE observed that some contractors were less ambitious in identifying PAAA noncompliances and reporting them. Additionally, it appeared that in the latter part of 1998, certain contractors had chosen to stop reporting these noncompliances, apparently believing that DOE would be unable to pursue cases that were not reported into the Noncompliance Tracking System (NTS). These contractors failed to realize that most of DOE's enforcement actions involved problems that had been uncovered by DOE or had been disclosed by an event

about which all parties were aware. In most cases, DOE has not taken enforcement action when the problem was identified by a contractor initiative such as a self-assessment. Generally, the exceptions are problems that were identified by contractor initiative but were so significant that DOE would be remiss in its responsibilities if it failed to take action. In these cases the civil penalty is generally substantially reduced based upon the contractor's initiative. This approach is consistent with the safety philosophy that DOE communicated in the Enforcement Policy (Appendix A to 10 CFR Part 820). EH-Enforcement noted that in 1999, as the year progressed, the level of NTS reporting by contractors improved due in part to their response to DOE PAAA Program Review efforts.

DOE will continue to focus special attention on contractors that do not display a high degree of being proactive in identifying and reporting noncompliances. An effort will be made to determine whether these contractors are, in fact, demonstrating a high level of compliance and safety performance or whether they are avoiding their responsibility for aggressively identifying noncompliances and improving the safety of operations. In these cases, DOE will also consider a special site visit to the contractor's facility to conduct a PAAA Program Review. DOE conducted seven PAAA Program Reviews in 1999 and will prioritize the conduct of subsequent reviews in 2000 based in part on contractor performance in self-reporting.

Table 5-1 summarizes the NTS reports prepared by the major DOE contractors in 1999. These "major contractors" are direct managing and operating (M&O) or managing and integrating (M&I) contractors responsible for nuclear facilities. Some of these contractors manage large, complex sites with many nuclear facilities; others manage smaller sites or sites with few nuclear facilities or radiological activities, some of which are research laboratories facilities where it may be reasonable for fewer NTS reports to be input into the system. However, larger

Changes and Improvements

Table 5-1

Contractor	Number of 1999 NTS Reports
Ames Laboratory	1
Argonne National Laboratory-East	13
Argonne National Laboratory-West	2
Bechtel BWXT Idaho	4
Bechtel-Hanford	4
Bechtel-Jacobs Company	6
BNFL, Inc	4
Brookhaven National Laboratory	7
Bechtel-Nevada Operations Office	4
Babcock & Wilcox of Ohio	5
Flour-Daniel Fernald	8
Fermi National Acceleration Lab	1
Flour Daniel Hanford (Project Hanford)	33
IT Corp. Las Vegas	5
Kaiser-Hill	27
Los Alamos National Laboratory	16
Lawrence Berkley Laboratory	1
Lockheed-Martin Idaho	8
Lawrence Livermore National Laboratory	11
Lockheed-Martin Energy Systems	10
Lockheed-Martin Hanford	2
Mason-Hanger Pantex	10
Oak Ridge National Laboratory	4
Pacific Northwest National Laboratory	6
Sandia National Laboratory	8
Westinghouse Electric Company	3
Westinghouse Savannah River	16

NTS Reports through December 31, 1999, for DOE's principal (Management and Operating, Management and Integrating) contractors. Subcontracts may file reports through their respective contractor, who has responsibility for oversight and subcontractor activities. A larger number of NTS reports by a contractor does not correlate to a poor performer, but could be indicative of a more aggressive compliance determination program.

sites with many nuclear facilities or radiological hazards would be expected to input multiple NTS reports if the contractor is aggressively identifying, reporting, and fixing problems. Thus a relatively large number of NTS reports by a particular contractor may be indicative of positive contractor initiatives. Accordingly, a direct comparison across all contractors is not appropriate; however, the table does show the wide variation in contractor use of the NTS. Contractors with low reporting into NTS that are performing activities with nuclear safety implications will receive special attention from EH-Enforcement.

Employee Concerns Issues

The DOE and the Department of Labor (DOL) share responsibilities in the area of employee protection. Section 211 of the Energy Reorganization Act provides that no employer may discriminate against any employee with respect to compensation, conditions, or privileges of employment because the employee engaged in certain protected activities. These protected activities include notifying an employer or government official of an alleged nuclear safety concern and other safety concerns. The DOL is responsible for investigating employee complaints of discrimination under Section 211. After an investigation and hearing, DOL may (1) order a violator to take affirmative action to abate the violation, (2) reinstate the complainant to his or her former position with back pay, and (3) award compensatory damages, including attorney fees.

DOE has promulgated regulations to prohibit discrimination for raising concerns and for providing a personal remedy to an employee who suffered discrimination (reference 10 CFR 708). The DOE Office of Hearings and Appeals investigates and processes 10 CFR 708 complaints of retaliation filed by DOE contractor employees. The prohibition against retaliation for raising nuclear safety concerns is designated as a nuclear safety rule because such action by contractors may adversely impact safety. Thus, the

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DOE Enforcement Program has authority to take enforcement action against a contractor that violates this prohibition.

In egregious cases EH-Enforcement may independently conduct an investigation into matters of alleged retaliation for raising nuclear safety concerns. Such investigations may result in an enforcement action. An enforcement action may include citing and fining a contractor for retaliating against an employee for raising a nuclear safety concern.

Although each Federal agency carries out its statutory responsibilities independently, administrative efficiency and sound enforcement policies can be maximized by cooperation and the timely exchange of information in areas of mutual interest. Consequently, DOE and DOL are negotiating a formal Memorandum of Understanding to facilitate coordination and cooperation in these cases. Once this agreement is in effect DOE and DOL will share information. EH-Enforcement may hold an Enforcement Conference with the contractor based upon DOL findings of fact to provide the contractor with an

opportunity to present its views. DOE would then determine whether to initiate enforcement action against the contractor for a violation or violations of 10 CFR 708.

Increased Focus on Compliance Issues By the Office of Oversight

The 1999 Government Accounting Office (GAO) Report on DOE's Enforcement Program, as noted in Chapter 2, recommended a general strengthening in the DOE Enforcement Program. Rather than hiring a large staff of inspectors as part of the DOE Enforcement Program, the Department chose to provide a stronger linkage of the existing activities of the Office of Independent Oversight with those of EH-Enforcement. The general plan is to have the Office of Oversight provide a more direct factual input to EH-Enforcement on regulatory compliance matters. While the primary role of the Office of Independent Oversight is to assess the performance of Field Offices in their management of contractors, that role permits them to gain knowledge of

contractor activities as well. Some steps have already been taken to achieve benefits from this strengthened interface.

The Office of Oversight has designated personnel to develop and maintain skills on PAAA matters. They will coordinate the efforts of that Office in supporting DOE's enforcement mandate. To undertake that role, the individuals designated as having PAAA responsibilities for the Office of Oversight attended the November 30 through December 2, 1999, DOE PAAA Coordinator Training Workshop. The scope of the Workshop is discussed in Chapter 4.

EH-Enforcement generally has relied on its review of documents developed in the ordinary course of business or on input from DOE Field Office personnel to identify particular cases for enforcement review. In some circumstances the Office of Oversight may be able to provide EH-Enforcement with a unique perspective on recent performance by the contractor. This information is particularly true where DOE Field Offices lack a fully effective PAAA Coordinator program.

ACRONYMS

ALARA	as low as reasonably achievable
ANL–West	Argonne National Laboratory – West
BNL	Brookhaven National Laboratory
BSA	Brookhaven Science Associates
CMR	Chemistry and Metallurgy Research
DNFSB	Defense Nuclear Facility Safety Board
DOE	Department of Energy
DOL	Department of Labor
EFCOG	Energy Facility Contractors Group
EGS	Enforcement Guidance Supplement
EH	Office of Environment, Safety and Health
EH-Enforcement	Office of Enforcement and Investigation
FDH	Fluor Daniel Hanford Inc.
GAO	General Accounting Office
INEEL	Idaho National Engineering and Environmental Laboratory
KHLL	Kaiser-Hill Company
LMITCO	Lockheed Martin Idaho Technologies Company
LANL	Los Alamos National Laboratory
MHC	Mason & Hanger Corporation
NTS	Noncompliance Tracking System
NOV	Notices of Violation
ORPS	Occurrence Reporting and Processing System
PAAA	Price-Anderson Amendments Act
RTF	Radiation Therapy Facility
RFETS	Rocky Flats Environmental Technology Site
SNL	Sandia National Laboratories
SNFP	Spent Nuclear Fuels Project
SWB	Standard Waste Box
SBUH	Stony Brook University Hospital
WIPP	Waste Isolation Pilot Project

APPENDIX A - OVERVIEW

Introduction

This section provides an overview of the Department of Energy (DOE) Enforcement Program for those readers who may not be familiar with the overall 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 Enforcement and Investigation Web Site at <http://tis.eh.doe.gov/enforcel>

Background

DOE has implemented a congressionally mandated mechanism to apply sanctions to its contractors for unsafe actions or conditions that violate nuclear safety requirements for protecting workers and the public. The Department provides positive incentives for contractors to strive for an enhanced nuclear safety culture through attention to compliance with requirements and self-identification of problems and by reporting noncompliances to DOE and initiating timely and effective corrective actions. The Price-Anderson Amendments Act (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.¹

The 1988 Price-Anderson Amendments Act² extended indemnification to DOE operating contractors for the consequences of a nuclear incident. At the

same time, Congress required DOE to begin undertaking enforcement actions against those contractors that violate nuclear safety rules. The PAAA, in effect, required DOE to establish an internal self-regulatory process.

DOE's regulatory basis for its Enforcement Program is published in 10 CFR Part 820, *Procedural Rules for DOE Nuclear Activities*. Enforcement actions may include issuance of Notices of Violation (NOV) and, where appropriate civil monetary penalties.

Such enforcement actions require the formal promulgation of rules in accordance with the Administrative Procedure Act, including adequate procedures for public notice and comment. To date, two substantive rules have become enforceable as final rules—Quality Assurance Requirements and Occupational Radiation Protection.³ Additionally, DOE rules on "Contractor Employee Protection and Accuracy of Information"⁴ have been identified as nuclear safety requirements that are also enforceable.

During late 1994 and in 1995, the Department focused on (1) developing the Enforcement Program infrastructure, (2) providing training for contractor and DOE PAAA Coordinators, and (3) issuing the formal procedures needed to implement the Enforcement Program. DOE's first enforcement action was the issuance of an NOV in April 1996.⁵ Since then DOE has routinely applied its Enforcement Program by issuing Program Review Letters, Enforcement Letters, and NOVs and by imposing civil penalties.

Administration

The Department's Enforcement Program is administered by the relatively small staff in the Office of Environment, Safety and Health, Office of Enforcement and Investigation (EH-Enforcement) 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 and relies on independent judgments by EH-Enforcement personnel on matters of compliance, safety significance, corrective actions, and enforcement actions.

The EH-Enforcement staff includes the Director, 6 full-time enforcement personnel, a Docket Clerk and an administrative assistant; 2 contractor 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.

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 threshold using their own, internal tracking system. These noncompliances are subject to periodic

¹ Safety Management Principles from October 1994 DOE letter to the DNFSB.

² 42 U.S.C. 228a.

³ 10 CFR Part 830.120 and 10 CFR Part 835, respectively.

⁴ 10 CFR Part 708 and 10 CFR Part 820.11, respectively.

⁵ EA 96-01.

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review and audit by Field Office Coordinator personnel. DOE expects that noncompliances meeting the reporting thresholds⁶ 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 or low safety significance and completion of actions to correct the noncompliance condition and prevent recurrence.

Noncompliances also may be identified independently through DOE Field Office input; Headquarters reviews; by the Defense Nuclear Facility Safety Board (DNFSB), DOE PAAA Coordinators, and DOE Oversight; or through other reviews conducted by EH-Enforcement staff. Workers with noncompliance issues may also directly contact EH-Enforcement staff confidentially or contact the site DOE

PAAA Coordinator. EH-Enforcement staff, with input from Field and Program Office management, decide which noncompliances have the requisite level of safety significance to warrant an investigation.

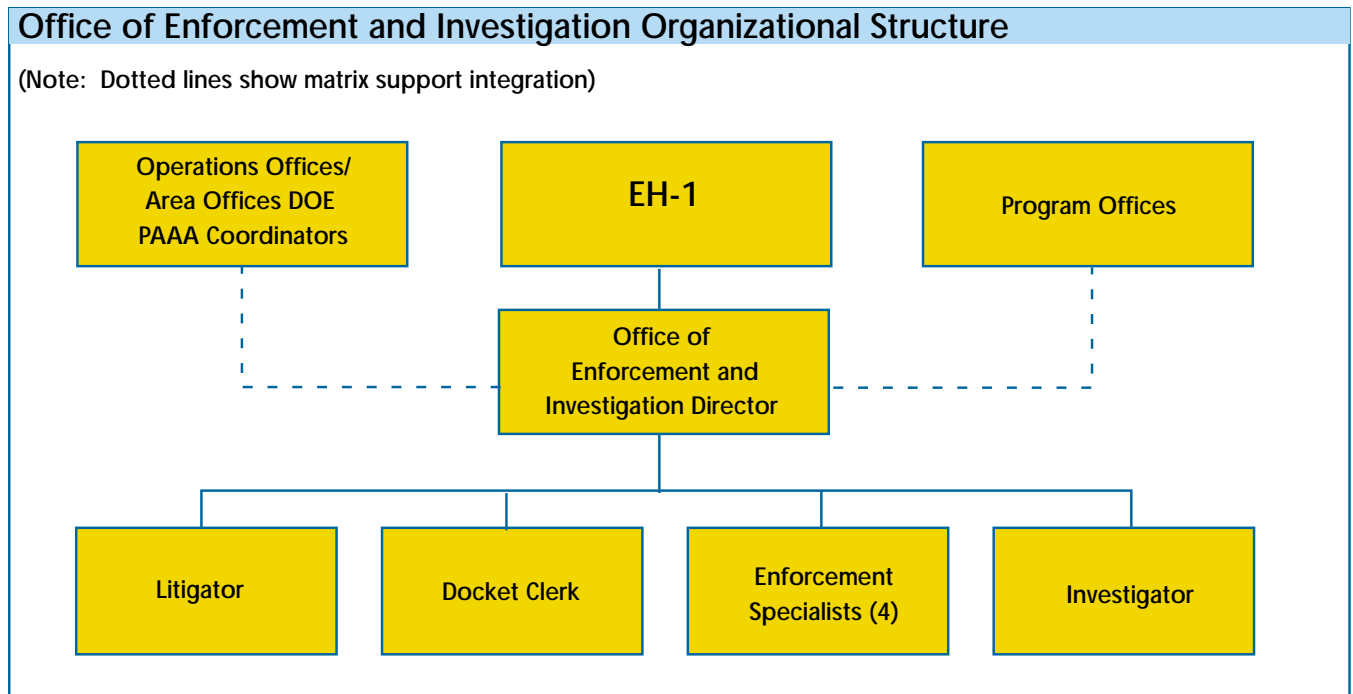
An investigation usually involves review of documentation from the contractor, assistance from DOE Field Office personnel, and in some cases, onsite visits to gather facts about the noncompliance, conduct interviews, and understand contractor actions in response to the noncompliance.⁷ If, in the course of the investigation, DOE concludes that the contractor is not responsive to informal requests for information, a Special Report Order may be issued (under the authority of 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.

Figure A-1



⁶ DOE's reporting thresholds are contained in Operational Procedures, Identifying, Reporting and Tracking Nuclear Safety Noncompliances under Price-Anderson Amendments Act of 1988.

⁷ Pursuant to 10 CFR Part 820, the Director, Office of Enforcement and Investigation, 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.

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EH-Enforcement 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 necessary, 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. 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.

Enforcement Process

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 EH-Enforcement procedures. Figure A-2 summarizes the enforcement process.

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 Letter⁸
- NOV with no civil penalty
- NOV with a civil penalty
- Consent Order

- Compliance Order
- Referral to the Department of Justice for criminal investigation

Decisions concerning the severity level, appropriate enforcement action, and magnitude of any civil penalty will be 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.⁹ 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 limit (i.e., \$55,000) per violation per day, and Severity Level III violations are set at 10 percent of the statutory limit (i.e., \$11,000) per violation per day.¹⁰

The PAAA statute provides exemption of specifically named DOE not-for-profit entities from any liability for civil penalties; and 10 CFR Part 820 extended this exemption to all not-for-profit DOE contractors that are education 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 those regulated by the Nuclear Regulatory Commission or under the authority of the Director, Naval Nuclear Propulsion Program. Activities conducted under the Nuclear Explosives and Weapons Safety Program are also excluded insofar as compliance with nuclear safety rules may

have the effect of compromising nuclear safety. As stated by the Office of General Counsel in Ruling 1995-1, 61 FR4209 (1996), this latter exemption is to be extremely narrow.

In response to an NOV, contractors are required to document specific actions taken and planned to prevent recurrence of similar events. The contractor also either admits the violations and pays any civil penalty, if applicable, or denies the violation and seeks redress through an escalating series of steps set forth in the rule. 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 or law, (2) monetary remedy to be paid by the contractor, and (3) corrective actions to be taken by the contractor. DOE may choose to use such an approach to resolve a case if the issue was identified by the contractor and reported in a timely way; has comprehensive corrective actions; has received a thorough and objective investigation by the contractor; and, most importantly, if the contractor has demonstrated a consistent track record of such discovery and response to compliance issues.

The Consent Order approach benefits the contractor by avoiding the burden of supporting a DOE investigation and has the potential to involve 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 may proceed with a traditional enforcement action.

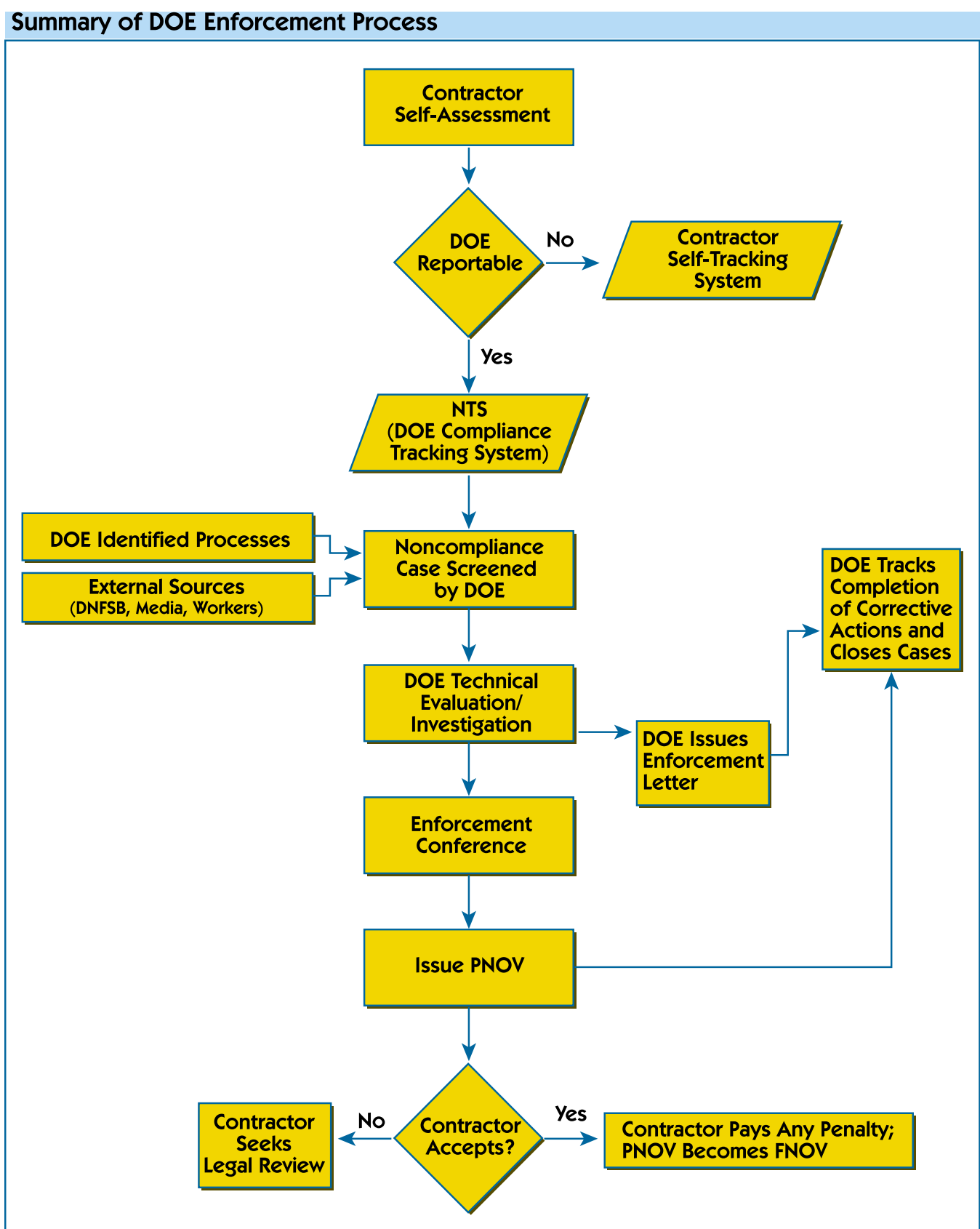
⁸ An Enforcement Letter may be used when DOE concludes that a particular noncompliance is not of the level of significance warranted for issuance of a Preliminary NOV, but it is an issue of concern to DOE. The letter puts the contractor on notice that the problem needs to be corrected. The Enforcement Letter notifies the contractor that DOE will close the noncompliance report when verification is received that corrective actions have been implemented.

⁹ On October 2, 1997, DOE amended its Part 820 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.

¹⁰ 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 solely on the safety significance of the violation.

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Figure A-2



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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. The actions in a Compliance Order are nuclear safety requirements and as such are enforceable under 10 CFR 820. Failure to meet the actions specified could lead to issuance of an NOV with civil penalties, if applicable. Compliance Orders are used when the following elements are present:

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

- DOE does not have confidence that the contractor will correct the condition in a timely manner.

It is expected that the use of Compliance Orders will be limited and that generally they will be used in very serious cases with the above attributes.

The contractor's commitments on corrective actions and schedules for completion for any enforcement action become part of the enforcement proceeding record. Commitments on corrective actions and their completion schedule are entered into and tracked on the NTS system. Field Office personnel verify completion of corrective actions before a case is closed.

Information on a particular enforcement proceeding is available to the public once a Preliminary NOV (PNOV) is issued. The Docket Clerk maintains records at DOE Headquarters.¹¹

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."

¹¹ Office of the Docket Clerk, Office of Enforcement and Investigation (EH-10), Room 3041, 20030 Century Blvd., Germantown, MD 20874-1290; (301) 903-0112.

APPENDIX B



Department of Energy
Washington, DC 20585

July 1, 1999

MEMORANDUM FOR DOE PAAA COORDINATORS
CONTRACTOR PAAA COORDINATORS

FROM: R. KEITH CHRISTOPHER
DIRECTOR *R. Keith Christopher*
OFFICE OF ENFORCEMENT AND INVESTIGATION

SUBJECT: Enforcement Guidance Supplement 99-01:
Enforcement of 10 CFR Part 830.120 (Quality Assurance Rule)
for Facilities Below Hazard Category III

Section 1.3 of the *Operational Procedures for Enforcement*, published in June 1998, provides the opportunity for the Office of Enforcement and Investigation (EH Enforcement) periodically to issue clarifying guidance regarding the processes used in its enforcement activities.

During the past 18 months, EH Enforcement has identified a number of examples in which both DOE and contractor organizations have incorrectly exempted activities from applicability of the DOE Quality Assurance Rule 10 CFR 830.120 (QA Rule). The contractors excluded these activities on the basis that the QA Rule did not apply if the activity was classified as less than a Hazard Category III under DOE Standard 1027-92 (Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports). Standard 1027 provides guidance for determining whether a facility, activity or area requires a Safety Analysis Report but it does not provide a basis for exclusion from the provisions of the QA Rule.

The QA Rule applies in a graded approach to all DOE reactor and nonreactor nuclear facilities. Nonreactor nuclear facilities are defined as those that conduct activities or operations that involve radioactive and/or fissionable materials in such form and quantity that a nuclear hazard potentially exists to the employees or the general public. The QA Rule includes those activities related to design, manufacture, and assembly of items for use with radioactive materials in such form or quantity that a nuclear hazard potentially exists even when no nuclear material is present. This Rule does not specify any minimum for such a hazard.

In 1994, DOE initially contemplated using Standard 1027 to limit the scope of the QA Rule to those nuclear facilities classified as Category III or higher. However, in the Preamble to the final rule adopting the QA Rule in April 1994, the Department rejected

comments that requested a threshold to exclude coverage of low hazard facilities; furthermore, DOE reaffirmed its intent to cover all facilities that involve radioactive material in such form and quantity that a nuclear hazard potentially exists. On February 5, 1996, the DOE Office of General Counsel published in the *Federal Register* (61 Fed. Reg. 4209), a *Notice of Ruling 1995-1, Ruling Concerning 10 CFR Part 830, "Nuclear Safety Management," and 10 CFR Part 835, "Occupational Radiation Protection."* The DOE Office of General Counsel is responsible for formulating any interpretation of DOE's nuclear safety requirements.

In Ruling 1995-1, the Office of General Counsel clearly reiterated that the scope of the QA Rule was not limited to activities involving source, byproduct, or special nuclear material. Instead the QA Rule applied to all DOE activities that have the potential to cause radiological harm (in the present or future) other than those already explicitly excluded by the rule, such as accelerators, transportation of radioactive material, or incidental use (e.g., check and calibration sources, smoke detectors, etc.). Nevertheless, confusion has continued to exist over this issue. In retrospect, this confusion appears has its basis for several reasons: (1) the continuing open debate about the remaining proposed Part 830 rules, (2) a decision by EH Enforcement to focus its attention elsewhere in the course of the development of the DOE Enforcement Program, and, on occasion, (3) a desire on the part of some contractors to find a mechanism to avoid accountability under the QA Rule. (See attached rulemaking history and analysis).

The use of Standard 1027 by contractors to exclude activities from the QA Rule has also been legitimately criticized by the General Accounting Office (GAO) in their recently released report documenting their analysis of the effectiveness of DOE's Price-Anderson nuclear safety enforcement program. See GAO/RCED-99-146 (June 10, 1999). The GAO report recommends that DOE ensure that DOE nuclear activities properly follow DOE's own rulings in determining what facilities and activities must adhere to the QA Rule. A copy of the GAO Report is attached.

EH Enforcement intends in the future to enforce the provisions of the QA Rule in a graded approach to those facilities, activities, and areas that have the potential to cause radiological harm unless specifically excluded by the QA Rule or by an approved exemption issued in accordance with 10 CFR Part 820. Over the next several months, EH Enforcement will work with both DOE and Contractor Price-Anderson Coordinators and the Program Offices to ensure that DOE's nuclear activities are conducted in accordance with the clear intent and scope of the nuclear safety rules. It is not necessary to revise implementation plans or Quality Assurance Programs (QAPs) that have been submitted to the DOE Docket Clerk. Any correction of such documents can be accomplished at the next planned update.

DOE does not intend to initiate immediate or retroactive enforcement in cases in which the facilities having the potential to cause radiological harm have been excluded from the scope of the QA Rule through the use of Standard 1027. It is recognized that due to early confusion some contractors have prepared Quality Assurance implementation

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plans using Standard 1027 to define a set of nuclear facilities while excluding other facilities or activities that have the potential to cause radiological harm. While reclassifying facilities is unnecessary, some reasonable period of time will be allowed for contractors to assess their existing quality assurance processes for these broader activities. Most DOE sites already implement site-wide QA plans using the graded approach. Also, the DOE Quality Assurance Order (DOE O 414.1), when implemented through a contract, is nearly identical to the QA Rule and is implemented widely across the DOE complex. Further, the key element of the QA Rule involving work process control already directly correlates with the Department's efforts in the Integrated Safety Management process.

EH Enforcement will defer enforcement action for issues that fall under the scope of this Supplement until January 1, 2000. This deferment will allow sufficient time for contractors to modify processes to ensure they are in compliance with 10 CFR 830, including General Counsel Ruling 1995-1. After that period, EH- Enforcement will consider potential enforcement cases in accordance with the defined scope of the QA Rule as interpreted by General Counsel's Ruling 1995-1. This enforcement discretion does not apply to violations of 10 CFR 835 (Occupational Radiation Protection) or to 10 CFR 820.11 (Information Requirements).

It should be clear that the graded approach to enforcement based on safety significance remains constant and is unaffected by this issue. The decision to initiate an enforcement action will continue to be based on established criteria as described in the Enforcement Policy and associated guidance. After January 1, 2000, any language in QA implementation plans or QAP's that attempt to limit the scope of regulatory authority in this area will not restrict a potential enforcement action unless the contractor has an approved exemption processed in accordance with Part 820 or the activity is otherwise specifically excluded by Part 830.

This enforcement guidance will be incorporated into the Office of Enforcement and Investigation *Operational Procedures for Enforcement* and will be made available on the Office of Enforcement and Investigation web page (<http://tis-nt.eh.doe.gov/enforce/>). If you have any questions regarding this enforcement guidance, please contact me or Howard Wilchins of my staff at (301) 903-0100.

Attachments:
Rule Making History and Analysis
GAO Report

Appendix B

**ENFORCEMENT GUIDANCE SUPPLEMENT 99-01
RULEMAKING HISTORY APPENDIX**

The DOE Quality Assurance Rule, (QA Rule) is part of the Nuclear Safety Management Rule, 10 CFR 830 (59 FR 15843), published in 1994. As clarified and amplified by the Office of General Counsel, which has exclusive responsibility to interpret the rules under Subpart D of 10 CFR 820, the Rule has great jurisdictional breadth (See Ruling 1995-1; 61 FR 4209; February 5, 1996).

10 CFR 830.7 states that the Rule shall apply in a graded approach to all DOE reactor and nonreactor nuclear facilities. Nonreactor nuclear facilities were defined to include the following:

Those activities or operations that involve radioactive and/or fissionable materials in such form and quantity that a nuclear hazard potentially exists to the employees and the general public.

At 59 FR 15851.

The intended scope of the Rule was expansive, exemplified by the fact that it encompassed work where there was no nuclear material present, but which would be used with nuclear materials in the future. Thus, it included activities or operations that-

... (6) [d]esign, manufacture, or assemble items for use with radioactive materials and/or fissionable materials in such form or quantity that a nuclear hazard potentially exists.

At 15851.

The definition section, 830.3 of the Rule also included the following definition for matters encompassed within its scope:

Service means the performance of work, such as design, construction, fabrication, inspection, nondestructive examination/testing, environmental qualification, equipment qualification, repair, installation, or the like.

At 15852.

Additional support for the conclusion that the Rule is applicable even in circumstances where no nuclear inventory is present may be found in the application of the QA Rule to design work. 10 CFR 830.120(b)(2)(ii) states as follows:

Design. Items and processes shall be designed using sound engineering principles and appropriate standards. Design work, including changes, shall incorporate applicable requirements and design bases. Design

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interfaces shall be identified and controlled. The adequacy of design products shall be verified or validated by individuals or groups other than those who performed the work. Verification and validation work shall be completed before approval and implementation of the design.

At 15852.

Thus, it is clear from the terms of the Rule itself that its application is not limited to hazards above a certain level of nuclear inventory. This point is made even more clearly in the Response to Comments, which precedes the Rule. Comment 9 observes that-

... comments were received stating that the definition of "nonreactor nuclear facility" was too vague and that some threshold relative to source term or some potential dose to the public or workers (a quantification) must be provided in the definition to prevent limited resources from being expended on non-nuclear or low hazard facilities. It was also suggested that the definition of the term "nonreactor nuclear facility" be modified by deleting the reference to graded approach in the definition.

At 15844.

The response stated that:

The Department disagrees with this comment because the proposed definition was intended to cover all situations...with the potential to cause radiological harm. The reference to graded approach was included to take into account the differences that exist between facilities and, thus, to avoid a rigid application of nuclear safety requirements to divergent facilities and to encourage the taking of actions appropriate for particular facilities.

At 15844.

Thus, it is clear that the application of the QA Rule does not in any way depend on the presence of nuclear inventory or a particular volume of nuclear inventory. It applies to all activities and facilities where a nuclear hazard potentially exists in the present or in the future.

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Enforcement Guidance Supplement
EGS 99-02
Appendix E – Operational Procedures
for Enforcement

July 16, 1999

MEMORANDUM FOR DOE PAAA COORDINATORS
CONTRACTOR PAAA COORDINATORS

FROM: R. KEITH CHRISTOPHER
DIRECTOR *R. Keith Christopher*
OFFICE OF ENFORCEMENT AND INVESTIGATION

SUBJECT: Enforcement Guidance Supplement 99-02:
DOE Enforcement Activities of Internal Dosimetry Program
Requirements

Section 1.3 of the Operational Procedure entitled Enforcement of DOE Nuclear Safety Requirements under Price-Anderson Amendments Act of 1988, published in June 1998, provides the opportunity for the Office of Enforcement and Investigation (EH Enforcement) to issue clarifying guidance in a timely manner with respect to the processes used in its enforcement activities. The focus of this enforcement guidance clarifies internal dosimetry program requirements identified by the Department of Energy's nuclear safety requirements in 10 CFR 835 (Occupational Radiation Protection Programs) and 10 CFR 830.120 (Quality Assurance Requirements). To develop the enforcement guidance, EH Enforcement convened a DOE working group which included representatives from the Field Office elements and the Office of Worker Protection Programs and Hazards Management, which is the office responsible for the content and technical clarifications of 10 CFR 835. The guide discusses the following areas: (1) prospective determination of employees that are "likely to receive" 100 millirem (mrem) or greater per 10 CFR 835.402, (Individual Monitoring); (2) application of enforcement policy in taking credit for respiratory protection in prospective determinations; (3) use of contractor's policies regarding personnel internal exposure to radioactive material; (4) As Low As Reasonably Achievable (ALARA) programs; (5) clarification of enforcement with regard to internal dosimetry programs; and Final Comments.

**1. PROSPECTIVE DETERMINATION OF EMPLOYEES "LIKELY TO RECEIVE"
100 MREM OR MORE**

It is important that contractors perform a prospective determination to identify radiological workers who are required to be monitored by 10 CFR 835.402(c), i.e., those workers likely to receive 100 mrem or more from all occupational radionuclide intakes in a year. Contractors should establish and document a clear basis for the

prospective determination as part of the contractor's existing internal dosimetry program and/or technical basis documents. Such documents should include the technical rationale used by the contractor for including or excluding populations of radiological workers from monitoring for internal deposition of radioactive materials. Contractors should maintain these documents as part of the contractor's record system. However, if the contractor does not adequately document the basis for identifying the radiological worker population that is required to participate in the internal dosimetry program, then, for compliance purposes, all workers participating in the internal dosimetry program will be considered likely to receive 100 mrem or more in a year and are being monitored per 10 CFR 835.402.

It should be recognized that changes in a facility's operations or operational status can and do occur, particularly in the area of decommissioning and decontamination activities in which previously contained radioactive materials systems are opened and accessed by workers. These operational changes would then require reconsideration of the working conditions and modification of the determination of the "likely" exposed population of radiological workers when performing a prospective determination of employees likely to receive 100 mrem or more in a year. Contractors should also continually reassess the determination when initiating operations that are infrequently performed.

As with all safety programs implemented by the DOE-contractor community, the technical bases, decisions, and implementation of the safety programs at various sites will continue to be subject to DOE review and evaluation. A contractor's determination that a population of workers does not require monitoring under 10 CFR 835.402 does not automatically result in the monitoring (or lack of monitoring) of those individuals being outside DOE's purview. As a result of DOE's review, differences in professional opinion may arise or new factors and considerations may result. As always, DOE will work to resolve any differences; however, no programs, decisions or bases supporting the determination of the population of workers required to be monitored under 10 CFR 835.402 will be considered outside DOE's continued purview.

2. APPLICATION OF ENFORCEMENT POLICY IN TAKING CREDIT FOR RESPIRATORY PROTECTION IN PROSPECTIVE DETERMINATIONS

In work situations where a contractor is considering the use of respiratory protection in performing prospective exposure estimates to identify those individuals who require internal exposure monitoring per 10 CFR 835.402, credit for respiratory protection may be allowable in certain circumstances. For enforcement purposes, credit for respiratory protection may be considered provided that the contractor has well planned and controlled work activities, timely and accurate monitoring of work areas, a demonstrable history of implementing effective work controls, and a respiratory protection program that meets the OSHA requirements of 29 CFR

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1910.134(b). Credit for respiratory protection should not be taken, however, for situations in which potential airborne radiological releases are not highly predictable or controllable. Examples of such situations include facilities with multiple release points, unidentified or chronic releases, or instances of airborne release not closely associated with planned work activities. The contractor's analysis of the effectiveness of the site's respiratory protection program and documented position in taking credit for respiratory protection is but one aspect of the overall prospective determination and is, therefore, subject to EH Enforcement review.

3. USE OF CONTRACTOR POLICIES REGARDING PERSONNEL EXPOSURES TO RADIOACTIVE MATERIAL

Some contractors may voluntarily establish policies that do not permit any intakes of radioactive material or that limit intakes of radioactive material to less than 100 mrem from all occupational intakes in one year. Such a policy, however, by itself, is not sufficient to conclude that a routine bioassay program at such facilities would not be required. Policy implementation through detailed work control and internal dosimetry documents that ensure compliance with 10 CFR 835.402 would be required.

Additionally, the contractor at a site should have a documented technical basis that identifies known working conditions in the various facilities and a history of low internal exposures for the site's radiological workers. As discussed in item 1, changes in a facility's operations or operational status can and do occur, particularly in the area of decommissioning and decontamination activities where previously "sealed or contained" systems are opened and accessed by the workers. These operational changes would then require reconsideration of the working conditions and the potentially radiologically exposed working population.

4. AS LOW AS REASONABLY ACHIEVABLE PROGRAMS

ALARA is not a numerical value or dose level but rather a process, which has as its goal the objective of maintaining doses as low as is reasonably achievable. Consequently, the monitoring level of 100 mrem established by 10 CFR 835.402(c)(1) does not define a threshold value for ALARA or for enforcement considerations.

5. CLARIFICATION OF ENFORCEMENT WITH REGARD TO INTERNAL DOSIMETRY PROGRAMS

Some contractors have chosen, at their discretion, to extend bioassay monitoring programs to include individuals not meeting the "likely" criteria contained in 10 CFR 835.402(c)(1). Contractors may perform such discretionary monitoring for a variety of reasons, such as meeting union commitments or as a program quality

control measure.

EH Enforcement views the following specific elements of a discretionary monitoring program as falling within Price-Anderson regulatory space. They are consequently subject to review and potential enforcement:

- a. The contractor's prospective analysis, determination and supporting rationale for identifying the worker population that is not "likely to receive 100 mrem."
- b. The contractor's mechanisms for timely, continuing analysis and feedback from the results of the discretionary bioassay program. Positive bioassay results or trends may indicate that individuals within the "discretionary" population require re-evaluation and actually fall under the monitoring requirements of 10 CFR 835.402 in that these individuals may be likely to receive 100 mrem in one year.
- c. The contractor's mechanism for recording the dose results from discretionary monitoring in accordance with 10 CFR 835.702.

Additionally, a failure of the discretionary monitoring program may indicate a similar failure of the mandatory program. Moreover, if a contractor operates its discretionary and mandatory bioassay programs together as a unified program, a failure of the discretionary program may correlate to a systemic failure in the entire program and would require evaluation by EH Enforcement. Therefore, a failure in the discretionary program may demonstrate a pattern of noncompliance in the mandatory bioassay program required by 10 CFR 835.402(c).

In general, instances of procedural noncompliance related directly to the discretionary monitoring aspects of the bioassay program would fall outside the constraints of 10 CFR 835.402 and would not be subject to DOE enforcement unless there was a significant breakdown that has the potential to affect compliance with the general requirements of 10 CFR 835.401. In light of the above, the contractor is cautioned, however, not to reduce overall emphasis on bioassay procedure compliance. Attempts to implement a graded procedural compliance based on perceived regulatory significance may serve to confuse and send an inappropriate message to the workforce. EH Enforcement will make a determination of whether regulatory violations occurred with respect to the discretionary bioassay program on a case by case basis, taking into account the commitments established in the Radiation Protection Program for 10 CFR 835 and in the Quality Assurance Program for 10 CFR 830.120.

FINAL COMMENTS

For the purposes of enforcement, DOE is primarily concerned with the programmatic implications of repetitive and long-term bioassay program problems that have not been

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corrected by the contractor. DOE expects the contractor to effectively manage and implement their documented bioassay programs including being knowledgeable of the extent of any deficiencies. A single instance of procedural noncompliance, e.g., failure to collect a bioassay sample required by the 10 CFR 835.402 (Internal Dosimetry Program), would not normally have sufficient safety significance for enforcement action.

As stated in EH Enforcement's Operational Procedure Identifying, Reporting and Tracking Nuclear Safety Noncompliances under Price-Anderson Amendments Act of 1988, dated June 1998, "DOE recommends that where a condition indicates a sufficient concern to warrant some remedial action to correct a common underlying cause or weakness in controls, the condition be considered programmatic." The safety significance of the failure to collect bioassay samples would escalate if the failure recurred or extended to additional samples.

In addition, EH Enforcement re-emphasizes its interest on contractor self-identification of 10 CFR 835 and 10 CFR 830 noncompliances and the subsequent implementation of effective corrective actions. Pro-active contractor identification of issues related to the internal dose evaluation program would be considered by EH Enforcement for mitigation purposes in the resolution of an enforcement case.

Enforcement Guidance Supplements will be incorporated in later revisions of the DOE Enforcement Handbook and will be made available on the Office of Enforcement and Investigation web page (<http://tis-nt.eh.doe.gov/enforce/>). If you have any questions regarding this Enforcement guidance, do not hesitate to contact me or Susan Adamovitz of my staff at 301-903-0100.

