1997 Annual Report

Price-Anderson

Nuclear Safety Enforcement Program

Office of Enforcement and Investigation

Environment, Safety and Health

U. S. Department of Energy

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This document may be obtained from the following sources:

Available to DOE and DOE contractors from the Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge, TN 37831; (615) 576-8401.

Available to the public from the U.S. Department of Commerce, Technology Administration, National Technical Information Service, Springfield, VA 22161; (703) 487-4650.

Also available via the Internet from the DOE Office of Enforcement and Investigation Home Page: http://tis-nt.eh.doe.gov/enforce/

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Foreword

DOE's Enforcement Program has achieved significant progress in its second year of operation and is now a critical part of the DOE Integrated Safety Management System. In 1997 the Department issued 13 Notices of Violation and seven civil penalties totaling $440,000 (none of which were challenged). But success is not measured by penalties alone. The program's success is also measured in the heightened quality and value of information provided by contractors through self assessment, and the increased number of incidents where issues were fully investigated but enforcement action was deferred in recognition of contractor initiative.

The maturation of DOE's Enforcement Program is evident in a number of ways. We have noted that contractors are seeing the value and are emphasizing the need to identify their own problems, report them, and correct them before any enforcement action is initiated. We have also seen DOE Headquarters and Field Office managers increasingly involved in enforcement investigations and the determination of appropriate actions. Both are critical to continued success.

The Enforcement Program continues to grow as new lessons are learned form our experiences and from input from our contractors. This past year we updated and streamlined the Enforcement Policy and will soon be issuing additional guidance to contractors. Continued success depends not only on the professional Enforcement staff and the critical role of the Price-Anderson Coordinators, but on the support and participation of DOE management in program and field offices and the DOE contractors. With continued improvement, DOE's Enforcement will continue to grow as a valuable management tool to improve the safety of DOE operations.

Peter N. Brush
Acting Assistant Secretary
Environment, Safety and Health

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I. ANNUAL REPORT HIGHLIGHTS

This report summarizes activities in the Department of Energy's Price-Anderson Amendments Act (PAAA) Enforcement Program in calendar year 1997 and highlights improvements planned for 1998[1]. The DOE Enforcement Program involves the Office of Enforcement and Investigation in the DOE Headquarters Office of Environment, Safety and Health (referred to in this report as EH-Enforcement), as well as numerous PAAA Coordinators and technical advisors in DOE Field and Program Offices.

The DOE Enforcement Program issued 13 Notices of Violation (NOV's) in 1997 for cases involving significant or potentially significant nuclear safety violations. Six of these included civil penalties totaling $440,000[2]. Highlights of these actions include:

- **Brookhaven National Laboratory Radiological Control Violations/Associated Universities Inc**. Four separate violations involving a number of radiological control deficiencies were cited. Radiological control technicians did not meet established qualifications, and there were several radiological events involving unplanned personnel exposures, contaminations, or loss of control of radioactive material. Civil penalty: $142,500 (waived due to statutory exemption).

- **Bioassay Program Violations at Mound/ EG&G, Inc**. This case included the first Severity Level I violation under the Price-Anderson Program. In 1997 approximately 108 workers engaged in radiological activities failed to submit bioassay samples as required. Corrective actions were continually deferred and eventually canceled. In addition, failure to use accurate data could have caused workers who received internal doses to have doses recorded as zero. Civil penalty: $112, 500.

- **Savannah River Crane Operator Uptake/Westinghouse Savannah River Company**. The NOV was issued for violations discovered after a crane operator doing decontamination and equipment removal activities in the F-canyon received an estimated total effective dose equivalent more than twice DOE's annual occupational limit. Investigators concluded that, among other infractions, radiological control personnel failed to immediately stop work and evacuate when radioactivity was suspected to be over 100 times greater than the work permit allowed. Civil penalty: $93,750.

- **Waste Calciner Worker Uptake/Lockheed-Martin Idaho Technologies Company**. Five workers dismantling scaffolding were in a room with others engaged, under a separate work permit, in the cutting and disassembly of potentially-highly contaminated piping. A cut pipe released airborne contamination and caused a spill of unknown liquid. All workers remained in the room and continued working for an additional 40 minutes; air monitors were not operating. DOE concluded workers' exposures were preventable and a direct result of radiological violations.
  Civil penalty: $25,000.

- **Reactor Scram and Records Destruction at Sandia/Sandia Coporation (Lockheed-Martin).** This case involved multiple violations of operating and administrative procedures and destruction of records following a plant protection system actuated scram. The scram occurred after a power rise caused by a lack of operator attention to the control rods' movement. The reactor was restarted immediately without proper notifications or reviews. Sandia management uncovered the problem, initiating a timely self-identification and reporting, and taking widespread and effective corrective actions. DOE used its discretionary authority to waive the entire $40,000 civil penalty.

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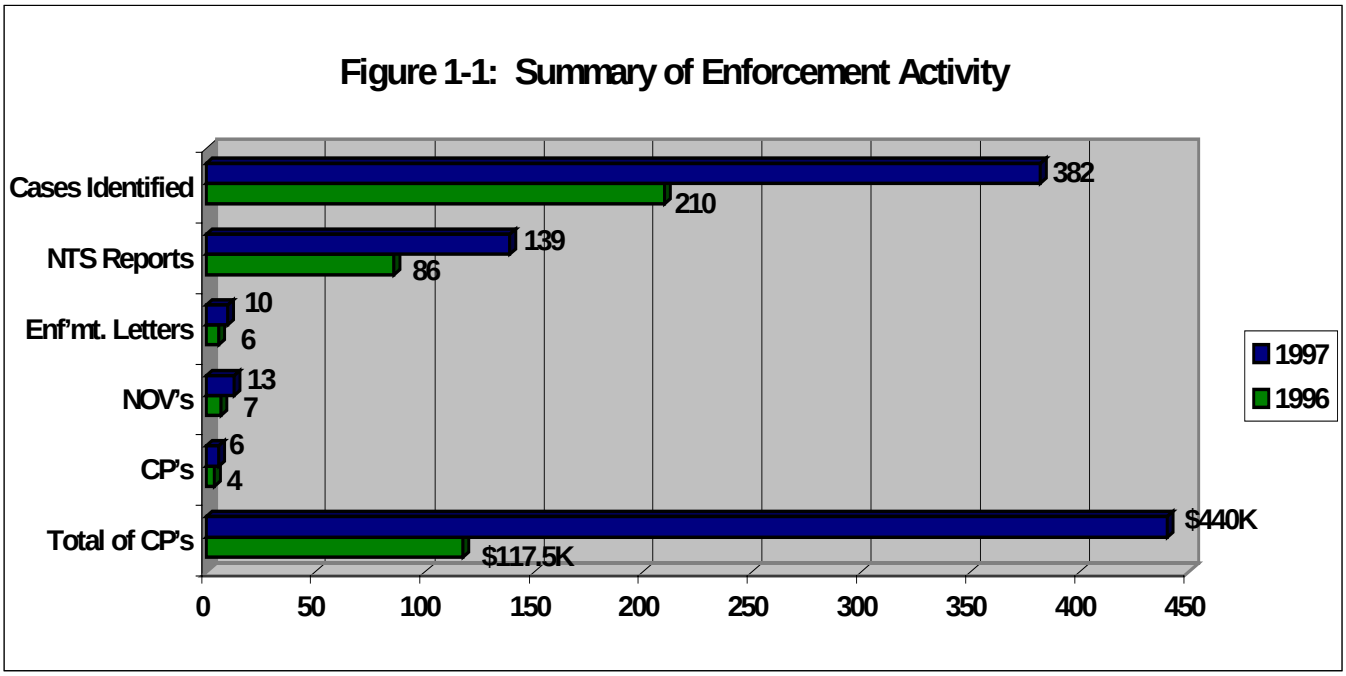
[1] PAAA- The 1988 Price-Anderson Amendments Act (P.L.) No. 100-408 required DOE to enforce compliance with its nuclear safety requirements.

[2] Of the $440,000, $142,500 was waived due to the statutory exemption for specific not-for-profit contractors.

In addition to the NOVs, DOE issued ten Enforcement Letters, which require that effective corrective actions be made and reported. Additional cases were evaluated, but in recognition of contractor initiative in identifying, reporting and correcting issues, no enforcement action was taken.

The 13 enforcement actions taken by DOE in 1997, including the first Severity Level 1 NOV, represented a significant increase in enforcement activity over the previous year. Figure 1-1 below demonstrates the increased level of activity in 1997.



The NOV's generally involved events that had significant or potentially significant consequences to workers or the public, and inadequate action on the part of the contractor until prompted by DOE or disclosed by an adverse event. The civil penalties were fully paid in all cases except where the contractor has a not-for-profit status and is exempted from civil penalties.

DOE currently enforces two nuclear safety rules: Quality Assurance and Radiation Protection of Workers. Contractors implemented requirements in 1995 and DOE began enforcement in 1996. DOE identified more than 380 cases of nuclear safety requirement noncompliance of sufficient importance for DOE review. These noncompliances were identified in two ways. First, based on a threshold recommended by DOE, contractors voluntarily reported 139 noncompliances through the DOE Noncompliance Tracking System (NTS), an increase from 86 the previous year. In addition to the NTS, another 243 noncompliances not reported by contractors were identified by DOE Coordinators and enforcement program reviews. Many of these cases were closed by DOE because the contractor initiated timely and appropriate corrective actions, or because DOE concluded that safety significance was low. Based on its experience in the first two years of the program and lessons-learned, DOE is planning changes to the program in 1998 that will improve its effectiveness. These changes are described in Chapter V.

II. ACCOMPLISHMENTS

Infrastructure Changes

In the latter part of 1995 and in 1996, DOE built a foundation for the Enforcement Program by establishing an Enforcement staff, building a network of DOE Field and Program Office PAAA Coordinators, establishing noncompliance reporting systems, issuing guidance documents, conducting training, and disseminating information. In 1997 further improvements to the DOE Enforcement Program infrastructure were made and are described here.

Part 820 Amendment

The Federal Civil Penalties Inflation Act of 1990 (P.L. 101-410) as amended by the Debt Collection Improvement Act of 1996 (P.L. 104-134) requires each agency to adjust by regulation each civil monetary penalty provided by law within the jurisdiction of the agency by a stated inflation adjustment. 10 CFR Part 820 was amended in accordance with this statutory requirement to increase from $100,000 to $110,000 the maximum civil penalty per violation of a Price-Anderson nuclear safety requirement. For a continuing violation, each day of such violation is considered a separate violation for application of this limit.

Part 820 was amended through issuance of the revision in the Federal Register on September 2, 1997 (reference F.R. Vol. 62, No. 169, pp. 46181-46184). The amendment was effective October 2, 1997, meaning DOE may apply this new maximum civil penalty to violations occurring after that date.

Enforcement Policy Amendment

DOE's Enforcement Policy, 10 CFR Part 820 Appendix A, was issued in 1993 and has provided the framework for enforcement actions at DOE facilities since 1995. Since its application, certain improvements have been identified to ensure that the Policy could be applied evenly across the DOE Complex and would communicate the desired message to contractors. On October 8, 1997, DOE issued an amendment to the Enforcement Policy through publication in the Federal Register, effective November 7, 1997.

The major purpose of the amendment was to provide the department greater flexibility to tailor enforcement actions to the significance of the violation without being limited by the facility type or size of the facility. Additionally, the amendment better tailors the Policy to the types of activities prevalent in DOE today, instead of emphasis on reactors or large radiological releases. It also clarifies certain features of the process not covered in the original Policy.

The original Policy established maximum base civil penalties for each type facility. The theory was that large facilities had greater hazards to the public from a nuclear incident and should receive larger civil penalties. This formula had the adverse effect of applying lower civil penalties to an incident involving significant or potentially significant worker safety hazards (e.g., radiological exposure of a worker) at small or low-inventory facilities, while DOE could issue a more substantial and meaningful civil penalty for the same violation at a larger facility.

The Policy was revised to remove the linkage of base civil penalty to the type of facility, and simply base the civil penalty on the safety significance of the violation. Thus a Severity Level I violation now has a base civil penalty of $110,000, Severity Level II - $55,00, and Severity Level III - $11,000 (although SL-III violations generally receive no civil penalty).

Additionally, DOE added language to clarify enforcement consideration of self-disclosing events. The amended Policy states that mitigation is appropriate only where a contractor did not have previous opportunities to identify and resolve problems that are disclosed by response to an event.

Also the amended Policy explains the use of Enforcement Letters, which were not specifically identified in the original Policy. Enforcement Letters were used in 1996 (six Letters) and 1997 (ten Letters) in certain cases where DOE has decided not to take enforcement action due to the low significance of the noncompliance, and proper and timely contractor actions. The letter provides an opportunity for DOE to communicate its basis for not taking action, but also to establish expectations for the contractor to follow through on commitments for completion of corrective actions.

In addition, the amended Policy formally encourages contractors to self-track noncompliances that are below DOE's reporting threshold, and establishes that such self-tracking be credited as reporting under the Policy. Self-tracking systems must be accessible to DOE, and must identify those items being tracked as Price-Anderson noncompliances.

The amended Policy will generally be applied to enforcement cases involving violations that occur after the effective date of November 7, 1997. In cases where the violation is long-standing, but was found after November 7, and the contractor had ample prior opportunity to identify and correct the problem, DOE could consider application of the amended Policy.

Enforcement Staff Strengthened

DOE increased from five to six the number of professionals in the EH-Office of Enforcement and Investigation. Additionally, the Office budget was increased to allow the use of outside specialized expertise to support enforcement reviews and investigations. A full time Docket Clerk manages and controls the official filing of material in particular cases.

The EH-Enforcement staff is linked with over 50 PAAA Coordinators in Field and Program Offices, and supported by additional DOE technical expertise from field and Headquarters' groups. These resources aid in evaluating the facts and circumstances of particular noncompliances, judging their nuclear safety significance, and evaluating the timeliness and adequacy of contractor corrective action. Using this input, independent judgements are made by EH-Enforcement on compliance, safety significance, adequacy of corrective actions and appropriate enforcement action.

Training

In 1997, EH-Enforcement continued its efforts to ensure that the DOE and Contractor community understands the DOE Enforcement Program, enforcement-related initiatives, and DOE's expectations of contractors. These efforts included participation by the Director of Enforcement at quarterly Contractor Coordinator sessions sponsored by EFCOG (Energy Facility Contractor Group). DOE also sponsored in November 1997 a formal two-day training session for DOE PAAA Coordinators attended by Coordinators from nearly every DOE Field and Program Office. Participants reviewed the 1997 enforcement cases, discussed experience and lessons-learned with the Nuclear Regulatory Commission's Director of Enforcement, and reviewed changes and improvements to the Enforcement Program planned for 1998.

On-the-job training to DOE PAAA Coordinators was provided through their direct involvement in particular cases for the entire enforce-

ment investigative and resolution process, including information gathering and review, interviews, and participation at enforcement conferences. This training was provided by EH-Enforcement staff.

Field Office Coordinator Participation on Investigation Teams

DOE PAAA Field Office Coordinators are the primary contacts for EH-Enforcement and contractor Coordinators. These Field Office Coordinators provide assistance to EH-Enforcement staff during the evaluation of noncompliances and technical support during enforcement investigations. Similarly, EH-Enforcement draws upon support from DOE Program Office PAAA Coordinators who have program or facility specific expertise during the evaluation, investigation and decision making stages of the process. Activities typically performed by the DOE Field Office and Program Office PAAA Coordinators include:

- Monitoring contractor reports and other information to independently identify noncompliances.
- Obtaining information to evaluate the safety significance and facts of noncompliances.
- Directly participating in investigations at their site to support enforcement reviews.
- Monitoring contractor completion of corrective actions.
- Periodically evaluating significance and completion of noncompliances tracked locally.

In addition to these responsibilities for their local site, several Field Office Coordinators have participated as part of investigation teams for reviews at other sites. The objective of such participation is to broaden the background of Coordinators so they can learn how issues are reviewed and resolved at other sites, and enhance the perspective brought to any evaluation. With the benefits realized from this participation in 1997 by DOE, it is planned to continue such support in 1998, as Coordinators are available.

Enforcement Home Page

In late 1996 DOE initially posted an Enforcement Home Page on the Internet.[3] In 1997, the information provided on the Enforcement Home Page has expanded. It now includes:

- Copies of all enforcement actions, including transmittal letters and Notices of Violation;
- Copies of all Enforcement Letters;
- Changes to the NTS system;
- Copies of Enforcement Handbooks;
- Price-Anderson Regulations, revised Enforcement Policy, and Price-Anderson related DOE Standards;
- Regulatory interpretations by the DOE Office of General Counsel;
- Press Releases related to enforcement actions;
- Most recently published Annual Report; and,
- Contact information for reaching the Enforcement staff.

Ongoing enforcement investigations are predecisional and cannot be made public until an enforcement action is taken. DOE's intent is to make as much enforcement-related information available to the public as possible.

[3] Enforcement and Investigation Home Page Internet address: http//tis-nt.eh.doe.gov/enforce/

Noncompliances, Investigations and Enforcement Actions

Cases Considered

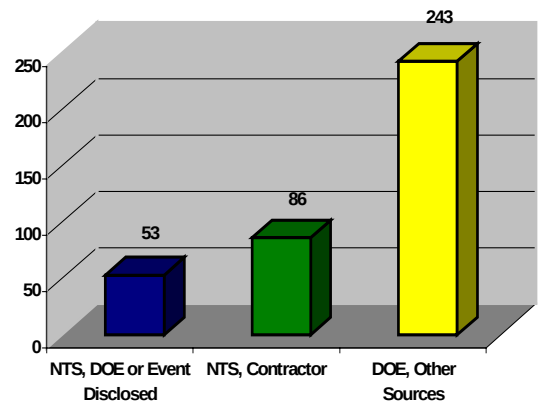
DOE considers for investigation a variety of information sources of noncompliances, including NTS reports by contractors and other cases identified by DOE. During this reporting period, over 380 cases of noncompliance with nuclear safety requirements were identified to EH-Enforcement for potential enforcement review.

Between January 1 and December 31, 1997, 139 noncompliance reports were filed into the NTS. For comparison 86 reports were filed in the same period in 1996. Of these 139 cases, DOE was able to complete the review of 95 reports by December 31, 1997. Additionally, DOE identified over 240 other noncompliance cases through review of the Occurrence Reporting System (ORPS), various DOE Field Office reports, EH-Oversight reports, Defense Nuclear Facilities Safety Board trip reports, DOE Field Office assessments, and other sources of contractor noncompliances. **Figure II-1** summarizes the sources for identification of potentially significant noncompliances in 1997, whether identified by DOE or the contractor and reported into NTS, or identified through DOE's other sources.

DOE's reviews of these noncompliance reports focused on the safety significance of the issues, as well as the degree to which the contractor was demonstrating the desired behavior of aggressive self-identification, reporting and corrective action. Where DOE was not satisfied that appropriate actions had been taken and that the safety significance warranted further investigation, DOE undertook a more comprehensive review.

The increase in the number of NTS reports in 1997 over 1996 indicates a broader acceptance by contractors of the need to identify noncompliance conditions, proactively report these to DOE, and implement timely corrective actions to mitigate those conditions.

Figure II-1, Noncompliance Identification Sources



Investigations / Reviews With No Enforcement Action

EH-Enforcement and DOE Field Office Coordinators conducted many comprehensive reviews of noncompliance cases. In some of these cases it was found that the contractor had properly self-identified and reported the problem, and was taking the appropriate action. These cases were often closed with appropriate annotation in the NTS system, including documentation of the observations and conclusions of the Field Office Coordinator. For non-NTS reported cases, EH-Enforcement similarly considered the safety significance of the issue and the actions taken by the contractor. If satisfied, EH-Enforcement documented the review via a drop-file.

If not satisfied, EH-Enforcement would have initiated an NTS report itself, and evaluated and tracked the case through the NTS.

In some cases DOE found it appropriate to issue an Enforcement Letter to the contractor as part of the closeout of the case to clarify a DOE position or to communicate DOE expectations to further enhance resolution of the issue. Where an Enforcement Letter was issued, no additional enforcement action was taken subject to satisfactory completion of corrective actions.

In 1997 DOE issued ten Enforcement Letters to formally close out investigations, as compared with six in 1996.

Notices of Violation and Civil Penalties

DOE initiated formal enforcement action in cases where DOE determined that the circumstances of the case and the actual or potential safety consequences were sufficiently serious. The purposes of the actions were multiple: to clearly document violations of DOE nuclear safety requirements with significant actual or potential safety consequences; to more clearly communicate DOE's expectations of contractors and the need to substantially change behavior and practices; and to emphasize the need for contractors to aggressively focus on a conscientious safety culture that self-identifies noncompliances, reports these to DOE, and takes prompt and effective corrective actions.

In 1997 DOE issued 13 NOV's, six with civil penalties totaling $440,000. This activity compares to seven NOV's, four with civil penalties totaling $117,500 in 1996.
Each NOV typically described a number of related examples that were collectively incorporated into a single set of findings.

In the six 1997 cases for which civil penalties were imposed, five contractors paid the full penalty. The final case involved a not-for-profit laboratory exempted from payment of civil penalties by PAAA. In all cases to date, the contractors have fully complied with the corrective action requirements set forth in the Notices of Violation and paid the civil penalties in full as required by law. No Notices of Violation were contested in the reporting period.

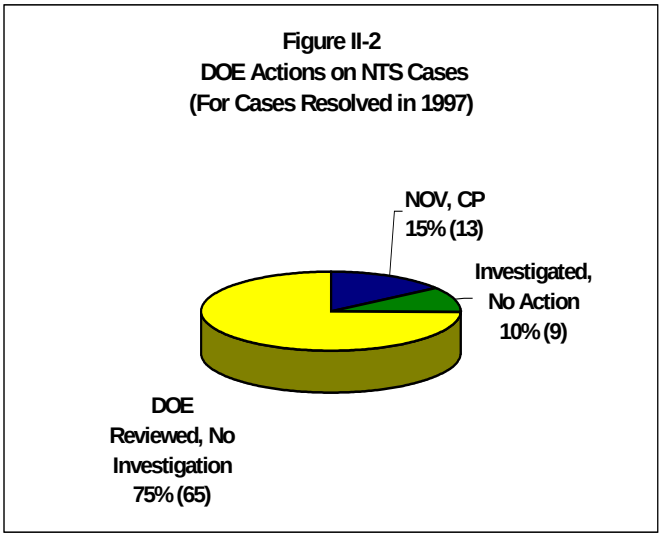


Figure II-2 summarizes the enforcement actions or outcomes for the various NTS cases considered and resolved by DOE in 1997. These cases derived from NTS reports, where DOE judged that potential safety significance warranted a substantive review.

Most cases were closed without enforcement action based on proper initiative by the contractor or DOE conclusions of low safety significance once the facts of the case were reviewed. Sections III and IV provide examples of selected 1997 EH-Enforcement cases.

III. SIGNIFICANT ENFORCEMENT ACTIONS

Radiological Program Violations at Brookhaven National Laboratory

On December 18, 1997, DOE issued a NOV to Associated Universities, Inc., Brookhaven National Laboratory (BNL) citing four separate violations of nuclear safety requirements involving a number of radiological control deficiencies at the laboratory identified in 1997. On March 5, 1997, DOE found that a large number of BNL Radiological Control Technicians (RCTs) did not meet established qualifications, yet were performing the same duties as qualified RCTs. Additionally, in May and June 1997 radiological events occurred at BNL involving unplanned personnel exposures, contaminations or loss of control of radioactive material.

"reflected a trend of programmatic violation with regulatory and BNL procedural requirements."

DOE was particularly concerned with these violations because they reflected a trend of programmatic violation with regulatory and BNL procedural requirements. Additionally, these violations occurred at multiple facilities over a period of time. For example, the issue involving RCT qualification had been previously identified by a DOE audit conducted in 1993. However, actions to correct this problem were not fully implemented by BNL until after DOE raised the issue again in March of 1997. In another example, supervisory staff at the High Flux Beam Reactor (HFBR) violated BNL procedures on multiple occasions when transporting contaminated dummy fuel elements from a radiological area to a non-radiological area. The procedures involved posting, material release from radiological areas, monitoring of personnel, and labeling of radioactive material. These infractions led to personnel contamination and the loss of control of radioactive material. In a third example, numerous instances were identified where personnel at the HFBR failed to comply with BNL radiological control procedures established to control personnel exposures as low as reasonably achievable (ALARA). In still a fourth example, personnel were contaminated and received unnecessary exposures due to failure to follow internal procedures for the review and irradiation of experimental samples at the Brookhaven Medical Research Reactor.

While the actual consequences of the BNL violations were fortuitously minor (i.e., personnel exposures were low), the programmatic nature of the violations, the potential for more severe consequences to workers, and BNL's failure to take timely corrective actions, were of significant regulatory concern. DOE concluded that an NOV should be issued for these violations even though DOE's contract with Associated Universities, Inc. had been terminated, so that the new contractor would be cognizant of the enforcement issues.

In accordance with the "General Statement of Enforcement Policy," 10 CFR 820, Appendix A, the four violations were each classified as Severity Level II. A civil penalty in the amount of $142,500 would normally have been assessed for the four Severity Level II violations discussed above. However, since the statute specifically exempts Associated Universities', Inc. activities at BNL from civil penalties, the civil penalty was waived. Although this contractor was exempt from civil penalties, DOE could have mitigated the enforcement action, such as by reducing the scope of instances cited or reduction of the severity level, if the contractor had demonstrated initiative in identifying the problems, reporting these to DOE and taking prompt and effective corrective action. No such initiative was evident, and thus DOE granted no mitigation.

Bioassay Program Violations At Mound

On October 21, 1997 DOE issued a Severity Level I NOV, with a civil penalty of $75,000, and a Severity Level II NOV, with civil penalty of $37,500, against EG&G, Incorporated, the parent company of EG&G Mound. The Severity Level I violation issued in this case was the first issued by DOE under the Price-Anderson program.

This case involved deficiencies in the administration of the Mound Plant's bioassay program and methodologies used for determining and assigning internal radiation doses to workers. DOE concluded that violations of DOE's Occupational Radiation Protection Rule (10 CFR 835) and Quality Assurance Rule (10 CFR 830.120) occurred.

"108 workers . . . failed to submit samples for bioassay as required."

The NOV described violations associated with the failure to adequately assure that the Mound Plant's Bioassay Program for workers was implemented in accordance with the contractor's own established procedures. For 1997 alone, it was determined that approximately 108 workers performing radiological work activities under the control of at least 20 different radiation work permits had failed to submit samples for bioassay as required.

The investigation established that supervisors routinely failed to ensure that workers adhered to radiation work permit requirements to submit bioassay samples for analysis. EG&G initially identified this problem in February 1996, through its self-assessment process. However, these violations were of particular concern to DOE because the corrective actions that would have resolved the problem involving the failure to obtain samples were deferred multiple times and then subsequently cancelled. Moreover, bioassay sampling is the contractor's primary basis for assigning workers' internal dose, and missed samples can result in a worker's internal radiation dose not being fully assigned and documented.

Additionally, the NOV described violations associated with the failure to ensure that all occupational exposure received by individual workers during the year would be included and controlled to prevent workers from exceeding the annual radiation dose limits. These violations occurred because the most current, accurate laboratory data available to the contractor were not used to evaluate worker bioassay sample results. By failing to use current, accurate data for calculating worker exposure to Pu-238, individual workers could have received internal doses up to 860 millirem CEDE which would have been recorded as a zero dose in the workers records. As early as 1995, contractor personnel were aware of the need to update the data being used to evaluate and assess worker bioassay results and make dose assignment.

"Severity Level I, DOE escalated the severity level based on factors … in the Enforcement Policy"

The multiple examples of the violations associated with the bioassay program participation could have been cited separately, and assessed individually for civil penalties. However, in accordance with the criteria set forth in the Enforcement Policy, these violations were classified in the aggregate as a Severity Level I problem to focus on the programmatic nature and significance of the problem. In classifying these violations at Severity Level I, DOE escalated the severity level based on factors to be considered by DOE as stated in the Enforcement Policy. Specifically, DOE considered: the past performance of the contractor in the administration of the bioassay program; the multiple examples of violations involving numerous workers; the continuation of the problem

over an extended period of time; the awareness of supervisory personnel to the ongoing nature of the problem; and the repeated deferral of the corrective actions necessary to correct the problem. A civil penalty of $75,000 was assessed for this Severity Level I violation. No mitigation was considered appropriate, since, while the problem was initially identified by the contractor, the immediate actions to restore compliance were not taken.

The violations associated with the use of inaccurate MDA data were classified as a Severity Level II problem, and a civil penalty of $37,500 was assessed. No mitigation was considered appropriate in that corrective actions were not implemented in a timely manner when contractor personnel first became aware of the problem in 1995.

Savannah River Crane Operator Uptake

On December 5, 1997, DOE issued an NOV and proposed civil penalty of $93,750 to Westinghouse Savannah River Company (WSRC), the Savannah River Site contractor. The NOV was issued for violations discovered after a crane operator received an estimated whole body dose of 11.6 rems Total Effective Dose Equivalent, more than twice DOE's annual occupational 5-rem regulatory limit. The exposure was identified in April 1997 during a review of the worker's routine bioassay sample results. Investigations conducted by DOE and the contractor concluded that the exposure occurred in December 1996 during decontamination and equipment removal activities in the F-Canyon reprocessing facility.

Problems found by the investigators included the following:

- Radiological control personnel failed to stop work and immediately evacuate personnel when airborne radioactivity was calculated to be over 100 times greater than allowed by the work permit.
- Personnel worked in radiation areas using an unapproved radiation work permit.
- Personnel did not use a required primary containment to prevent the spread of contamination.
- Improper construction of a secondary containment hut.

These failures directly contributed to the individual worker receiving an unplanned and unnecessary intake of plutonium resulting in an exposure in excess of regulatory limits.

"The violations . ..contributed to an unnecessary worker exposure . . . and . . . (prior) repeated deficiencies in radiological work practices went uncorrected."

The violations were of particular concern to DOE not only because they contributed to an unnecessary worker exposure but also because both the DOE and WSRC found multiple other examples of the failure to properly plan and control radiological work that occurred throughout 1996. Management oversight was inadequate and as a result, repeated deficiencies in radiological work practices went uncorrected. Also, the violations were similar to previous radiological work control deficiencies identified and reported to DOE in mid-1995. A principal cause of the most recent deficiencies was the failure by WSRC management to recognize the implications of the earlier work control problems in 1995 as an indicator of a broader issue in F-Canyon. The management control violations were classified in the aggregate as Severity Level II violations.

In this case DOE concluded that an exposure equal to or greater than 5 times an annual limit is an appropriate threshold that will generally result in assigning a Severity Level I classification. In this case, that level was not reached, but any exposure above a regulatory limit is

cause for concern, and will generally be classified at a minimum as a Severity Level II violation. Therefore, the violation in this case of an exposure exceeding regulatory limits was classified at Severity Level II.

The base civil penalty for the management control Severity Level II violations was reduced by 25%. Partial mitigation was considered appropriate in recognition of the breadth of the contractor's investigation to fully assess the problem and to identify the site-wide implications of these issues.

ACRR Reactor Scram and Destruction of Records

On August 14, 1997 DOE issued a Severity Level II NOV with no civil penalty to Sandia Corporation, a subsidiary of Lockheed Martin, Inc. This case involved multiple violations of operating and administrative procedures by reactor operators, and destruction of records of an unauthorized immediate restart of the reactor following a plant protection system actuated scram (automatic shutdown) of the Annular Core Research Reactor (ACRR). These issues were uncovered by Sandia National Laboratory (SNL) management through questioning of SNL staff and subsequent SNL investigations. The automatic scram of the reactor on high power (110% power) occurred when the reactor supervisor was trouble-shooting a problem with two of the control rods. The power rise was caused due to a lack of operator attention to the control rods' movements while investigating the control rod problem. The reactor was immediately restarted following the scram without proper notifications of management and performance of post-scram reviews and pre-restart actions, as required by contractor procedures. Several other procedural requirements and documentation of information in logs were not performed. Additionally, the reactor supervisor destroyed a portion of the logs covering the immediate restart of the reactor following the scram and roughly 19 minutes of subsequent operation. SNL management later (about 9 days after the incident) learned of the scram from the reactor operator when discussing a number of other topics, and promptly initiated an investigation to ascertain the facts and circumstances surrounding the reactor shutdown.

The multiple failures to comply with contractor established procedures to ensure the safe operation of the ACRR constituted violations of 10 CFR Part 830.120 (c)(2)(i), (Work Processes). Additionally, the instances associated with this case of failing to complete and preserve proper operating logs constituted violations of 10 CFR Part 830.120 (c)(1)(iv), (Documents and Records). The numerous failures to comply with established contractor procedures, and the subsequent destruction of records were of particular concern. These violations were individually classified as Severity Level II Violations.

"SNL management . . . timely self-identification . . . prompt management response . . . broad and objective investigative"

A civil penalty would normally be considered for a Severity Level II problem. In this case, the base civil penalty would have been $40,000 ($5,000 for each of the eight (8) violations). However, DOE considered the discretionary adjustment factors set forth in the Enforcement Policy and concluded that the contractor's actions in this case warranted 100% mitigation of the civil penalty. Specifically, SNL management undertook proactive initiatives in this case that resulted in timely uncovering of the problems and reporting of the regulatory issues, thus providing a basis for 50% mitigation of the base civil penalty. Additionally, SNL's corrective actions, including prompt management response in dealing with the individuals involved in this incident, broad and objective investigative actions, and the designation of a senior level Nuclear Facility Review Panel with

outside participation, were considered timely and comprehensive, and therefore formed the basis for mitigation of the remainder of the civil penalty.

Idaho Waste Calciner Worker Uptake

On February 27, 1997, DOE issued a Severity Level II NOV and proposed civil penalty of $25,000 to Lockheed Martin Idaho Technologies Company (LMITCO), a subsidiary of Lockheed Martin, Inc. The NOV was issued for worker exposures in violation of occupational radiation protection requirements. DOE concluded that the worker exposures were preventable and were a direct result of radiological work deficiencies that involved the failure to implement requirements of 10 CFR Part 835, *Occupational Radiation Protection.* Specific violations included failure to implement administrative controls for ALARA (As Low As Reasonably Achievable); and failure to perform adequate monitoring of individuals and the work area for changing radiological conditions.

"workers could have received a much greater exposure due to the lack of appropriate radiological work controls"

Five workers received unplanned internal radiation doses ranging from 652 mrem to 678 mrem. Although their doses fell below DOE's annual occupational exposure limit of 5 rem (5,000 mrem), DOE concluded there was substantial risk the workers could have received a much greater exposure due to the lack of appropriate radiological work controls.

On July 22, 1996, five workers were dismantling scaffolding in the Waste Calciner Decontamination Makeup Room as part of decommissioning activities. Respiratory protection was not required for these workers by the Radiation Work Permit (RWP), and they were not wearing respiratory protection.

In the same room and at the same time, a second work activity was being conducted which involved the cutting and disassembly of potentially highly contaminated piping. The workers performing the cutting were using a different RWP, which required airline respiratory protection. These workers were in airline respiratory protection. One of these workers cut a contaminated pipe, which released airborne radioactive contamination into the room, and caused a spill of an unknown liquid. Radiological hold-points and administrative requirements were not being followed by the workers which required: (1) a Radiological Control Technician (RCT) to survey each pipe, after a small hole was made in the pipe, prior to cutting; (2) stop work if a spill from the cut piping was observed; and, (3) stop work when contamination levels exceeded the RWP limit. Air monitoring was not in place at the time, so the workers were unaware of the airborne contamination. All of the workers remained in the room and continued working for an additional 40 minutes after the radiological release. Work was finally stopped and personnel evacuated from the room when one worker left the room and set off a radiation monitor.

In addition to the above deficiencies, DOE identified deficiencies in poor work planning by contractor management in allowing these two work activities in the room and at the same time, and not conducting an adequate pre-job briefing for the workers.

In issuing this NOV and civil penalty, DOE recognized that although LMITCO performed a comprehensive investigation and root cause analysis of this event, they failed to evaluate this and other previous events that could have uncovered these problems prior to the work in this case. DOE was concerned that the radiological work deficiencies occurred multiple times in the conduct of this work activity, and were performed by personnel from several

different organizations, indicating a potential broader weakness in the radiological control program.

Finally, during the investigation of this event, a second event occurred on January 13, 1997 involving the unplanned internal exposure of two workers, also due to radiological work control deficiencies. DOE concluded that the violations collectively were a Severity Level II problem, and that no mitigation of the civil penalty was warranted in this case.

Pantex Training Violations

On June 5, 1997 DOE issued a Severity Level III NOV with no civil penalty to Mason and Hanger Corporation, the contractor for DOE's Pantex facility. The violations involved irregularities associated with training requirements for Production Technicians who performed work in the W55 nuclear weapons dismantlement program in Building 12-84. EH Enforcement initiated its inquiry after several workers communicated concerns to the DOE Amarillo Area Office regarding the accuracy of weapon work proficiency records.

After the concerns were raised to DOE, Mason and Hanger Corporation conducted an internal review of the issues and found deficiencies in assuring that only qualified and certified individuals perform nuclear weapons work. Additionally, records documenting work proficiency required for certification of Production Technicians to perform weapons work were found to contain incorrect and misleading information.

DOE determined that violations associated with DOE's Information Requirements as articulated in 10 CFR 820.11 occurred. The investigation established that in at least one case, the records maintained to document that a Production Technician was certified to perform nuclear weapon dismantlement work were false.

"substantial evidence to indicate that work proficiency records were purposely manipulated"

DOE concluded that there was substantial evidence to indicate that work proficiency records were purposely manipulated at the direction of an Operations Manager to inflate the number of proficiency hours worked by Production Technicians in order to make it appear that the Production Technicians were earning work proficiency hours when in fact they were not.

DOE recognized that the safety significance associated with these deficiencies was low because technicians were originally qualified through training to perform the work but eventually lost the ability to be currently certified because they were not assigned the duties necessary to allow retention of work proficiency certifications. Nevertheless, the involvement of a first line manager in the falsification of records is significant and required enforcement action. Additionally, DOE recognized that once informed of the problem, the contractor's Internal Audit and Assurance Division conducted a thorough review of the issue and then expanded the review to evaluate the broader site-wide implications of the matter. However, the misrepresentation of material information regarding nuclear activities upon which DOE relies is a serious regulatory concern, and in this case was determined to be a Severity Level III Violation.

IV. DEFERRED ENFORCEMENT ACTIONS

DOE in many instances has chosen to defer enforcement action based on contractor initiative in identifying and reporting the noncompliances, and in taking comprehensive corrective actions. In a number of other cases DOE has not taken action due to the relative low safety significance of the noncompliance. These actions by DOE serve as an incentive to contractors to undertake the desired safety management culture. The following are examples of cases where DOE, following review and investigation, chose to defer enforcement action based on desired actions on the part of the contractor. However, in these examples, an Enforcement Letter was issued to identify DOE's view of the seriousness of the problem and emphasize DOE's expectation that the root causes be corrected to preclude recurrence.

Los Alamos Radiological Worker Training Noncompliances

On January 17, 1997 DOE issued an Enforcement Letter to Los Alamos National Laboratory involving programmatic deficiencies in conducting radiological worker training. An assessment was conducted by LANL after a determination was made that at least nine employees at Building TA-55 had not received radiological worker training in accordance with the requirements of 10 CFR 835. The corrective actions included a review of training requirements, completion of training for all workers whose training was determined to be deficient, and establishing a formal system for that facility to assure personnel received required training and re-qualification.

Subsequently, LANL conducted an investigation into radiological training qualifications for LANL employees, and certain contractors. This investigation concluded that approximately twenty-three percent (23%) of workers requiring Radiation Worker I training and nine percent (9%) of workers requiring Radiation Worker II training were not in compliance with the applicable training requirements.

"LANL's aggressive investigation identified the broad problem."

DOE's evaluation concluded that a noncompliance with 10 CFR 835 radiation safety training requirements likely occurred. Absent mitigating factors, DOE would normally issue an enforcement action for a violation of this nature. However, DOE concluded that LANL's aggressive investigation identified the broad problem, beyond the initial deficiency of a few workers in Building TA-55. Further, when the nature and extent of the problem were uncovered, LANL promptly reported the matter to DOE and involved DOE site personnel in its pursuit of a sound solution.

DOE concluded that the corrective actions, if fully implemented, constituted a reasonable approach to correct the noncompliance and associated programmatic weakness. Based on the self-identification of the broader programmatic issues, and the comprehensiveness of the corrective actions, DOE exercised discretion not to undertake enforcement action. However, DOE stressed that this discretionary decision was contingent upon the adequacy and timeliness of implementation of the corrective actions. Subsequent to issuance of the Enforcement Letter, DOE confirmed the completion of all corrective actions and the matter was closed.

Hanford Tank Farm Work Process Noncompliances

On July 7, 1997, DOE issued Enforcement Letters to Flour Daniel Hanford, Inc, the integrating contractor at the DOE Richland Site, and to Lockheed Martin Hanford Company,

the Tank Farm facility operating contractor. The Enforcement Letters identified three events which occurred at the Tank Farm between October 1996 and January 1997 that involved workers who failed to comply with nuclear safety procedures. Each event by itself was considered to have only minor safety significance, but DOE concluded that collectively these events represented a broader management concern that, if not corrected, could result in more significant safety consequences. The three events were:

- On September 17, 1996, Tank Farm workers failed to follow procedures while attempting to add treated water to Tank C-106. The person in charge (PIC) failed to verify the transfer line was properly connected and failed to obtain the required management approval, prior to initiating the transfer.

  Subsequently, 97 gallons of treated water were spilled before the PIC recognized the transfer line was not connected to the tank.

- During October 1996, an Engineering Change Notice (ECN) was initiated to obtain heat trace components for a Tank Flammable Gas Monitoring System. During the procurement process it was discovered that the release stamp on this ECN had been falsified and the ECN had not received the required review.

- On January 17, 1997, a leak detector alarm was received during the transfer of radioactive waste between two tanks. The transfer procedure required an immediate shutdown of the transfer process upon such an alarm. Shift personnel failed to follow the shutdown procedure, which resulted in the transfer operation continuing for another four hours without knowledge or monitoring by facility personnel.

"PNOV was not warranted (due to) contractor's brief tenure … identification and aggressive corrective actions"

DOE, in deciding that an NOV was not warranted, considered both the operating contractor's brief tenure at this facility, contractor identification of the ECN deficiency, and the contractor's aggressive corrective actions in response to these findings. The operating contractor initiated comprehensive corrective actions to retrain the Tank Farm work force on the importance and expectation of complying with the established work controls, and stopping work if an uncertainty about those controls exists. In addition, DOE noted that increased visibility of contractor management in the field was having a positive effect in developing the necessary worker safety culture at the Tank Farm.

V. CHANGES AND IMPROVEMENTS

Experience from DOE's first two years of applying the Enforcement Program, and from a number of enforcement actions, has led to some lessons learned. It is DOE's intention to continually review its Enforcement Program, and institute changes to improve its effectiveness. The following changes and improvements in the enforcement program are planned for 1998.

Removing Civil Penalty Exemption for Not-for-Profits

Presently, certain contractors operating DOE Laboratories are statutorily exempt from civil penalties for nuclear safety violations. In addition, all other not-for-profit educational institutions operating a DOE Laboratory, and any contractors or suppliers to the laboratories, are exempted from imposition of such civil penalties by DOE rule.[4] DOE is studying further the removal of this exemption, and treating such contractors and subcontractors in a similar manner as other contractors who violate nuclear safety requirements.

Although DOE is authorized by statute to issue Notices of Violation to such not-for-profit contractors, consideration is being given to whether civil penalty authority could be expected to enhance vigilance in compliance with nuclear safety requirements.

Increased Focus on Safety Feature Violations

In DOE's first two years of applying the Enforcement Policy, the major focus has been on cases where violations of nuclear safety requirements resulted in an actual or potential risk to workers, such as through exposure to radiological material or uptake of such material. Approximately 70% of the enforcement actions have involved cases of worker exposure or worker radiological risks.

About 30% of the enforcement actions to-date have involved violations that resulted in degradation or reduced quality of safety features relied on to prevent or mitigate the effects of accidents that could impact the public as well as the site-wide population.

This initial focus on worker radiological safety was based on the continued historical problem of such problems not being adequately resolved to preclude recurrence. While these areas continue to require attention, in 1998 the Enforcement Program will be placing enhanced attention on cases involving safety features violations, or violations of general quality assurance programs aimed at ensuring the quality of nuclear facility safety features. This will likely result in a more balanced approach to violations involving risk to worker radiological safety, as well as those affecting safety features intended to protect the public and general site work force.

Changes to Enforcement Guidance

In 1995 EH-Enforcement issued three guidance documents to assist contractors and DOE personnel in understanding expectations in the enforcement process. Each was written to provide comprehensive information about a specific aspect of the Enforcement Program. With the experience gained over the first two years of the Enforcement Program, some clarifications and improvements are appropriate for two of these documents. In 1998 DOE expects to issue revisions to The Enforcement Handbook (DOE-HDBK-1087-95), and The Guidance for Identifying, Reporting and Tracking Nuclear Safety Noncompliances (DOE-HDBK-1089-95).

[4] Reference 10 CFR Part 820.20.

The Enforcement Handbook will be revised to reflect changes to the Enforcement Policy made in 1997 (refer to Section II.1). It will clarify certain issues, including: self-disclosing events; what constitutes a "willful" violation; expectations when a site transitions between contractors; cases where DOE may decide not to hold an enforcement conference; non-applicability of PAAA to DOE employees; and DOE's ability under the Policy to escalate the Severity Level if certain factors apply. The factors for escalating the Severity Level include extensive duration of the problem, prior opportunities to resolve the problem, management involvement, and frequency of the violation.

The NTS Reporting Threshold Handbook is being revised to: replace the terms "minor" and "significant" noncompliances with "NTS-reportable" and "non-NTS-reportable," respectively; remove Table 3-3 on reportable "Administrative Actions;" add more specificity to the criteria on personnel exposure requiring reporting; and clarify expectations for contractor self-tracking systems. In addition, the NTS User Manual is being converted to a separate guidance document.

Consistent Field Office Involvement

DOE's enforcement program is founded on an approach of making maximum use of existing resources and programs, such as personnel in Field Offices. These personnel are integral to the enforcement program. They are most aware of conditions that represent potentially significant noncompliances, are most capable of judging corrective action adequacy, and the most efficient in confirming that corrective actions have been completed. EH-Enforcement has no direct authority over these Field Offices, and thus has structured an arrangement that is based on professional cooperation rather than management authority to obtain the support and involvement of individual Field Offices.

The program was established with individual Coordinators designated in each Field Office as the point of contact for EH-Enforcement and for contractors on PAAA issues. Over the first two years of implementing the enforcement program, substantial variation in program involvement among Field Offices has been experienced.

This variation appears to be related to both differences in perceived role of the Field Office when interacting with the contractor on PAAA issues, and divergence among Field Office managers on extent of desired involvement in the enforcement program. These differing perceptions have manifested themselves in differences in the active involvement in identifying noncompliances, participation with EH-Enforcement in conducting investigations, and in confirming proper completion of corrective actions by the contractors.

To improve this area, beginning in 1996 DOE undertook several initiatives to provide more uniform cooperation, including:

- Annual Coordinator workshops with representatives from most Field and Program Offices, most recently conducted in November 1997. A focus of this workshop was cross-feed of information on various enforcement cases in the past year, and understanding lessons-learned in the enforcement area from the NRC's Director of Enforcement.
- Continued communication between senior EH management and individual Field Office management to better establish working relationships, understanding of roles, and strategies for focusing on particular contractor problem areas.

This issue was identified in last year's Annual Report as well, and actions taken similar to the above have led to improvement in certain offices; however, there is still considerable need for improvement.

Table V-1 illustrates the relative involvement of different Operations Offices for NTS reports where sufficient time has elapsed that Field Office input could be expected.

Improving Contractor Initiative in Identification and Reporting

Over the past two years, DOE has found some contractors are still less ambitious in identifying PAAA noncompliances and reporting these to DOE, although across the Complex improvements have been seen in the level of activity to identify noncompliances, and the extent of communication with DOE.

In some cases these contractors identified more significant noncompliances but were reluctant to report these to DOE, and simply tracked these in their internal tracking system. Some others have not even focused on identifying the nuclear safety noncompliances in their operations. In certain of these cases DOE has taken enforcement action, and through the enforcement action communicated to the contractor the high level of safety awareness and compliance assurance desired by DOE as reflected in DOE's nuclear safety requirements.

DOE will continue to monitor the responsiveness of contractor initiative in identifying noncompliances, reporting issues above DOE's reporting threshold into NTS, and taking prompt and effective corrective actions. DOE's monitoring activities will include review of occurrence reports, routine contractor monitoring by Field Office personnel, Defense Board (DNFSB) reports, Office of Oversight findings, and worker input.

A number of other contractors have reported very few noncompliances into DOE's NTS system. For these contractors, DOE intends to focus special attention to determine if these contractors are demonstrating a high level of compliance and safety performance, or are avoiding their responsibility to aggressively identify noncompliances and focus on improving safety of operations. DOE will exercise similar monitoring activities as described above, but will also consider a special site-visit to the contractor's facility to review identified noncompliances and other records.

As a point of information, **Table V-2** summarizes the NTS report frequency by contractor as of December 31, 1997. The contractors listed in the Table are those that are direct managing and operating (M&O) or managing and integrating (M&I) contractors to DOE, responsible for nuclear facilities. Some of these manage large, complex sites with many nuclear facilities, while others manage smaller sites or sites with few nuclear facilities or radiological activities. Some of these are research laboratories where it may be reasonable that few NTS reports would appear; however; larger sites with many nuclear facilities or radiological hazards should be expected to have multiple NTS reports if the contractor is aggressively identifying, reporting and fixing its 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; but, the table does show the wide variation in use of NTS by contractors. Contractors with low reporting into NTS, but performing activities with nuclear safety implications, will receive special attention.

NTS Graphical User Interface

DOE is preparing a Windows based version graphical user interface (GUI) to access NTS reports in a similar manner as has been accomplished for access to ORPS reports. The GUI will greatly improve the speed and ease at which users will be able to enter, search and

retrieve information on NTS reportable non-compliances. The initial version of the GUI was "beta" tested in September 1997, and found by DOE and contractor personnel, to require further changes to improve the program. Based on these findings from the "beta" testing, the GUI is being revised before it is placed in service. Until completed, DOE and contractor personnel will continue to access NTS using the existing software application.

Integrated Safety Management Interface With Enforcement

DOE has undertaken the process of changing the way that the management of safety at its facilities is accomplished. It is Department Policy that an Integrated Safety Management System (ISMS) will be used to systematically integrate safety into management and work practices at all levels so that missions are accomplished while protecting the public, the worker and the environment.[5] The Development of an ISMS Program by contractors is required by the Department's acquisition regulations.[6]

The ISMS Program encompasses activities dealing with worker industrial hazards, risks to the environment, and radiological risks to workers and the public. The Price-Anderson Program addresses a subset of the ISMS scope, the radiological safety risks, in a manner that is consistent with the concepts and policy of DOE's Integrated Safety Management System.

The ISMS initiative is aimed at integrating various specifically focused Department activities into a coherent approach to managing safety. The nuclear safety rules and enforcement of compliance with the requirements of those rules is a central part of the activities that comprise the ISMS Program. Consistent with ISMS, the nuclear safety rules establish the required management safety process activities. These required activities include: to plan work, understand safety requirements, establish formal procedures for the conduct of work, establish nuclear safety limits for workers and the public for planned work and potential adverse consequences of events or accidents, and implement a consistent formality of operations to ensure requirements are met. The DOE Enforcement Program is aimed at taking action against contractors when they have substantially deviated from these nuclear safety requirements and have not followed desired safety management principles of critical self-assessment, self-identification of problems, and aggressive and comprehensive resolution of identified problems. Significant opportunity for mitigation of enforcement action serves as an incentive to contractors to implement these safety management principles.

[5] From DOE Policy DOE-P-450.4, *Safety Management System Policy*, October 15, 1996.
[6] 48 CFR (DEAR) 970.0470-2.

Table V-1
FIELD OFFICE INVOLVEMENT[7]

Field Office	No. of NTS Reports Closed in 1997 by EH-Enforcement	% of NTS Reports With Field Office Comments on Corrective Actions
Albuquerque Operations Office	16	88%
Chicago Operations Office	7	86%
Idaho Operations Office	4	100%
Nevada Operations Office	1	100%
Oak Ridge Operations Office	4	25%
Oakland Operations Office	7	100%
Ohio Operations Office	14	93%
Richland Operations Office	8	100%
Rocky Flats Field Office	3	100%
Savannah River Operations Office	10	100%

[7] Based on NTS Reports where the contractor has indicated that all corrective actions have been completed by October 31, 1997, thus allowing sufficient time for Field Office involvement to confirm completion of corrective actions. Field Office involvement was recognized where comments have been provided by the Field Office either into NTS or via formal correspondence to EH-Enforcement.

Table V-2
CONTRACTOR NTS REPORTING[8]

Contractor	No. of 1997 NTS Reports	Enforcement Actions[9]
Ames Laboratory	2	
Argonne National Laboratory-East	2	
Argonne National Laboratory-West	1	
Battelle-PNNL	3	
Bechtel-Hanford	4	NOV, SL-III
Bechtel-Nevada	3	
Brookhaven National Laboratory (BNL)	6	NOV, SL-II, CP of $142,500[10]
EG&G Mound	6	NOV, SL-I & -II, CP of $112,500
Fermi National Accelerator Laboratory	0	
Fernald (FERMCo)	10	NOV, SL-III, CP of $10,000
Fluor-Daniel Hanford	17	
Kaiser-Hill	17	NOV, SL-III[11]
KC Allied Signal	0	
Lockheed-Martin Energy Research	1	
Lockheed-Martin Energy Systems	5	
Lockheed-Martin Idaho Technology Co.	20	NOV, SL-II, CP of $25,000 NOV, SL-III
Lockheed-Martin Science Center	0	
Los Alamos National Laboratory	7	
Manufacturing Sciences Corp.	1	
Mason & Hanger	8	NOV, SL-III
MK-Ferguson	1	
Princeton Plasma Physics Laboratory	1	
Sandia National Laboratory	4	NOV, SL-II, no CP NOV, SL-II, CP of $56,250
Stanford University	0	
Lawrence Livermore National Laboratory	2	
Lawrence Berkeley National Laboratory	5	
West Valley Nuclear Services	1	
Westinghouse Savannah River Company	10	NOV, SL-III NOV, SL-II, CP of $93,750

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8 NTS Reports Through December 31, 1997 for DOE's principal (Management and Operating, Management and Integrating) contractors. Subcontractors file reports through their respective contractor, who has responsibility for oversight of 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.

9 An enforcement action could include a Notice of Violation, with or without a civil penalty; "SL" is the Severity Level.

10 Civil penalty waived due to statutory and Enforcement Policy exemption for laboratories.

11 A SL III NOV was also issued against a subcontractor to Kaiser-Hill, Rocky Mountain Remediation Services (RMRS).

APPENDIX A – ENFORCEMENT PROGRAM OVERVIEW

This section provides an overview of DOE's enforcement program for those readers who may not be familiar with the overall process. Further details on the process may be obtained through DOE's Enforcement Program guidance documents referred to within this overview, or by directly contacting the DOE Office of Enforcement and Investigation, R. Keith Christopher, Director, (301) 903-0100.

Background

DOE has established a mechanism to apply sanctions to DOE contractors for unsafe actions or conditions that violate nuclear safety requirements for protecting workers and the public. It provides positive incentives for contractors to strive for an enhanced nuclear safety culture through attention to compliance with standards and requirements, self-identification of problems, 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, independent oversight, and enforcement .[12]

The 1988 Price-Anderson Amendments Act[13] extended indemnification to DOE operating contractors for consequences of a nuclear incident. At the same time, Congress required DOE to begin undertaking enforcement actions against those contractors who violate nuclear safety rules. Although certain DOE facilities have been mandated in recent years to come under regulatory jurisdiction of the Nuclear Regulatory Commission, most DOE nuclear activities are exempt from such external regulatory oversight. 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 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 Radiation Protection for Workers.[14] Additionally, DOE rules on Contractor Employee Protection and Accuracy of Information (submitted to DOE) [15] have been identified as nuclear safety requirements that are also enforceable.

During late 1994 and in 1995, the Department focused on developing the Enforcement Program infrastructure, providing training for contractor and DOE PAAA Coordinators, and issuance of formal guidance[16] needed to implement the Enforcement Program. DOE's first enforcement action was the issuance of an NOV in April 1996.

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[12] Safety Management principles from October 1994 DOE letter to the DNFSB.

[13] 42 U.S.C. 228a.

[14] 10 CFR Part 830.120 and 10 CFR Part 835, respectively.

[15] 10 CFR Part 708 and 10 CFR Part 820.11, respectively.

[16] - DOE HDBK-1085-1995, DOE Roles and Responsibilities
- DOE-HDBK-1087-1995, Enforcement Handbook
- DOE-HDBK-1089-1995, Identifying, Reporting and Tracking Nuclear Safety Noncompliances

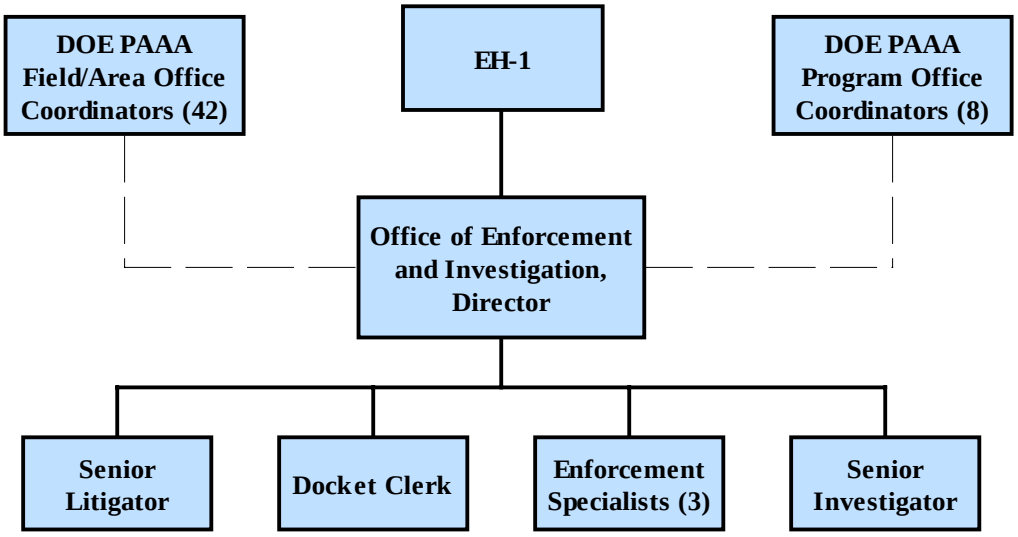
Since then DOE has been routinely applying its Enforcement Program through issuance of Enforcement Letters, Notices of Violation and imposition of civil penalties.

Administration

The DOE Enforcement Program is administered by a relatively small DOE Headquarters' EH-Enforcement staff, linked with PAAA Coordinators in Field and Program Offices, and supported by technical experts from DOE Headquarters and field elements. It is structured to use existing resources, and to rely on independent judgments by EH-Enforcement personnel on compliance, safety significance, corrective actions and enforcement action.

The EH-Enforcement staff includes the Director, five full time enforcement personnel, a Docket Clerk, and an administrative assistant, with three 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.

Figure A-1
Office of Enforcement and Investigation, Organizational Structure
(Note: Dotted lines show matrix support integration)



Noncompliance Identification and Reporting

DOE expects contractors to implement appropriate steps to assure their activities comply with nuclear safety requirements and to self-identify noncompliances. Noncompliances below DOE's reporting threshold may be tracked and closed using a contractor's internal tracking system These noncompliances are subject to periodic review and audit by Field Office Coordinator personnel. DOE expects that noncompliances above DOE's reporting thresholds[17] will be reported into the Noncompliance Tracking System.

Additionally, noncompliances may be identified independently through DOE Field Office input, Headquarters' reviews, the Defense Board (DNFSB), DOE PAAA Coordinators, DOE Oversight, or reviews by EH-Enforcement staff of various sources. Workers with noncompliance issues may also directly contact EH-Enforcement staff confidentially or the site DOE PAAA Coordinator. Additionally, workers may contact the DOE Nuclear Safety Hotline.[18]

EH-Enforcement staff, with input from Field and Program Office Management, will decide which noncompliances have the requisite level of safety significance such that an investigation should be conducted with the potential for enforcement action. Most cases are closed at this stage without an investigation, based on positive contractor initiative or low safety significance.

If an investigation is performed, it involves review of documentation from the contractor, assistance from Field personnel, and in some cases, an onsite visit of several days to gather facts about the noncompliance, conduct interviews, and understand contractor actions in response to the noncompliance.[19] Results of the investigation are documented in an Investigation Summary Report.

Enforcement Decisions

The primary consideration in determining whether to take an 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 such mitigation of enforcement actions in particular cases provides a positive incentive for contractors to implement the desired safety culture.

EH-Enforcement works closely with Field and Program Office Management in making decisions on what enforcement actions are appropriate based on the findings of the investigation. If necessary, an Enforcement Conference is held with senior contractor management, and DOE Field and Program Office Management, to review the circumstances of the noncompliance, mitigating factors, and timeliness and adequacy of corrective actions. DOE also classifies the violation as Severity Level I (most significant, with actual or potential significant consequences to workers or the public), II or III (greater than minor significance and important to avoid a more significant condition), based on an assessment of the unique facts of each case.

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[17] DOE's reporting thresholds are contained in DOE-HDBK-1989-1995, Identifying, Reporting and Tracking Nuclear Safety Noncompliances.

[18] 1-800-626-6376

[19] 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.

Enforcement Process

DOE's process and regulatory authority for enforcement actions are embodied in a Regulation (10 CFR Part 820), supplemented by the Enforcement Policy (Appendix A to 10 CFR Part 820) and guidance documents. 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:

- An Enforcement Letter,[20]
- A Notice of Violation with no civil penalty,
- A Notice of Violation with a civil penalty,
- A Compliance Order, or
- Referral to the Department of Justice for criminal investigation.

Decisions on 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 actions entirely. Civil penalties are limited by statute to a maximum of $110,000 per violation per day.[21] Severity Level I violations are set at 100% of the statutory limit per violation per day, i.e., $110.000. Severity Level II violations are set at 50% of the statutory limit ($55,000) per violation per day, and Severity Level III violations are set at 10 % of the statutory limit ($11,000) per violation per day.[22]

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 may issue Notices of Violation to all such not-for-profit contractors. Additionally, other activities excluded from DOE's nuclear safety requirements, and thus any enforcement action by DOE, include activities: regulated by the Nuclear Regulatory Commission; under the authority of the Director, Naval Nuclear Propulsion Program; or, conducted under the Nuclear Explosives and Weapons Safety Program.

In response to a Notice of Violation under the PAAA, contractors are required to document specific actions taken and planned to prevent recurrence of similar events. The contractor also either accepts the citation and pays any civil penalty, or denies the violation and seeks redress through an escalating series of steps. These steps can include direct communication with EH-Enforcement providing the basis for the contractor's position, appeal to the Secretary of Energy, or request for an on-the-record adjudication before an Administrative Law Judge. Settlement can occur at any point in the process.

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[20] 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 Notice of Violation. The Enforcement Letter notifies the contractor that DOE will close the noncompliance report when verification is received that corrective actions have been implemented.

[21] On October 2, 1997, DOE amended its Part 820 to increase the maximum civil penalty from $100,000 to $110,000 per violation. This was accomplished in accordance with the Debt Collection Improvement Act of 1996.

[22] 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.

The contractor's commitments on corrective actions and schedules for completion become part of the enforcement proceeding record. 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 Notice of Violation is issued. Prior to issuance of a Preliminary Notice of Violation, the matter is in the investigative stage and is considered pre-decisional. Records are maintained by the Docket Clerk at DOE Headquarters.[23] Workers or members of the public may request EH-Enforcement to review an alleged violation. A DOE Hotline (1-800-626-6376) connects directly with EH-Enforcement and can be called at any time of the day or evening.

DOE's approach to enforcement involves some relatively innovative methods to avoid manpower intensive inspection forces and 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 safety of the public and workers for DOE activities.

Further guidance on DOE's PAAA enforcement process may be found in DOE-HDBK-1987-95, Enforcement Handbook, as well as 10 CFR Part 820, Procedural Rules for DOE Nuclear Activities (Subpart B), and its Appendix A, General Statement of Enforcement Policy

[23] Office of the Docket Clerk, Office of Enforcement and Investigation (EH-10), 19901 Germantown Road, Germantown, MD 20874, (301) 903-0112.
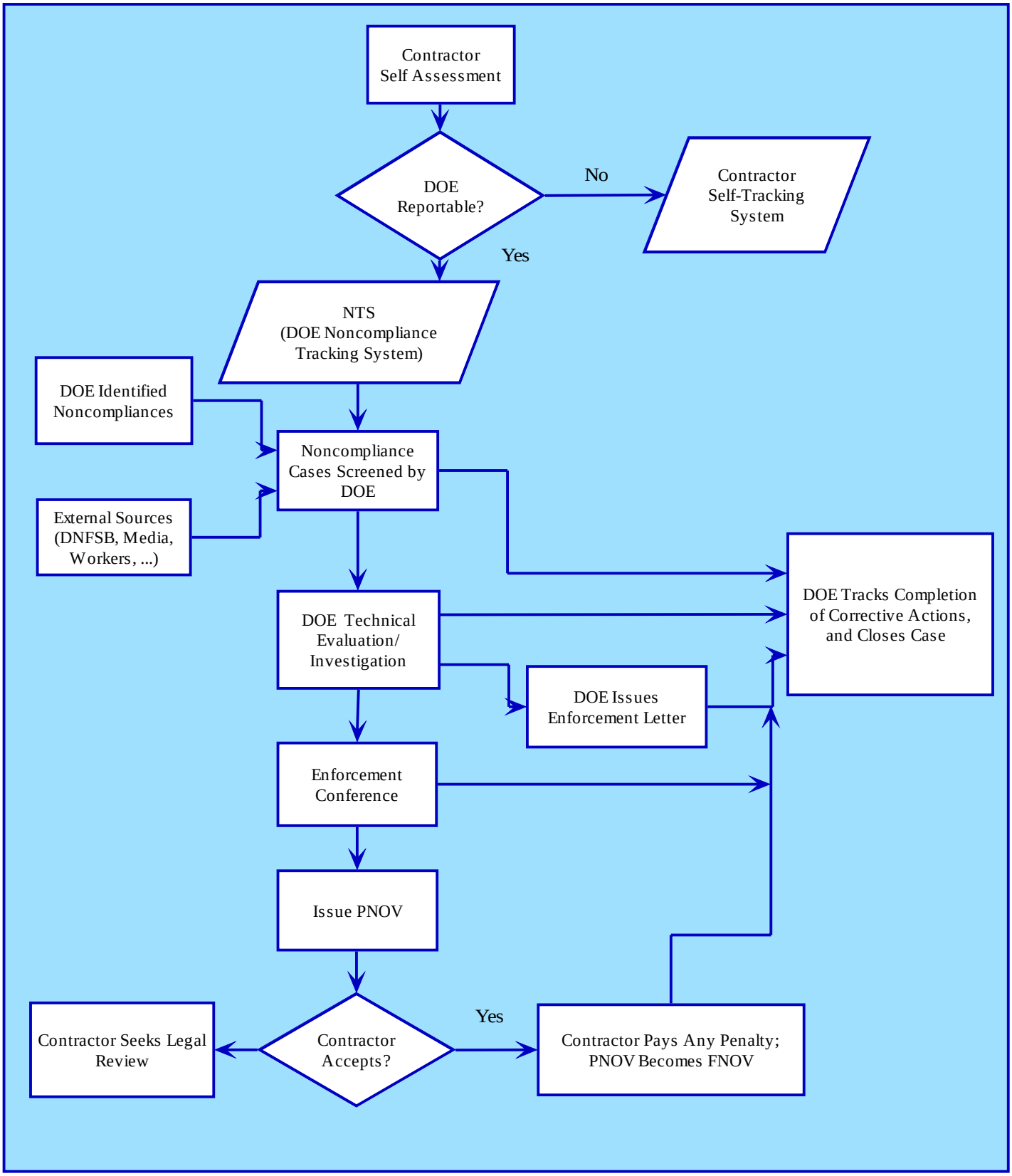
Figure A-2, Summary of DOE Enforcement Process