

UPDATE ON THE ENFORCEMENT REGIME OF THE PRICE ANDERSON AMENDMENTS ACT OF 1988

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ABSTRACT

The purpose of this paper is to identify the present-day contours of the enforcement regime of the Price Anderson Amendments Act of 1988 (PAAA), especially in light of some recent Congressional criticism. First, this paper briefly describes the penalty provisions available to the Department of Energy (DOE or Department) to enforce nuclear safety rules against DOE contractors. Next, the paper discusses the findings of a 1999 General Accounting Office (GAO) Report that criticized the Department for limiting enforcement coverage to less than the full range of contractor activities for which nuclear safety is an integral component. The balance of the paper analyzes the PAAA enforcement record subsequent to the 1999 GAO report to determine whether the regulatory record supports or refutes GAO's concerns. As part of that analysis, this paper: (1) identifies the types of activities, conduct, and conditions that trigger PAAA enforcement actions; and (2) explores the Department's discretionary use of mitigation and aggravation factors. This paper concludes that the PAAA enforcement record subsequent to the 1999 GAO report appears to cover the full range of contractor activities for which nuclear safety is an integral component, which thereby calls into question the correctness of GAO's earlier findings that the regulatory regime was less than complete or otherwise ineffectual.

OVERVIEW OF THE PAAA ENFORCEMENT PROVISIONS

The Price Anderson Amendments Act of 1988, 42 U.S.C. §§ 2011-2282, extends public liability indemnity coverage to all DOE contractors and subcontractors in the event of a nuclear incident in exchange for the submission of the covered parties to the Act's penalty provisions for failure to comply with nuclear safety rules. Although the Act has been in effect for approximately twenty-five years, the Office of Enforcement and Inspection (E&I) (which is now known as the Office of Price-Anderson Enforcement (OE)), of DOE's Environmental, Safety, and Health (ES&H) organization did not begin enforcement proceedings under the Act until 1995. This is due almost entirely to the fact that DOE had not developed until that time a comprehensive set of implementing regulations.

The principal implementing regulation is 10 CFR 820, entitled "Procedural Rules for DOE Nuclear Activities." That rule, promulgated in 1993, sets out the scope of coverage, the enforcement process, the appeals mechanism for "on-the-record" hearings, and most importantly, an Appendix A to Part 820, which provides a general statement of enforcement policy that includes a listing of mitigating and aggravating circumstances to be considered in the enforcement process. Part 820 allows for the issuance of Notices of Violation and the assessment of Civil Penalties in an amount of up to \$110,000 per violation. Entities exempted from Civil Penalties include national laboratories and non-profit organizations. The regulation

allows for a fact-finding enforcement conference during which OE determines whether the bases for any formal enforcement action are present, followed, if applicable, by the issuance of a Preliminary Notice of Violation (PNOV) and Final Notice of Violation (FNOV). Part 820 also details the procedures to be followed in an “on-the-record” appeal of an FNOV. The regulation identifies as its purpose the establishment of “procedures for investigating the nature and extent of violations of the DOE Nuclear Safety Requirements, for determining, whether a violation has occurred, for imposing an appropriate remedy, and for adjudicating the assessment of a civil penalty.” 10 CFR 820.20(a). The term “DOE Nuclear Safety Requirements,” in turn, is defined as follows:

DOE Nuclear Safety Requirements means the set of enforceable rules, regulations, or orders relating to nuclear safety adopted by DOE (or by another Agency if DOE specifically identifies the rule, regulation, or order) to govern the conduct of persons in connection with any DOE nuclear activity and includes any programs, plans, or other provisions intended to implement these rules, regulations, orders, a Nuclear Statute or the Act, including technical specifications and operational safety requirements for DOE nuclear facilities.

10 CFR 820.2. Accordingly, by its own terms, the PAAA enforcement regime extends to all rules, regulations, or orders relating to nuclear safety.

Appendix A to Part 820 identifies the Department’s policy as fostering of a culture of compliance and promoting voluntary compliance. That policy includes a set of monetary incentives for contractors to: (1) timely identify nuclear safety deficiencies; (2) promptly and fully report such deficiencies to DOE; (3) perform root cause analyses of the identified deficiencies; (4) promptly correct nuclear safety deficiencies in a manner that precludes recurrence; and (5) identify modifications in practices or facilities that can improve public or worker radiological health and safety. That interpretive document identifies the three levels of severity for nuclear safety violations, with Severity Level I being the most significant and Severity Level III being least significant. Appendix A also introduces the requirement that contractors track all non-compliances, no matter how seemingly insignificant, on the Non-compliance Tracking System (NTS) database that is shared with the DOE. Appendix A allows for a reduction of up to 50% of the base civil penalty where the contractor itself identifies the violation and promptly reports it to DOE. The promptness (or lack thereof) and extent to which the contractor takes corrective action, including actions to identify root cause and prevent recurrence, may result in up to a 50% increase or decrease in base civil penalty. Aggravating factors include: (1) contractor gross negligence, deception, or willfulness; (2) disregard of prior notice of the problem; (3) where the nonconformance constitutes a multiple violation of the same type within the same time period; and (4) where the nonconformance evidences a serious breakdown in management controls.

The two substantive regulations concerning the nature and range of contractor activities subject to PAAA enforcement are 10 CFR 830, “Nuclear Safety Management,” and 10 CFR 835, “Occupational Radiation Protection.” When it was first promulgated in 1994, Part 830 consisted mainly of 10 CFR 830.120, which governs quality assurance requirements. Thereafter, in 2001,

the Department expanded the scope of Part 830 to a regulation that embraced nuclear safety management generally, including specific provisions addressing: (1) safety analysis reports; (2) unreviewed safety questions; (3) defect identification and reporting; (4) conduct of operation; (5) technical safety requirements; (6) training and certification; (7) maintenance management; and (8) occurrence reporting. Of interest, the 2001 rule represents a departure from the initial rulemaking effort begun in 1991 in that the final rule emphasizes the development of all-encompassing “safety basis” programs instead of requiring contractors to adopt the prescriptive approach announced in the draft rule. As finalized, 10 CFR 830 allows the contractor to propose the method it intends to use to develop safety basis documents based upon the work to be performed and the hazards expected to be encountered. The other substantive PAAA regulation is Part 835. That regulation, which was promulgated initially in 1993 and revised in 1998, covers a broad range of radiation protection measures, including: (1) management and administrative requirements for radiation protection programs; (2) standards for internal and external exposure; and (3) monitoring of individuals and areas.

Contractors also face a number of negative collateral implications as a result of PAAA noncompliance. Most recently, DOE promulgated an interim rule that applies to both M&O and non-M&O contractors that would trigger a reduction in award fee for the contractor’s failure to adequately safeguard worker safety and health at contract sites. *See* 68 Fed. Reg. 68,771, Dec. 10, 2003. This interim rule, effective for all contract solicitations issued on or after January 9, 2004, provides for fee disallowances with three degrees of severity. The most egregious conduct would be characterized as a “first degree violation,” which can trigger a fee reduction of between 26 and 100 percent. Clearly, the same fact pattern that can trigger a PAAA violation also can give rise to a fee reduction under the interim rule. This new rule is of keen importance to nonprofit entities and to national laboratories in that while PAAA penalties against such entities are waived by statute, fee reductions under the interim rule are not. This interim rule definitizes existing policy with respect to the interrelationship between ES&H performance and the amount of the award fee, as a contractor’s safety record has always been a factor in award fee determinations. A second collateral implication to a PAAA violation is the negative effect on that contractor’s “past performance” rating, which is one of the most important evaluation criteria in negotiated, “best value” procurements.

THE 1999 GAO REPORT

The document that spawned interest in this paper initially is the 1999 GAO report entitled “NUCLEAR SAFETY – Department of Energy Should Strengthen Its Enforcement Program,” (GAO/T-RCED-99-228; June 29, 1999). In that report, the Congressional watchdog agency concluded that since the inception of the PAAA enforcement regime in 1996, DOE had issued enforceable rules in only two of eleven areas of nuclear safety. These areas include radiation protection for workers and quality assurance defining how work is planned and carried out. The rules governing these two areas are codified respectively at 10 CFR 830.120 (quality assurance requirements) and 10 CFR 835 (occupational radiation protection). Other areas of nuclear safety noted GAO, such as training and certification of employees performing vital operations, remained as Orders that were enforceable only as a matter of contract. The principal inquiry of this paper is whether GAO’s criticism still holds, or whether the implementation of subsequent

rules and / or interpretations of existing rules adequately address the full range of activities, conduct, and conditions that implicate matters of nuclear safety.

REVIEW OF RECENT PAAA ENFORCEMENT ACTIONS FOR GUIDANCE ON SCOPE OF PAAA APPLICABILITY

While the scope of PAAA enforcement authority appears to be sufficiently broad based on a review of the applicable regulations, no amount of parsing of the regulations to divine true “regulatory intent” can match the Department’s own interpretation of the activities its deems subject to PAAA enforcement authority. That interpretation is best revealed by the PAAA enforcement record itself. Based on a review of all enforcement actions subsequent to the 1999 GAO Report, it appears that the GAO’s concerns are misplaced in that the DOE time and again has made subject to PAAA enforcement authority all manner of activities that could implicate nuclear safety. A review of the most significant enforcement actions relative to establishing the contours of the permissible scope of PAAA enforcement authority follow below:

Violations of the Quality Assurance Rule (10 CFR 830.120 - 122)

One of the most frequently invoked bases for triggering PAAA enforcement actions is a violation of the quality assurance rule. In one such enforcement action, EA-2002-03 (August 12, 2002), DOE cited a Hanford subcontractor with a Severity Level II violation for failing to have the controls in place to detect that transuranic (TRU) waste likely would have been buried at Hanford rather than at the properly permitted Waste Isolation Pilot Plant (WIPP) in Carlsbad, NM. Another enforcement action that cited a violation of the quality assurance rule with respect to the proper handling of TRU waste was EA-2002-05 (December 17, 2002), issued against a national laboratory at Los Alamos. That enforcement action involved the failure to follow established procedures for analyzing and determining the appropriate safety management controls for the protection of workers and public from TRU material stored on site. Other violations of the quality assurance rule include the following:

- Failure on part of contractor personnel to perform required weld inspections on uranium processing equipment that was determined to be safety significant and the failure of contractor management to assure that adequate corrective actions were taken and sustained to prevent recurrence of a known problem (EA 2003-03; June 4, 2003);
- Inadvertent deenergization of annulus leak detectors, dilution tank overfills, and dome loading control at the Hanford Tank Farms (EA 2003-06; August 29, 2003);
- Failure of INEEL contractor to enforce quality assurance requirements of supplier wherein supplier engaged in falsification of records and such conduct was imputable to contractor (EA 2003-07; October 23, 2003);
- Falsification of records by supplier to INEEL contractor in a companion enforcement action to EA 2003-07, above (EA 2003-08; October 23, 2003);

- Services procured by Oak Ridge contractor that did not meet established requirements and failure to take steps to ensure that a supplier continued to provide acceptable services (EA 2003-09; November 10, 2003);
- Management ineffectiveness of Oak Ridge contractor in identifying and correcting precursor programmatic problems associated with maintenance work control processes and their implementation (EA 2003-10; November 18, 2003);
- SRS contractor's multiple failures to comply with facility Technical Safety Requirements where such failures were the result of facility personnel and management not complying with procedures and administrative requirements (EA 2002-01; March 19, 2002);
- SRS contractor's performance of various modifications to or maintenance on safety-class or safety-related equipment that degraded that equipment's safety function as established and described in the facility Authorization Basis (EA 2002-01; March 19, 2002);
- National laboratory's failure to ensure that personnel were qualified to carry out their assigned work in that the assigned health physics personnel responsible for controlling worker radiation exposure did not know the well-documented hazards and characteristics associated with the radioactive material and thus were unable to safely plan and conduct work (EA 2001-05; August 14, 2001); and
- Personnel not provided continuing training to ensure that job proficiency was maintained and respirator training period for certain categories of workers had lapsed (EA 2001-05; August 14, 2001).

Violations of the Occupational Radiation Protection Rule (10 CFR 835)

While a large percentage of recent PAAA enforcement actions have cited as the regulatory basis for the violations of the Quality Assurance Rule and other aspects of 10 CFR 830, a handful of actions have implicated 10 CFR 835, the Occupational Radiation Protection Rule, as a basis for the action. For example, in EA-2001-04 (July 17, 2001), two of the eight Severity Level II violations were for violations of 10 CFR 835. One of these violations was for a failure to comply with 10 CFR 835.104, which requires that written procedures be developed and implemented commensurate with the radiological hazards presented by the activity. The other violation was for the contractor's failure to ensure that radiation in controlled areas be kept as low as reasonably achievable (ALARA) through the use of design features and administrative controls. Other representative violations of 10 CFR 835 include the following:

- Failure to establish appropriate controls during pipe cutting activities to prevent the spread of alpha contamination to locations beyond the identified radiological boundaries (EA 2003-02; April 10, 2003);
- Failure to perform radiological surveys and monitoring to identify potential radiological hazards arising from radiography operations (EA 2003-02; April 10, 2003);

- Failure of SRS contractor to take measures to maintain radiation exposures ALARA through effective use of physical design features or administrative controls (EA 2002-01; March 19, 2002); and
- Failure of Fernald contractor to monitor airborne radioactivity following startup of facility and failure to properly implement ALARA principles, resulting in 23 individuals receiving unplanned exposures ranging from approximately 30 to 330 millirems (EA 2001-06; January 4, 2002).

THE DEPARTMENT'S USE OF MITIGATING AND NON-MITIGATING FACTORS

Mitigating Factors

Self-Identification and Timely Notification

One of the most commonly invoked mitigating factors is a contractor's self-identification of an event the prompt reporting of that event to the DOE. By taking such measures, contractors typically are able to avoid approximately 25 % of the maximum civil penalty corresponding with the violation. Several recent examples of the application of this mitigating factor include:

- Twenty-five percent reduction of the maximum civil penalty in work process noncompliances warranted due to self-identification and timely notification (EA 2003-03; June 4, 2003);
- Reduction from Severity Level II violation to a Severity Level III violation for self-identification and reporting of work processes deficiencies coupled event-specific corrective actions (EA 2002-01; March 19, 2002);
- Twenty-five percent mitigation of civil penalties warranted for self-identification of nuclear safety and waste facility work control violations by Rocky Flats contractor (EA 2001-04; July 17, 2001); and
- Twenty-five percent mitigation of civil penalty warranted for self-identification of records falsification and in recognition of the high degree of initiative demonstrated by supplier to determine the full extent of the problems (EA 2003-08; October 23, 2003).

Aggressive Post-Event Involvement

Comprehensive causal or "root cause" analyses followed up by an aggressive corrective actions program typically will yield dividends as mitigating circumstances. In one enforcement action involving an Oak Ridge contractor (EA 2003-10; November 18, 2003), the contractor was cited with a Severity Level II violation in connection with nuclear safety work and control issues at the High Flux Isotope Reactor (HFIR) and the Radiochemical Engineering Development Center (REDC). All but one of the Severity Level II violations were reduced by 50% in recognition of the comprehensive senior management response that included multiple post-event investigations, detailed causal analyses, and extensive corrective actions. In another enforcement action, the contractor was able to achieve a 50% mitigation in its Severity Level II penalty because of significant improvements made in its post-event causal analyses (EA 2003-01; February 4,

2003). Similarly, in an enforcement action at Fernald, the contractor was afforded a 50% mitigation in recognition of its comprehensive and timely corrective action relative to the events once they were identified (EA 2001-06; January 4, 2002).

Another post-event action that can produce regulatory benefits is to effect positive change in the nuclear safety mindset of the contractor. One way in which this has been successfully demonstrated is by the change-out of contractor senior management and the introduction of a new corporate culture, such as was done by a Hanford contractor in EA 2003-06 (August 29, 2003).

Non-Mitigating (Aggravating) Factors

The factors discussed below are the most commonly cited factors in the Department's decision to not mitigate proposed fines. Moreover, some of these factors are cited as reasons to elevate a severity level to the next higher level. As such, not only are the identified factors not mitigative, they may affirmatively elevate the penalty level.

Self-Disclosing Events

In contrast to the self-identified and timely reported event is what DOE refers to as the "self-disclosing event," which is an event whose revelation catches both the contractor and the Department unawares. In such circumstances, the Department uniformly finds that the contractor deserves no mitigation for self-identification and reporting. Recent examples of the Department's findings that events were "self-disclosing" and not susceptible to mitigation (at least on that ground) include:

- Three tube bundle fires occurring over a two and one-half year period at the East Tennessee Technology Park (ETTP) (EA 2003-01; February 4, 2003);
- Manual reactor shutdown due to a control cylinder maintenance safety deficiency at Oak Ridge (EA 2003-10; November 18, 2003);
- Release of radioactive material resulting in measurable uptakes of radiological exposure by seven workers EA 2001-05; August 14, 2001;

Identification of Event by Others

Even worse for the contractor than the "self-disclosing event" is the event that is first discovered by the Department and then revealed to the contractor. In one such enforcement action involving the Oak Ridge and Paducah sites, the Department noted that no mitigation was warranted for timely self-identification and reporting since so many of the issues were identified by the DOE Oak Ridge Operations Office (EA 2003-09; November 10, 2003). In another case, the Department noted that no mitigation was warranted where the problem had been in existence for two years and where detection was made through a specialty subcontractor (EA-2002-03; August 12, 2002). Similarly, in a Fernald enforcement action, the Department noted that no mitigation was warranted given that the problems were long-standing in nature or identified by DOE (EA 2001-06; January 4, 2002).

Recurring Nature of Problem

Another of the factors identified by the Department as precluding mitigation of penalty amounts and, indeed, as warranting aggravation of severity level to the next higher level is the recurring nature of the problem. That was precisely the case in EA-2003-09 (November 10, 2003) where nuclear safety issues were identified at the Oak Ridge and Paducah sites. There, the contractor was cited with a Severity Level II violation rather than a level III violation because of the contractor's numerous failures to follow nuclear safety requirements coupled with the recurring nature of the problems.

Long-standing Weakness of Management to Recognize and Address Safety Deficiencies

Closely related to the recurring problem situation is where there is a long-standing weakness of management to recognize and address nuclear safety deficiencies at the institutional level. That was the case in one enforcement action where the Department considered elevating a quality improvement violation to a Severity Level I due to this fact (EA 2003-02; April 10, 2003).

Lack of Timely Identification by Contractor

In one case where the national laboratory oversaw an inventory of nuclear material but failed to conduct an analysis to determine the appropriate safety management controls for protection of the workers and public, the Department concluded that no mitigation was warranted due to "an extraordinary lack of timely identification of the condition" and the laboratory's failure to aggressively investigate the extent of the problems and their causes (EA-2002-05; December 17, 2002).

CONCLUSION

Based on the recent examples of enforcement activity noted above, it appears that GAO's conclusion that the Department's PAAA enforcement regime is incomplete is simply uninformed and incorrect. While the bulk of the enforcement actions taken under 10 CFR Part 830 are based on violations of the quality assurance rule, that rule, in reality, permeates all aspects of the contractor's operations that have or could have nuclear safety implications. The fatal flaw in the GAO's logic was its presumed assumption that quality assurance was limited to the classical definition – *viz*, that QA meant adherence to technical specification or code requirements. The enforcement examples cited above far exceed that traditional and limited view of QA and thus disprove GAO's unstated hypothesis and its faulty conclusion.

Moreover, it appears that the Department's use of both the carrot and the stick in its PAAA enforcement regime is paying dividends. The potential mitigation benefits available have incentivized management to promptly disclose non-conformances and to take prompt and effective corrective action. Taken in combination, these two responses can work a 75% reduction in the ultimate amount of the Civil Penalty assessed against the contractor *See e.g.*, EA 2003-08; October 23, 2003 (base Civil Penalty reduced from \$55,000 to \$13,750). On the "stick" side of the equation, it also appears that contractors that have failed to "get it" with respect to nuclear safety compliance are either being treated as pariahs or have exited the DOE Weapons Complex contracting environment altogether (one prominent aerospace contractor comes to mind).

In sum, unlike some other DOE programs, the PAAA enforcement regime appears to have exhibited constancy in application and focus over the years, has covered in scope all activities that implicate nuclear safety (contrary to the GAO's conclusion), and has effected a lasting change in institutional mindset of the DOE contractor to a culture of nuclear safety compliance.