



Department of Energy

Washington, DC 20585

July 10, 2003

Mr. John Christian

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BNFL, Inc.

East Tennessee Technology Park

Portal No. 8, Building K-761

P.O. Box 5689

Oak Ridge, TN 37831

Subject: BNFL Price-Anderson Amendments Act Program Review

Dear Mr. Christian:

The Department of Energy's (DOE) Office of Price-Anderson Enforcement conducted a review of the BNFL, Inc., (BNFL) Price-Anderson Amendments Act (PAAA) program during May 14-15, 2003. This review included onsite interviews with key personnel.

The BNFL PAAA program was evaluated against the criteria and guidance established by DOE Enforcement Guidance Supplement (EGS) 00-02, "Price-Anderson Amendments Act (PAAA) Program Reviews," and EGS 01-02, "Management and Independent Assessment." As part of this review, your processes for identifying and screening nuclear safety noncompliances for PAAA applicability, reporting applicable noncompliances into DOE's Noncompliance Tracking System, your internal tracking and trending of noncompliances, and your causal analysis and corrective action processes were evaluated.

Overall, our review concluded that BNFL's PAAA program met DOE expectations and guidance. Most notable were senior management's support of the PAAA program, the program's integration into BNFL's Issues Management System (IMS), and the resources under development to aid in tracking and trending nuclear safety noncompliances. Though some weaknesses were identified during the program review, they were considered minor, especially when compared to the program's strengths. BNFL's PAAA program's observed strengths and weaknesses have been identified below. Both strengths and weaknesses have been described in more detail in the enclosed report.

PAAA Program Strengths

- BNFL PAAA Coordinator's position is now full time rather than part-time.
- Nuclear safety procedures have been updated to incorporate PAAA program instructions for addressing noncompliances.

- BNFL senior management expressed strong support for the program.
- The IMS database, though undergoing final development at the time of the review, appears to be a substantive resource improvement for tracking and trending purposes.
- The PAAA Coordinator appears well prepared to continue developing and operating the program.

PAAA Program Weaknesses

- Noncompliance data tracking and trending protocols have not been finalized.
- Not all sources of information pertaining to work process anomalies are incorporated into the IMS.
- Procedure PR-AD-005 (and its revision, PR-CS-030) provides reporting criteria for programmatic deficiencies that are different from DOE's recommended criteria.

No reply to this letter or the program review is required. Please contact me at (301) 903-0100, or have a member of your staff contact Steven Zobel of my staff at (301) 903-2615, if you have any questions.

Sincerely,



Stephen M. Sohinki
Director
Office of Price-Anderson Enforcement

Enclosure: PAAA Program Review

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Price-Anderson Amendments Act Program Review BNFL, Inc.

I. Introduction

During May 14-15, 2003, the Department of Energy's (DOE) Office of Price-Anderson Enforcement (OE) conducted a review of the Price-Anderson Amendments Act (PAAA) program implemented by BNFL, Inc., (BNFL) at the East Tennessee Technology Park. OE staff performed the review in accordance with DOE Enforcement Guidance Supplements (EGS) 00-02, "Price-Anderson Amendments Act Program Reviews," and 01-02, "Management and Independent Assessment." This review evaluated (1) BNFL's PAAA program pertaining to the identification and screening of nuclear safety noncompliances, (2) the method for determining a noncompliance's reportability to the DOE Noncompliance Tracking System (NTS), (3) the causal determination process for noncompliances reported to the onsite tracking system and the NTS, and (4) corrective action implementation and closure. OE staff also reviewed BNFL procedures and other documents, and interviewed BNFL personnel during the program review.

II. Background

OE recently identified significant weaknesses in BNFL's quality improvement processes through several enforcement actions (EAs 2001-02 and 2003-01) as a result of three gaseous diffusion converter tube bundle fires. OE's primary concern was that BNFL had not adequately identified and addressed nuclear safety issues as part of its PAAA program to prevent subsequent events.

In recognition of the above, in early 2002, additional management was assigned to BNFL to specifically reconfigure the decontamination and decommissioning program for the K-33, K-31, and K-29 gaseous diffusion buildings. Towards the end of that year a significant revision and improvement initiative for the BNFL PAAA program commenced. At the commencement of the program review, BNFL management explained significant upgrades made to the PAAA program that began in late 2002. OE staff, therefore, focused on assessing the revised PAAA program.

III. General PAAA Program Implementation

The following documents established the revised PAAA program:

- Procedure PR-AD-005, "Price-Anderson Amendments Act Noncompliance Identification, Evaluation, and Reporting," dated August 8, 2001. This procedure

underwent an extensive revision but was not in effect at the time of the review, yet the contractor was already implementing portions of the revision (this is further explained in the following text).

- Procedure PR-CS-023, revision 6, “Causal Analysis,” dated January 23, 2003.
- Procedure PR-CS-029, revision 1, “Issue Management System,” dated April 24, 2003.

BNFL procedure PR-AD-005 is the primary document for the PAAA program. It assigns responsibility to various managers and other coordinators for reviewing nonconformance reports (now called Issue Management forms) for nuclear safety noncompliances and reporting those to the PAAA Coordinator for further evaluation. It assigns responsibility to the PAAA Coordinator to review additional documents for noncompliances and to coordinate the activities of the PAAA Review Board (Board). Section 4.2 describes the process for determining whether a nonconformance actually is a PAAA noncompliance and also if it is reportable to the NTS. This process involves having the Board determine if a nonconformance is a PAAA noncompliance, and directs the Board to forward noncompliances determined to be reportable to the General Manager for approval or disapproval. This involved process, and the time frames allowed by PR-AD-005, resulted in an average of 63 days for submitting a noncompliance report to the NTS. This average was nearly twice as long as the 35 days recommended by EGS 00-02 and could have resulted in the forfeiture of up to 50 percent of any potential mitigation should any of the noncompliances have resulted in an enforcement action. Section 4.2.3 provided criteria the Board was to use in determining if a noncompliance was reportable. However, programmatic noncompliances described in table 3.1 of OE’s Operational Procedure, “Identifying, Reporting and Tracking Nuclear Safety Noncompliances under Price-Anderson Amendments Act of 1988,” dated June 1998, were not included. Programmatic issues tend to be more serious issues affecting quality improvement. Supplemental criteria in the procedure in lieu of table 3.1 did not provide equivalence in that the possibility existed that radiological issues might not be considered for repetitive or programmatic implications.

During the review, OE staff was provided a draft copy of PR-AD-005’s revision. The revision will make it consistent with other relevant, revised procedures, correct the above timeliness issue by changing the timeframes for identifying and reporting a noncompliance to conform to OE guidance, and include an improved screening form for evaluating Issue Management forms (IMF) for PAAA issues. OE staff found the draft revision did not include table 3.1 guidance criteria and asked BNFL personnel to consider its inclusion. The PAAA Coordinator stated this would be taken into consideration. The revision, now designated PR-CS-030 to indicate “ownership” by the Compliance Support group of which the PAAA program is part of, went into effect on May 29, 2003. The OE review team received a copy of this revision in early July and found the supplemental NTS reporting criteria for programmatic deficiencies had not been changed. Thus, the vulnerability described above still exists.

Procedure PR-CS-029, revision 1, is a recent revision to the original procedure (that went into effect January 6, 2003). This revision corrects various flow charts and incorporates changes suggested during training on the initial procedure. PR-CS-029 changes the system for collecting information concerning work process anomalies from nonconformance reports (NCR) to IMFs, and incorporates corrective actions derived from a previous DOE Type B investigation of a gaseous diffusion converter fire. Procedure PR-CS-014, revision 3, "Nonconformance Identification, Correction, Closure, Tracking and Trending," dated August 8, 2002, (and replaced by PR-CS-029) provided general instructions on the development of an NCR, who was responsible for the NCR, and how an NCR was dispositioned. PR-CS-029, however, presents more specific instructions to each management level and institutes a system for categorizing issues (categories 1 through 4). The categorization scheme also determines the level of response to an issue, i.e., the type of causal analysis, the extent of corrective actions and the method by which they will be evaluated, and resolution of ineffective corrective actions. Adequate instructions on tracking and trending are included. PR-CS-029 significantly improves the integration of the PAAA program throughout the issue identification and resolution process.

Procedure PR-CS-023 was extensively revised near the end of 2002 in response to DOE's Type B investigation. This revision addresses outstanding comments made during the revised procedure's introduction. As with PR-CS-029, this procedure is specific regarding individual responsibilities for the conduct, review, and approval of causal analyses. Two types of causal analyses are described: root cause analysis and apparent cause analysis. Root cause analyses are reserved for category 1 and selected category 2 issues (the two highest levels). Category 1 issues are those that either have a significant impact on safe facility operations, worker or public safety and health, or regulatory compliance, constitute a significant condition resulting from a Work Smart Standards violation or any significant programmatic breakdown in an Integrated Safety Management function. A category 2 issue is one that has an impact on safe facility operations, worker or public health and safety, or regulatory compliance. In addition, all Occurrence Reporting and Processing System (ORPS) reports are treated as category 2 issues. A category 2 issue that results in an NTS report also receives a root cause analysis. The remaining category 2 issues and selected category 3 issues are evaluated using an apparent casual analysis, which is not as rigorous. A casual analyses report also assists in the identification and development of corrective actions.

The BNFL PAAA Coordinator is a relatively new employee (hired in early 2003) but has sufficient experience, is well suited for the position, and is knowledgeable of DOE's nuclear safety regulations and how they apply to BNFL's various activities. In contrast to previous observations of BNFL's PAAA program, the present senior management expressed full support for the program. The PAAA Coordinator has direct access to senior management. Furthermore, the Coordinator's position is full time rather than part-time as was previously the case.

IV. Noncompliance Identification and Screening

IMFs are now the primary means of identifying PAAA nuclear safety noncompliances. Each organization (overseen by a second level, or program, manager) has an Issues Management Specialist (IMS) who reviews IMFs for PAAA noncompliances pertaining to such source documents as occurrence reports, DOE operational awareness reports and Facility Representative reports, BNFL corporate audits, internal and external assessments, and other reports or issues internal to that organization. The PAAA Coordinator is available to assist in those determinations as necessary. Procedure PR-AD-005 provides a "PAAA Issue Review Form." However, the revision includes that form and a detailed "PAAA Potential Noncompliance Evaluation Guide" to facilitate and standardize issue reviews for PAAA implications.

The IMS then provides the forms to his or her program manager for review and approval. All forms that indicate a nuclear safety noncompliance occurred are forwarded to the PAAA Coordinator for review. Other information sources reviewed for noncompliances included near-miss reports and radiological awareness reports. Not all anomaly identification sources are fully incorporated into the PAAA screening processes. These include Safety Observation Cards that are available in all work areas. This incompleteness is due to the ongoing incorporation of the revised PAAA program into all nuclear safety activities. It is anticipated that this will be rectified in the near future.

The PAAA Coordinator, as stated, reviews IMFs to confirm whether a noncompliance has been identified. The Coordinator also reviews many of the same documents reviewed by the IMSs as a redundant check. The PAAA Coordinator indicated that as the IMSs gain more experience (the IMS position was recently created), he plans to spot check IMFs and other documents in order to devote more time to PAAA program functions.

Due to the newness of the revised PAAA program, no standard methods have been developed for trending data for PAAA purposes. However, the database developed for issues data readily supports a variety of *ad hoc* methods for trending data. Furthermore, though trending data is only required to be evaluated on a quarterly basis, the General Manager has requested that certain trending data be provided for the monthly senior staff meeting in order to identify any developing adverse trend.

V. Evaluation for Reportability

Potential noncompliances are evaluated by the PAAA Coordinator against the criteria in PR-AD-005 (now PR-CS-030). If an issue meets one or more of the criteria, then the Coordinator convenes the Board for their determination whether the issue is a noncompliance. If a noncompliance is identified, then the Board determines if the noncompliance is NTS reportable or internally tracked. All Board decisions are forwarded to the General Manager for concurrence. For an NTS reportable noncompliance, the PAAA Coordinator drafts an NTS report for review and concurrence by the General Manager and General Counsel.

OE staff reviewed database summaries of issues and noncompliances for the past 12 months. The distribution of issues to internally tracked noncompliances to NTS reported noncompliances appeared reasonable. OE staff also reviewed evaluation forms for several noncompliances. The forms were properly filled out and the issues appropriately evaluated.

VI. Cause Determination/Corrective Action Closure

The causal determination process was described in section III above.

Procedure PR-CS-029, revision 1, specifies in section 4.4 that the cognizant manager has overall responsibility for applicable corrective (“compensatory”) actions, and directs the appropriate level 3, or program element, manager to develop, implement, and complete those actions. Categories 1 through 3 issues are required to have all corrective actions completed within approximately 120 days of the applicable IMF’s date. Date extensions are allowed only if approved by senior management.

The Issues Management Coordinator (IMC) within the Quality Assurance Department is then notified that the corrective actions associated with an IMF have been completed. The IMF is subsequently closed. The IMC then has approximately 30 days to verify that the corrective actions have been completed. Corrective action validation must occur within approximately 180 days following IMF closure.

PR-CS-029, revision 1, was found to be somewhat vague regarding the corrective action validation process. The PAAA Coordinator explained that BNFL utilizes two well-experienced subcontractors to independently perform all validations. Therefore, BNFL decided that there was no need for a detailed procedure or training. The DOE Oak Ridge Operations Office approved this approach.

VII. PAAA Program Assessments

BNFL’s PAAA program had two recent assessments—one management and one independent—prior to the OE program review. The management assessment occurred during December 2002 through mid-April 2003. The PAAA Coordinator at that time worked with a consultant to review NCR reports, occurrence reports, and stop work orders from the past 18 months to determine, in part, the thoroughness of PAAA determinations. The assessment identified the following:

- Procedure PR-AD-005 was not kept current with PAAA program revisions already in use.
- 167 nonreportable noncompliances in the IMS database did not indicate their PAAA status. Thus, these noncompliances were not identifiable as such within the database nor could their associated corrective actions be tracked and trended.
- Cognizant managers had identified only 14 NCRs having PAAA applicability

whereas the assessment team identified 140 out of 255 NCRs reviewed. BNFL senior management directed that all deficient items be corrected and that exercise was concluded before the OE PAAA program review began.

The independent assessment was conducted from mid-April to early May 2003 and was intended to be a review similar to OE's PAAA program reviews. This assessment's findings did not deviate significantly from those of this program review.

VIII. Conclusion

The OE review determined that BNFL's newly revised PAAA program meets DOE expectations and guidance. Specific strengths and several minor weaknesses identified during the review have been described in sections III-VII of this report. The DOE Enforcement Policy (10 CFR 820, Appendix A) provides positive incentives for contractors who identify, report, and promptly and comprehensively correct nuclear safety noncompliances. The weaknesses identified in this report, if not corrected, could impact the application of enforcement discretion in any future enforcement action.