



Department of Energy

Washington, DC 20585

August 12, 2004

Mr. Thomas E. Logan
[]
Bechtel Hanford, Inc.
3060 George Washington Way
Richland, WA 99352

Subject: Bechtel Hanford, Inc. Price-Anderson Amendments Act Program
Review

Dear Mr. Logan:

The Department of Energy's (DOE) Office of Price-Anderson Enforcement (OE) conducted a review of the Bechtel Hanford, Inc. (BHI) Price-Anderson Amendments Act (PAAA) program during July 13-14, 2004. This review included pertinent PAAA program documentation and interviews with key BHI personnel.

The BHI PAAA program was evaluated against the criteria and guidance established by DOE Enforcement Guidance Supplement 00-02, *Price-Anderson Amendment Act (PAAA) Program Reviews*. 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 (NTS), your internal tracking and trending of noncompliances, and your causal analysis and corrective action processes were evaluated.

Overall, our review concluded that BHI's PAAA program met DOE expectations and guidance. Though the review did identify some weaknesses, the overall structure of your program, including management support, implementing procedures, breadth of sources reviewed for potential noncompliances, noncompliance determinations, corrective action management, and technical capability of PAAA staff, is viewed favorably when compared to other DOE contractors. Your PAAA program's strengths and weaknesses are identified below and are further described in more detail in the enclosed report.

I. PAAA Program Strengths

- A. BHI PAAA coordinator is independent of line functions and is a direct report to the president.
- B. Assigned personnel for PAAA program responsibility were found to be knowledgeable and dedicated to supporting and improving the BHI PAAA program.


- C. The BHI PAAA program is formally established by procedures and integrated into the BHI issue identification process and corrective action management process.
- D. Breadth of sources reviewed by BHI for potential noncompliances is comprehensive.
- E. The identification and reporting of PAAA noncompliances was consistent with OE guidance.
- F. Formal causal analysis is performed for all NTS reportable as well as significant (Level 1) non-reportable noncompliances.
- G. Corrective actions are identified, tracked, and closed for PAAA noncompliances. Corrective action effectiveness reviews are performed as well as extent-of-condition reviews.
- H. Timeliness for screening, evaluating, and reporting noncompliances meets DOE expectations.
- I. Weaknesses identified from the March 2000 OE BHI PAAA program review have all been addressed.

II. PAAA Program Weaknesses

- A. Some assessments were not screened for potential PAAA noncompliances.
- B. The performance of extent-of-condition reviews has not been procedurally incorporated.
- C. Some minor log-keeping errors were noted.
- D. The BHI trending program of nonreportable PAAA noncompliances for repetitive or programmatic issues is not formally implemented, and the results are not consistently documented.
- E. No recent management or independent assessments of the BHI PAAA program had been performed.

No reply to this program review or letter is required. Please contact me at (301) 903-0100 or have your staff contact Richard Day at (301) 903-8371 if you have any questions.

Sincerely,

 *Anthony A. Wierlock* **for**
Stephen M. Sohinki
Director
Office of Price-Anderson Enforcement

Enclosure: PAAA Program Review

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Price-Anderson Amendments Act Program Review Bechtel Hanford, Inc.

I. Introduction

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 Bechtel Hanford, Inc. (BHI), at the Hanford site. OE staff performed a review in accordance with DOE Enforcement Guidance Supplement 00-02, *Price Anderson Amendment Act Program Reviews*. This review evaluated (1) BHI'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 tracking, implementation, and closure. OE staff also reviewed BHI procedures and other documentation, in addition to interviewing BHI personnel during July 13-14, 2004.

II. General PAAA Program Implementation

The BHI PAAA program is formally established by and described in the following documents:

- A. *Identification, Tracking, and Reporting of Price-Anderson Amendment Act Noncompliances*, BHI-MA-02, procedure 2.12, Revision 1, dated June 6, 2000. This procedure provides the general framework by which BHI identifies, evaluates, reports, corrects, and tracks noncompliances. Responsibilities of the BHI functional managers are delineated in the procedure to include the forwarding of operational information to the PAAA Coordinator for screening, corrective action identification and implementation, and assisting in causal analysis. Managers responsible for PAAA Implementation Plans (IP) are responsible for performing the evaluation of potential PAAA noncompliances and providing their evaluation to the PAAA Coordinator. Responsibilities of the BHI PAAA Coordinator are also defined, and they include screening of potential noncompliances, identification of trends for repetitive or programmatic issues, entry of noncompliances into the NTS, and training of BHI staff relative to PAAA requirements.
- B. *Evaluation of Potential Noncompliances with the QA Rule*, BHI-CQP-01, procedure 2.8, Revision 6, dated January 13, 2003. This procedure describes the process for

evaluation of PAAA noncompliances relative to 10 CFR 830, Subpart A, *Quality Assurance Requirements*. Specific responsibilities of the BHI Assessment and Quality Assurance organization are addressed in this procedure.

- C. *Determination of Radiological PAAA Noncompliances*, BHI-RC-03, procedure 13.1, Revision 1, dated June 29, 2001. This procedure describes the process for evaluation of PAAA noncompliances relative to radiological control. Specific responsibilities of the BHI Radiation Control organization are addressed in this procedure.
- D. *Evaluation of Potential Noncompliances With Subpart B Safety Basis Requirements*, EDPI-4.42-01, Revision 0, dated September 4, 2001. This procedure describes the process for evaluation of PAAA noncompliances relative to 10 CFR 830, Subpart B, *Safety Basis Requirements*. Specific responsibilities of the BHI Design Engineering organization are addressed in this procedure.

In general these procedures provide BHI with a comprehensive set of requirements for screening, evaluating, and reporting PAAA noncompliances. The major elements of the BHI PAAA program are adequately described, and responsibilities are identified for key personnel. The scope of this program reflects an understanding of the applicability of the rules and includes a broad base of sources that are reviewed for potential PAAA noncompliance. Sufficient staff has been assigned to perform the screening and assessments of the potential PAAA noncompliances. Formal training has been established and training records are maintained. OE's review found that those areas of weakness in the BHI PAAA program procedures that were identified in the prior program review have adequately been corrected.

As part of the review in this area, OE determined that no recent BHI management or independent assessments had been performed to evaluate PAAA program implementation. This was noted as a program weakness.

III. PAAA Organizational Relationship

The BHI PAAA Coordinator is a direct report to the president of BHI and is independent of BHI line programs. Interviews with both the BHI President and the PAAA Coordinator indicate that the PAAA Coordinator has unlimited access to the BHI President when issues relative to PAAA arise. Also, the PAAA Coordinator typically meets with the BHI President several times a month to discuss pertinent issues. It is this type of organizational relationship that OE views as optimal to address emerging nuclear safety issues.

IV. Identification and Screening of Noncompliances

BHI-MA-02, procedure 2.12, defines the process by which BHI identifies and screens potential PAAA noncompliances. All Environment Restoration Contractor management personnel forward reports, findings, allegations, concerns, and issues to the BHI PAAA

Coordinator for screening. The PAAA Coordinator can request an evaluation by the IP manager on PAAA applicability. The Rule IP manager documents his/her evaluation and returns it to the PAAA Coordinator. The Rule IP managers also have authority to screen issues brought to their attention from other sources. Sources of this information may include (1) occurrence reports, (2) internal and external audits, assessments, surveillances, inspections and walkdowns, (3) BHI management oversight reports, (4) adverse trends in operational data, and (5) nuclear safety-related allegations or concerns. All identified potential nuclear safety noncompliances are forwarded by the BHI PAAA Coordinator to the PAAA IP manager for their review and evaluation. All PAAA noncompliances are entered into the Corrective Action Tracking System (CATS), which is discussed in more detail in Section VI of this report. The BHI PAAA Coordinator maintains a log of all screened potential PAAA noncompliances.

In reviewing the PAAA noncompliance screening log, OE concluded that BHI is drawing from a number of different sources of operational data in performing its PAAA noncompliance screening. In addition, OE sought to determine the extent to which potential PAAA noncompliances are being captured by the PAAA Coordinator for screening and the adequacy of the screening once performed. A comparison of self-assessment logs for a one year period of time in the areas of quality, decommissioning projects and radiation control, to the noncompliance screening log, indicated that some of the assessments were not being forwarded to the PAAA Coordinator for screening. Of particular note was that of the 61 radiation control assessments reviewed, 13 were not forwarded for PAAA noncompliance screening. Overall, OE's evaluation of the PAAA noncompliance screening concluded that the screening was being conducted in a timely manner and that BHI was screening in accordance with DOE guidance and that no additional criteria were being imposed to limit the applicability of the DOE nuclear safety rules. Some minor log-keeping errors were noted but were confined to the self-assessment logs rather than the PAAA screening log maintained by the BHI PAAA Coordinator. These errors were brought to the attention of BHI personnel at the time of the visit for correction.

V. Evaluation for Reportability

Once forwarded by the BHI PAAA Coordinator, the BHI PAAA IP manager evaluates potential noncompliances against the applicable nuclear safety requirements. This evaluation is formally documented and forwarded to the BHI PAAA Coordinator. If the PAAA IP manager determines that a noncompliance condition did not exist the issue is recorded as such and no further action is required. If the PAAA IP manager determines that a noncompliance condition does exist, an NTS reportability determination is made. This determination is made by the PAAA Noncompliance Review Committee. If the committee determines that the noncompliance is not NTS reportable, then a corrective action request (CAR) is initiated, and typically a formal root cause analysis is conducted. If the committee determines that the noncompliance is NTS reportable, then the BHI president is briefed on the noncompliance, an NTS report is generated, a CAR is initiated, and a formal root cause analysis is performed.

The OE review of selected self-assessments and occurrence reports, along with the associated evaluation forms found that BHI is performing its noncompliance evaluations in accordance with DOE guidance and that no additional criteria were being imposed to limit the applicability of the DOE nuclear safety rules. The execution of the BHI noncompliance evaluation process was done in a timely manner and it met DOE expectations. The personnel performing these PAAA noncompliance evaluations were found to be knowledgeable of their internal PAAA processes and the criteria used to evaluate PAAA noncompliances.

VI. Cause Determination and Corrective Action Management

The BHI processes for root cause determination and corrective action management are contained in the following procedures and are well integrated into the BHI PAAA program documentation previously described:

- *Root Cause Analysis*, BHI-MA-02, procedure 2.4, Revision 5, dated September 4, 2001.
- *Corrective Action Request (CAR)*, BHI-MA-02, procedure 2.1, Revision 6, dated June 22, 2001.
- *Corrective Action Tracking System (CATS)*, BHI-MA-02, procedure 2.2, Revision 2, dated January 13, 2003.

A graded approach to root cause determination is accomplished by using either a root cause checklist or a more formal root cause analysis by using the REASON[®] Root Cause Analysis (RCA) method. Other causal analysis tools may be used as needed by the root cause analysis team. All NTS reportable noncompliances and significant (Level 1) internally tracked noncompliances are required to use a formal REASON RCA method for causal analysis. The significance Level 2 deficiencies receive an evaluation for apparent causes. Training on the application of the REASON software is required for all analysts performing a root cause analysis using REASON. An independent evaluator is used to validate the results of the root cause analysis team which are documented in a formal report and provided to the team leader. It is from this report that the responsible manager develops the associated corrective actions.

Upon identification of a deficiency a CAR is generated and one of two significance levels is assigned based on an established set of criteria. Level 1 CARs are required to have a root cause analysis performed, which will form the basis for a Corrective Action Plan (CAP). The CAP consists of both remedial and preventative actions to be taken. Corrective actions identified in the CAP are entered into the CATS database. The BHI Compliance and Quality Programs organization reviews the CAP and the root cause analysis for both completeness and accuracy. As with Level 1 CARs, Level 2 CARs require the preparation of a CAP with associated corrective actions entered into CATS. However, a formal root cause analysis and the review by the Compliance and Quality Programs organization is not required. Once all corrective actions in the CAP have been closed, the responsible project/functional manager is required to conduct a verification of corrective action effectiveness to assure that all corrective actions have

been implemented and are effective in preventing recurrence of the deficiency. After review of the form used to generate the CAP and after discussions with BHI personnel, it was determined that BHI is performing extent-of-condition reviews using a graded approach. However, the execution of extent-of-condition reviews is not formally captured in BHI procedures.

A review of both NTS reportable and internally tracked noncompliances does not suggest that BHI is having a problem with recurrence of events, *implying* that the process used by BHI in conducting its root cause analysis and associated corrective action development has been effective.

VII. Trending for Repetitive and Programmatic Noncompliances

The BHI process for trend analysis is defined in BHI-MA-02, procedure 2.3, *Trend Analysis*, Revision 2, dated November 26, 1997. The Assessments, Regulatory and Quality Programs organization within BHI utilizes occurrence reports and completed CARs as input into the CATS database to trend and analyze data and to generate associated reports on a quarterly basis. Repetitive conditions are referred to the PAAA Coordinator for evaluation. In addition, BHI is trending and analyzing assessments by assessment activity (i.e., radiation control, quality, decommissioning projects). Finally, the BHI PAAA Coordinator conducts informal trending and analysis of identified noncompliances. The OE review concluded that the process by which BHI trends and analyzes data for the identification of repetitive or programmatic noncompliances lacks the maturity expected by DOE. How specific issues surface as potential repetitive problems, beyond those preselected on a quarterly basis, is not clear. Based on procedural and report review, it is not clear how trend data is analyzed to identify trends adverse to quality. The trending and analysis of assessments is viewed as a positive step forward. It should be noted that BHI has reported into the NTS noncompliances associated with repetitive issues. However, as more data becomes available to analyze, an increased burden will be placed on the BHI trending and analysis efforts to identify these types of noncompliances.

VIII. Corrective Actions taken from Previous Review

In March 2000, OE conducted its first review of the BHI PAAA program. In that review OE identified a few weaknesses with the program. Specifically, it was noted that BHI screening procedures established criteria for the identification of noncompliances that were not consistent with DOE guidance. In addition, OE noted examples in which potential noncompliances appeared to be inappropriately screened. In this current PAAA program review, OE sought to examine the extent to which BHI responded to the deficiencies observed in the March 2000 review. It was determined that the BHI PAAA procedures have been revised, and they accurately reflect DOE guidance. Further, no evidence of inappropriately screened potential PAAA noncompliances was observed in this current review.

IX. Conclusion

The OE review determined that BHI's PAAA program met DOE expectations and guidance. Several strengths and a few weaknesses were identified as previously discussed. The DOE Enforcement Policy (10 CFR 820, Appendix A) has provided 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.