



**Department of Energy**  
Washington, DC 20585

January 9, 2007

Mr. Paul Divjak  
President and General Manager  
BBWI Advanced Mixed Waste Treatment Project  
850 Energy Drive, Suite 200  
Idaho Falls, Idaho 83401-1502

Subject: Price-Anderson Amendment Act Program Review

Dear Mr. Divjak:

The Department of Energy's (DOE) Office of Enforcement, now within the Office of Health, Safety and Security, conducted an onsite review of your Price-Anderson Amendments Act (PAAA) Program and a limited review of your Management and Independent Assessment Programs from September 12-13, 2006.

Your PAAA Program was evaluated using the criteria and guidance established by DOE Enforcement Guidance Supplement 00-02, *Price-Anderson Amendment Act (PAAA) Program Reviews*. Specifically, the BBWI processes for identifying and screening nuclear safety noncompliances for PAAA applicability, reporting applicable noncompliances into DOE's Noncompliance Tracking System (NTS), internal tracking and trending of noncompliances, and causal analysis and corrective action were assessed.

Overall, the Office of Enforcement identified that your PAAA Program lacked the maturity and effectiveness exhibited by other sites recently reviewed by DOE. Our office is concerned that significant implementation weaknesses in each of the areas reviewed have prevented the BBWI PAAA Program from reaching DOE's desired level of effectiveness.

Our review also identified the following specific strengths and weaknesses which are summarized below and discussed in detail in the enclosed report.

**PAAA Program Strengths:**

- All key DOE expected program elements were found to be in place such as detailed procedures, formal training, established roles and responsibilities, and sufficient mechanisms for local and NTS noncompliance reporting and corrective action.

- PAAA training for personnel reviewing issues for PAAA applicability includes case studies and scenarios.
- A diverse and comprehensive set of information sources (including events, assessments, external reviews, etc.,) are being screened by BBWI for potential PAAA noncompliances.
- PAAA screening determinations and NTS reporting are very timely.
- The PAAA program functions are well integrated with a centralized issues management system. This ensures all relevant performance information is screened for PAAA noncompliances.

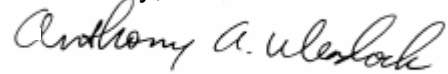
#### **PAAA Program Weaknesses:**

- The current BBWI PAAA Coordinator will be retiring at the end of 2006 and a replacement had not been identified for appropriate turn-over and training.
- BBWI procedures do not identify how trending for repetitive and programmatic noncompliances will be performed.
- Screening activities are not fully effective at identifying potential PAAA noncompliances.
- Reporting determinations are found to be non-conservative and not consistent with DOE guidance.
- PAAA trending activities are not fully effective in identifying repetitive or programmatic PAAA noncompliances.
- The BBWI causal analysis procedure does not address historical reviews for identifying similar conditions or causes, evaluations of prior corrective action adequacy, and determinations of whether BBWI assessment processes should have previously identified and facilitated correction of the conditions or underlying causes.
- Reviewed root cause analysis reports did not have an extent of condition or historical review for determination of generic implications.
- DOE Idaho surveillances identified that BBWI had weaknesses in identifying the underlying causes of problems so as to prevent problem recurrence.
- Corrective Action Reports are not being completed in a timely manner.
- The BBWI Management Assessment Program exhibited several weaknesses including problems with timely completion of assessments, individual assessments lacking necessary rigor, and failures to properly characterize or identify problems as findings and conditions adverse to quality (CAQ) consistent with procedural requirements.

Due to the significant weaknesses in a number of the program elements, the Office of Enforcement is planning to perform a follow-up review in approximately six months in order to evaluate BBWI efforts in addressing the identified weaknesses. The weaknesses should be addressed to ensure appropriate mitigation consideration during possible future enforcement actions as well as the continued exercise of discretion for noncompliances of lesser significance as described in the DOE Enforcement Policy (10 CFR 820 Appendix A). Details of the review are provided in the attached enclosure.

No reply to this letter is required. If you have any questions regarding this review, please contact me at 301-903-0100 or have your staff contact Pete Rodrik at 301-903-5092.

Sincerely,



Anthony A. Weadock  
Acting Director  
Office of Enforcement  
Office of Health, Safety and Security

Enclosure: Price-Anderson Amendments Act Program Review

cc: Thomas Fallon, BBWI  
Richard Laing, BBWI PAAA Coordinator  
Kay Emanuelson, BBWI PAAA Coordinator

## **BBWI Advanced Mixed Waste Treatment Project Price-Anderson Amendments Act Program Review**

### **I. Introduction**

From September 12-13, 2006, the Department of Energy's (DOE) Office of Enforcement conducted an onsite review of the BBWI Advanced Mixed Waste Treatment Project (AWTP) Price-Anderson Amendments Act (PAAA) Program.

Overall, the Office of Enforcement identified that the BBWI PAAA Program lacked the maturity and effectiveness exhibited by other sites recently reviewed by DOE. Significant implementation weaknesses in each of the areas reviewed have prevented the BBWI PAAA program from reaching DOE's desired level of effectiveness. On a positive note, however, the site program has all of the key elements in place such as detailed procedures, formal training, established roles and responsibilities, and sufficient mechanisms for local and Noncompliance Tracking System (NTS) noncompliance reporting and corrective action. The results of the review are discussed below.

### **II. General Implementation**

BBWI has been the AWTP managing contractor for DOE since May of 2005, a relatively short duration at the time of this review. Because of this, only limited performance data and information concerning the implementation of the BBWI PAAA Program was available for review. Since the Office of Enforcement did not conduct a previous review of the prior AWTP managing contractor, a performance trend could not be made or identified.

The BBWI PAAA Program as implemented is a centralized program. The PAAA Coordinator and support staff reside within the BBWI Quality Assurance (QA) organization. Currently, the PAAA Coordinator reports to the QA Manager, and the QA Manager is a direct report to the BBWI company president.

The program has two key implementing documents:

1. AWTP Procedure MP-Q&SI-5.2, Rev 1, *PAAA Reporting*.
2. AWTP PAAA Screening Form and Checklist.

Several additional AWTP procedures implement other key functions such as corrective action management and assessment programs. These procedures are described in the following report sections.

The BBWI PAAA Program has all of the key program elements in place including: implementing procedures, defined roles and responsibilities, general employee training and more detailed training for those making screening and reporting evaluations, and mechanisms for identifying and reporting nuclear safety noncompliances both locally and into the NTS.

BBWI has established a Corrective Action Review Board (CARB) to review and address performance issues. The BBWI PAAA Coordinator routinely reports on PAAA issues and/or NTS issues during CARB meetings. The CARB reviews all NTS reports and NTS report corrective action plans.

A single self-assessment of the site PAAA program was conducted since BBWI was selected as the managing contractor. It was limited in scope and involved reviewing previous Corrective Action Report (CAR) PAAA screening decisions made from May 2005 until May of 2006. The review was conducted to satisfy a requirement to conduct at least one annual review of BBWI's PAAA Program. The review concluded that CARs were being properly screened. The Office of Enforcement disagrees with this conclusion and discusses the issue in more detail in the subsequent report section.

The BBWI program could benefit from an external review. BBWI has not included a requirement or other driving process for having a periodic external PAAA Program review. The Office of Enforcement chose not to list this as a weakness due to the short timeframe BBWI has been managing AWTP.

### Strengths

- All key DOE expected program elements are in place.
- PAAA training for personnel reviewing issues for PAAA applicability includes case studies and scenarios.

### Weaknesses

- The current BBWI PAAA coordinator will be retiring at the end of 2006 and a replacement had not been identified for appropriate turn-over and training. BBWI missed a key indoctrination opportunity by failing to have a replacement coordinator participate in this OE review.
- BBWI has not formally defined within its implementing procedures how it will conduct trending for the purposing of identifying repetitive and programmatic noncompliances needing further evaluation and corrective action for recurrence control.

### III. Identification, Screening and Evaluation of NTS Reportability

The Office of Enforcement evaluated BBWI's processes for screening of potential PAAA noncompliances by interview of personnel and review of selected screening documentation. The BBWI PAAA Coordinator conducts most of the PAAA applicability screens and is occasionally supported by additional staff within the QA group. All conditions adverse to quality (CAQ) (i.e., deficiencies) are entered into a central issues management system called Track-Wise (TW). Screening determinations are documented and also tracked in TW. It was also noted that a diverse and comprehensive set of information sources (including events, assessments, external reviews, etc.) are screened.

The Office of Enforcement noted however, that BBWI is not effectively identifying PAAA noncompliances as part of screening activities, is not effectively identifying repetitive/programmatic issues through ongoing trending activities, and is not effectively reporting noncompliances into the NTS consistent with DOE guidance.

The following are three examples (although several more were also identified during the review) of screening activities failing to identify potential PAAA noncompliances (i.e. these were screened as non-PAAA applicable). The Office of Enforcement determination was that these items were PAAA applicable.

1. CAR 21960 Dated May 4, 2006. This CAR documented a DOE Office of Environmental Management Assessment finding concerning failures to establish a program for conducting Fire Hazard Analysis and assessments of its facilities as well as BBWI's actions related to fire protection system impairments.
2. CAR 22527 Dated June 19, 2006. This CAR documented an anomaly with real time radiography (RTR) audible and visual warning signals and a procedural noncompliance with RTR operation. The procedural noncompliance also occurred in a prior event involving RTR operation which revealed a systemic weakness with the understanding and operation of the RTR equipment.
3. CAR 17499 Dated August 5, 2005. This CAR documented failures to properly authorize housekeeping activities with facility assay equipment and failures to properly proceduralize and control work instructions involving the safety significant equipment.

The following are some representative examples of BBWI failing to identify and report programmatic and repetitive issues into the NTS consistent with DOE guidance. The Office of Enforcement determination was that these items met the threshold for NTS reportability.

1. ORPS Report EM-ID--BBWI-AWTF-2006-0005. This ORPS report documents an event involving the inadvertent shipment off-site of a TRU waste container to a

commercial low-level waste burial site. An event investigation identified several deficiencies indicative of a programmatic breakdown in the processing and control of waste containers.

2. ORPS Report EM-ID--BBWI-AWTF-2005-0020. This ORPS report documents several conduct of operations procedural execution issues associated with waste container processing for shipment. The deficiencies were determined to be repetitive in nature by BBWI personnel.
3. ORPS Report EM-ID--BBWI-AWTF-2005-0019. This ORPS report documents three separate failures to comply with facility vehicle fuel limits for combustible loading as well as failures of prior corrective actions.

BBWI indicated that trending is accomplished by both an informal process and as part of a periodic review of ORPS cause-codes associated with BBWI TW-CARS. The informal process is accomplished by relying on the limited number of personnel performing screening activities to identify potential trends for follow-up through their day to day screening activities. The second level of trending is by periodic review of cause code trends of TW-CAR data. The Office of Enforcement is concerned that the informal process failed to identify the repetitive trends noted above. The Office of Enforcement is concerned that the high level cause code (ORPS Level I) trending is also not effective in identifying PAAA noncompliance repetitive and programmatic issues.

### Strengths

- A diverse and comprehensive set of information sources (including events, assessments, external reviews, etc.) are screened by BBWI.
- PAAA screening determinations and NTS reporting are very timely.

### Weaknesses

- Screening activities are not fully effective at identifying potential PAAA noncompliances.
- Reporting determinations are non-conservative and inconsistent with DOE guidance.
- PAAA trending activities are not fully effective at identifying repetitive or programmatic PAAA deficiencies.

## **V. Corrective Action Management**

The Office of Enforcement reviewed the investigation, causal analysis, and corrective action processes implemented by BBWI. BBWI's causal analysis and corrective action processes are described in the following documents:

- *Investigation and Root Cause Analysis*, MP-Q&SI-5.1, R4
- *Corrective Action*, MP-Q&SI-5.3, R6

- *Corrective Action Review Board Charter, MP-Q&SI-5.10, R3.*

#### A. Investigation and Causal Analysis Process

BBWI has implemented a formal investigation and causal analysis process that is based upon a graded approach, establishes training and qualification requirements for participants, and defines organizational roles and responsibilities. The assigned investigator and the responsible manager jointly establish the scope and schedule for investigations of conditions adverse to quality. The responsible manager also identifies the rigor and depth of the investigation using a graded approach based on the significance, severity, and assumed risk of the adverse event or condition. The investigator is responsible for evaluating the extent of an adverse event condition and its generic implications as part of the causal analysis. The procedure does not address the conduct of a historical review to determine whether similar problem conditions or underlying causes have previously occurred, a review of the adequacy of prior related corrective actions, or a review of the assessment program effectiveness concerning the deficient performing areas.

BBWI identified that they had performed approximately six formal root cause analyses during their tenure at the AWTP. DOE Idaho surveillances performed in August 2005 and January 2006 identified potential weakness in BBWI's causal analysis process. The surveillance reports identified that BBWI was not consistently identifying the causes of problems to prevent their recurrence.

The Office of Enforcement reviewed the following two examples of formal root cause analysis to evaluate the formality of implementation and depth of analysis.

1. Causal Analysis Report (June 2006) Management Concern Identified at the Advanced Test Mixed Waste Treatment Project,
2. Causal Analysis Report (AMWTP-RCA-06-002) Inadvertent transfer of a TRU waste drum to a LLD project.

Strengths that were common to both of these causal analysis reports included the establishment of a formal investigation team, an investigation process that included interviews with affected personnel and review of applicable documents, use of a formal causal determination process, and the development of recommended actions to address the problem and causes. Common weaknesses included a linkage back to ORPS apparent causes that generalized the investigation findings, no historical review for similar problems or causes, and no evaluation of the generic implications (no extent of condition review) of the weaknesses identified. The first causal analysis noted above identified a weakness in the assessment program but failed to identify a corrective action; and the second causal analysis noted above failed to address whether or not the assessment program should have identified and facilitated correction of the conditions prior to the event.



### Strengths

- Formal certification and training required for personnel who perform causal analysis.
- Graded approach to investigation and causal analysis is used to focus additional efforts and resources on more significant events.

### Weakness

- The BBWI causal analysis procedure does not address the following areas:
  - Historical review to identify similar conditions or causes,
  - Review of the adequacy of prior corrective actions, and
  - A review of previous assessment performance effectiveness at identifying and correcting underlying causes and conditions.
- No historical review or determination of generic implications was performed in the two example root cause analysis reports reviewed.
- DOE Idaho surveillances identified weaknesses in identifying the underlying causes of findings and conditions adverse to quality so as to prevent recurrence.

## B. Quality Problem Resolution/Corrective Action Processes

Conditions adverse to quality are reported into the TW system and corrective actions are identified in TW through the use of CARs. Nonconforming items, such as material or equipment nonconformance, are captured in a separate tracking system using Nonconformance Reports (NCR). The corrective action procedure identifies that deficiencies that are systemic, programmatic, or deviations associated with NCRs should also be entered into the TW as CARs but does not require this action. The CAR initiator's manager determines the validity of the CAR and identifies the appropriate manager responsible to implement actions necessary to resolve the CAR.

The QA manager also reviews, validates, and assigns a significance level to each CAR. CARs associated with a significance level I and II are reviewed by a CARB. The QA manager is responsible for ensuring that the Corrective Action Plan (CAP) is developed for a CAR within 45 days of validation or an ORPS categorization determination. The QA manager also establishes a schedule for the CAP based completing all actions within 90 days following QA validation of the CAR. CAPs that exceed the 90-day schedule are required to be reviewed by the BBWI President. The QA department performs an independent verification of completed corrective actions and documents the results. In addition, the QA department evaluates the effectiveness of corrective actions as part of their routine periodic surveillance.

DOE Idaho's surveillance reports from August 2005 and January 2006 identified recurring problems with BBWI's corrective action process. The problems identified included (1) failure to issue CARs when CAQs were identified, (2) ineffective corrective actions, and (3) untimely completion of corrective actions. The Office of

Enforcement reviewed selected CARs to assess the inadequacy and timeliness and found that more than 50 percent of the PAAA CARs were overdue by more than 30 days. In addition, BBWI's surveillance, SS-06-46, found that a significant percentage (41 percent) of completed management assessments failed to issue a CAR for identified deficiencies and CAQs.

#### Strengths

- All CARs are formerly tracked in TW, a centralized issues management system that facilitates both trending and a single comprehensive source of issues requiring PAAA screening.
- CARs receive independent verification of completion and effectiveness reviews.

#### Weaknesses

- CARs are not consistently developed for assessment findings and CAQs
- CARs are not being implemented in a timely manner
- DOE Idaho surveillances have identified that CARs are not always effective in preventing recurrence of CAQs.

## **VI. Management and Independent Assessment Programs**

The Office of Enforcement performed a review of BBWI's Management and Independent Assessment Program using guidance established by Enforcement Guidance Supplement (EGS) 01-02, "*Management and Independent Assessment.*" This review included an evaluation of selected assessments, interviews with BBWI personnel, and a review of the applicable procedures. BBWI's Management and Independent Assessment Program is described in the following two documents: *Management Assessment, MP-M&IA-17.1, R6* and *Independent Assessment, MP-M&IA-17.2, R4.*

The Management Assessment Procedure (MP-M&IA-17.1, R6) adequately describes the roles and responsibilities, assessment planning process, and reporting of the results. All of BBWI's department managers are required to schedule and perform periodic assessments of their organization's performance. A minimum of one assessment per quarter is required by the procedure. Department managers are also required to identify their planned assessment schedule in TrackWise. Assessment findings that result in conditions adverse to quality (CAQ) or NCRs are required to be entered into TrackWise or the NCR tracking system.

A DOE Idaho surveillance conducted in January 2006 identified that BBWI repeatedly failed to perform the minimum number of assessments required by their procedure. A BBWI surveillance, SS-06-46, also identified that CAQs were not consistently identified as findings in management assessments and entered into TrackWise as CARs. The Office of Enforcement's review of selected management assessments found that these reports only provide a very general description of the scope and conduct of the

assessment, and few assessments resulted in findings. BBWI managers are aware of the problems with their management assessment program and are in the process of correcting the deficiencies.

The Independent Assessment Procedure (MP-M&IA-17.2, R4) adequately describes the roles and responsibilities, lead auditor training, and conduct of independent assessments. A formally trained and qualified lead auditor is assigned to each independent assessment. Technical specialists are also assigned as necessary to support the assessment. The BBWI QA Manager is responsible for scheduling all internal independent assessments and they are conducted by the QA organization. The QA manager develops a twelve-month schedule that identifies independent assessments for the upcoming year.

The Office of Enforcement reviewed the independent assessment schedule for 2006, including independent surveillances. Assessments are being completed on schedule and appear to address a broad scope of assessment areas. No weaknesses were identified in the Independent Assessment Program.

### Strengths

- Independent assessments are being performed by trained and qualified lead auditors, are being completed on time, and address a broad scope of assessment areas.

### Weaknesses

- BBWI managers repeatedly failed to perform the minimum number of management assessments required.
- Some management assessments lack rigor and required CARS are not issued for assessment identified problems or conditions adverse to quality.
- Management assessments do not properly characterize problems as findings consistent with BBWI's definition of a finding.

## **VII. Conclusion**

Overall, the BBWI PAAA Program lacked the maturity and effectiveness exhibited by other sites reviewed by DOE. The BBWI program has all of the key elements in place such as detailed procedures, formal training, established roles and responsibilities, and sufficient mechanisms for local and NTS noncompliance reporting and corrective action. Implementation weaknesses in each of these areas, however, have prevented the BBWI program from reaching DOE's desired level of effectiveness.

The weaknesses should be addressed to ensure appropriate mitigation consideration during possible future enforcement actions as well as continued exercise of discretion for noncompliances of lesser significance.