

are personally supportive of the PAAA program and see its value in addressing the challenge of improving the BNL safety culture.

Our program review did identify weaknesses in PAAA program implementation. In the area of reporting into the Noncompliance Tracking System (NTS), for repetitive and programmatic issues, we have noted that the Laboratory applies a significance threshold for reporting into the NTS which is at variance with the June 1998 guidance document developed for identifying, reporting and tracking Price-Anderson noncompliances.

In addition, OE identified areas for improvement in trending, independent and management assessment, and corrective action management. These issues are described more fully in the enclosed report.

In sum, OE has concluded that significant improvements have occurred in the BNL PAAA program since our December 2000 program review. Nonetheless, opportunities for further improvement are present and we encourage the Laboratory to pursue them.

No reply to this correspondence is required. DOE will continue to monitor your performance and appreciates your continuing cooperation with our efforts to improve nuclear safety in the DOE complex. If you have any questions, please contact me at (301) 903-0100 or have your staff contact Howard Wilchins, at (301) 903-0107.

Sincerely,



Stephen M. Sohinki
Director
Office of Price-Anderson Enforcement

Enclosure: Program Review

cc: M. Gunn, DOE-CH
J. Drago, DOE-CH PAAA Coordinator
F. Crescenzo, DOE-Brookhaven
P. Jones, DOE - BNL PAAA Coordinator
C. Dimino, BNL PAAA Coordinator
R. Orbach, SC-1
D. Michlewicz, SC-82 PAAA Coordinator
B. Cook, EH-1
A. Kindrick, EH-1
H. Wilchins, OE
Docket Clerk, OE

**Price-Anderson Amendments Act Program Review
Brookhaven National Laboratory
Brookhaven Science Associates**

I. Introduction

During December 2003 and January 2004, including an onsite visit January 14-15, the Department of Energy's (DOE) Office of Price-Anderson Enforcement (OE) conducted a follow-up review of Brookhaven Science Associates (BSA) Price-Anderson Amendments Act (PAAA) process for screening and reporting PAAA noncompliances associated with its activities at Brookhaven National Laboratory (BNL). This review followed-up on deficiencies identified in OE's PAAA program review of BSA in December 2000. This follow-up review also evaluated the determination of a noncompliance's reportability to DOE's Noncompliance Tracking System (NTS). Limited review of rule compliance issues in the areas of assessment and corrective action management was also conducted.

II. PAAA Program Implementation

BNL standard ESH 1.1.1, "Price-Anderson Amendments Act Compliance Validation and Noncompliance Reporting Program," revision 5, effective June 2001, establishes policy for the Laboratory's PAAA Program. The standard establishes the position of the PAAA Coordinator, and assigns responsibility for overall administration and coordination of the PAAA program to this individual. The Coordinator makes decisions on whether issues represent PAAA noncompliances, and makes a preliminary recommendation on PAAA reportability. The standard also establishes a PAAA Working Group, with members appointed by the Laboratory Director, that has responsibility to evaluate identified noncompliances for NTS reportability, ensure NTS reports are properly submitted, and advise management on PAAA Rule compliance matters and processes for identifying, evaluating, and reporting noncompliances.

Since the December 2000 review, BNL has established the following new standard operating procedures to implement ESH 1.1.1: "PAAA Review and Reporting Procedure," "Conducting PAAA Trend Analysis," and "Conducting Causal Analysis for PAAA Noncompliances."

OE's review in December 2000 identified several issues needing attention in this area, including: structuring the screening and reportability requirements in procedures to require more timely reportability decisions and reporting of NTS issues, establishing processes for trending of quality and radiological problems, as well as PAAA non-NTS reportable noncompliances; and establishing requirements for PAAA-related training for

individuals involved in screening and reporting activities. This follow-up review determined that all of these areas have been addressed and are functioning well.

- A. OE's follow-up review found the following positive elements in the current structure of the PAAA screening and reporting process:
1. The process is well structured and documented in formal procedures.
 2. A broad set of individuals with requisite expertise support the PAAA Coordinator and the Working Group.
 3. A Working Group of senior personnel and managers provides oversight of the PAAA screening and reporting process, as well application of lessons learned from PAAA issues at other sites.
 4. A well-qualified individual is serving as the PAAA Coordinator, and is performing his role in a proactive manner.
 5. The PAAA Coordinator is performing trending and quarterly reporting for management on PAAA activities in the quarter, including potential adverse trends and programmatic issues.
 6. The Coordinator's role has been restructured to be a senior-level position, with ready access to senior Laboratory management. The Coordinator is in the Independent Oversight group, which reports to the Director of Internal Audit & Oversight, who directly reports to the Lab Director.
 7. A web-based PAAA training process has been developed for managers and representatives supporting the screening and reporting process.
- B. No weaknesses were identified in this area.

III. Noncompliance Identification and Screening

BNL relies on various processes, including internal assessment activities, surveillances, inspections, and worker and management observation, as well as external reviews, to identify problems or deficiencies. The processes used for managing resolution of these issues are discussed further in section V.C below. These include processes at the institutional level for matters of potential institutional applicability, as well as various local processes. Some of the processes, such as the Assessment Tracking System (ATS), require that any PAAA noncompliance be forwarded to the Coordinator for review. Since there are multiple and diverse activities in which potential noncompliances may be identified, the Coordinator has assigned responsible managers as well as QA and RP designees in the various departments to monitor issues in their areas for potential PAAA applicability. These designees support the Coordinator for this function, and any such issues are forwarded to the Coordinator for review. ESH 1.1.1 requires managers or designees to notify the Coordinator of potential noncompliances

“as soon as they become aware of them.” Additionally, as a check or overlay on the direct referral from various groups, ESH 1.1.1 requires the PAAA Coordinator to routinely review Laboratory-wide performance information (including Occurrence Reporting and Processing System (ORPS) reports, internal and external assessments, nonconformance reports, employee concerns, Radiological Awareness Reports (RAR), etc.) to identify potential noncompliances with Nuclear Safety Rules.

The Coordinator has established a *MS-Access* database to document screening and reportability decisions, to track non-NTS reportable noncompliances, and to support trending reviews and evaluations for programmatic or repetitive noncompliance conditions. Issues determined to be PAAA noncompliances are communicated as such by the Coordinator to the responsible manager, including a notification that a causal analysis is required. OE's review of the identification and screening of potential PAAA issues, and determination of PAAA noncompliance, in the prior December 2000 review, identified several areas of deficiency, including: a significant delay in determining whether issues were PAAA noncompliances; not establishing timeframes for communicating potential PAAA issues to the Coordinator; assigning significant non-PAAA duties to the Coordinator, compromising attention to this function; and, not holding timely meetings of the Working Group to support prompt decisions by this group. Also, the issue noted above in section II of the lack of a process to trend non-NTS noncompliances was resulting in a failure to adequately identify programmatic or repetitive problems. This follow-up review determined that these areas had been addressed and are functioning well.

- A. This review has found a number of positive elements in the BNL process for identification, screening, and determination of noncompliance, including:
1. A comprehensive database management tool to facilitate screening and evaluation activities, documentation of decisions and actions, and trending reviews.
 2. Proactive efforts by the Coordinator in identifying potential information sources for screening, in raising concerns on potential noncompliance matters, and in notifying the responsible manager that a causal analysis is required for PAAA noncompliances.
 3. Effective use of a network of designees and subject matter experts to assist identification and screening efforts.
 4. The Coordinator's Quarterly Trending review and report to management, which is providing valuable information to management on activities subject to Price-Anderson requirements and has identified broader programmatic problems. Some potential improvements in this review are noted below.

5. Selected recent events and assessment findings were reviewed and OE concluded that appropriate determinations were made regarding PAAA applicability.

B. In this review, OE noted the following weakness in the Quarterly Trending review by the PAAA Coordinator:

BNL should look more broadly in judging the implications of the data when doing the Quarterly Trending review. While the reviews being performed provide value to management for cases where there is a clear statistical negative trend, there is opportunity to gain further benefit from the process in identifying problem areas. The process should also identify problems occurring at an undesirable frequency whether or not there is a statistical negative trend. Such a matter may also be a candidate for consideration as a programmatic issue.

IV. Noncompliance Reporting

Noncompliances judged as potentially NTS-reportable by the Coordinator or responsible manager are generally presented to the PAAA Working Group for final evaluation and determination. Event-related noncompliances that fall within the DOE Table 3-2 criteria do not require Working Group determination. Noncompliances judged to not be NTS-reportable are reported into the PAAA database for tracking, and are also placed in local or institutional corrective action management processes.

As discussed above, BNL has improved its identification and screening process since the December 2000 review. This follow-up review confirmed that processes have been improved with respect to both reportability decisions and the timeliness of reporting into the NTS system. The follow-up review noted the reasons for this improvement:

1. The Coordinator, with concurrence of certain managers, is authorized to make determinations on NTS reportability for event-related matters without requiring Working Group action.
2. The Coordinator can call meetings of the Working Group to allow timely decisions on NTS reportability.

This follow-up review evaluated decisions made on NTS-reportability for a number of example noncompliance conditions. Some weaknesses were identified in this review with respect to programmatic and repetitive issues. In particular, it appears that BNL is applying a threshold of reportability into the NTS, which is not contemplated by the DOE guidance documents. Rather, all programmatic and repetitive issues should be reported into the NTS rather than being tracked internally.

V. Rule Implementation Issues

A. Radiological Assessment Process

The December 2000 OE review of BSA's screening and reporting process also noted certain rule compliance issues in this area. That review found that the radiological assessment program was not formally described in site assessment or radiological control procedures, findings from internal assessments were not placed in corrective action management processes, and BSA was not conducting assessments to accomplish the triennial assessment requirement of 10 CFR 835. This follow-up review confirmed that BNL now has a sound process to conduct assessments of the radiological protection program to meet 10 CFR 835, and that the assessments being conducted are identifying substantive and programmatic weaknesses in the program so that management can place attention on these opportunities for improvement. No other compliance issues were identified in this limited review.

B. Independent and Management Assessments

OE is placing an increased emphasis on the area of independent and management assessment, and performed a limited evaluation as part of this review.

1. OE observed a number of strengths in this area as noted below:
 - a. BNL has established a solid program for planning management or self-assessments of activities and processes, and for oversight of the self-assessment program by the Independent Oversight Group. The assessments include a series of functional area 'management systems' assessments, as well as assessments by managers of their organization.
 - b. Independent Assessment teams go through indoctrination or training process prior to the assessment to assure all team members are clear on the assessment objectives, methods, performance issues, and applicable BNL requirements.
 - c. The sample management or self-assessments reviewed by OE, both 'management systems' assessments as well as line organization self-assessments, appeared to be substantive, were identifying areas for improvement, and results were transferred into appropriate corrective action processes.
 - d. BNL engaged a third-party to review the effectiveness of its management systems self-assessment program, and identified the need to establish an institutional owner for the program, focus assessments to be more performance-oriented, and provide better trending of assessment data.

- e. BNL has established a sound process for planning Independent Assessment activities that will provide the most value.
 - f. The sample BNL independent assessments reviewed by OE appeared to be substantive, were identifying areas to improve performance and compliance, and the results were placed in appropriate corrective action processes.
2. OE identified certain assessment related weaknesses in this limited review:
- a. Management attention is required to ensure that the management systems self- assessment area is improved, in particular through considering the recommendations from the third party review. Improvements in the self-assessment process will require appropriate training of personnel to these enhanced objectives.
 - b. Independent assessments conducted by BNL's Independent Oversight Group (IO) appear thorough, and have identified substantive issues. However, for several of the assessments, results are all termed Areas for Improvement or Opportunities for Improvement. The set of these that may represent noncompliance conditions more typically are identified as 'findings' in the DOE complex. The most important reason for this from a safety management standpoint is to permit all levels of management to be aware of such significant conditions to assure they receive immediate attention. Other opportunities for improvement may then be addressed on appropriate schedules. OE's concern is that noncompliance conditions receive the proper focus and priority. (However, it should be noted that one of the recent IO assessment examples was noted as identifying the issues that represented 'findings'. The decision to characterize recommendations in this manner in the future is encouraged.)

C. Corrective Action Management

As in the assessment area, OE is placing an increased emphasis on reviewing this area due to the frequency of deficiencies found in our investigation and enforcement activities. In this follow-up review, OE reviewed the structure of corrective management processes as defined in various procedures. BNL relies on certain processes at an institutional level, such as the ATS and Nonconformance Report processes. Additionally, the various Departments maintain their own corrective action management processes for issues that are primarily relevant to those Departments.

The prior program review in December 2000 noted weaknesses in this area, including: no requirements for causal determination for PAAA noncompliances; no requirements for validation of completion of corrective actions for significant problems areas or noncompliances; and significant delays in timely completion of corrective actions. This follow-up review confirmed that positive steps had been taken by BNL to address these issues.

1. OE observed a number of strengths in this area as noted below:
 - a. Application of a sound process to validating completion of corrective actions and evaluating effectiveness for more significant problems.
 - b. Establishment of institutional expectations for the multiple, local corrective action processes to ensure each has the necessary quality problem resolution attributes.
 - c. Establishment of a structured approach to select the appropriate causal analysis method for a particular problem, and requiring some level of causal analysis for all PAAA noncompliance matters.
 - d. Plans by the Rad Control organization to evaluate lower level RAR's for precursor or cross-cutting issues.
 - e. Taking positive steps coordinated by the Quality Management organization to better integrate the multiple, local corrective action processes to identify broader issues. The planning in this area is a start, but as noted below, continued attention is required as an important step toward improving safety performance.
 - f. Feedback from Independent Oversight on the adequacy of corrective actions for problems found in their independent assessments.
2. Areas of weakness requiring further attention in the corrective action management area noted in this follow-up review include:
 - a. BNL needs to complete the efforts started by the Quality Management organization to better integrate the local corrective action management processes into a single institutional process to better support cross-cutting reviews and identification of broader programmatic problems. Failure to identify such problems that affect nuclear safety would represent a noncompliance condition.
 - b. BNL needs to continue improving the consideration of the broader implications or extent of condition of problems when evaluating an event or other significant condition adverse to safety or quality.
 - c. As noted in section IV, BNL needs to report all programmatic and repetitive noncompliances into the Noncompliance Tracking System.

VI. Conclusion

The above summarizes OE's review of BSA's PAAA screening and reporting process, BSA's progress in addressing the deficiencies from the OE review of December 2000, and further opportunities to improve activities in this area. While most of the matters relate to elective areas for BNL screening and reporting of noncompliances, some matters are identified as potential compliance issues. However, it is clear there has been substantial improvement in the BNL screening and reporting process compared to the findings made in the 2000 Program Review.