



## Department of Energy

Washington, DC 20585

January 20, 2012

Mr. Darrel P. Kohlhorst  
President and General Manager  
Babcock & Wilcox Technical Services Y-12, LLC  
Y-12 National Security Complex  
P.O. Box 2009/MS-8001  
Oak Ridge, Tennessee 37831-8001

Dear Mr. Kohlhorst:

The Office of Health, Safety and Security's Office of Nuclear Safety Enforcement conducted an onsite regulatory assistance review of the Babcock & Wilcox Technical Services Y-12, LLC (B&W Y-12) Price-Anderson Amendments Act (PAAA) program at the Y-12 National Security Complex during November 8-9, 2011. The review included an evaluation of the management processes used by B&W Y-12 for identifying, screening, reporting, and tracking nuclear safety regulatory noncompliances; developing corrective actions; and trending noncompliance issues.

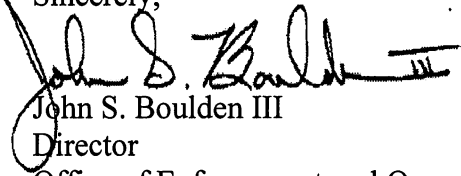
The B&W Y-12 nuclear safety regulatory compliance program is supported by documented policies and procedures, an extensive network of line management personnel resources, and an electronic noncompliance issue screening tool. Collectively, these program elements allow B&W Y-12 to effectively implement a functional nuclear safety regulatory compliance program that is in alignment with the guidance set forth in the Department of Energy's *Enforcement Process Overview*.

As described in the enclosed report, the regulatory assistance review identified a number of program strengths, as well as recommendations for your consideration to further improve the B&W Y-12 nuclear safety regulatory compliance program. Most notably, B&W Y-12 is encouraged to enhance the existing process for identifying and analyzing noncompliance trends to better support your efforts to address program weaknesses that might otherwise result in safety significant events and potential enforcement investigation. Program improvements, whether self-identified or through implementation of the recommendations noted in this report, may serve as a basis for mitigation for any future nuclear safety enforcement action against B&W Y-12, as described in the *Procedural Rules for DOE Nuclear Activities* (10 C.F.R. Part 820, appendix A).



No reply to this letter is required. If you have any questions regarding this review, please contact me at (301) 903-2178, or your staff may contact Mr. Steven Simonson, Deputy Director for Enforcement, Office of Enforcement and Oversight, at (301) 903-7707.

Sincerely,

A handwritten signature in black ink, appearing to read "John S. Boulden III". The signature is written in a cursive style with a horizontal line at the end.

John S. Boulden III

Director

Office of Enforcement and Oversight  
Office of Health, Safety and Security

Enclosure: Regulatory Assistance Review

cc: Daniel Hoag, YSO  
Chuck Smolens, YSO  
Conard Stair, B&W Y-12  
Kemla Branum, B&W Y-12

**Office of Nuclear Safety Enforcement  
Regulatory Assistance Review  
Babcock & Wilcox Technical Services Y-12, LLC**

## **I. Introduction**

During November 8-9, 2011, the Office of Nuclear Safety Enforcement, within the U.S. Department of Energy (DOE) Office of Health, Safety and Security, conducted a regulatory assistance review of Babcock & Wilcox Technical Services Y-12, LLC (B&W Y-12), which is the National Nuclear Security Administration's (NNSA) prime contractor at the Y-12 National Security Complex. The Office of Nuclear Safety Enforcement planned and conducted the regulatory assistance review in accordance with the guidance in the DOE *Enforcement Process Overview*, dated June 2009; this document is available on the Office of Health, Safety and Security website at: [http://www.hss.doe.gov/enforce/docs/Final\\_EPO\\_June\\_2009\\_v4.pdf](http://www.hss.doe.gov/enforce/docs/Final_EPO_June_2009_v4.pdf)

The goal of the regulatory assistance review was to understand B&W Y-12's processes for identifying, screening, reporting and tracking nuclear safety regulatory noncompliances, developing corrective actions, and trending noncompliance issues. The review also evaluated B&W Y-12's effectiveness in resolving both noncompliant conditions and program deficiencies that can lead to noncompliances with the potential to adversely affect nuclear safety. The Office of Nuclear Safety Enforcement gained first-hand information about B&W Y-12's program effectiveness and had the opportunity to exchange feedback regarding implementation of the B&W Y-12 program. During the onsite visit, the review team evaluated B&W Y-12's staff qualifications and experience, self-assessments, and noncompliance screenings for preselected operational issues. In addition, the review team interviewed B&W Y-12 employees and observed operation of the Issues Management System (IMS).

Overall, the review team found that B&W Y-12's regulatory compliance program enables B&W Y-12 to identify, report, evaluate, track, and correct nuclear safety noncompliances to prevent recurrence. The review team identified a number of program strengths, as well as opportunities to improve the B&W Y-12 nuclear safety regulatory compliance program. Most notably, B&W Y-12 is encouraged to enhance its process for identifying and analyzing noncompliance trends to better address program weaknesses that might otherwise result in safety significant events and potential enforcement investigation. Strengths and recommendations are discussed in further detail in the appropriate sections of this report.

## **II. General Implementation**

The B&W Y-12 Enforcement Program Office (EPO) is charged by senior management to administer the regulatory compliance program, manage regulatory noncompliance data, and serve as the interface with the NNSA Y-12 Site Office (YSO) and DOE's Office of Nuclear Safety Enforcement. EPO is located in the Office of the President's Legal Division, which

reports to the President and General Manager. The EPO has been delegated sufficient authority and independence to make decisions without undue pressure from line or senior management.

B&W Y-12 senior managers designate Line Management Price-Anderson Officers (LMPO) to support the implementation of the enforcement compliance program within their organizations. LMPOs are required to take a ten-hour, classroom-based training course that is administered by the EPO. In addition, an overview of nuclear safety regulatory compliance is provided to B&W Y-12 non-managerial personnel as part of their general employee training, and to managers as part of awareness training.

B&W Y-12 procedures Y76-001, *Enforcement Compliance Program* (8/17/2010), and Y15-312, *Issues Management Process* (10/2/2011), are used to identify, evaluate, report, and track nuclear safety regulatory noncompliances. The review team examined management processes, as represented in B&W Y-12's policies and procedures, program implementation records, and interviews with LMPOs and EPO staff.

LMPOs screen potential nuclear safety noncompliance issues and evaluate them for Noncompliance Tracking System (NTS) reportability, with the support of EPO enforcement coordinators. The IMS serves as the central repository for identified issues. EPO personnel work closely with LMPOs in each organization to ensure that nuclear safety compliance issues are correctly characterized and evaluated. In addition, EPO is responsible for reviewing and approving NTS reports and providing support to LMPOs for tracking and verifying closure of corrective actions.

Subcontractor noncompliance information is not integrated into the data set that B&W Y-12 uses for screening. B&W Y-12 requires "subcontractors, suppliers and their employees at all levels" to perform work under B&W Y-12 procedure Y76-001. According to interviews with EPO, B&W Y-12 is checking to ensure that applicable enforcement compliance requirements are flowed down from first-tier subcontractors to any lower-tier subcontractors.

#### Strengths:

1. B&W Y-12 has an active and functional regulatory compliance program that is consistent with the guidance established in the DOE *Enforcement Process Overview*. The program provides a mechanism for B&W Y-12 to maintain awareness of its compliance status across all organizations.
2. The EPO reports to the President and General Manager through the Chief Legal Counsel.
3. EPO staff members are well informed of DOE's expectations for nuclear safety regulatory compliance.

#### Recommendations:

1. Consider updating Y76-001 and Y15-312 to specifically address the identification and screening of issues for subcontractor work activities.

2. Update Y76-001 to reflect the \$150,000 maximum civil penalty provided for in the January 2010 revision of 10 C.F.R. Part 820.

### III. Identification and Screening of Noncompliances

Potential nuclear safety noncompliance issues are screened by LMPOs using the IMS screening module, in accordance with Y76-001. All screenings are submitted to EPO for review and approval to ensure accuracy and consistency in screening determinations across the site. Primary sources of potential noncompliances include: audits, Defense Nuclear Facilities Safety Board (DNFSB) reviews, Nonconformance Reports (NCR), occurrences, Radiological Awareness Reports (RAR) and any issues assigned a significance level of “A” or “B” per Y15-312 (those that present potential risks or consequences ranging from moderate to unacceptable). Primary sources are required to be individually screened within 15 calendar days after the organization is aware of the issue. Secondary sources of potential noncompliances are screened on a quarterly basis; these include: walkdowns, inspections, and issues assigned a significance level of “C” per Y15-312 (those that present little or incidental potential risk or consequence).

The B&W Y-12 Feedback and Improvement Working Group (FIWG) reviews nuclear safety performance, evaluates and identifies issues across the organization, and provides recommendations to senior management. The FIWG quarterly reports are screened as a secondary source of potential noncompliances.

Assessments conducted by YSO are automatically imported into IMS from the Pegasus tracking system, where they can be screened for potential noncompliances, adverse trends, or programmatic issues. However, the review team found that some YSO issues that appeared to contain potential noncompliances were not individually screened, as described above, because they had been assigned a “C” significance level.

Noncompliances that are fixed on the spot are not screened unless they are entered into IMS. Employee concern reports and noncompliances from lower-tier subcontractors are not included in either the primary or secondary data sources. In examining RARs since October 2009, the review team identified multiple issues concerning bioassays, RWP sign-in documentation, and dosimeter exposures from airport x-ray equipment. While B&W Y-12 conducts an individual enforcement screening on each RAR, as well as a quarterly RAR summary analysis, B&W Y-12 does not formally screen these issues for repetitive noncompliances.

B&W Y-12 NTS reports submitted since 2006 showed that 3 noncompliances out of 32 were discovered during an assessment and the rest were discovered either “by event” or “contractor as found.” B&W Y-12 has no goals or metrics for the ratio of noncompliances discovered by self-assessment. As described in the DOE *Enforcement Process Overview*, contractors are encouraged to identify the majority of all noncompliances by self-assessment to proactively correct deficiencies that might otherwise result in significant events.

#### Strengths:

1. LMPOs are effective in screening issues at B&W Y-12 for potential noncompliance with DOE nuclear safety requirements. A large and diverse set of source documents are individually screened for potential noncompliances, including: audits, DNFSB reviews, issues assigned significance levels of “A” or “B”, NCRs, occurrences, and RARs.
2. B&W Y-12 has significantly reduced the average time needed to screen noncompliances (measured from the discovery date until PAAA determination) from an average of 41 days in 2008 to 23 days in 2010.

#### Recommendations:

1. Consider enhancing the process used to evaluate issues for potential repetitive or programmatic noncompliances. While B&W Y-12 conducts an individual enforcement screening on each RAR, as well as a quarterly RAR summary analysis, B&W Y-12 does not formally screen these issues for repetitive noncompliances. DOE encourages contractors to screen repetitive noncompliances, regardless of the potential for radiological harm, in order to proactively identify and correct deficiencies.
2. Consider developing goals and metrics for proactively identifying nuclear safety noncompliances through self-assessment, in accordance with the guidance in the DOE *Enforcement Process Overview*. Such goals and metrics may help prevent events by encouraging the identification of precursors through internal self-assessments, line organization inspection activities, and regulatory compliance trending activities.
3. Consider including employee concern reports and noncompliances from lower-tier subcontractors, which represent important sources of potential programmatic issues, in B&W Y-12’s regulatory noncompliance identification and screening program.
4. Consider conducting individual screenings of YSO assessments for potential noncompliances. The review team identified some YSO issues (which had been assigned a “C” significance level and thus were not individually screened) that appeared to identify potential noncompliances.

#### **IV. Evaluation for NTS Reportability**

The LMPOs review nuclear safety issues for NTS reportability. The EPO receives NTS-reportable noncompliance issues through the IMS screening module. NTS reports are approved by multiple levels of B&W Y-12 senior management, as well as the B&W Y-12 enforcement attorney. The B&W Y-12 President and General Manager and the EPO manager both have the authority to approve the submittal of an NTS report without receiving all of the concurrent approvals, in accordance with Y76-001. Any NTS report related to programmatic issues must be approved by the B&W Y-12 President and General Manager.

The review team examined occurrence reports submitted over the last 3 years and determined that B&W Y-12 has not been consistent in reporting nuclear safety noncompliances that meet the reporting thresholds in the DOE *Enforcement Process Overview*, Table B.1. Y76-001 includes a screening category entitled “PAAA Reportable without NTS Report,” which is defined as meeting a reporting threshold, but having no identified potential noncompliance. The review team examined the screening forms for a sample of occurrence reports in this category and determined that, in some cases, B&W Y-12 had identified a potential noncompliance. According to EPO staff, these issues were not reported because of their low safety significance.

A review of B&W Y-12’s past and current NTS reports revealed that the time it took to report a noncompliance ranged from 6 to 204 days. During interviews with EPO staff, the wide variation in reporting times was attributed to programming issues with the new IMS system, which lacked the capability to alert the EPO if NTS reports were not approved. The programming issues have been resolved, and reporting times have improved in 2011.

Recommendation:

1. Consider reporting all nuclear safety noncompliances that meet the reporting thresholds defined in the DOE *Enforcement Process Overview*. If there is any question or issue about the reportability of a specific issue, EPO is encouraged to consult with the Office of Nuclear Safety Enforcement.

## V. Issues Management and Trending

B&W Y-12 has a mature issues management program, described in procedure Y15-312, to address issues involving nuclear safety noncompliances. Resolution of issues is based on a graded approach with four levels of significance, and B&W Y-12 organizations track all corrective actions until final disposition. Line management performs effectiveness reviews for all noncompliances with a significance level of “A” or “B.” IMS is used to track and manage issues to closure.

EPO staff notifies senior management and functional area managers when systematic, cross-cutting issues are identified through EPO’s routine reviews of LMPO screening reports. These issues are entered into IMS for tracking and resolution. However, B&W Y-12 procedure Y76-001 does not specify a process for recognizing these systematic, cross-cutting issues, and the electronic screening tool does not have a module for trending and analyzing B&W Y-12 repetitive or recurring regulatory noncompliances.

B&W Y-12 does not have any goals or metrics for overdue corrective actions. The review team examined 9 NTS reports that were still in “Submitted” status, and noted that out of 91 corrective actions, in 50 cases the target completion date was changed, and 9 corrective actions were finished late. During the review, EPO personnel acknowledged that B&W Y-12 has had some difficulty in meeting target completion dates.

## Recommendations:

1. B&W Y-12 is encouraged to track the timeliness of corrective action completion. The review team's examination of NTS reports indicated that established target completion dates for corrective actions were frequently extended. DOE provides positive incentives for contractors who promptly correct nuclear safety noncompliances, as described in the *General Statement of Enforcement Policy* in 10 C.F.R. Part 820, appendix A.
2. Consider modifying IMS to support trending of noncompliance data as a performance indicator for senior management. This process enhancement is particularly critical to ensure that B&W Y-12 identifies and corrects noncompliances before they result in safety significant events and potential enforcement investigation. DOE's enforcement policy provides incentives for contractors who promptly self-identify and report noncompliances to DOE. In the interim, consider taking compensatory actions to aid in the identification of programmatic and repetitive issues, such as the use of third-party software to analyze the noncompliance data.

## VI. Summary

B&W Y-12 has established and maintains a functional regulatory compliance program that is supported by senior management. The B&W Y-12 regulatory compliance program contains the functional elements necessary for identifying, screening, and reporting nuclear safety regulatory noncompliances and managing corrective actions consistent with the guidelines delineated in the *DOE Enforcement Process Overview*. Improvement items that merit consideration include developing goals and metrics for nuclear safety noncompliances proactively identified through self-assessment, enhancing processes for identifying repetitive and programmatic noncompliances, and trending noncompliance data.

The Office of Nuclear Safety Enforcement suggests that B&W Y-12, in consultation with YSO, evaluate the review recommendations for corrective action in light of the enforcement incentives described in the *Procedural Rules for DOE Nuclear Activities* (10 C.F.R. Part 820, appendix A). B&W Y-12's attention to these items will facilitate the Office of Nuclear Safety Enforcement's exercise of discretion for noncompliant conditions that are considered to be less significant; support mitigation consideration in any future enforcement action; and ensure that nuclear safety program shortcomings receive appropriate recognition and corrective actions.