



Department of Energy
National Nuclear Security Administration
Washington, DC 20585

FEB 24 2012



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DNF SAFETY BOARD

The Honorable Peter S. Winokur
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004

Dear Mr. Chairman:

This letter is in response to your August 25, 2011, letter concerning weaknesses with technical procedures and their implementation at the National Nuclear Security Administration's (NNSA) Y-12 National Security Complex (NSC). Your letter requested a report and briefing from NNSA within six months addressing NNSA's assessment of the effectiveness of actions taken to date to address the weaknesses identified in the enclosed report, as well as the path forward to resolve any newly identified issues.

Safety is a core value within the NNSA and conduct of operations and the use of procedures are fundamental to ensuring safe and efficient mission execution. To that end, we have commissioned a number of activities to further that shared goal. Enclosure 1 is the NNSA Y-12 Site Office (YSO) assessment of the progress made to date on implementation of the actions identified in the Babcock & Wilcox Technical Services Y-12, LLC (B&W Y-12) Conduct of Operations (ConOps) Performance Improvement Plan dated September 21, 2011 (Enclosure 2). The YSO assessment is based on more than 50 activity-based assessments conducted by the NNSA YSO and includes shadowing assessments of the B&W Y-12 self-assessment (Enclosure 3) of the implementation of the improvement plan.

While isolated examples of minor procedure non-compliance were observed during assessment activities, the frequency and severity of these instances indicate that B&W Y-12 actions taken to date are bringing about the desired improvements outlined in their plan. Nevertheless, NNSA considers this effort to be a work in progress and plans to continue its focus on this area to ensure effective and lasting improvements.

Overall, results of the contractor self-assessment and the NNSA evaluation have confirmed that operations at Y-12 are being conducted safely. Even so, improvements are being made to advance the development, use, and adherence to technical procedures. Noteworthy improvements have been realized in the areas of ConOps training, the institutionalization of procedure place-keeping (reducing the possibility of human error during procedure execution), and the implementation of a Senior Supervisory Watch concept which brings fresh senior management perspective to the floor.



Borrowing from commercial nuclear power experiences, YSO is piloting a new ConOps Health Report Process that is intended to objectively assess the effectiveness of the Y-12 ConOps within the Y-12 nuclear facilities. The initial results of the pilot are consistent with those obtained from the YSO assessments discussed above.

B&W Y-12 has also taken additional actions beyond those identified in the improvement plan to enhance the timeliness, consistency and ease of use of technical procedures at the Y-12 NSC. These actions include a re-organization and realignment of procedure development staff and the methods used to incorporate and process changes to procedures.

Finally, NNSA has commissioned an independent assessment team to review the actions taken by the site (both contractor and YSO) to address ConOps and activity-level work control improvements.

If you have any questions concerning this letter, please contact me at (202) 586-2179, or have your staff contact Mr. Jeffry Roberson at 301-903-9228.

Enclosures

Sincerely,

A handwritten signature in black ink, appearing to read 'Don Cook', with a long horizontal line extending to the right.

Donald L. Cook
Deputy Administrator
for Defense Programs

cc: T. D'Agostino
D. K. Hoag

ENCLOSURE 1

Y-12 Site Office Evaluation of Effectiveness of Contractor Actions to Improve – Procedure Development and Implementation

Scope:

The scope of this evaluation was to assess the progress made by Babcock & Wilcox Technical Services Y-12, LLC (B&W Y-12 LLC) in improving the development, use, and adherence to technical procedures at the Y-12 National Nuclear Security Site. The requirements of Department of Energy (DOE) Order (O) 422.1, Section 2.p, “Technical Procedures” and the Defense Nuclear Facilities Safety Board (Board) letter to the National Nuclear Security Administration (NNSA) dated August 25, 2011, documenting the Board Staff review of technical procedures and their implementation at Y-12 during April 26-29, 2011, were included in the scope of the assessment. This assessment further consolidates the Y-12 Site Office (YSO) oversight activities between October 1, 2011, and February 10, 2012, related to technical procedure compliance and progress made by the contractor in achieving the objectives of the B&W Conduct of Operations (ConOps) Improvement Plan dated September 21, 2011.

Executive Summary

The Y-12 Site Office (YSO) staff evaluated the progress being made against the B&W Y-12, LLC ConOps Performance Improvement Plan dated September 21, 2011, (Enclosure 2). The evaluation included 51 activity-based assessments performed by YSO between October 1, 2011, and February 10, 2012. Seven isolated examples of minor non-compliances were identified and no programmatic deficiencies or new issues were noted. The minor non-compliances fell into one of three areas. Three examples involved failure to properly implement placekeeping, two related to workers missing or incorrectly performing a procedure step, and two were examples of incorrect validation of the current procedure revision.

The results of this evaluation confirm that many of the contractor’s actions are effective in improving procedure use and adherence and many of the initiatives in the ConOps Improvement Plan are becoming more mature. However, continued contractor management and YSO attention is needed to ensure that work is performed as specified in technical procedures and other work documents. Evidence of challenges to consistent compliance continue to occur as seen in two recent maintenance events at Highly Enriched Uranium Manufacturing Facility (HEUMF), but the overall frequency and severity of the events have decreased since May 2011. Increased management engagement continues to have a positive effect in reinforcing expectations of procedure implementation.

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Placekeeping has been observed to be reaching a more mature level of implementation based on the significant number of documented assessments with only three isolated examples of non-compliance. It has been noted that workers are more engaged in the process of procedure execution and are stopping and asking for clarification when needed. The recently redesigned ConOps training course has significantly improved the delivery of the topic to workers and includes classroom and hands-on dynamic learning components. The newly implemented Senior Supervisory Watch (SSW) has also been observed as an effective tool in reinforcing conduct of operations expectations.

Activities Observed:

Fifty-one activity-based assessments conducted by YSO staff, including four shadowing assessments of the contractor's team self-assessment were reviewed for any evidence of programmatic issues. In addition, the contractor's self-assessment report was reviewed, as well as several sessions of the redesigned conduct of operations training program.

Results:

The YSO staff evaluated the progress being made against the B&W Y12 LLC ConOps Performance Improvement Plan dated September 21, 2011, through the conduct of 51 activity-based assessments between October 1, 2011, and February 10, 2012. Seven isolated examples of minor non-compliances were identified; neither programmatic deficiencies nor new issues were noted. The minor non-compliances fell into one of three areas. Three examples involved failure to properly implement placekeeping, two related to workers missing or incorrectly performing a procedure step, and two were examples of incorrect validation of the current procedure revision.

Placekeeping was observed to be reaching a more mature level of implementation based on the significant number of documented assessments with only three isolated examples of non-compliance. It has been noted that workers are more engaged in the process of procedure execution and are asking for clarification in many instances on the proper way to perform placekeeping for certain procedures that require repeating steps.

During the course of the field assessments conducted by YSO, greater management and process engineer involvement were observed and were having a positive effect on procedure implementation. The newly implemented Senior Supervisory Watch (SSW) has also been observed as an effective tool in reinforcing conduct of operations expectations. Because the SSWs are observing activities in facilities outside their normal assigned areas, a fresh senior management perspective is brought to bear on the work floor.

B&W conducted a self-assessment of their progress against the ConOps improvement plan. Based on shadowing assessments conducted by YSO, the self-assessment was detailed, thorough

and professional. The results of the self-assessment (Enclosure 3) are also consistent with the YSO assessment results.

The newly redesigned ConOps training was also assessed by YSO and during an October 2011 assist visit by a team from the Institute for Nuclear Power Operations (INPO). Although the training is continuing to mature based on B&W management and YSO feedback, the training has been evaluated as a significant improvement in ConOps training and is effectively raising production worker awareness and knowledge. The hands-on aspect to the training was noted as strength by INPO.

YSO recently developed and piloted a new approach to assessing the health of Y-12 ConOps. This new tool borrows from the Plant Health Process used by the commercial nuclear power industry and provides a method of objectively evaluating, on an on-going basis, ConOps Program Health. It integrates multiple sources of site data related to ConOps and evaluates the health of each major nuclear facility or group of smaller facilities. The process is intended to identify where special attention and oversight should be placed. The health report cards for each facility are represented in an easy to understand format, where facility and site-wide trends can be readily identified. The results of the pilot, covering the first quarter of Fiscal Year 2012, are consistent with the results of the Site Office's field assessment and confirm that continued management attention is needed in the area of technical procedures.

While not a new issue, progress in one area is lagging. Many of the Y-12 production procedures with excessive number of precautions and limitations, incorrect placement of procedure caution statements placed just prior to the related action step, and overuse of branching between procedures remain unchanged. Efforts by the contractor to properly prioritize the changes which are necessary to improve the effectiveness of procedure execution and reduce the potential for procedure error have not been timely and is the single area of B&W's improvement plan that has lagged behind in terms of progress. Additional management attention and resources are required in order to achieve expected results. The contractor's self-assessment also concluded that this aspect of the improvement plan was lagging behind.

Conclusions:

Progress is being made in the area of procedure implementation/execution and many of the initiatives in the B&W ConOps Improvement Plan are becoming more mature. However, continued contractor management and YSO attention is needed to ensure that work is performed as specified in technical procedures and other work documents. Evidence of challenges to consistent compliance continue to occur as seen in two recent maintenance events at HEUMF, but the frequency and severity of the events has decreased. Management engagement continues to have a positive effect in reinforcing expectations for procedure execution. Managers and process engineers are more interactive in daily procedure use on the floor and placekeeping has

become institutionalized. The workforce has been observed to be actively engaged in the practice of placekeeping, including raising questions in situations where placekeeping was unclear. Procedure development and redesign has made some progress but contractor management has to address the resource challenges necessary to achieve more timely resolution of procedure clarity, consistency and usability. Operations at Y-12 continue to be safe and compliant with DOE requirements and progress has been made to institute best industry practices in the area of procedure development, use and adherence.