4/2 Evaluation 2005 NNSA

- Development and planned implementation of wireless predictive maintenance system
- Advanced Metallographic Digital Techniques
- Planned implementation of Beryllium Monitoring Program procedures
- NMC&A Confirmatory Cart testing completed

A self-assessment and a YSO assessment on PDRD were both favorable. Reviews of FY 2006 project proposals by YSO and NNSA HQ were generally positive. BWXT provided detailed responses to NNSA HQ's self-evaluation questionnaire.

Directive Stockpile Work (DSW)

Overall performance in the Directive Stockpile Work functional area was good.

The objective of the Directive Stockpile Work Program is to fulfill the Defense Programs mission to maintain the safety, reliability, and performance of the nuclear weapons stockpile. DSW includes all activities that directly support weapons in the stockpile including production and refurbishment, QE and surveillance, dismantlement, and supporting tasks such as nuclear weapon receipts and packaging, DSW complementary work, and production support.

DSW had 28 Level II milestones, all of which were blue, with the exception of the milestone to bring the purification facility on-line. Although it was started late, BWXT Y-12 made excellent progress on resolving a weld issue associated with the B61 Alt 357. All of the B61 NDE program was completed. All of the baseline Quality Evaluation and Surveillance program work was completed, as well as all incentivized dismantlement units. BWXT Y-12 also initiated the dismantlement of another system this FY. BWXT Y-12 continues to provide strong support for container refurbishments and safety documentation for nuclear packaging. Some important work was not completed this year, including 18% of the W76-1 LEP work scope, and 80% of the W87 JTA-4 work scope.

The DSW program was successful in meeting many but not all mission requirements. Some major DSW accomplishments included the following:

- Although late to schedule, completion of contractor readiness activities for the Purification Facility.
- Diligent and hard work associated with (a) developing a welding process supportive to the B61 ALT 357 requirements and (b) fabricating test and evaluation units against a dynamic program baseline.
- Completion of the B61 NDE program.
- Initiation of the QE Relocation project using internally generated funds.
- Completion of the baselined Quality Evaluation and Surveillance program.
- Completion of all incentivized dismantlement units.
- Continued strong support for container refurbishments and safety documentation for nuclear packaging.

Several opportunities for improvement have been identified including:

- BWXT Y-12 completed about 82% of the full baselined and funded W76-1 LEP work scope. The remaining work scope should have been completed.
- The contractor completed 20% of the full baselined and funded W87 JTA-4 work scope. The remaining work scope should have been completed.
- BWXT Y-12 experienced internal problems during the build of specific B61 Test & Evaluation units. The most significant issue involved the late start in executing a weld development program and the subsequent inability to weld per the design requirements specified by LANL.

- Significant efforts are required to ensure the Y-12 manufacturing/maintenance infrastructure is reliable, available, and maintained in a state of readiness to support the DSW mission. Extended outages occurred during this evaluation period, and these outages were difficult to overcome. As time progresses, this aged equipment is expected to be driven harder and harder. When the aged equipment fails, extensive resources (people, funds, and most importantly time) are required before the equipment is restored to production use.
- Delays in the Purification Facility project, startup and readiness have significantly increased the risk to achieving programmatic target dates.
- DSW cost and schedule performances need to be improved to equal or exceed the NNSA targets.

Campaigns

Overall performance in the Campaigns functional area was good.

The objective of the Campaigns program is that it will be managed and executed in accordance with Work Authorization Directives and implementation plans with focus on Level I, II, and III milestones. The Campaigns will re-establish and enhance the manufacturing capability at Y-12 needed for the long-term stewardship of the stockpile. These efforts will result in the revitalization of Y-12's ability to meet its mission requirements in a more responsive, efficient, and cost effective manner while improving security and worker safety and health. Campaigns are technically challenging, multi-year, multi-functional efforts to re-establish and enhance the manufacturing capability at Y-12 needed for the long-term stewardship of the stockpile.
At the end of the evaluation period the overall CPI and SPI averaged across all campaigns was way off from 1.0 (CPI = 0.87 and SPI = 0.81.) The uncosted balances for the individual campaigns were within the NNSA guidelines with the exception of Stockpile Readiness. The Readiness Campaign lowered its uncosted balance in comparison to the previous fiscal year.

All Level II milestones tracked by HQ in the Milestone Reporting Tool were completed on time with the exception of the SR milestone for the Disassembly Glovebox. BWXT sought and was granted approval from HQ to extend the due date into FY 2006.

The Campaigns at Y-12 provided significant support to the modernization program at Y-12 this year. Particularly, support for the Uranium Processing Facility Technology Development Plan was overwhelmingly provided by Campaigns. Significant progress was achieved in the technology of microwave casting. The dissolution process for Saltless Direct Oxide Reduction (SDOR) was redesigned and demonstrated off-site using surrogate materials. Advances in digital radiography were achieved making Y-12 a leader in the complex for this technology.

The project to install the Non-Destructive Laser Gas Sampling system (NDLGS) in the prior location of the Laser-Cutting Workstation mutually benefited ADAPT and QE and is a great example of how to accomplish a project efficiently. Similarly, the choice to relocate the ELTTD equipment to the area designated for the "new" QE mutually benefited QE.

Several new projects in campaigns will provide immediate benefit to Y-12 as well as be incorporated into the long-term plans for modernization of the Complex. The EB Weld Inspection Station could provide cost avoidance of around $750K for each unit inspected. The chip management project could be utilized on current cutting tools without having to wait for the agile machine tool. The three CMMs with integrated gloveboxes, in addition to being a vast improvement over current technology, also provide demonstration of nitrogen generator technology that could have far reaching implications for the plant. Y-12 made significant progress in security in getting approval for unlimited deployment of classified diskless thick client desktop and machine controller workstations.