

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 4, 2005

**TO:** J. Kent Fortenberry, Technical Director  
**FROM:** R. Todd Davis/Donald Owen, Oak Ridge Site Representatives  
**SUBJECT:** Activity Report for Week Ending February 4, 2005

Mr. Davis was out of the office from Tuesday through Friday. Staff member Robert Quirk visited Y-12 to review software quality assurance for the Oxide Conversion Facility (OCF).

A. Oxide Conversion Facility. The NNSA Operational Readiness Review (ORR) was completed this week and results presented to YSO and BWXT management. The ORR team noted that operations personnel demonstrated satisfactory levels of knowledge and conduct of operations during the review. The ORR team did identify certain pre-start findings on specific issues including: first-aid responders during a emergency exercise not carrying hydrogen fluoride (HF) detectors nor wearing respirators or chemical resistant clothing; lack of radiological survey plans for initial OCF operations; lack of training on HF detection alarms and response for support personnel and co-located workers; lack of clear marking for the storage cabinet containing a chemical for treating HF burns; and, a valve being mis-positioned during a calibration activity. A few post-start findings were also identified. Resolution of the ORR findings is in progress.

As reported last week, a field demonstration of “test procedures” intended for initial OCF operation with hazardous materials (uranium, hydrogen fluoride, etc.) was not planned for the NNSA ORR. The ORR team noted that a detailed review of the test procedures against the normal operating procedures was performed by the ORR team. Such review was also completed by YSO management this week. Based on these reviews, the ORR team and YSO management consider that the test procedures generally closely match the normal operating procedures, that the differences are understood, and that a demonstration for the NNSA ORR is not warranted.

Board staff performed a review of the OCF safety programmable logic controller (PLC) software documentation this week. The staff identified observations similar to those identified by YSO in a software quality assurance review performed in early 2004, including misidentification of the document that identifies the source of the software requirements as well as software code which cannot be traced to approved requirements. The staff discussed these observations with YSO and BWXT personnel who indicated that corrective action would be taken.

B. Uranium Processing Facility. This week, YSO approved the Uranium Processing Facility (UPF) Project Definition Plan. As previously reported, all enriched uranium manufacturing and processing operations at Y-12 are to be consolidated into the UPF. This plan sets out expectations and tasks for the project definition phase, including completion of UPF conceptual design, to support approval of Critical Decision 1 (Approve Alternative Selection and Cost Range) and a budget request for congressional line item funding.

Among the tasks supporting project definition is technology development. As reported on December 23<sup>rd</sup>, design agency agreement and involvement with the development and implementation plans for new technology (e.g., microwave casting and saltless direct oxide reduction) will be important for UPF project success. A series of design agency interface meetings were held in January resulting in agreed-upon plans for evaluating microwave casting and saltless direct oxide reduction in meeting product requirements. Prototype runs of these processes are planned for later this year (see 11/24/04 and 12/23/04 site rep. reports).