

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 11, 2008

TO: Timothy Dwyer, Technical Director  
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives  
SUBJECT: Activity Report for Week Ending July 11, 2008

Mr. Owen was out of the office this week.

**Facility Infrastructure:** During Wednesday and Thursday, the Y-12 site received more than 2 inches of rain including periods of severe downpours. Standing water collected in numerous operational areas including in the Warehouse and the Enriched Uranium Operations Building. Water accumulated in several contamination areas during these storms. B&W management took administrative action to keep personnel out of specific areas. Work crews have been upgrading the roof of the Enriched Uranium Operations Building, which may have caused increased rain infiltration in sections of that facility.

**ORNL Building 3019/Uranium-233 Disposition:** Last week, Isotek submitted the Safety Design Strategy of the U-233 Downblending and Disposition Project to DOE-ORO for approval (see the 6/13/08 site rep. report). The Safety Design Strategy was prepared to be compliant with DOE Standard 1189, *Integration of Safety into the Design Process*, and includes the project confinement strategy, fire mitigation strategy, nuclear criticality safety strategy, and safety analysis approach. Isotek has not yet issued its implementation plan for DOE Standard 1189.

This week, DOE-ORO conducted a 30% Design Review of the U-233 Downblending and Disposition Project focused on process components downstream of the downblending mixer. The DOE-ORO review team was augmented by outside experts and personnel from both DOE-EM headquarters and other DOE sites. The review was conducted per the criteria established in the draft *Office of Environmental Management Preliminary Design Review Guide*. The review team briefed Isotek regarding the following preliminary observations:

- The process to ensure that contract and design requirements are captured in the Design Criteria Document (DCD) lacks process control and quality assurance rigor,
- It is not clear that all of the material has an established disposition path as required,
- The safety basis development process is not fully integrated with the design process,
- The process for the project team to capture and track issues needs improvement,
- Significant structural support issues have been identified that raise questions regarding the current facility design, options to resolve these issues need to be developed, and
- Expected design deliverables were not available prior to the Design Review.

DOE-ORO is expecting that the 60% Design Review will include the entire project scope rather than the limited scope pursued during this review.

**Uranium Processing Facility (UPF):** Last month, YSO directed B&W to incorporate the final version of DOE Standard 1189, *Integration of Safety into the Design Process*, into the UPF project. B&W has reviewed the final version of the Standard and has determined that implementing the requirements of the Standard will not impact the scope, cost, or schedule of the UPF project.

B&W recently awarded contracts for the second Basic Ordering Agreement (BOA). The first BOA was awarded to Merrick and Company in February for chemical processing and metal working systems (see the 2/1/08 and 2/15/08 site rep. reports). The second BOA was awarded in two parts: one associated with utility systems design and the other associated with structural design. Jacobs Engineering (partnered with URS/Washington Group) was awarded the utilities piece and CH2M Hill (partnered with Nexus Technical, MSTI, Spectra Tech, and Degenkolb Engineering) was awarded the structural piece. Preliminary design for the UPF project is underway and CD-2 is scheduled for March 2010.