

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Timothy Dwyer, Technical Director  
FROM: Rory Rauch, Site Representative  
SUBJECT: Oak Ridge Activity Report for Week Ending August 31, 2012

**Extent-of-Condition Review:** This week, B&W transmitted a review plan in response to the August 14, 2012, NPO memo requesting that B&W evaluate high-hazard, high-risk functional areas and operations at Y-12. The goal is to evaluate whether similar systemic problems to those illustrated by the events that led to the recent security stand down are present in other areas related to nuclear operations. Initially, seven systems will be included in the scope of the review, including Building 9212's secondary extraction process, Building 9204-2E's assembly operations, and Building 9215 M-Wing machining operations. The review scope will be expanded to other systems if the review team identifies systemic issues. The review will evaluate both the technical aspects of the system (i.e., safety basis and supporting calculations, development and implementation of controls, and execution of work), as well as any potential cultural issues, such as the acceptance of less than optimal equipment conditions. B&W plans to issue the results of this review on October 22, 2012.

**Conduct of Operations/ Work Planning:** Last week, while removing a beryllium-contaminated item from a glovebox in Building 9204-2E, an operator increased the potential for the spread beryllium contamination beyond the posted contamination area by dropping the item several feet into a storage drum. Though not specified by operating procedure, the supervisor indicated that he covered the need to place the item in the drum in a slow and controlled manner during the pre-job brief. The industrial hygiene (IH) technician for the operation stopped work, expanded the posted beryllium contamination area, and initiated the process of sampling and decontaminating the area. Small, but detectable amounts of beryllium were found on the operator's personal protective equipment (PPE) and within the original posted contamination area. In addition, the IH technician noted that a chair had been removed from the newly expanded beryllium contamination area before the survey results were available. The chair was located in a nearby work station and found to have detectable amounts of beryllium.

In response to this issue, Building 9204-2E management implemented corrective actions to improve the beryllium control practices for this operation. Just prior to resuming the operation, a radiological control technician discovered inconsistencies between the PPE specified in the radiological work permit (RWP) and the beryllium work permit (BWP) for the operation. The BWP required a respirator, foot protection, coveralls, and two pairs of gloves, while the RWP only required a labcoat and one pair of gloves. This indicates that the hazard analysis team for this operation did not follow the B&W integrated work control manual, which requires the team to resolve any conflicts between controls, permits, and subject matter expert input. The RWP has since been updated to be consistent with the BWP.

**Holden Gas Furnace (HGF) Operations:** In April, B&W suspended HGF operations in Building 9212 after discovering abnormally high pressures in the natural gas supply line (see 5/4/12 report). B&W subsequently declared a positive Unreviewed Safety Question due to the possibility for high natural gas pressures to preclude the flame management system from performing its safety-significant function of preventing a natural gas explosion in the HGF. In early July, NPO approved a safety basis change incorporating a low-flow orifice as a new safety-significant design feature to reduce the likelihood of an explosion in the HGF by limiting the natural gas flow to the HGF. B&W recently installed the low-flow orifice in the gas supply line and completed the annual surveillance requirement on the system. B&W restarted HGF operations this week.