

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 6, 2005

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/Donald Owen, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending May 6, 2005

A. Oxide Conversion Facility. This week, BWXT identified an unreviewed safety question due to the potential for pressure buildup in the hydrogen fluoride (HF) cylinders while in storage (i.e., prior to connecting to the HF system). The pressure buildup results from hydrogen release due to HF interaction with iron in the cylinder. The first HF cylinder was received in mid-April but has not been connected to the system. Shortly after the cylinder was received, a YSO Facility Representative questioned BWXT personnel about a tag on the cylinder that noted the cylinder should only be connected to systems rated at 480 psig. Investigation also identified that the vendor published a safety bulletin on the potential for pressure buildup and requested that cylinders be returned after two years if not used. BWXT had incorporated the return requirement into a site procedure; however, the potential for connecting a cylinder with higher-than-expected pressures to the HF system had not been analyzed by safety personnel. BWXT personnel noted that the pressures identified by the vendor exceed those analyzed for HF release scenarios and exceed the HF system design pressure.

B. Safety of a Security System. YSO, with assistance by NNSA Office of the Chief of Defense Nuclear Safety and other Headquarters personnel, conducted a readiness review of a new security system in a defense nuclear facility this week. Such a review, using general nuclear facility startup/restart protocols and explicitly addressing safety as well as security issues, is another positive step in integrating safety and security considerations at Y-12.

C. Feedback and Improvement. This week, the site reps. observed instances where conduct of critiques, called to determine facts associated with operational issues/events, was not fully consistent with the BWXT procedure on critiques and follow-up investigations. For example:

- Shortly after a vacuum pump for a welding enclosure in the Assembly/Disassembly building was started, a smoke-like oil mist exhausted out an open pipe flange of the exhaust header shared by another welding machine that was undergoing replacement (prompting a security guard to call for site fire department response). Following the event, facility management noted to the site rep. that no critique was planned to be called. The site reps. consider this is not consistent with the BWXT procedure calling for critiques on events "... that, if uncorrected, could impact safety..." Following site rep. inquiry with YSO, a critique was called the next day.
- During the critique noted above, the discussion centered on the facility response to the event and not on facts leading to the event that would point to any controls or lack of controls to prevent pump operation or prevent the pipe flange from being opened. A follow-up action to determine such controls or lack of controls was identified, but reconvening of the critique was not addressed. This is not consistent with the BWXT critique procedure requirements to determine what happened and what was required to happen (e.g., via procedure, permits, or pre-job brief) or to reconvene the critique if insufficient information was provided in the initial critique.
- BWXT reported this week on failing to ensure that the criticality alarm system was audible in a trailer that had been moved near the Enriched Uranium Operations building in December. The need (or expectation) for such equipment movement to be brought to the attention of the facility was identified, but the critique did not establish (nor call for a follow-up action to establish) if a clear requirement(s) existed regarding actions to be taken to move such equipment near a nuclear facility. Again, this was inconsistent with the BWXT critique procedure requirement to determine what happened and what was required to happen.

These observations were discussed with YSO and BWXT management.