

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 20, 2000

**TO:** J. Kent Fortenberry, Technical Director  
**FROM:** Paul F. Gubanc and David T. Moyle, Oak Ridge Site Representatives  
**SUBJ:** Activity Report for Week Ending October 20, 2000

A. Y-12 Chemical Safety: During cleanup activities in Building 9201-5 on Sunday, a small volume of NaK was released while closing a valve. The NaK reacted energetically with caustic solution in the bottom of the furnace (remaining since the December accident). Workers were wearing the appropriate PPE for the hazard, but the actual leak was unexpected. Personnel evacuated the area but no injuries resulted. The path forward to resume is unclear. The contractor has not yet satisfied DOE that sufficient preventative measures have been taken to avoid unplanned NaK reactions. (2-A)

B. Y-12 Fire Protection: In walking down the sprinkler system in the disassembly area, we discovered a branch line which traversed the floor of a mezzanine area with a several hundred pound motor stored directly on top of it. Furthermore, a few small chunks of loose concrete supported by the sprinkler head where it penetrated the ceiling below suggested some significant jarring of this line at some time in the past. This heightens our concern about the susceptibility of sprinklers to inadvertent failure during operations which may have undesirable interactions with water. We shared our observations with contractor management and the motor was relocated shortly thereafter. (1-C)

C. Y-12 Maintenance: Recent developments regarding Y-12 maintenance improvement efforts:

1. Maintenance management is now amassing sufficient data to evaluate the effectiveness of their efforts to improve work planning. We are working with LMES and DOE to identify the most useful metrics and the level of performance and formality needed to relax compensatory measures.
2. During the ISM review, 229 of 1200 480V breakers were identified as overdue for maintenance. Utilities management has acquired additional resources to work off this backlog but has now identified that the accuracy of the breaker database is questionable. LMES has concluded a 100% walkdown of the breakers will be required to validate the database. We have suggested to LMES that having the cognizant engineers participate in these walkdowns would enhance their understanding of these systems and afford them a better basis to judge the acceptability of continued operation (e.g., is the breaker in a benign or hostile environment). (1-C)

D. Y-12 Emergency Exercise: On Wednesday, Y-12 conducted an emergency exercise. We observed the event at both the Emergency Operations Center (EOC, located at ETTP) and the Technical Support Center (TSC, located at Y-12). The TSC supports the Incident Commander and directs on-site response, whereas the EOC oversees the TSC and directs the off-site response.

1. This was the first exercise conducted since the December 1999 NaK explosion. A report is expected by November 3. A full participation exercise is currently planned for May 2001.
2. The shared command and control between the EOC and TSC proved awkward and at times broke down. Additionally, there weren't sufficient technical staff to adequately support both. The exercise prompted questions as to whether the TSC is either required or beneficial.
3. A clear response strategy to the event was not formulated and promulgated by the EOC. The TSC, by contrast, did identify specific actions although the tasking was not definitive nor clearly coupled to an overall approach. This event highlighted the lack of proficiency by the response managers, and may be exacerbated when the new contractor management team assumes control.

We believe additional practice is merited before the full participation exercise. (1-C)

cc: Board Members