

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 23, 2002

TO: J. Kent Fortenberry, Technical Director
FROM: Matt Forsbacka, Oak Ridge Site Representative
SUBJ: Activity Report for Week Ending August 23, 2002

DNFSB staff members W. Andrews and T. Dwyer were on site this week to observe conduct of operations associated with Enriched Uranium Operations (EUO) Wet Chemistry Restart and to discuss issues related to safety basis development, EUO fire protection, and the Highly Enriched Uranium Materials Facility status.

A. BWXT Y-12 Enriched Uranium Operations (EUO) Wet Chemistry Restart: On Wednesday, BWXT senior management authorized the commencement of the contractor Operational Readiness Review (ORR). The apparent lack of experience in running some of the systems in functional mode has brought forth procedural and equipment operability issues that previous training evolutions, based on simulated operations, did not bring to light. The ORR is anticipated to be completed by August 30th.(2-A)

B. BWXT Y-12 EUO Fire Protection: On Wednesday, the Site Representative and DNFSB staff members accompanied the YSO EUO Facility Representative and YSO Subject Matter Experts (SMEs) in fire protection and authorization bases in a walk down of the C-1 Wing sprinkler system. This system was classified as Safety Class in the recently approved revision of the Building 9212 Basis for Interim Operation.

Corroded sprinkler heads were prevalent. Abnormal sprinkler performance due to corrosion can range from inadvertent actuation to failure of water to flow depending on the degree of corrosion damage. Engineering judgement is relied upon to determine when sprinkler head replacement is necessary; however, there is no body of evidence based on testing to guide or vindicate such judgements.

On Thursday, the Site Representative and YSO personnel (including the fire protection SME) accompanied a group of BWXT fire protection SMEs in a detailed inspection of some of the noticeably corroded sprinkler heads. The BWXT fire protection SMEs took the position that most of the sprinklers would probably function in event of a fire. This was based primarily on qualitative judgements. It is important to note that working in a contamination area and wearing personal protective equipment made observing fine details, on which the judgements were based, difficult. In addition, it is apparent that the potential for fire resulting from inadvertent actuation of a sprinkler over high-voltage sources has not been taken into account.

In follow-on discussions between BWXT Y-12 and YSO managers, the reliability requirements incumbent on Safety Class systems were taken into consideration. Actions to expedite sprinkler head replacement were taken by BWXT Y-12, and sprinkler head replacement in C-1 Wing, approximately a 3-day project, is expected to begin on September 6th. Fire watches have been ordered for C-1 Wing until the work is completed.(2-A)

C. BWXT Y-12 Corporate ISM Annual Review: The ISM Annual Review was completed on Thursday, and the overall assessment was positive. Among opportunities for improvement was the observation that hazard identification planning for routine work activities does not always capture facility-related hazards. (1-C)