

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 15, 2003

TO: J. Kent Fortenberry, Technical Director
FROM: Donald Owen, Oak Ridge Site Representative
SUBJ: Activity Report for Week Ending August 15, 2003

A. Y-12 Integrated Safety Management (ISM) Annual Review. The Y-12 Annual ISM Review was started this week. A team that includes YSO and BWXT personnel along with several subject matter expert personnel from outside of Y-12 is conducting the review. The field work and initial brief of results from the review is expected to be completed by August 22nd. Individual observations in areas of activity-level work planning and conduct of operations have been noted but review continues in these and other areas. (1-C)

B. Y-12 Building 9212 Wet Chemistry Restart. The site rep. observed initial operation of the Wiped Film Evaporator (WFE) this week. The WFE process takes uranium-bearing product solution from the Secondary Extraction process and further concentrates the solution to a molten level suitable for subsequent denitration to a solid uranium trioxide product. The operation was started under the wet chemistry startup plan "first use" controls with introduction of feed solution to the WFE receiver tank. Several minutes after energizing the evaporator equipment and performing limited evaporation, however, power was lost to electrical panels providing temperature and other parameter indications. The response was to shutdown the evaporator. Investigation of the panels indicated a Ground Fault Circuit Interrupt switch had tripped but also revealed an unauthorized test wire modification was in place. At this point, Building 9212 management decided to suspend the operation. Investigation of the electrical panel issues continues. (2-A)

C. Y-12 Inactive Nuclear Materials. The Board's letter of May 20, 2002, addressed management and disposition issues with inactive nuclear materials at sites managed by NNSA. In support of commitments made by NNSA to the Board, YSO submitted plans for several inactive material disposition projects to NNSA Headquarters this week. The project plans focus on the next two years but provide information for activities stretching to the 2010 timeframe. Of note, the project plan for disposition of low-equity highly enriched uranium provides a discussion on the need for revised economic discard limits (as well as termination of safeguards for certain materials). The plan states that without revised discard limits Y-12 could spend about 50 percent of processing time recovering less than 1 percent of uranium in the backlog inventory. (3-A)

D. Y-12 Building 9202 Explosion/Fire - Update. As reported on July 11th, BWXT had been investigating the explosion and fire that occurred in a glovebox during development testing of a process related to uranium metal production. The final report of the independent investigation team chartered by BWXT management had been issued. The last major review action addressing the event was a review of safety assessment techniques used for Y-12 technology development efforts against best industrial practices. BWXT chartered a group of outside personnel with experience in chemical and process safety assessment in commercial research and development environments to conduct the review. The report of this review was provided to YSO late last week. Among several recommendations noted in the report was use of a "Reactivity Matrix" (a matrix of chemicals versus process conditions, materials, other chemicals, etc.) as a tool to better identify and track chemical hazards throughout design, analysis and development of a process. The BWXT corrective action plan for the Building 9202 event is being revised to address the recommendations in this report. (1-C)