

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 29, 2003

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
J. J. McConnell, Deputy Technical Director
FROM: R. T. Davis/ T. D. Burns
SUBJECT: SRS Report for Week Ending August 29, 2003

FB-Line: This week, the independent review team presented the results of their review of the unexpected exposure received by FB-Line personnel in late July (site rep weekly 8/1/03). During a repackaging activity in the material characterization line, three operators received doses estimated at approximately 375 mrem, 225 mrem and 125 mrem. The team noted that many of the problems identified during their review were similar to problems identified following the 1999 uptake that occurred in FB-Line (site rep weekly 9/3/99).

The root cause identified by the review team was failure to control doses from external radiation, including failure to adequately comply with procedural radiological control action steps. The team noted that the Radiological Work Permit (RWP) and the Job Hazard Analysis (JHA) did not properly assure hazards management. Also, an overemphasis on completing tasks without appropriate consideration for stopping work when unusual conditions exist was identified by the team. This conclusion was supported by a separate behavior analysis conducted by WSRC. The behavior analysis indicated that the concept of safe mission essential was misunderstood by some personnel to mean that completing site missions was paramount and additional risk was acceptable. Contributing causes identified by the independent review team including the following:

- Insufficient command and control to manage hazards (e.g., inadequate turnover and pre-job briefings)
- Some key safety programs which control safe execution of work were implemented in a manner to increase work efficiency without assuring appropriate hazards management and good planning (e.g., RWPs and JHAs)
- Insensitivity to managing hazards associated with external radiation exposure

Tritium Extraction Facility Project: Construction of facility internals is progressing on schedule. Assembly of four of the nine gloveboxes has been completed at central shops. The four assembled gloveboxes for the Water Cracker (GB#1), Extraction Furnace Pumps (GB#500), Flush Gas Evacuation (GB#1000), and Product Evacuation (GB#1500) have been delivered to the Tritium Extraction Facility and are currently being installed. Assembly of the remaining five gloveboxes is expected to be complete by late November, with delivery to TEF before the end of the year.

Testing of the seismic monitors and alarms to be installed in TEF has proceeded favorably in Building 233-H. In more than two months of service, the seismic monitors have given no false alarms due to ambient vibrations. Additionally, recent facility drills have indicated that personnel response times for room evacuation are within the window of advanced notice provided by the seismic alarms.