DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 24, 2000

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: C. H. Keilers / R. T. Davis
SUBJECT: SRS Report for Week Ending November 24, 2000

3H Evaporator: Concentrated waste from the 3H evaporator is transferred to tank 30 (the drop tank) during operations. Tank 30 must be cooled to stay below an Authorization Basis (AB) temperature limit because of the heat added to the waste while in the evaporator. Two weeks ago, the 3H evaporator was shutdown because the tank 30 temperature was approaching the AB limit (site rep weekly 11/10/00). Subsequently, WSRC identified cooling coil leaks in all 5 of the tank's coil assemblies with leak rates as high as 65 gallons per minute. Lack of cooling capability in this tank may limit 3H evaporator operations, but the evaporator is needed to support DWPF sludge batch two preparations. This issue may eventually impact feed to DWPF.

All the tank coils have been isolated, and the tank is currently below the AB temperature limit. WSRC is investigating the coil failures to determine the cause and the potential for repair. One contributing factor appears to be the weight of a salt layer that has built up on the cooling coils combined with a recent lowering of the tank waste level. WSRC has an engineering path forward and is evaluating short-term operational strategies (e.g., intermittent operation, transferring cooler waste) and possible use of internal sealants for the coil leaks. In the longer term, WSRC intends to investigate providing more cooling capability to this tank.

Fire Preparedness: On Wednesday, the Secretary established an independent commission to assess the adequacy of DOE fire safety programs, including facility and wildfire safety. At SRS, much attention is provided to the latter because about 80 percent of SRS is forested. SRS averages about 12 wildfires per year but has never had a major wildfire that affected a nuclear facility. Last month, an independent review team reported that SRS has a fundamentally valid wildfire protection and management program. Some conclusions were that the U. S. Forest Service has aggressive wildfire suppression objectives, well-documented prescribed burn plans, and well-trained personnel. Particularly effective are the site's use of its modern weather forecasting capability and the Site Use Permit process in evaluating potential controlled burn areas. The team also made recommendations, including restarting and expanding the prescribed burn program. SRS has requested an exemption from the DOE-wide moratorium for prescribed burns, which has been in place since June. While this may be appropriate, it appears possible that the first areas to be burned are being selected more for economic than safety reasons.

SRS is also considering implications of wildfires on facility authorization bases. While nuclear facilities typically have non-combustible construction and are well separated from woodlands, there is a possibility of fire propagation by airborne fire brands (i.e., spotting) to auxiliary buildings that may then spread to nuclear facilities. A recent WSMS evaluation considered fire propagation by spotting to a nuclear facility to be unlikely, but it has not been systematically evaluated. WSMS also observed that some forested areas near nuclear facilities have not seen a controlled burn in more than 25 years (10 years is recommended). Several facilities are conducting system walk-downs to identify vulnerabilities, such as potential air-filter blinding. Facilities are also develop wildfire response plans and configuration controls for prescribed burns. This may take several months to complete.