DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 15, 1999

TO: G. W. Cunningham, Technical Director

FROM: R. Arcaro, Hanford Site Representative
M. Sautman Hanford Site Representative

SUBJ: Activity Report for the Week Ending October 15, 1999

A. Building 327 HEPA Filter: An Unusual Occurrence was declared when it was discovered that the 327 Postirradiation Testing Laboratory was not in compliance with an OSR surveillance to track HEPA filter differential pressure (ΔP) measurements. The ΔP gauge for the vacuum air system HEPA has been pegged high for many months. This system is separate from the facility's main ventilation system and consists of the fixed air head sampling system, the stack monitoring system, and bleed air. Using different equipment, the actual ΔP has been measured to be 34" H_20 which exceeds both the 6" H_20 scale of the gauge and the standard for HEPA filters. It is believed that the actual ΔP over the filter is about 4" H_20 with the remainder due to the filter housing. Past filter changes have not fixed the situation. A subsequent investigation identified several design and conduct of operations issues:

- the vacuum pump blower located upstream of the HEPA filter is so powerful (i.e., does not meet ANSI standards) that it could blow out the HEPA filter
- the ΔP gage used for OSR surveillances has not been calibrated
- off-scale readings have been repeatedly recorded without realizing the OSR implications
- since the work package for taking the measurement relies on skill of the craft, different equipment and ports have been used which provide very different results
- the validity of past DOS/DOP test results is suspect because the incoming concentrations were measured before the relatively large volume of bleed air entered the system
- available drawings do not match the as-built system

The technical staff will continue to follow resolution of this issue and examine potentially wider implications. (1-C)

B. Spent Nuclear Fuel Project: Mr. Arcaro attended a project discussion related to electrical separation of safety class components of the MCO Handling Machine (MHM) in the Canister Storage Building (CSB). The project hired a consultant to evaluate the application of IEEE codes to the MHM to determine whether the system was equivalent to NRC standards. The consultant concluded that application of the particular IEEE codes to the MHM was questionable, but should they be applied, the MHM was non-compliant in the area of electrical separation. For example, some redundant safety signals were housed in the same panels or conduits, and some safety-related components were housed in the same panels or conduits as non-safety-related components. The project will likely correct all instances of non-separation of redundant safety signals. However, for the remainder of the non-compliances, the contractor expects to propose and justify to DOE that the code not be applied and that the system be shown safe as is. This information has been provided to the staff (Wille, Gwal) to ensure that the code application is fully evaluated and to ensure that the safety analysis accurately reflects the reliability of CSB safety systems. (1-C)

cc: Board Members