DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 14, 2000

TO: G.W. Cunningham, Technical Director
FROM: Paul F. Gubanc and David T. Moyle, Oak Ridge Site Representatives
SUBJ: Activity Report for Week Ending January 14, 2000

On January 13, U.S. Representatives Thornberry (TX) and Tauscher (CA) visited Y-12. Also on Thursday the Site Reps met with Congressman Wamp (TN). Mr. Gubanc was on leave Friday.

A. Nuclear Criticality Safety (NCS) at Y-12: On January 10, LMES submitted to DOE their proposal to define the scope of the operational readiness review (ORR) for resumption of fissile material handling in Building 9212. LMES proposes that the ORR address demonstrating the adequacy of container and material handling procedures and storage practices. DOE has not yet responded.

On January 10, Mr. Gubanc reviewed seven LMES documents regarding the multiplicity of fissile material storage containers used at Y-12. Specific insights include:

1. Y-12 currently employs over 200 different types of fissile material containers.
2. For certain containers, the Enriched Uranium organization (EUO) and the Non-EUO organizations utilize two different drawings for the same identical containers!
3. Each Y-12 nuclear facility has its own Criticality Safety Analysis (CSA) for the specific containers it uses. Even though most have been revised as recently as 1999, and contain much the same information, the format of each is significantly different.

Mr. Gubanc has provided these observations, as well as other specifics, to DOE and LMES. (2-A)

B. Y-12 Building 9201-5 Explosion Investigation: On Tuesday, the DOE Type-A accident investigation team delivered their report for factual accuracy review to DOE-OR and LMES. Approximately 200 comments were delivered back to the team on Wednesday. The team will resolve comments and is expected to close the investigation this week. A final version of the report is expected to be signed and issued by Assistant Secretary Michaels by mid-February. (1-C)

C. Chemical Safety: On Tuesday, an uncontrolled reaction pressurized and shattered a bottle and a nearby beaker in the building 9995 analytical chemistry lab. Glass was thrown out of a hood and one shard struck the lab coat of an employee with no injury. The reaction was caused by mixing incompatible chemicals (nitric acid and ethanol) in a common waste container after completing three different procedures on polychlorinated biphenyl (PCB) contaminated samples. This accident illustrates the serious lack of Integrated Safety Management implementation at Y-12. The "routine" activity used off-the-shelf procedures. No pre-job brief or job hazard analysis was conducted. (1-C)

D. Y-12 Hydrogen Fluoride (HF): A recent staff review of instrumentation and controls of the HF system identified several issues associated with controls implementation based on their functional classification (e.g., safety significant (SS) sensors not fail safe, over-reliance on non-safety computer system). Additionally, calculations predict unmitigated off-site consequences of an HF release well in excess of the values considered immediately dangerous to life and health. Comparing these consequences to the radiological dose evaluation guidelines requiring safety class systems to protect the public from unmitigated 50-yr cumulative doses of 25rem, it seems that a comparable level of control is warranted for the HF system. The staff intends to conduct a follow up review at Y-12 in February. (2-A)

cc: Board Members