DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 12, 1997

TO: G. W. Cunningham, Technical Director

FROM: R. F. Warther, M. T. Sautman

SUBJ: RFETS Activity Report for Week Ending September 12, 1997

B707 Conduct of Operations. Despite increased attention by K-H management, the Site Reps continue to be concerned with conduct of operations in B707. The Site Reps found workers sleeping in Module A on two occasions. In addition, there were three incidents involving nine individuals where personnel entered airborne contamination areas without respirators. In one case, two of the Module doors were not posted. Another employee brought chairs from a contamination area into an RBA. He was not wearing anti-C clothing. Most of the previous incidents involved RFEC personnel. Finally, a spill drill conducted in preparation for the upcoming salt Readiness Assessment was declared a failure. Some players did not take the drill seriously. Much of the poor performance has been attributed to the way the drill was initiated and controlled. K-H has assumed a stronger role than SSOC to resolve many of these issues. K-H is considering several courses of action, including increasing the frequency of building assessments and other programmatic decisions.

Dose Administrative Control Level (ACL) Exceeded. An individual in B559 exceeded the RFETS administrative control level of 750 mRem per year. Two other individuals had their TLDs removed because their annual doses were approaching the ACL. The reason for the relatively high doses was an increase in the amount of characterization work in B559. During the critique, it was noted that no ALARA review had been conducted even though the rate of sample processing was significantly increased and a large number of the samples were high Am-241 salts. Building management has modified some of its processing procedures and moved or removed some source terms from the area. Building management also is designing and constructing some engineered controls, but these will not be implemented until October. Management intends to request an increase in the ACLs to allow continued characterization.

Plutonium Solutions. Last week, RFFO rejected K-H's request to start high-level solution tank draining. SSOC and K-H spent this week mapping all criticality controls to procedures and postings, revalidating valve lineups, and developing a method for clearly identifying high-level solution bottles. RFFO's subsequent review of their response identified that not all the required controls were correctly identified in the procedures and postings. As of late Friday, these remaining issues had been addressed and approval to start draining was expected.

SSOC is investigating the possibility of increasing the plutonium concentrations of solutions processed by CWTS to about 25 g/l from the current 6 g/l. It appears that this increase would have little adverse impact on safety because the CWTS system is designed to process solutions up to 150g/l and the criticality safety evaluations confirm that the equipment can safely process these concentrations. This approach would increase the processing rate by about four times and increase the possibility of meeting Rec. 94-1 milestones. The reason for not processing at concentrations above 25 g/l is that it would result in increased security requirements for the solutions.

Plutonium Metal and Oxide. Several problems have been encountered during preparations for the Plutonium Stabilization and Packaging System. RFFO rejected BNFL's 3013 container because BNFL

did not demonstrate compliance with ASME VIII material and welding requirements and it was not clear which design and pressure requirements were being satisfied. In addition, functional acceptance testing of BNFL's packaging system is running a month behind schedule. Raytheon's furnace is still not operational. They have taken delivery of the furnace although it does not meet several specifications (e.g., furnace cool down taking 10 times too long). Furthermore, the shutdown of the CMR Building at LANL will affect the chemical analyses of RFETS materials that were being performed to support stabilization and storage studies.

So far in FY97, RFETS has completed several shipments of SNM to other sites, including many pit shipments to Pantex. Although a few projects are behind schedule, this reflects a significant increase in shipments compared with previous years. However, FY98 HEU shipments to Oak Ridge may be adversely impacted due to schedule and funding issues at Y-12. A letter from ORO written in early August states that they can not receive and store HEU from RFETS because of current budget shortfalls and because of potential impacts to the Y-12 EUO resumption schedule. Y-12 may consider receiving additional shipments beginning April 1998 if funding is made available. This likely will delay RFETS risk reduction activities. The extent of the delay is not fully clear.