

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 27, 1998

TO: G. W. Cunningham, Technical Director

FROM: M. T. Sautman

SUBJECT: RFETS Activity Report for Week Ending November 27, 1998

B779 Configuration Control Authority (CCA) Watch. On Tuesday, the Site Rep was informed by a facility representative (FR) that the B779 CCA (i.e., shift manager) standing watch over glovebox size reduction and duct removal only had interim qualifications. The apparent reason for granting interim qualifications was that the 4 fully qualified CCAs were all on vacation. The Site Rep explained the situation to both the K-H Training Director and COO, who were also alarmed. This interim qualification was not approved by the SSOC training manager or documented until pressed by the FR. The operations order and approval letter are also not consistent with the B779 Interim Qualifications Document (IQD) for oversight when LCO operations are in progress. The first two allowed the watch to occur if the Work Authorization Team Manager (WATM) was **on call** to assist. The latter says that 1 of 4 personnel (including the WATM) must be **present in the complex**; being on call is only allowed in stand-by mode. This is partly because a CCA with interim qualifications does not have authority to make decisions for abnormal or emergency situations. The CCA, however, was not familiar with this limitation nor was this discussed with her. While 1 of the 4 allowable personnel (the Technical Support Manager) was on site Tuesday, the Site Rep does not believe that she or any of the other few B779 managers present had any incident command training. On Wednesday, no B779 managers were in the complex while the interim qualified CCA stood watch again. Regardless of the compliance issues, the Site Rep believes that the concept of interim qualifications is being used for convenience and should be eliminated. These concerns are shared by both RFFO and K-H training personnel. As of late Tuesday, K-H was planning to take action with RMRS to prevent this from recurring.

B771 Process Piping Removal. B771 began removal of the highly contaminated pipes associated with the high-level dissolution system. The Site Rep observed several hours of this activity. It appears that better containment or ventilation controls may be needed for two activities.

A 4-wheel pipe cutter is used to cut the pipe to the point where the pipe is about to be breached. A sleeve is then pulled across the cut and the pipe cut completed by twisting the pipe with a wrench until it snaps. The key to controlling contamination is to not accidentally breach the pipe with the pipe cutter before the sleeve is applied. This relies solely on the pipe cutter's skill to know when to stop. While this technique worked well with the first couple cuts, the pipe cutter became highly contaminated during one cut. Although no other contamination was found when the cut was completed, subsequent analysis of the breathing zone air sampler found that the airborne radioactivity level was 123 DAC. Since this is a time-weighted average, the actual levels were much higher for

the duration of the release. Although a nearby continuous air monitor did not alarm, it appears that the high DAC reading was not due to accidental cross contamination. A highly contaminated flange was also found 6 feet upwind of the pipe cut. It is not clear whether the airborne radioactivity was due to the pipe cut, the contaminated flange, or a flange change performed earlier. Whatever the cause, it appears that the airborne radioactivity exceeded the full face respirator's protection factor of 50. If the pipe cut was the cause, the vacuum being pulled inside the pipe may not be sufficient to prevent a release of contamination. The entire pipe cut may need to be performed in a sleeve or a portable vacuum used during the cut.

The ALARA review says that the preferred method for disconnecting flanges is a glovebag or similar device to prevent direct exposure to piping internals; a ventilated hood is the next best method. This requirement was not satisfied during an observed flange disconnection. Operators were going to disconnect a ~4' vertical piece of pipe that had a bend at the bottom followed shortly by a flange. A vacuum was being pulled through the flange connection to a nearby glovebox. The pipe was expected to have significant holdup since previous pieces had 80 to 100 g plutonium and holdup often accumulates at bends. While workers were doing preparations, the Site Rep told the K-H Oversight observer and the Radiological Operations foreman that he was uncomfortable with their plans. Once the flange was disconnected, the piece of pipe would no longer be under a vacuum. In addition, other than a bag underneath the connection, there was nothing to contain any plutonium that spilled down the pipe and out the opening. Because of the tight space, localized airborne levels could greatly exceed the respirator's protection factor. (It takes only 1 μg of Pu-239 to cause 1000 DAC in a 10 m^3 area). The Site Rep felt that a portable vacuum, sleeve, or glovebag was needed. Although the foreman stated he was also uncomfortable, neither he nor the K-H observer stopped the activity. In this case, the workers managed to put tape and a bag over the flange opening fast enough after the disconnection to prevent anything from spilling out. Since a subsequent discussion with the radiological engineer did not resolve the issue, this issue was discussed with the K-H COO, who has been advocating more use of engineered controls. The COO later walked the system down and informed the site rep that additional controls would be used in the future.

K-H Technical Support. For several technical support programs, K-H will retain program ownership, but the "core group" will be assigned to RMRS or SSOC as follows:

RMRS: Radiation Protection, Fire Protection, Design Engineering, WIPP Certification

SSOC: Nuclear Safety, Criticality Safety, Nondestructive Assay

The K-H program managers are supposed to have technical expertise in their area. The Site Rep and William Shields are especially following the reorganization of fire protection. Since RFFO currently does not have a fire protection engineer, it is important that K-H has some expertise in this area.

SSOC Personnel Change. George Jackson will be the new SSOC Chief Operating Officer. Mr. Jackson previously worked at Hanford and will be replacing John McKibben, who is returning to SRS.

cc: Board members