



Department of Energy

Idaho Operations Office
850 Energy Drive
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February 25, 2003

Mr. Brian R. Monson, Manager
RCRA Programs
Idaho Department of Environmental Quality
1410 North Hilton, 3rd Floor
Boise, Idaho 83706

SUBJECT: Notification of Unexpected Conditions and Request for VES-SFE-20 Hot Waste Tank System HWMA/RCRA Closure Plan Milestone Relief – (EM-ER-03-055)

Dear Mr. Monson:

The purpose of this correspondence is to notify the Idaho Department of Environmental Quality (DEQ) that unexpected conditions were encountered during closure implementation. According to the approved HWMA/RCRA closure plan and IDAPA 58.0105.009 (40 CFR 265.112(c)), if an unexpected event occurs during closure activities requiring modification to the plan, the DOE must notify the DEQ in writing. This letter is the required notification.

The Department of Energy (DOE) requests relief from the initial characterization milestone in order to determine a revised course of action. We believe it will take approximately 60 days to develop a revised course of action.

DOE has undertaken several attempts to obtain the required characterization sample from the SFE-20 tanks, using several methods, as indicated by the following events:

- On June 19, 2002, a camera inspection of the interior of the tank through the 2-inch vent line determined there was no liquid in the tank.
- During August through October 2002, a remote sampling system was developed to enter the tank through the 2-inch vent line.
- An Auditable Safety Analysis was developed to permit sample removal through the vent line.
- On November 25, 2002, radiological readings inside the tank were obtained by inserting a radiological detector through the vent line. The radiological measurement at the sediment surface were 6.3 R/hr.
- On January 14, 2003, an attempt was made to sample the tank sediments through the vent line, but it was determined that sample collection would not be possible as the remote sampler could not penetrate the tank sludge.
- On January 21, 2003, a second attempt to sample the SFE-20 sediment through the vent line was attempted using a modified sampling system. This attempt was also unsuccessful and a video camera was inserted to better understand the conditions in the tank.
- On February 17, 2003, developed a manned entry plan and built a mock-up to establish feasibility of a manned entry.
- On February 21, 2003, in the attempt to collect a sample by manned entry, unexpected conditions were experienced. The radiological hazards observed were significantly

higher than anticipated and the condition of the vault was not safe for workers to proceed with the tank sampling. The planned entry attempt was discontinued due to radiological and safety considerations.

Manned entry of the tank is very difficult and potentially hazardous to workers. The samplers and radiological control personnel are required to crawl 8 feet through a 2.5 foot square tunnel, (where in places it narrows to approximately 1 foot due to obstructions) into the tank vault. The workers entering the tunnel must wear airline respirators and full two layers of personal protective equipment (PPE) due to the high airborne radiation, asbestos, and confined space. After reaching the vault, the samplers must lower themselves from the tunnel to get close enough to the tank to remove a flange, collect a sample from the 3 to 4 inches of sediment in the bottom of the tank, and containerize the sample. This process would be repeated until sufficient sample volume is obtained.

During the February 21, 2003, entry, the radiological control technician climbed into the pump pit and crawled through the tunnel to use a probe to assess the radiation and radiological contamination levels. The purpose of this survey was to ensure that workers would not exceed the radiological exposure limits identified for the safe performance of the tank sampling. This survey identified that the radiological contamination levels associated with the tank and vault exceeded the limits identified for the workers. The estimated personal exposure from the tank surface and vault surfaces is approximately 2 Rem. The contamination on the outside surface of the tank was up to 1,000,000 dpm/100cm² beta-gamma. Contamination around the exterior of the tank flange and on the outside surface of the tank contribute to the source of exposure. Based on this information, and other issues which would put workers at an unacceptable risk, such as confined space, asbestos, and unexpected obstructions, work was stopped. Consequently, the tank contents were not sampled by February 25, 2003, as required by the HWMA/RCRA Closure Plan.

The DOE is reviewing alternatives for characterizing the tank contents that can be feasibly implemented without exposing the sample team to significant amounts of radiation and other safety hazards. The DOE believes that a 60-day period should be sufficient to determine the proposed course of action.

Sincerely,



Kathleen E. Hain, Lead
Environmental Restoration Program

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