



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

February 26, 1997

MEMORANDUM TO: Michael F. Weber, Chief  
Licensing Branch  
Division of Fuel Cycle Safety  
and Safeguards, NMSS

THRU: George Pangburn, Section Leader  
Licensing Section 2  
Division of Fuel Cycle Safety  
and Safeguards, NMSS

FROM: Susan D. Chotao  
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Licensing Section 2  
Division of Fuel Cycle Safety  
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SUBJECT: TRIP REPORT: COMBUSTION ENGINEERING, HEMATITE, MISSOURI,  
JANUARY 23 AND 24, 1997

The Fuel Cycle Licensing Branch (FCLB) staff, Sean Soong and Susan Chotao, visited the fuel manufacturing facility, Combustion Engineering (CE), in Hematite, Missouri, on January 23 and 24, 1997. The primary purpose of the trip was a site familiarization tour. The tour of the facility was led by Bill Sharkey, the Director of Regulatory Affairs and Harold Eskridge, a Senior Consultant of Regulatory Affairs, and included observation of production areas and laboratories. Outdoor areas including the burial site, evaporation ponds and environmental monitoring stations were also observed. The NRC staff noted that progress has been made in removing radioactive waste stored in rear of the facility, although a great deal material still remains there.

On January 24, 1997, a meeting was held between NRC staff members and CE personnel regarding the source of technetium-99 (Tc-99) previously identified in groundwater, the status of remediation of the evaporation ponds, and decommissioning of the burial site.

Safety Condition S-2 of CE's renewed license required the licensee to investigate and determine the source of gross beta activity found in well #4, southeast of the process buildings. The licensee stated in a letter dated January 27, 1995, that the contaminant is Tc-99, and the source of the contaminant is the formerly used evaporation ponds. However, the NRC staff determined that due to inadequacies of CE's groundwater monitoring program, there was insufficient evidence to support this conclusion. By letter dated

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April 30, 1996, CE was asked to revise their groundwater monitoring program so that it is adequate to demonstrate compliance with 10 CFR 20.1302. CE was also requested to submit additional information concerning the source of the Tc-99.

CE subsequently contracted with a Certified Professional Geologist to construct a potentiometric surface map. CE also revised and expanded the groundwater sampling program and upgraded the wells by installing surface aprons, protective casings, and lock plugs. Due to surface infiltration, well #4 was properly abandoned and was replaced with a new well approximately ten feet north of old well #4.

During the site visit, CE indicated that the source of Tc-99 contamination is a former outdoor storage area east of the south vault. This conclusion is supported by historical records, soil and groundwater samples, and the direction of groundwater flow. CE will submit a report summarizing this information.

In addition to discussing Tc-99, CE updated the NRC staff on the remediation of the former evaporation ponds. The ponds were dug in 1958, lined with rock, and used for disposal of limed filtrates from the low-enriched ammonium diuranate (ADU) process, limed high- and low-enriched uranium recovery wastes, and spent potassium hydroxide scrubber solutions from recycle/recovery furnaces. Use of the ponds ended in 1978. Since that time, CE has initiated several remediation efforts and has removed most of the sludge from the ponds to a licensed disposal facility.

On May 4, 1995, CE's license was amended to incorporate the Hematite Evaporation Ponds Decommissioning Plan. In the plan, CE commits to decommissioning the ponds to specified contamination levels approved by the NRC. A radiation survey of the ponds has been conducted which indicated the presence of hot spots. CE plans to further excavate the ponds to reduce these areas of elevated radioactivity. Currently, the ponds contain water and are uncovered. During the site visit, CE indicated that a revised schedule for the completion of this remediation project will be sent to the NRC in the near future.

The last issue discussed during the site visit concerned decommissioning of the burial site. The burial site is located immediately to the east of the fence line and extends to a wooded area at the site boundary. Burials were made in the late 50's and early 60's under both Mallinckrodt Chemical, United Nuclear, and Gulf prior to Combustion Engineering ownership. The burial site primarily contains contaminated combustibles and small pieces of equipment. Records indicate that an estimated 27 kilograms U-235 have been disposed of in this area under former 10 CFR 20.304.

CE believes that the burial site contaminants currently pose no health risk to the public. Therefore, by letter dated September 13, 1996, CE requested delay of decommissioning of the burial site until the end of plant life. The NRC staff found that CE did not adequately justify this delay by addressing

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factors described in the Decommissioning Timeliness Rule [59 FR 36030] and other relevant factors described in 10 CFR 70.38(i). During the site visit, CE indicated that they would request a meeting with FCLB and Low Level Waste Projects Branch (LLDP) staff to discuss this issue further.

Docket 70-36  
License SNM-33

cc: Mr. Robert W. Sharkey, Manager  
Regulatory Compliance  
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