Region III

Intero ce Correspondence

NIS/84/2025

POWER SYSTEMS

70-36

May 31, 1984

please

Mr. R. G. Page, Chief
Uranium Fuel Licensing Branch
Division of Fuel Cycle and Material Safety, NMSS
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docket No. 70-36

Dear Mr. Page:

Enclosed is the proposed plan for decommissioning the evaporation ponds. This plan is required by license condition No. 10 of SNM-33, as amended.

Please advise if there are any questions, or if additional information is required.

Very truly yours,

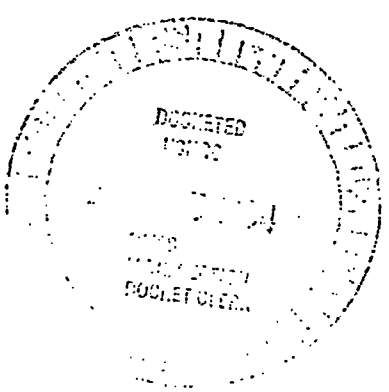
COMBUSTION ENGINEERING, INC.

H. E. Eskridge

H. E. Eskridge
Supervisor, Nuclear Licensing,
Safety and Accountability

eg

cc: H. V. Lichtenberger
J. A. Rode



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PROPOSED DECOMMISSIONING PLAN

FOR EVAPORATION PONDS

COMBUSTION ENGINEERING, INC.

HEMATITE PLANT

MATERIALS LICENSE NO. SNM-33

MAY, 1984

I. PURPOSE

The purpose of this plan is to describe the course of action to be completed by Combustion Engineering, Inc. to decontaminate and decommission the primary and secondary evaporation ponds located in the southwest corner of the fenced manufacturing area. The object of this action is to prepare the evaporation pond area for eventual release for unrestricted use, or release with necessary use convenants in the manner required by State law.

II. DECONTAMINATION REQUIREMENTS

A reasonable effort shall be made to achieve residual contamination concentrations as far below acceptable levels as is practical. It is anticipated that this effort will result in residual contamination concentrations of below 250 picocuries per gram, and thus correspond to option 2 of the Uranium Fuel Licensing Branch Technical Position for disposal or onsite storage of residual uranium from past operations. Should the 250 picocuries per gram concentration not be practically achieveable, the 2500 picocuries per gram limit, option 4 of the Branch Technical Position, will apply. In either case, residual concentrations will be covered with a minimum of 4 feet of clean overfill.

III. DECONTAMINATION OPERATIONS

Decontamination and decommissioning of the evaporation ponds will include the following steps:

1. Discontinue use of ponds for disposal of low level liquids.

2. Remove pumpable portion of sludge (down to the underlying layer of crushed rock) from the primary pond.

3. Dry sludge from primary pond, consolidate into new drums and ship to licensed burial.

III. CONTINUED

4. Remove layer of carryover sludge from secondary pond and ship to licensed burial.

5. Cut trench north of ponds to intercept ground water flow upstream of ponds and to suppress ground water table in area of ponds.

6. Pump liquid from primary pond and evaporate.

7. Remove remaining sludge from primary pond.

8. Sample both ponds on grid pattern to determine residual activity concentrations. Obtain depth profile of activity for each pond.

9. Remove any residual activity above decontamination requirements and resample.

10. Submit survey report to NRC Uranium Fuel Licensing Branch.

11. After obtaining NRC approval, cover both ponds with a minimum of 4 feet of clean overfill.

IV. SAMPLING RESIDUAL ACTIVITY

After removal of the remaining sludge from the primary pond, samples will be taken to characterize and map residual activity in the underlying soil (step 8 above). This sampling will be conducted as follows:

Samples will be taken by superimposing a 2 ft. X 2 ft. horizontal grid pattern on the primary (small) pond and a 3 ft. X 3 ft. grid pattern on the secondary (large) pond. A representative sample will be obtained from each grid cell. Samples will be crushed, blended and counted for gross alpha and gross beta activity. A depth activity profile at one-foot intervals will be taken at the center of each pond.

V. DECONTAMINATION SCHEDULE

Steps 1 through 5 of the above decontamination operations have been accomplished. Use of the evaporation ponds for disposal of low level liquids, primarily spent potassium hydroxide scrubber solution from the uranium dry recycle process and liquids from startup testing of the wet recovery process, was discontinued in September 1978. After an extended dry weather period, 21,000 liters of sludge was pumped out of the primary pond in October 1979. The resulting 136 drums of material were individually dried, consolidated into 74 new drums (17 H) and shipped to licensed burial during 1982, 1983 and early 1984. A thin layer of carryover sludge was removed from the secondary, or "overflow" pond in November 1983. This sludge was placed in 3 metal shipping boxes (B-25) having a combined volume of 294 cubic feet and shipped to licensed burial in January 1984. During the summer of 1983, an 8-foot deep trench was cut parallel to the ponds in the uphill gradient of area ground water flow. The purpose of this trench was to intercept ground water flow to the ponds and to suppress the ground water table in the general area of the ponds. Although water has been repeatedly pumped from the trench, no effect on the water level in the ponds has been observed.

Step 6 of the decontamination operations, pumping water from the primary pond into a steam-heated tank for evaporation, is currently in progress. Once this step is completed, we will be dependent on an extended dry weather period to complete drying of the primary pond and complete Step 7, which is removal of the remaining sludge, including the 6-inch thick crushed rock lining. An estimated 2,450 cubic feet of material remains to be removed from the primary pond.

Although removal of the remaining sludge and completion of the residual activity sampling is scheduled for the summer and fall of 1984, an extremely wet period, as has been experienced in some previous years, could delay completion of those steps for a year. It is not practical to handle the heavy water intrusion during extremely wet weather (covering the ponds would only prevent accumulation of direct rainwater, a relatively minor problem).

V. CONTINUED

A survey report will be submitted to NRC within 6 months of completion of Steps 7, 8 and 9. Completion of the entire decontamination and decommissioning project is scheduled prior to the expiration date of License SNM-33, which is December 31, 1988.