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40-8027

April 17, 1970

Memorandum for Chairman Seaborg

LICENSING PROBLEMS WITH KERR-McGEE PLANTS

I understand you are going to Oklahoma the first of the week to dedicate Kerr-McGee's Sequoyah Plant and I am attaching for your information a summary of the licensing status of that plant and also the Cimarron Plutonium Plant and the Cimarron Uranium Plant. The company wants to use deep well disposal of liquid wastes from all these plants.

Based on discussions that the Materials Licensing Division has had with representatives of the Geological Survey, I don't think it is likely that we would get their approval for the deep well method in the near future and perhaps not even in the foreseeable future. Furthermore, in view of the Environmental Policy Act, we may have to consult other government agencies like the FWPCA and HEW.

I also understand that some of the people on the operating side of the Commission, engaged in waste disposal research programs, have some reservations.

I suppose the main thing I wanted you to be aware of is that I don't see an early favorable resolution of the deep well method.

The company does have alternatives which are not as attractive to it, such as evaporation ponds, further treatment of the waste and, with respect to some of it, solidification.

The final resolution of this problem will be brought to the Commission before any action is taken because there are

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policy as well as technical problems involved.

(Signed) HLP

Harold L. Price
Director of Regulation

Attachment:
Summary on Kerr-McGee Plants

cc: Commissioner Ramey
Commissioner Johnson
Commissioner Thompson
Commissioner Larson
Secretary

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SUMMARY ON KERR-McGEE PLANTS

Kerr-McGee operates three plants under AEC license in Oklahoma. Two are located near Guthrie, Oklahoma (about 30 miles north of Oklahoma City). One is the Cimarron Uranium Plant and the other is the Cimarron Plutonium Plant. The third plant is the Sequoyah Plant located near Gore, Oklahoma.

Sequoyah Plant

Kerr-McGee applied for a source material license in September 1969, to authorize the conversion of uranium concentrates (yellowcake) to UF_6. The application also requested approval to dispose of liquid waste by deep well injection. A license was issued in February 1970, for operation of the plant but did not include approval of deep-well disposal of the liquid waste.

A review of the initial information submitted by Kerr-McGee regarding deep-well disposal was made by the USGS and Dr. Warner, our staff consultant on deep-well disposal. They indicated that a comprehensive safety assessment of the well system was necessary. The additional information was requested of Kerr-McGee by letter in February 1970, and a meeting was held with Kerr-McGee to discuss the contents of the letter. Their reply was received April 15, 1970.

Approval of the deep-well disposal method is important to Kerr-McGee because the chemical content of the waste exceeds state restrictions for release to surface streams. As an interim measure, Kerr-McGee is holding up the liquid waste in evaporation ponds. Additional pond capacity will be necessary as the plant approaches the planned operating capacity of 5,000 tons of uranium per year. By segregation of the waste stream, it is possible to achieve radioactivity concentrations less than one-tenth of the Part 20 limits for release to unrestricted areas for 90% of the waste volume. Disposal of this material by deep well would greatly relieve the situation.

Cimarron Plutonium Plant

Kerr-McGee applied for a special nuclear material license in March 1969, to authorize plutonium fuel fabrication and processing activities. The application also proposed disposal of liquid wastes by deep well injection. A license was issued April 2, 1970 for operation of the plant but did not include approval of deep-well disposal. A review of the initial

information submitted by Kerr-McGee regarding deep-well disposal was made by the USGS and Dr. Warner, our staff consultant of deep-well disposal. They indicated that a comprehensive safety assessment of the well system was necessary. The additional information was requested of Kerr-McGee by letter in February 1970, and a meeting was held with Kerr-McGee to discuss the contents of the letter. Their reply is expected in about a month.

The plant is designed to produce U-Pu mixed oxide fuel pellets and the fabrication of fuel rods containing the U-Pu mixed oxide pellets. The plant operations will include the recovery of plutonium and uranium from unirradiated scrap materials.

All liquid process waste effluents from the Cimarron Plutonium Plant are collected in hold tanks, sampled and analyzed. Kerr-McGee plans that liquid process waste effluents be discarded to deep well disposal. The disposal well system is expected to be completed in April 1970. Pending AEC approval of deep-well disposal, an evaporative pond will be used for waste liquid retention.

Kerr-McGee has indicated that the main reason for deep-well disposal of liquid effluents is because the chemical constituents are not expected to meet the state standards for release into surface streams. All plutonium process waste streams are processed through a flocculation treatment system. The solid floc is removed by filtration, monitored and packaged for shipment to a burial site. The effluent solution is an alkaline solution of alkali and/or ammonium salts. It is collected in large tanks, sampled and analyzed prior to release. Kerr-McGee states that the experience of others indicates that similar aqueous process wastes so treated will have radioactivity concentrations less than the Part 20 limit for release to unrestricted areas.

Cimarron Uranium Plant

This plant, which was licensed in 1965, conducts enriched uranium fuel processing and fabrication activities. Kerr-McGee has informed us they plan to request approval to dispose of liquid waste from this plant via the same well proposed for disposal of the plutonium plant liquid waste. This waste would contain a variety of chemicals, principally nitrates, fluorides and ammonium salts, and concentrations of radioactivity less than 30 times the Part 20 limit for release to unrestricted areas.