UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

APR 5 1973

Note to Files

TELEPHONE CONVERSATIONS WITH JAMES W. CRAIG AND WILLIAM J. SHELLEY, KERR-MCGEE CORPORATION ON APRIL 3, 1973 - DOCKET 40-8027, SUB-1010

I called Mr. Craig, Manager of Conversion Engineering at the Kerr-McGee Sequoyoh Facility to request the submission of an addendum to the March 7, 1973, Application for Amendment to License SUB-1010 covering the following items before the modified raffinate disposal processes could be approved.

I. Raffinate Evaporation Process

(a) Clarify data source for apparent scaleup factor of 52.25 used in calculations instead of value of 50 obtained by scaleup from 300,000 BTU/hr pilot burner to 15,000,000 BTU/hr full scale burner. Explanation given verbally in discussions during a site visit on March 21 and 22, 1973, indicated that actual manufacturer's data were used to arrive at the 52.25 scaleup factor.

(b) Provide the source of the feed analysis used to calculate the μCi/day in the feed shown in Table I (p. VI-6.1.8) of the application. The verbal explanation offered was that the feed analysis used was the average of a series of test runs rather than that used in Run No. 9 and shown in Table II.

(c) Provide the data necessary to permit the calculation of the chemical stack emissions listed in Table I. No data on chemical effluents are given in Table II.

(d) Explain the difference in feed composition listed in Tables I and II. Verbal explanation offered was that Run 9 was made with unneutralized raffinate while the Table III composition is for neutralized feed material

(e) $\left(\frac{\chi U}{Q}\right)_{max}$ is listed under Item 5 on Page VI-6.1.12 as "1200" while the "Work of Atomospheric Dispersion Estimates," Figure 3.9, indicates this value to be Ca. $1.3 \times 10^{-3} m^{-2}$ at a stack height of 30 feet (9.14m) and Stability Condition "D."

(f) Per discussions March 21 and March 22, modify sampling schedule (Page VI-6.1.9) so that samples are analyzed for radioactive contaminants at eight-hour intervals and for chemical contaminants on a daily basis during the first three days of operation. After this period, if results show calculated maximum ground level concentrations below Ca. 10% of allowable, cut back frequency of analysis to daily for radioactive and to weekly for chemical contaminants.

II. Radium Precipitation Process

(a) Clarify procedure writeup to indicate whether precipitation step is carried out batchwise, or on a continuous basis. If batchwise, radioactivity of clarified solution should be determined before it is pumped out to test area. If continuous, frequent analyses should be run to monitor radionuclide removal efficiency.

(b) Provide statement describing planned disposition of settled sludges for the short-term test period as well as for the long-term potential full-scale operation.

Following this conversation with Mr. Craig, I received a call from Mr. Shelley, Director, Regulation and Control, inquiring about the status of the amendment application. I repeated my request for the additional information listed above and indicated that the license amendment would probably be issued shortly after we received the requested supplementary data. Mr. Shelley indicated that, in view of the problems anticipated in analyzing for radium in the clarified solution resulting from the barium nitrate treatment, it was Kerr-McGee's intention to monitor the residual barium and use this as an indication of the radium left in solution along with having radium analyses run as frequently as feasible for control.

In a subsequent telephone conversation, Mr. Shelley was requested to delete the reference to the burial of the precipitated radium containing solids in accordance with 10 CFR 20.304 as shown on Page VI-6.1.14. It was pointed out that complete precipitation of Ra-226 from as little as 1 gpm of raffinate containing 1.4×10^{-6} µCi/ml would result in an annual production of sludge containing about 2800 uCi compared with the maximum annual permissible burial amount of 120 µCi per 10 CFR 20.304.

J. E. Rothfleisch

J. E. Rothfleisch
Fuel Fabrication and Reprocessing
Branch
Directorate of Licensing