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KERR-McGEE CORPORATION
KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

ENVIRONMENT AND HEALTH MANAGEMENT DIVISION

July 21, 1982

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

Re: SUB-1010, Amendment #17, Docket 40-8027

Attn: W. A. Nixon

Dear Mr. Nixon,

We urgently request suspension of Condition 3b of Amendment No. 17 SUB-1010, dated June 30, 1982 as it applies to molybdenum.

Condition 3b requires that the quantity of trace elements applied to the soil with treated raffinate not exceed the maximum quantities of these elements recommended for continuous use irrigation in "Water Quality Criteria" 1972, NAS. The applicable limitation for the element molybdenum is .08 pounds per acre per year.

Strict adherence to the molybdenum specification would limit fertilizer application to about 150 lbs nitrogen per acre and result in the treated raffinate inventory exceeding pond capacity. This situation is caused by the fact that the molybdenum concentration in approximately 30 million gallons of treated raffinate now in inventory is 13-16 parts per million (compared to 7.6 ppm in 1981) while the nitrogen concentration is only 25 gm/l compared to 50 mg/l in 1981. The low nitrogen concentration is due to unusually heavy spring and summer rains.

In reviewing our recent treatment practices it has been determined that greater efforts were made to achieve a pH of 7.5 immediately upon neutralization because of our mutual desire to insure that uranium, thorium and radium concentrations are maintained as low as possible. In the case of molybdenum however, we now see that the practice of a single neutralization to achieve a pH of 7.5 results in re-solubilizing molybdate whose minimum solubility is at about pH 4. Hence, it is evident that a two-step neutralization process where (1) the molybdate and iron are precipitated at a pH of approximately 4 and (2) the supernatant is removed to a subsequent pond for neutralization to pH 7.5 would be preferable if practical and cost effective.

CK held in LPM's file to be collected later

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The current large inventories in Clarifier A and the treated raffinate storage ponds makes installation of a quick fix impossible. However, our technical and operating people are diligently seeking a method of treatment that will reduce the molybdenum content to the level permitted by Condition 3b. For example, preliminary success has been reported from the laboratory by re-acidifying with ferric nitrate and raising the pH in two steps. Several other theoretically promising treatments are being considered.

To ease the inventory situation and allow us time to develop an appropriate solution, Kerr-McGee Nuclear requests that the first three million gallons of treated raffinate distributed subsequent to the issuance of Amendment 17 on June 30th, be exempted from the requirements of Condition 3b given in the subject amendment.

Kerr-McGee Nuclear believes that this exception is justified on the following basis:

1. KM is pursuing diligently a number of promising avenues of alternate treatment sequences to reduce the molybdenum in its treated raffinate.

2. Previous uses of treated raffinate which contained considerably more molybdenum than current production have not resulted in forage exceeding the maximuim tolerable dietary level given in the NAS report, "Mineral Tolerance of Domestic Animals", Washington, D.C., 1980.

3. The NAS document permits an application rate 5 times greater for a restricted period (20 years) and notes that acid soils, such as those at Sequoyah, reduce molybdenum availability.

In accordance with the requirements of 10 CFR 171, a fee for administrative change is to the amount of $150. is enclosed.

Your prompt consideration of this request and subsequent approval would permit immediate release of significant quantities of treated raffinate this year.

Very truly yours,

W. J. Shelley

W. J. Shelley, Vice President
Nuclear Licensing & Regulation

ALD/ba