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FEDERAL-AMERICAN PARTNERS

Telephone 856-9283
Red Hills Star Route
RIVERTON, WYOMING 82501

Oct. 14, 1980

Mr. Dan Gillen
Uranium Mill Licensing Section
Div. of Fuel Cycle & Material Safety
7915 Eastern Avenue
Silver Springs, MD 20906

Dear Mr. Gillen:

Enclosed are 5 copies of a report prepared for me by George C. Toland of Dames & Moore regarding the operating procedure of our present tailings disposal system.

In order to implement his recommendation No. (1), Federal-American Partners requests that condition No. 30 of Amendment No. 5 to the above referenced Source Material License be amended to allow for the water level in pond No. 2 to raise to the design elevation of 6503 feet.

Mr. Toland's recommendation No. (2) will be implemented as soon as the tailings discharge pipe can be extended to a position on the northeast embankment area.

Mr. Toland has indicated he will be available to respond to any technical questions you may have, and the staff at Federal-American Partners will provide any additional information it can in this regard.

Yours very truly,

N. J. Andrus
Acting General Manager

NJA/sb
Encl.
cc: J. C. Ferguson
J. W. Losse
D. J. Nicolarsen

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DAMES & MOORE

CONSULTANTS IN THE ENVIRONMENTAL AND APPLIED EARTH SCIENCES

October 8, 1980

Mr. Niles Andrus, General Manager
Federal American Partners
Gas Hills Star Route
Riverton, WY 82501

Dear Mr. Andrus:

Request For Operation Changes
Tailings Pond Number 2
Docket No. 40-4492
SUA-667
Amendment No. 5

REQUESTED CHANGES

Following our inspection of the subject tailings pond and following a discussion with Mr. Dan Gillen of the Uranium Recovery Licensing Branch, this report provides backup data and information pertinent to your request for raising the pond water level during continuing operation. Essentially, we recommend the following two changes to your present operating system:

(1) Allow the decent pond level elevation to raise from the present elevation of 6490 feet to the design elevation of 6503 feet.

(2) Start discharging tailings from the northeast embankment area where the tailings embankment was constructed over a slime area. (This procedure will allow the pond water to be moved to the west and a tailings beach to be formed in the stability sensitive area of the embankment.)

EVALUATION OF PROBLEM

The present problem in Operating Pond No. 2 is that the present elevation of the slime tailings at the decant pipe entrance is at elevation 6490 feet,

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which is also the maximum elevation for ponded water. There is, therefore, no clear water pond. The slime materials are currently running out the decant line and filling the evaporation pond. This condition cannot continue without infringing on the control elevation of the evaporation pond.

From previous design studies, the elevation for the decant pond was set at elevation 6503 feet. The geotechnical and engineering review changed this elevation to 6490 feet. We feel this restriction conservative for the following reasons:

(1) Storage of slimes is required in the area around the decant pipe and it was intended that the slimes would fill the area up to elevation 6503 feet.

(2) It is necessary to maintain a clear water decant pond to prevent slime tailings from being decanted to the evaporation pond.

(3) All piezometers to date indicate water levels in the embankment below the control elevation established (see attached table).

(4) The stability sensitive area of the embankment is on the northeast side. Establishing a beach in this area would greatly reduce the potential for liquefaction. Liquefaction was the reason for controlling the decant elevation - "the applicant has not shown that tailings will not liquefy during the design earthquake" - (see Safety Evaluation Report - Geotechnical Engineering). We feel that under the current operation the following items regarding liquefaction should be considered:

   a. The earthquake potential is low (Seismic Zone 1).

   b. This pond will be abandoned when the below-grade disposal system is designed and in operation. Current schedule is for August, 1981.

   c. By establishing a beach area at the stability sensitive section of the embankment, embankment failure should it occur, would not release water or result in a more critical condition than the slumping of the embankment.

   d. From an earthquake probabilistic approach, the chances of a maximum earthquake capable of causing liquefaction occurring within a period of less than one year, is almost nil.

CONCLUSIONS AND RECOMMENDATIONS

Again, we restate the requirement that in order to continue to operate the No. 2 Tailings Pond, it is necessary to establish a clear water pond for the disposal of slime tailings. This can be accomplished, only, by raising the operating level of the pond from the present 6490 feet elevation progressively to the design 6503 feet elevation. It is also important that the northeast portion of the embankment where fill was placed over the slimes tailings area be used for tailings discharge and that a tailings beach be established to maintain the decant pond water away from this stability sensitive embankment area.

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We appreciate being asked to evaluate your operating problem. We are initiating continued discussions with the Uranium Recovery Licensing Branch to further resolve any technical questions that may remain.

Yours very truly,

DAMES & MOORE

George C. Toland

George C. Toland
Partner
Professional Engineer No. 992
State of Wyoming

GCT/pc

Attachment

(5 copies submitted)

cc: Mr. Dan Gillen
U.S. Nuclear Regulatory Commission
Uranium Recovery Licensing Branch
Mail Stop 483-SS
Washington, DC 20555

Table 1

TAILINGS NO. 2 PIEZOMETER WELL SOUNDINGS

Well Number	Casing Height (feet)	Well Bottom Depth (feet)	Ground Elevations (feet)	Water Elevations (feet)	Well Bottom Elevations (feet)
P-1	0.75	38.25	6510.40	6478.90	6472.9
P-2	2.75	40.37	6511.19	6471.50	6473.57
P-3	2.25	38.00	6513.34	6478.47	6477.59
P-4	0.79	39.00	6510.54	6480.21	6472.33
P-5	1.25	38.25	6511.04	6485.37	6474.04
P-6	3.67	38.00	6509.01	6486.76	6474.68
P-7	3.17	95.17	6510.98	6436.36	6418.98
P-8			6426.58		

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