WM Record File

WM Project 60

Docket No.

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~~WM60/GNG/85/06/06~~

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JUN 18 1985

(Return to WM, 623-SS)

John Themelis, Project Manager
Uranium Mill Tailings Project Office
Albuquerque Operations Office
U.S. Department of Energy
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Albuquerque, New Mexico 87115

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MR Knapp	G Gnugnoli
DM Gillen	DE Martin
RD Smith, URFO	POR

Dear Mr. Themelis:

I am enclosing the minutes of the May 1, 1985 meeting on the revised hydrology appendix to the Riverton Environmental Assessment (Enclosure 1). I wish also to thank you for the prompt transmittal of the two references requested during the meeting.

NRC staff is continuing its review of the appendix and other support information which was made available to us following our review of the draft RAP.

The geotechnical engineering review is still awaiting clarification on several issues regarding the liquefaction analysis. During a June 17, 1985 telephone conversation between TAC and NRC staff, it was agreed that a revised analysis of the liquefaction potential for the Riverton site will be submitted. As was discussed, this analysis should incorporate the results of additional investigation of:

i) the maximum ground-water elevation,
ii) the maximum ground acceleration at the site, and
iii) a soil profile underlying and adjacent to the pile.

Furthermore, adequate documentation including relevant boring logs should be provided to support the data used in the liquefaction calculations. Although it is not necessary to consider a simultaneous occurrence of a flood and a seismic event for the calculations, the analysis should consider the effects of potential liquefaction of soil adjacent to the pile on the seismic stability of the pile. NRC staff is also reviewing the slope stability and settlement calculations. We expect to factor the results of our analysis into the review of the revised EA and final RAP. Should we identify any concerns prior to the receipt of these documents, we will notify you.

Ground-water analysis is also continuing in areas of possible restoration and in the geochemical characterization. This analysis has revealed some

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inconsistencies; such as in the sulfate plume diagram (Fig D.2.26) in the hydrology appendix. The plume isopleths indicate some inconsistencies with the well concentrations.

It is our understanding from speaking with M. Matthews (DOE/AL) and K. Piel (TAC) that we should expect the Riverton Final RAP in late June. We recommend that you provide the revised Final EA for our review prior to that time, so that we may be able to expedite our review.

Should you have any questions regarding this letter, please contact Giorgio Gnugnoli of my staff at (FTS) 427-4788.

Sincerely

Original signed by
Leo B. Higginbotham

Leo B. Higginbotham, Chief
Low-Level Waste and Uranium
Recovery Projects Branch
Division of Waste Management

Enclosure:
As stated

*(See previous concurrence)

OFC	:WMLU:rb *	:WMGT *	:WMGT *	:WMEG *	:WMGT *	:WMLU	:
NAME	:G. Gnugnoli	:W. Ford	:M. Fliegel	:S. Smykowski	:M. Nataraja	:L.B. Higginbotham	: :
DATE	:85/06/14	:85/06/14	:85/06/14	:85/06/17	:85/06/17	:85/06/18	:

WM-41/85/05/07/1

JUN 18 1985

NRC/DOE MAY 1, 1985, MEETING MINUTES

PARTICIPANTS:	N.R.C.	D.O.E.	T.A.C.
	Birchard, George	Matthews, Mark	Bone, Mike
	Brooks, David		Brinkman, Jim
	Dam, William		Piel, Kelly
	Fliegel, Myron		
	Ford, William		
	Gnugnoli, Giorgio		
	Johnson, Ted		
	Larson, Mark		
	Smykowski, Steve		
	Valdes, Jose		
	Weber, Michael		

On Wednesday, May 1, 1985, the staff of the U.S. Nuclear Regulatory Commission (NRC) held a discussion with the U. S. Department of Energy (DOE) and DOE's consultants (TAC) concerning the Revised Hydrology Appendix of the Riverton Environmental Assessment. The purpose of this meeting was to discuss the initial reactions of the NRC staff to the Revised Hydrology Appendix. All staff comments and questions were preliminary, since the NRC staff had only one or two days to look at the document. Therefore any of the conclusions and recommendations expressed during this meeting and documented in this record may change pending further review. This memorandum describes the major issues discussed during the meeting.

1) Surface Water, Riverton Site

The NRC Staff indicated that they wanted a reasonable Probable Maximum Flood calculated for each UMTRAP site. This would mean that a consistent approach to calculate Probable Maximum Flood would be used for all sites. However, it would not mean that each UMTRAP site would have to be designed to withstand this level of flood, if it could be shown that the design for a lesser flood would be adequate. The TAC staff replied that the Remedial Action Plan will show that the rock size used to cover the pile will be sufficient to withstand any credible flood event.

NRC staff also asked if the pile would be designed to withstand channel erosion should the Wind River or Little Wind River change its flow direction so as to directly impact the pile. The TAC replied that the pile would be adequately protected against that possibility. The TAC described the details of the revised erosion protection design.

2) Surface Water, Dry Cheyenne Site

A request was made by the NRC staff for an improved description of erosion protection of the Dry Cheyenne Site.

3) Slurry Wall

The TAC indicated that a slurry wall will not be included in the Remedial Action Plan since the wall would not attenuate the movement of molybdenum and would slow down clean up of the unconfined aquifer by natural flushing.

4) Carbonate and Acid Tailings

The NRC staff asked if the TAC knew where the carbonate and acid tailings were located in the pile. The TAC staff replied that the carbonate tailings were located at the bottom of the pile, but little was known about their detailed distributions. Also it was not known if the carbonate tailings presently provided any buffering for the acid tailings.

5) Ground Water Sampling

Groundwater samples and water level measurements will be taken at the end of May. Local wells and DOE wells will be sampled at this time for organic and inorganic species.

6) Contaminated Wells

Three wells show evidence of contamination in the confined aquifer system (West Lake, 106, 111). Neither the TAC or DOE knew why the wells appeared to be contaminated. It was hypothesized that West Lake (a wind mill) may have been showing contamination due to a poor well completion and that the DOE wells (106,111) may have been contaminated when they were drilled. These wells will be studied further to try and determine how they were contaminated.

7) Buffering Capacity

The Revised Hydrology Appendix states that leaving the pile at the Riverton site will not create a continuous long term source of groundwater pollution because the unconfined aquifer can buffer the pH of the groundwater. This buffering action would cause contaminants to precipitate and limit their migration and transport. The NRC staff requested the sediment buffering capacity be characterized to add credence to this conclusion.

8) Geochemical Modeling

The NRC requested that a caveat be placed in the Environmental Assessment. This request was made in response to the statement in the EA on page D-232 that "Computer codes... are useful particularly for prediction of short- and long-term impacts of various remedial action plans because they account for complex interactions of mass and energy within the physical system before and after implementation of the proposed remedial action, subject to certain assumptions." However, the problem with the statement in the EA is that the computer codes are constructed from simplifying assumptions and are limited by the quality of input and thermodynamic data. Therefore, the codes are useful tools that can be used to 1) help understand the geochemistry of a site and 2) develop scenarios based on expected changes in conditions. Thus, they can be used to provide input into what might happen in the future but they do not predict what will happen.

The NRC also requested that the EA list the assumptions that were made in formulating the geochemical model (e.g. infinite calcite buffering capacity).

9) Groundwater Restoration

It was requested by the NRC that the Environmental Assessment be revised to address partial groundwater restoration alternatives and what costs and effects such an action will have on water use patterns if the groundwater is not restored.

10) Information Request

At the end of the meeting a preliminary request for information (attached) as reproduced below was agreed to and signed by the NRC and DOE. This list summarized most of the information requests previously described plus a request that responses to NRC comments on the Draft Remedial Action Plan be itemized when the Final Remedial Action Plan is submitted for NRC review.

PRELIMINARY REQUEST FOR INFORMATION
REGARDING HYDROLOGY FOR THE RIVERTON
UMTRAP PROJECT (5/1/85)

1. West Lake well and water level measurements around the pile (May, 1985 sampling).

2. Characterize sediment buffering capacity.

3. Request to caveat water chemistry modeling.

4. List of geochemical model assumptions (solute transport, TRUST and PHREEQE).

5. Copy of Pyrih reference.

6. Copy of SH&B geomorphology report.

7. Responses to NRC comment on Draft RAP itemized when the draft final RAP is submitted and a copy of the proposed EA.

8. Improve description of erosion protection of Dry Cheyenne Site.

Preliminary Request for Information Regarding Hydrology for the Riverton UMTRAP Project. (5/1/85)

1. West lake well and water level measurements around the pile. (May, 1985 sampling)

2. Characterize sediment buffering capacity.

3. Request to ~~caveate~~ caveat water chemistry ~~modeling~~.

4. List of geochemical model assumptions (Solute transport, TRUST + PHREEQE)

5. Copy of ~~Pyrite~~ Pyrite reference

6. Copy of SH+B geomorph report

7. Responses to N.R.C comment on Draft RAP itemized when the draft final RAP is submitted. and a copy of the proposed E.A.

8. Improved description of erosion protection of Dry Cheyenne Site

Jud 5/1/85
G Williams
Mark L Matheson 5/1/85
Gregory Sengebo 5/1/85