October 24, 1997

Mr. George Rael, Director
U.S. Department of Energy
Albuquerque Operations Office
ERD/UMTRA
P.O. Box 5400
Albuquerque, NM 87185-5400

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ON THE NATURITA SITE

Dear Mr. Rael:

The purpose of this letter is to provide you with the enclosed U.S. Nuclear Regulatory Commission (NRC) staff's request for additional information (RAI) regarding the U.S. Department of Energy's (DOE) September 1996 NATURITA RAP COMMENT AND RESPONSE DOCUMENT. Based on its review of DOE's responses, the NRC staff is requesting additional information in areas of groundwater protection and health physics, as described in the enclosed RAI.

The staff has reviewed the White Paper on Procedures for Selection and Utilization of Sandstone for the Apron Trench, Erosion Blanket, and Sediment Trap Dam. Based on it's review the staff finds these erosion protection specifications and procedures to be acceptable. DOE, as was stated by DOE representatives, intends to include these new specifications and procedures into the forthcoming revised Remedial Action Plan (RAP) and Remedial Action Inspection Plan (RAIP). NRC staff concur that DOE should place these specifications and procedures into the revised RAP and RAIP.

If you have any questions concerning this subject, please contact Mr. Robert Carlson, the Project Manager for the Naturita site, at (301) 415-8165.

Sincerely,

(Original signed by Daniel M. Gillen for)

Joseph J. Holonich, Chief
Uranium Recovery Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

NMSS
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WM-66
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Enclosure: As stated

cc: R. Cornish, DOE Alb
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U.S. NUCLEAR REGULATORY COMMISSION STAFF'S REQUEST FOR
ADDITIONAL INFORMATION ON NATURITA/URAVAN UMTRA PROJECT SITE

The following comments are based on the Nuclear Regulatory Commission (NRC) staff's review of the Department of Energy's (DOE) submittal, dated September 1996.

COMMENTS ON DOE RESPONSE
TO NRC RADIATION COMMENTS ON NATURITA REMEDIAL ACTION PLAN (RAP)

1. COMMENT (ISSUE 19): DOE should provide Th-230 and U-238 data obtained with the cobbly soil study to substantiate that adequate characterization of these radionuclides has been performed.

   DISCUSSION: DOE provided 1995 data on 11 pits, that included 18 samples for U-238 and Ra-226. From the Ra/U ratio, 9 samples are possibly tailings. No U-238 value was higher than the corresponding Ra-226 value, so there should be no problem for uranium cleanup, (i.e., uranium will be cleaned up when materials are excavated for Ra-226 cleanup). However, it was unclear whether DOE sampled in areas most likely to be contaminated with Th-230 and uranium, especially considering that DOE is now doing additional excavation to remediate uranium.

   In the July 15, 1996, phone call with DOE to discuss the draft Technical Evaluation Review (TER) issues, the NRC staff had commented that there was an error in the standard deviation formula in the cobbles procedure (Section 5.4). DOE responded that the 1992 procedure and the proper formula were used, but a corrected RAP (Appendix B of Remedial Action Selection Report) page was not provided.

   Also identified in the call was a possible problem with the site correction factor (lab/OCS) for Ra-226 analysis in the May 1995 cobbles-to-fines report. It appears that step 6 of the method uses two corrections for the Ra-226 log data and DOE did not provide data to support that the average (default) correction factor was appropriate for both low and high values. Another possible problem mentioned was the averaging of partition factor ("f") values when the percentage of fines varies greatly from area to area. This means some areas are cleaned to background and other areas could be above the standard. DOE has not formally responded to these comments.

   Staff has noted that the May 1995 cobbles-to-fines report indicates that the bulk Th-230 can be 35 pCi/g for all depths. This is not consistent with the UMTRA Project thorium policy because in 1000 years that would result in 12 pCi/g Ra-226 in the top 15 cm of soil.

   ACTION NEEDED: DOE should: 1) provide evidence that Th & U samples were taken from areas most likely to be contaminated with these radionuclides; 2) provide a page change to correct the standard deviation calculation to reflect what was used; 3) reference in the revised RAP, how the test pit data and cobbles to fines report will be utilized in the soil cleanup so that NRC and the state concur on the site specific procedure; 4) provide information on the Ra-226 correction factor and on the average partition factor; and 5) provide corrected pages indicating that the bulk Th-230 value of 35 pCi/g is for subsurface soil.

Enclosure

2. COMMENT (ISSUE 20): DOE should provide more Ra-226 background data and correct Table 6.1 in the Remedial Action Selection (RAS) Report.

   DISCUSSION: DOE provided 30 background Ra-226 values (average 2.1 pCi/g) and indicated that Table 6.1 would be revised.

   ACTION NEEDED: DOE should provide the appropriate page change for the RAP.

3. COMMENT (ISSUE 22): DOE should remove the former ore storage area from consideration under Part 192.21(c) (it is part of the designated site).

   DISCUSSION: DOE acknowledged in the September submittal that the area is part of the designated site and only supplemental standards criteria a and b apply.

   ACTION NEEDED: DOE should provide the appropriate page change for the supplemental standard information in the RAP.

4. COMMENT (ISSUE 23): DOE should discuss possible future uses of all supplemental standard areas in the analysis of health risks.

   DISCUSSION: DOE indicated that the supplemental standard areas are zoned agricultural, but staff is aware that the zoning designation could change in the future. Because the resident farmer scenario is usually more conservative than other land use scenarios, this issue is closed. However, the data for areas where supplemental standards have been applied should include records for the processing site areas and the database should be provided to the state.

   ACTION NEEDED: DOE should include a commitment in the RAP to document all supplemental standard areas in a database to be provided to the state.

5. COMMENT (ISSUE 25): DOE needs to reconsider how much removal can be performed around the gas line. In addition, Ra-226 data should be provided.

   DISCUSSION: In the July 1996 call, NRC asked that DOE provide the Ra-226 data in the revised RAP, with a discussion of the data sheets and a sample location map. DOE indicated in the September 1996 response that a 10-foot-wide area over the gas line would not be excavated because of the utility company requirements, that Ra-226 data was provided previously, and that sample locations were shown on the attached drawing. However, the Ra-226 data provided in the May 1996 response document did not clarify why there was a corrected Ra-226 value, why only a portion of the line was sampled, and how the Ra-226 values were reflected in the potential health risk analysis.

   ACTION NEEDED: DOE indicated that the Ra-226 data will go into any pertinent supplemental standard application. There is a supplemental standards application in the RAP, and DOE should revise it to include the pertinent information discussed in response to this comment.

6. COMMENT: Errors were identified in the Site Specific Hazardous Constituents List, Table 3.2.

DISCUSSION: In Table 3.2 (DOE, Comment and Response Document, September 1996, Comment 14, List of Hazardous Constituents) the concentration limit for Ra-226+228 is listed with a Maximum Concentration Level (MCL) of 15 pCi/L. 40 CFR 192, Subpart A, Table I lists an MCL of 5 pCi/L for combined Ra-226/Ra-228.

In a review of Section 3.1.6 of the RAP (March, 1994) the staff found 2 constituents that should be added to the hazardous constituents list in Table 3.2. The RAP (DOE, March 1994, Section 3.1.6, page 3-7, 4th paragraph, the last sentence) indicates Chromium and Net Gross Alpha were found above background and above MCLs in on-site monitor wells. Leach test results presented in Table 3.1 of the November 1995 RAP (Appendix C) identified the presence of chromium in tailings. Pursuant to the standards in 40 CFR 192, DOE should add these two constituents to the Hazardous Constituents List, Table 3.2.

Apparent omissions were found in the text that DOE should correct in the revised RAP. In the March 1994 RAP, Page 3-7 at the top, vanadium was not included in the list of constituents found above detection limits in groundwater. In Section 3.1.6, Page 3-8, second paragraph of the March 1994 submittal, chromium was not included in the list of constituents in exceedance of MCLs.

ACTION NEEDED: Table 3.2 should be corrected by changing Ra-226+228 MCL to 5 pCi/L and adding chromium and net gross alpha to the list. Revise the text accordingly for omissions of vanadium and chromium from specified text locations.