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MEMORANDUM FOR:

Daniel E. Martin, Section Leader  
Uranium Recovery Projects Section, WMLU

FROM:

Mysore S. Nataraja, Section Leader  
Rock Mechanics Section, WMEG

SUBJECT:

WMEG REVIEW OF THE DRAFT "COMPARATIVE ANALYSIS OF DISPOSAL  
SITE ALTERNATIVE REPORT" (CADSAR) FOR THE MAYBELL, COLORADO  
UMTRA SITE

We have attached our review comments on the geotechnical engineering aspects of the subject document in response to Technical Assistance Request No. WM-86716.

The Draft CADSAR (June 1986) for the Maybell site is very general and provides very little factual information or data on which the staff could base a conclusion with regards to site suitability.

In the Maybell Draft CADSAR submittal, it appears that DOE had elected to not provide basic site information which in the past, DOE has indicated would be provided in the CADSAR ("Alternative Site Selection Process for UMTRA Project Site," UMTRA-DOE/AL 200129.0007 R-2, March 1986). It is possible that this information will be included in the anticipated Final CADSAR, however, it becomes questionable what benefits are gained by a staff review of a Draft CADSAR which has very limited information. If relevant site specific information is not to be provided until the Final CADSAR stage, it would appear that a better utilization of staff resources would be to begin our review on the Final CADSAR submittal and allow for a two-step review process of staff questioning and DOE response on the Final CADSAR.

The attached review comments have been prepared by Joseph Kane (X74367) who may be directly contacted if you have questions on the contents of the attachment.

15/  
Mysore S. Nataraja, Section Leader  
Rock Mechanics Section, WMEG

Enclosure:  
As stated

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REVIEW COMMENTS ON THE DRAFT COMPARATIVE ANALYSIS  
OF DISPOSAL SITE ALTERNATIVE REPORT (CADSAR) FOR  
THE MAYBELL, COLORADO UMTRA SITE

Prepared by: Engineering Branch, DWM

1. Section 3.0, Characterization of Sites, Page 5

Section 3.0 provides very little factual information on actual site conditions. Basic information needs to be presented (site stratigraphy, exploration data, description of static and dynamic engineering properties of foundation, embankment and borrow materials, soil and rock characteristics that would prevent migration of contaminants) on the processing site, Johnson Pit and proposed borrow areas.

The two references cited in Tables 3.2 and 3.3 should be provided to understand the basis for DOE's conclusions on concerns for site characteristics that are identified in these tables.

The areal extent and thickness of pockets of slimes at the south end of the tailings pile and the condition of the partially backfilled Johnson Pit (material types, construction method for placement and any compaction effort, etc.) need to be described and understood in order to make a reasonable estimate of their impact and costs on remedial action work.

It would appear from Table 8.1 that the results of site investigations that would cover geotechnical drilling, borrow areas and groundwater would be available for incorporation into the Final CADSAR. After having established preliminary site conditions, an engineering assessment would need to be made on potential slope stability and settlement or subsidence problems, on stability under earthquake loading and any specific feature that might adversely impact safe construction and operation. The impact of these specific site features on remedial action costs would then need to be estimated.

2. Section 4.0, Site Conceptual Design, Page 14

The staff agrees with DOE that the designs of possible alternative disposal options in this section are preconceptual only, and will change as site characterization is completed. As an example, the proposed alternative for stabilization of Johnson Pit needs to establish the engineering properties and condition of the existing pit materials and slopes and backfilled portion (material types, densities) in order to



identify required remedial action work (cutting back or sealing of pit walls and bottom, etc.). The staff would anticipate major revisions and updating of Section 4.0 in the Final CADSAR along with sectional views that illustrate the conceptual scope and extent of proposed remedial action work.

3. Section 6.0, Cost Estimates, Page 17

Section 6.0 and the work items in the cost estimate summaries of Tables 6.1 and 6.2 are not sufficiently described which raises questions as to whether the cost estimates appropriately reflect the remedial work to be performed. As an example, it is unclear for the proposed stabilization in place alternative, what work effort and costs have been considered for either removing or stabilizing the soft slime materials at the south end of the existing tailings pile. In the Final CADSAR, Section 6.0 should be expanded to describe the major design features and construction operations with sufficient information on remedial action quantities and cost presented to demonstrate that the significant design and construction features have been adequately addressed.