

April 18, 2016

Ms. Jalena Dayvault, Site Manager  
U.S. Department of Energy  
Office of Legacy Management  
2597 Legacy Way  
Grand Junction, CO 81503

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION STAFF COMMENTS ON U.S. DEPARTMENT OF ENERGY DRAFT REPORT ENTITLED "DURANGO TRANSIENT DRAINAGE SYSTEM CLOSURE AND EVAPORATION POND REMOVAL PLANNING DOCUMENTS" DATED FEBRUARY 2016 (DOCKET NO. WM-00048)

Dear Ms. Dayvault:

I am writing in response to your letter dated February 17, 2016, providing the U.S. Nuclear Regulatory Commission (NRC) staff with the draft Technical Memorandum entitled "Durango Transient Drainage System Closure and Evaporation Pond Removal Planning Documents" dated February 2016 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML16053A013). Your letter and the draft technical memorandum provided responses to our comments in a letter dated August 10, 2015, regarding the U.S. Department of Energy's intent to remove the transient drainage system at the Durango, Colorado Uranium Mill Tailings Radiation Control Act site (ML15202A466). The NRC staff has reviewed your letter and the documents in the draft technical memorandum and has several comments on both. The staff's comments are enclosed.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

J. Dayvault

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If you have any questions concerning this letter, please contact me at 301-415-6749 or by email at [Dominick.Orlando@nrc.gov](mailto:Dominick.Orlando@nrc.gov).

Sincerely,

***/RA/***

Dominick A. Orlando, Senior Project Manager  
Materials Decommissioning Branch  
Division of Decommissioning, Uranium Recovery  
and Waste Programs  
Office of Nuclear Material Safety  
and Safeguards

Enclosure:  
NRC Staff Comments on DOE Letter  
and draft Technical Memorandum

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ADAMS Accession No.:			ML16095A185		*Concurred via e-mail
OFFICE	NMSS:PM	NMSS:LA	NMSS	NMSS	NMSS
NAME	N. Orlando	C. Holston	S. Giebel	Z. Cruz	D. Esh
DATE	4/4/16	4/5/16	4/6/16	4/6/16	4/11/16
OFFICE	R-IV	R-IV	NMSS:BC	NMSS:PM	
NAME	R. Evans*	J. Whitten*	M. Norato	N. Orlando	
DATE	4/11/16	4/13/16	4/18/16	4/18/16	

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**U.S. Nuclear Regulatory Commission Staff Comments  
on the U.S. Department of Energy draft “Durango Transient Drainage System Closure  
and Evaporation Pond Removal Planning Documents” dated February 2016**

**Cover Letter**

1. In the response to the U.S. Nuclear Regulatory Commission’s (NRC’s) comment regarding the applicability of the requirements of 10 CFR 40.27 (“**Regulatory Applicability**”), the U.S. Department of Energy (DOE) letter states that it is the DOE’s understanding that the regulations do not apply to the project because of the limited scope of the proposed action. As discussed in our August 10, 2015, letter to the DOE, the NRC staff determined that 10 CFR 40.27(e) applies to the project, and the DOE would need to describe how it will comply with the requirements of 10 CFR Parts 19, 20, and 21. The DOE’s letter dated February 17, 2016, discussed how it will comply with 10 CFR Part 19. However, the letter does not discuss how the DOE will comply with the notification requirements in 10 CFR Part 21 or the health and safety requirements of 10 CFR Part 20 although the letter does indicate that these activities will be conducted pursuant to DOE’s Office of Legacy Management (LM) policies and procedures and DOE Orders. Please provide the references (i.e., title or Order number) to the applicable DOE Orders and DOE-LM policies and procedures. Complete copies of the documents are not necessary as long as they are available for inspection or are otherwise publically available.
2. In response to the NRC staff’s comment regarding the impact of the removal of the transient drainage system (“**Final Comment**”), the DOE letter states that the transient drainage system will be capped and left in place. The “Engineering Evaluation” in the Technical Memorandum discusses the DOE’s intention to maintain the transient drainage system in a way that maintains the flexibility to restore the system to service if necessary. The DOE should describe the “threshold” to “re-open” the drainage system and put it back in service. In addition, the DOE should also clarify how the system is expected to respond to a major rain event, should one occur in the future given that the transient drainage system is closed. The threshold for re-opening the transient drainage system should be included in the revised Long-Term Surveillance Plan (LTSP), rather than an appendix to the LTSP, in order to ensure that it is readily available if the transient drainage system needs to be re-opened

**Draft Technical Memorandum**

**Road Improvements and Evaporation Pond Work Instructions**

**Section 3 – Evaporation Pond Removal**

1. Given the scope of the activities under this plan, and the waste management and pond removal activities, does the DOE intend to evaluate the project pursuant to the National Environmental Policy Act (NEPA), and if so, will the NRC be able to review the draft NEPA documents the DOE develops?
2. The first bullet on page 4 indicates that the DOE will “remove” any evaporation pond water prior to the start of construction. It is not clear how the DOE will remove this potentially contaminated water and how the water will be managed and/or disposed. Please provide a description of how the pond water will be managed.

**Enclosure**

3. It is not clear from the description of the activities on page 4, 13<sup>th</sup> and 14<sup>th</sup> bullets, if the DOE will coordinate the removal of the pond with the NRC so as to allow the NRC to perform a confirmatory survey of the pond area prior to its release. Please clarify if and how the activities will be coordinated with the NRC.

#### **Section 4 – Evaporation Pond Removal Detailed Work Plan**

1. Item 5, on page 6 states that, “The cell transient drainage system line and vent shall be located removed and controlled...” This appears to be inconsistent with the statements provided in the cover letter and the DOE’s responses to the NRC staff’s comments in August 2015 that the transient drainage system will remain in place. Please clarify the DOE’s intended actions with respect to the transient drainage system line.
2. Item 7, on page 6 discusses the mixing or blending of contaminated and non-contaminated materials (soils). It is not clear how these soils will be blended or mixed or where at the site this will occur. Please clarify the DOE’s procedures for blending the soils.
3. Please clarify if the transportation containers (bags) will be stacked.
4. Item 16, on page 6 discusses the decontamination of equipment used during the project. It is not clear from the discussion where this decontamination will occur or what criteria will be used to determine that the equipment can be released for unrestricted use. Please clarify where the decontamination will occur, how the DOE will manage the material that is removed during decontamination, and what release unrestricted release criteria will be used to ensure that contaminated equipment is not released.
5. Item 1, in “Loading and Transport of the Bags to the GJDS” on page 7 states that the DOE will “Follow all requirements of the Transportation/Shipping Plan.” A Transportation/Shipping Plan was not included in the Technical Memorandum. Please clarify if the DOE is referring to the section entitled “Radioactive Waste Management Procedures” or provide this additional plan.
6. Item 13, on page 8 indicates that the truck will be released without a final radiological survey. Please clarify if a survey of the truck will be performed, and if not, why the DOE does not believe this survey is necessary. Note this appears to be discussed on page 3 of the section entitled “Radioactive Waste Management Procedures” but it is unclear if the Radiological Control Technician or the driver is responsible for performing the radiological survey of the truck and its contents.

#### **Radioactive Waste Management Procedures**

1. It is not clear how the actions of the individuals involved in the Incident Reporting and Emergency Response are coordinated by, or reported to the DOE project manager(s). For example, Section 3.3 discusses the responsibilities of the radiological control manager, but it is not clear if this individual is a DOE employee, a contractor employee, or a subcontractor employee. The section also assigns responsibility for incident response to an incident commander, who would be the senior representative of a law enforcement or hazardous materials response authority, but it is not clear how the DOE will ensure that this individual

will assume responsibility for the incident and how the DOE will coordinate the incident response.

2. It is not clear that other workers besides drivers will require DOT training including the individual signing the shipping papers. Please clarify that workers other than drivers will get the required DOT training, including the individual signing the shipping papers.
3. The section is unclear with respect to who will contact the NRC in the event of an incident.
4. Section 3.2, on page 3 discusses waste container labeling. If the materials to be shipped to Grand Junction are DOT Class 7, the hazard ID would be "Radioactive 7" and the packages would also have to be labeled "Radioactive White-1" for surface radiation levels not exceeding 0.5 millirem per hour (mrem/hr). If the materials exceed 0.5 mrem/hr, the package would have to be labeled "Radioactive Yellow-2." The package should also include the UN ID shipping number for the material. It is not clear from the discussion here and in Section 3.5 of the "Clean-up Criteria and Verification Sampling Plan" if the DOE will include these labels on the shipping packages. Please clarify the labeling requirements on the shipping packages.

#### **Clean-up Criteria and Verification Sampling Plan**

1. It is not clear from the discussion in this section if the DOE has characterized the pond sludge and surrounding area to determine the radiological inventory and volume of the waste material. If so, please provide this information to the NRC as it is important in evaluating the health and safety measures discussed in the plans as well as the waste management activities.
2. Section 1.3 on pages 4-5 discusses the clean-up criteria that will be used by the DOE at the site and states that the DOE will use the U.S. Environmental Protection Agency's risk-based uranium level in soil for migration to ground water. The Durango site is subject to Title I of the Uranium Mill Tailings Radiation Control Act. Therefore, it is not clear why the DOE is not using the criteria in 40 CFR Part 192. Note that the NRC has developed guidance in Appendix H of NUREG-1620, revision 1, "Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites under Title II of the Uranium Mill Tailings Radiation Control Act," which discusses using the radium benchmark dose approach. The radium benchmark dose approach may be used to determine the appropriate clean-up criteria for radionuclides other than radium.
3. Item 8[b] indicates that the background gamma exposure rate is 15.7 microrentgens per hour, which was the background exposure rate in 1983. It is not clear why this exposure rate was used rather than one that is more current.
4. Section 3.0, on page 6 discusses the use of Visual Sampling Plan computer code to ensure verification samples are defensible and representative of site conditions. The verification sampling will be based on 17.5 foot (ft) x 17.5 ft grids. Please identify the basis of the 17.5 ft grids and having a single sample aliquot taken from the center of each grid.
5. Section 3.4, on page 9 discusses the use of SC-132 crutch scintillometers. Please describe the basis for the selection of these instruments. This section also has an equation for

converting SC-132 readings to gamma exposure rates. Please describe the rationale for the use of this equation.