



Department of Energy

Washington, DC 20585

September 23, 2020

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Deputy Director
Mail Stop T8-F5
Washington, DC 20555-0001

Subject: Department of Energy Office of Legacy Management Bluewater, New Mexico,
Disposal Site Main Tailings Disposal Cell Repair Project Proposal for U.S. Nuclear
Regulatory Commission Reviews and Acceptance (NRC Docket No. 40-8902)

To Whom It May Concern:

As identified in the December 2018 U.S. Department of Energy (DOE) Office of Legacy Management (LM) letter to the U.S. Nuclear Regulatory Commission (NRC)¹ and the 2018 and 2019 multiagency public meetings in Grants, New Mexico, LM is moving forward with a project to repair the main tailings disposal cell at the Bluewater, New Mexico, Disposal Site. The purpose of this letter is to coordinate a path forward between LM and NRC and clarify expectations for NRC's reviews and acceptance of the design.

Depressions were first identified on the northern portion of the Bluewater main tailings disposal cell top slope during the first inspection by DOE in 1998. Depression formation was visible via satellite imagery before the 1997 site transfer. Since this identification, the depressions have continued to grow both in depth and areal extent. LM has continued to monitor the depressions and conducted topographic aerial surveys of the main tailings disposal cell in 2012 and 2016. In 2016 the depressions covered approximately 20.5 acres of the 250-acre top slope. Because of the design of the main tailings disposal cell, the depressions impede storm water from being effectively shed off the top slope of the main tailings disposal cell. Instead, storm water accumulates in the depressions, forming a large ephemeral pond that has stored up to 4.3 million gallons of storm water. The ponding poses a potential risk to the integrity of the main tailings disposal cell in the case of a large storm event, with the potential to cause the pond to overtop and erode the cover material and underlying waste. LM has taken interim action to prevent overtopping by installing a meteorological station onsite in 2012 and a manually operated siphon in 2014.

DOE first notified NRC of the depressions and ponding in the *1998 Annual Site Inspection and Monitoring Report for Uranium Mill Tailings Radiation Control Act Title II Disposal Sites*.² Since then LM has continued to inform NRC of the conditions of the depressions and ponding through subsequent annual compliance reports, the *Site Status Report: Groundwater*

¹ Tsosie, 2018. Bernadette Tsosie, Site Manager, Office of Legacy Management, letter (about U.S. Department of Energy Response to U.S. Nuclear Regulatory Commission Comments on Bluewater, New Mexico, Disposal Site Documents [NRC Docket No. 40-8902]) to Ron Linton, Project Manager, Materials Decommissioning Branch, Division of Decommissioning, Uranium Recovery and Waste Programs, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, December 21.

² DOE (U.S. Department of Energy), 1998. *1998 Annual Site Inspection and Monitoring Report for Uranium Mill Tailings Radiation Control Act Title II Disposal Sites*, Long-Term Surveillance and Monitoring Program, September.



Flow and Contaminant Transport in the Vicinity of the Bluewater, New Mexico, Disposal Site,³ and the *Evaluation of Disposal Cell Topography Using LiDAR Surveys Bluewater, New Mexico, Disposal Site*.⁴ In the last of these documents, LM identified several options for mitigating the impact of the depressions, one of which was to:

Evaluate the construction of one or more armored spillways over the north side slope of the disposal cell. Ponding with partial draining would be designed such that erosion would not occur. The spillways should be designed to discharge runoff from a probable maximum precipitation event in case the top slope is regraded to prevent ponding at a later date.

NRC responded to the 2017 LiDAR report in a May 2018 letter⁵ indicating its interest in reviewing LM's consideration of the above option and requesting "DOE provide a response regarding their planned approaches for addressing ... the depressions on the north end of the disposal cell."

In 2018 LM began working with a subcontractor to develop conceptual designs to repair the main tailings disposal cell. On June 26, 2018, LM Director Carmelo Melendez signed a Memorandum of Agreement with the U.S. Army Corps of Engineers (USACE) to enable LM to better leverage nationwide assets available throughout the multiple USACE districts and offices. As a result of this agreement, LM approached the USACE Albuquerque District in spring 2019 to discuss the Bluewater main tailings disposal cell project. In late 2019 an interagency agreement was finalized with the USACE Albuquerque District to complete the design and construction of the main tailings disposal cell repair to ensure stormwater is shed effectively.

The current scope of work for the Bluewater main tailings disposal cell repair project is as follows:

- Construct a new disposal cell spillway at the Bluewater site main tailings disposal cell and ensure positive drainage of the entire disposal cell cover
- Replace disturbed areas of disposal cell cover on the top slope with a vegetative soil-rock matrix cover unless riprap cover is necessary
- Determine how a planted soil-rock admixture, placed over areas of cell disturbance, will perform as a water balance cover

³ DOE (U.S. Department of Energy), 2014. *Site Status Report: Groundwater Flow and Contaminant Transport in the Vicinity of the Bluewater, New Mexico, Disposal Site*, Office of Legacy Management, LMS/BLU/S11381, November.

⁴ DOE (U.S. Department of Energy), 2017. *Evaluation of Disposal Cell Topography Using LiDAR Surveys Bluewater, New Mexico, Disposal Site*, Office of Legacy Management, LMS/BLU/S14703, April.

⁵ Whited, 2018. Jeffrey Whited, Project Manager, Materials Decommissioning Branch, Division of Decommissioning, Uranium Recovery and Waste Programs, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, letter (about NRC Staff Review of Site Status Reports for the Bluewater, New Mexico, Disposal Site) to Bernadette Tsosie, Project Manager, Office of Legacy Management, U.S. Department of Energy, May 24.

- Identify what can be done to improve the performance of the redesign to maximize evapotranspiration and minimize infiltration for long-term cost savings
- Integrate lessons learned from previous work on water balance and soil formation on disposal cell covers to improve on the proposed redesign

It is LM's understanding that the work to repair the main tailings disposal cell will fall within LM's authority at Title II sites to conduct maintenance. Section 104(f)(2) of the Uranium Mill Tailings Radiation Control Act gives DOE authority "to carry out maintenance, monitoring and emergency measures."⁶ It is LM's understanding that NRC will need to formally accept any design changes to the main tailings disposal cell. Typically, this would be reflected in a revision to the Long-Term Surveillance Plan (LTSP). LM, however, would like to request (1) NRC formally accept the design apart from a revision to the LTSP and (2) the LTSP be revised after construction and project closeout are complete so record drawings, rather than design documents, may be used in the LTSP.

Finally, to aid in USACE project planning and funding allocation, LM would like to coordinate anticipated review points and durations with NRC to the extent possible. To ensure the design meets NRC standards and to minimize comments during NRC's acceptance review, LM would appreciate NRC's involvement in the project beginning in the early design phases and throughout the design process. LM anticipates the following deliverables from USACE as part of the design process: project management plan, alternatives analysis, geotechnical/radiological sampling plan, 35% design, 65% design, 95% design, draft final design, and final design. Considering this schedule, LM would like to propose the following review points and durations for NRC:

Document	NRC Review Duration
Geotechnical/radiological sampling plan (assuming penetrative work into the main tailings disposal cell)	3 months for concurrence
35% design	6 months for comment
Draft final design	9 months for comment
Final design	4 months for acceptance

In response to this letter, LM requests the following from NRC:

1. Notification of whether NRC can formally accept the final design apart from a revision to the LTSP and, if so, whether LM may revise the LTSP after construction and project closeout
2. Notification of whether NRC agrees with the proposed review points or would prefer additional or fewer review points
3. Notification of whether NRC anticipates being able to meet the proposed review durations and, if not, what alternative review durations would be more appropriate

⁶ PL 95-604. "Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA)," Public Law.

4. Notification of the most effective way to facilitate communication and enhance common understanding of the project between NRC and DOE (e.g., routine teleconferences, teleconferences at the beginning or end of NRC review periods, in-person meetings)

Finally, LM requests NRC respond to this letter by November 13, 2020, if possible, to allow DOE and USACE to complete appropriate planning and budgeting. After NRC responds to this letter and identifies its desired review points and durations, LM can provide NRC with an anticipated project schedule to help both agencies with planning and can provide regular updates as the project progresses.

LM looks forward to continuing work under NRC's general license at Bluewater to ensure the protectiveness of the main tailings disposal cell. Please contact me at (970) 248-6550 or Bernadette.Tsosie@lm.doe.gov, if you have any questions. Please address any correspondence to:

U.S. Department of Energy
Office of Legacy Management
2597 Legacy Way
Grand Junction, CO 81503

Sincerely,

BERNADETTE TSOSIE
Digitally signed by
BERNADETTE
TSOSIE
Date: 2020.09.23
15:21:32 -06'00'
Bernadette Tsosie
Bluewater Site Manager

cc:

Ron Linton, NRC
William Frazier, DOE-LM (e)
Mark Kautsky, DOE-LM (e)
Paul Kerl, DOE-LM (e)
Jeff Carman, Navarro (e)
Alison Kuhlman, Navarro (e)
Melvin Madril, Navarro (e)
David Traub, Navarro (e)
DOE Read File
File: E/20/1024 F/20/892