

May 2, 2016

Mr. Richard Bush, UMTRCA Program Manager  
U.S. Department of Energy  
Office of Legacy Management  
2597 Legacy Way  
Grand Junction, CO 81503

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION STAFF REVIEW OF THE  
U.S. DEPARTMENT OF ENERGY "2015 ANNUAL SITE INVESTIGATION AND  
MONITORING REPORT FOR URANIUM MILL TAILINGS RADIATION  
CONTROL ACT TITLE I DISPOSAL SITES" DATED MARCH 2016

Dear Mr. Bush:

I am writing in response to the U.S. Department of Energy's (DOE's) "2015 Annual Site Inspection and Monitoring Report for Uranium Mill Tailings Radiation Control Act Title I Disposal Sites" dated March 2016 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML16068A319). The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the inspection reports and has the following comments and/or questions:

1. On page 4-5, the DOE discusses the creation, since the 2014 inspection, of an 18-foot (ft.) long by 2.5 ft. deep depression on the north slope of the Durango disposal cell. In that this depression formed in one year, please indicate how often the DOE intends to re-check the condition of the depression.
2. On Page 12-7, the DOE discusses the monitoring of seeps at the Mexican Hat site. The fourth paragraph directs the reader to Table 21-2 for information on seep monitoring. The report does not appear to include Table 12-2. In addition, the report states that the 2015 inspection occurred at the Mexican Hat site on April 7, 2015, and that the seeps were dry. During a meeting in October 2015 the DOE staff indicated that the seeps appeared to be damp and that water samples were collected and evaluated. In that the DOE staff appears to have observed the flows in the seeps 6 months before the 2015 report was issued, it is not clear why a discussion of the seeps does not include a discussion of the results of the DOE's analysis of the seep samples. Please provide the dates that the seeps were found to have observable flow, the dates that they were sampled, and the results of the sampling.
3. On Page 13-6, the fourth paragraph states that the NRC approved the DOE's request to discontinue groundwater sampling at the Naturita site in April 2014 and that the DOE would revise the Long-Term Surveillance Plan (LTSP) and submit it to the NRC. Please provide the estimate of when the revised LTSP will be submitted to the NRC.
4. The caption on the picture on page 13-9, (PL-5) states that it is of the southeast face of the Naturita disposal cell with the Maybell West site in the background. In that the Naturita and Maybell West sites are not located in proximity to each other, this may be

an error. Suggest the DOE review the picture and caption to determine the correct caption.

5. The 2009 inspection report for the Lakeview site included a discussion of “streaks” stating:

The side slopes were closely examined for "streaks," defined as areas with smaller-sized rocks generally elongated down the slope. The identification of the streaks and the delineation of their boundaries were determined to be highly subjective. No streak areas were identified on the north side slope. It was estimated that approximately six to twelve semi-well-defined streaks were identified on the west side slope. The combined area of these streaks was conservatively estimated to constitute less than 5 percent of the area of the west side slope. One of the better-delineated streaks was outlined with yellow paint, photographed, and measured. The maximum length of the streak was 27-feet (PL-5), and the maximum width of the streak (midway down the streak) U was 3-feet, 6-inches (PL-6). Identifying the streak boundaries was difficult. The general size of the streak area rocks ranged from approximately 1.5- to 1-inch in diameter; larger rocks were interspersed within the streak area. The objective of marking the streak boundary was to provide a way to determine if the streak size increases over time. Therefore, the marked streak area will be examined and measured during future inspections. This method for monitoring streaks was developed in the field with NRC concurrence.

Reports since 2009 do not discuss the streaks and during the 2015 inspection, the NRC staff noted several (i.e., greater than 15) streaks on the disposal cell. Because the streaks have not been discussed in recent inspection reports, it is not clear if the DOE monitored the streaks and evaluated the cause and impact of these features. Please clarify the actions the DOE has taken regarding the streaks.

In addition to the comments above, the NRC staff has the following clarifying comments regarding the discussion of the inspection for the Lakeview site. We are including these comments in order to provide a more complete description of the issue at the Lakeview site and no response from the DOE regarding these comments is necessary.

The second paragraph in Section 9.1 on page 9-1, states, “However, at the U.S. Nuclear Regulatory Commission’s (NRC’s) request, the 2015 rock monitoring approach deviated from the normal procedure by using a pre-established monitoring grid in a subset area of the west slope.” In addition, the second paragraph in Section 9.4.2.2 on page 9-6, states, “However, for the 2015 inspection, the rock monitoring approach deviated from the normal procedure, at the NRC’s request, by using a pre-established monitoring grid in a subset area of the west slope (see Figure 9-1).” The NRC staff believes that it is important to clarify why the NRC staff recommended a new approach for the monitoring procedure during the 2015 inspection.

On November 12, 2014, the NRC staff requested that the DOE provide the status of the analysis of data collected as part of the on-going rock degradation monitoring program at the site (ML14303A623). On December 19, 2014 and March 2, 2015, the DOE submitted responses to the NRC, which included the data collected for the past 15 years, but did not include an analysis of the data as requested by the NRC staff (ML14356A562 and

ML15068A252, respectively). Because the data was not analyzed by the DOE, the NRC staff performed a preliminary analysis of the data, by plotting the data in a grid by rock size and rock durability. Based on the NRC staff's preliminary analysis, the NRC staff identified an area at the top-center of the side slope which contains rock with a mean rock diameter ( $D_{50}$ ) lower than the approved  $D_{50}$  for the site and rock durability classification of "low/poor." In the March 2015 letter, the DOE stated that it will discontinue the annual rock gradation and durability monitoring at the site. Rather, the DOE proposed to perform "focused inspections" of the rills that may form along the interface between the vegetated soil/rock top-slope cover and the rock-covered west side slope. The DOE staff inspected the site on September 16 and 17, 2015, and the NRC staff observed the DOE staff performing the inspection. During the week prior to the inspection, the NRC staff discussed the results of the staff's analysis of the DOE data with the DOE staff and suggested that the DOE staff perform "focused" monitoring of the area the NRC staff found with unacceptable rock  $D_{50}$ . The DOE staff agreed with the NRC's proposed approach. The proposed approach was further discussed during the inspection at the site with the DOE project manager and the DOE contractors.

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>.

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

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**ADAMS Accession No.: ML16111B238**

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