



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 22, 2017

Mr. Richard Bush, 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 2017
DRAFT FINAL INTERIM TREATMENT SYSTEM EVALUATION PLAN FOR THE
TUBA CITY, ARIZONA, DISPOSAL SITE, DATED JANUARY 2017(Docket
Number WM-00073)

Dear Mr. Bush:

I am writing in response to the U.S. Department of Energy (DOE) report entitled "Draft Final Interim Treatment System Evaluation Plan Tuba City, Arizona, Disposal Site", dated January 2017 (Agencywide Documents Access and Management System [ADAMS] Accession No. ML17018A118). The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the report and has the following comments:

1. The report discusses the potential for contamination of supplier's equipment due to the introduction of contaminated groundwater for the Solar Thermal System, Vertical Circulation in Pond and Wind-Aided Intensified Evaporation (WAIV) techniques. In addition, it appears that the DOE will rely on the equipment supplier's personnel to install some of the equipment for the trials of these techniques. The plan also states that the DOE will perform Hazard and Operability (HAZOP) reviews of the techniques prior to their implementation. The DOE should ensure that all contractor/supplier personnel are provided with appropriate radiation safety training prior to beginning work at the site and that this training is fully documented. In addition, any equipment that is contaminated during the trials should be decontaminated to the appropriate release criteria and the final radiological condition of the equipment should also be fully documented. Training and equipment decontamination information and the HAZOP reviews should be maintained by the DOE for review by the NRC. The schedule indicates that the equipment installation for the trials may be performed in August 2017. It may be useful for the NRC to observe the installation and/or demobilization of the equipment, and, as such, please ensure that the NRC is informed of the dates when these activities will occur at least 30 days in advance. Finally, by letter dated January 13, 2015, the NRC staff provided comments related to the potential installation of the WAIV system (ADAMS Accession Number ML14353A082) that you may want to consider in evaluating the WAIV system. Please note that, to date, the DOE has not responded to the NRC's January 13, 2015 letter.

2. The report indicates that the DOE will install additional monitoring wells at the site to support the Geochemical Analysis and Aquifer Response to Extraction Strategies and that the wells will be installed in the December 2016 - January 2017 timeframe. Please provide the status of the installation of the wells and their proposed or actual locations. By letter dated

July 28, 2016, the NRC staff provided comments related to the installation of additional ground water monitoring wells for areas deemed to be lacking in information and that might help determine if the contaminant plume has moved into the aquifer system beneath some portions of the lower terrace (ADAMS Accession Number ML16200A294). In addition, the Aquifer Response to Extraction Strategies may be relying on the groundwater flow model for the site to simulate the aquifer and plume response to various extraction strategies including static and dynamic pumping approaches. Finally, by letter dated March 28, 2016, the NRC staff provided comments related to the Tuba City groundwater flow model from 2015 (ADAMS Accession Number ML16075A139) that you may want to consider as you develop the Aquifer Response to Extraction Strategies.

3. Section 3.4.3 discusses testing the immobilization of contaminants through addition of ferric chloride. Any testing should also include the testing the effectiveness of the technique over the long-term. For example, if ferric chloride were no longer added to the system, would the contaminants remain permanently immobilized or would the contaminants become mobile once again. The section also discussed testing the mobilization of contaminants through addition of sodium bicarbonate. It was not clear to NRC staff what objective from the Interim Treatment System Evaluation Plan this would fulfill. In addition, if a field test were to be performed, the existing system of extraction wells would need to be relied upon to capture the mobilized contaminants. This would necessitate that the conceptual model for flow and transport at the site would need to be very well understood so that additional contaminants are not inadvertently added to the system.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 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 Website at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning the NRC review of the report, please contact me at 301-415-6749 or by email at 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

R. Bush

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***by email**

ADAMS Accession No.:

ML17045A372

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