OFFICE OF RADIATION AND INDOOR AIR
WASHINGTON, D.C. 20460

May 10, 2024

Mr. Michael Gerle, Director
Environmental Regulatory Compliance Division
Carlsbad Field Office
U.S. Department of Energy
P.O. Box 3090
Carlsbad, New Mexico 88221-3090

Re: Third set of questions on the Replacement Panels Planned Change Request (RPPCR)

Dear Mr. Gerle:

The U.S. Environmental Protection Agency is continuing its review of the U.S. Department of Energy's submittal of the RPPCR. This letter transmits a set of agency technical questions and comments (see enclosure). The EPA would appreciate a timely response to these questions to help expedite its review.

If you have any questions concerning this request, please contact Jay Santillan at (202) 343-9343 or at Santillan.Jay@epa.gov.

Sincerely,

DANIEL SCHULTHEISZ
Digitally signed by DANIEL SCHULTHEISZ
Date: 2024.05.10 10:24:21 -04'00'

Tom Peake
Director
Center for Waste Management and Regulations

ENCLOSURE
1. Third set of technical questions on the RPPCR

cc: Anderson Ward, DOE CBFO
Justin Marble, DOE EM
Lee Veal, EPA
Ray Lee, EPA

Winifred Okoye, EPA
EPA Docket

**Enclosure 1: Third set of technical questions on the RPPCR**

## RPPCR3-Mineralogy-1: Detailed mineralogy of new panels

Please describe the detailed Salado mineralogy surrounding Panels 11 and 12. Please also specify the stratigraphic locations of anhydrite interbeds in the vicinity of Panels 11 and 12. If mineralogical and stratigraphic data have not been collected for the areas surrounding these panels, please describe what data is available that characterizes the mineralogy and stratigraphy and why DOE believes that the data is sufficient.

*In order to calculate actinide solubility, models require the mineralogical composition of the environment that will equilibrate with WIPP brine. In addition, EPA would like to know the variability in mineralogy between panels and the location of the anhydrite interbeds in the proposed new panels.*

## RPPCR3-BRAGFLO-1: Follow up on BRAGFLO convergence

Please provide responses to the mass balance issues in the BRAGFLO code that EPA identified in its report in November 2023 (EPA 2023).

*EPA detailed in a recent report that in some instances, models that have been run with the BRAGFLO code may not have converged to acceptable mass balance values depending on the tolerance settings. The Agency has been able to approve previous CRAs despite these issues because these mass balance concerns only accounted for a minor number of PA realizations. In this report, EPA also suggested that with the availability of PFLOTRAN, DOE now has the ability to perform additional confirmatory calculations.*

*USEPA. (2023). Convergence and Mass Balance in the BRAGFLO Code. US EPA ORIA, Washington, DC, November 2023. EPA-HQ-OAR-2001-0012-0784.*

## RPPCR3-CLOSURE-1: Closure of Rooms with New Design

Please describe the effect of the room closure process with the new design used for RPPCR PA: the abutment pillars (between the waste rooms and the access drifts) are increased from 61.0 m (200 ft) to 122.0 m (400 ft) and the isolation pillars (separating two panels) are increased from 61.0 m (200 ft) to 91.5 m (300 ft).

*EPA would like to know the effect of the new design on the waste-containing areas. Would this affect the timeframe of creep closure? Should this design change have any effect on the room closure, porosity, and gas generation relationship? Would this be reflected in the updated porosity surface?*