UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Washington, DC 20460

September 30, 2021

OFFICE OF
AIR AND
RADIATION

Mr. Reinhard Knerr, Manager
Carlsbad Field Office
U.S. Department of Energy
P.O. Box 3090
Carlsbad, New Mexico 88221-3090

Dear Mr. Knerr:

This letter addresses the proposed resumption of operations by the Department of Energy (DOE) of the 700C ventilation fan at the Waste Isolation Pilot Plant (WIPP). I appreciate the information transmitted to the U.S. Environmental Protection Agency concerning the resumption of operation of the 700C ventilation fan, which will result in unfiltered air exhaust from the underground facility to the surface.

The Agency has reviewed the DOE Carlsbad Field Office's (CBFO) August 5, 2021 "Submittal of the Regulatory Assessment of 700-C Fan Operation at the Waste Isolation Pilot Plant and the Periodic Confirmatory Measurement Protocol for the Waste Isolation Pilot Plant." Under 40 CFR Part 61, Subpart H (and, relatedly, 40 CFR Part 61, Subpart A (the "General Provisions" applicable to Part 61)), the return of fan 700C to service constitutes an "operational change to a stationary source which results in an increase in the rate of emission to the atmosphere of a hazardous pollutant." 40 CFR § 61.15(a). Such a modification would typically require the owner or operator to apply, in advance, for EPA approval of the modification. Under Subpart H, however, such an application for approval is not required for a modification if "the effective dose equivalent, caused by all emissions from the . . . modification, is less than 1% of the standard prescribed in § 61.92." 40 CFR § 61.96(b). CBFO's August 5th submission states that full-time operation of the 700C ventilation fan will result in a maximum dose less than 1% of that standard and therefore does not require an application or EPA review. The submission includes a dose assessment to support this conclusion.

The Agency has performed a review of CBFO's submission and finds its analyses suitable to support the conclusion concerning the effective dose equivalent associated with the modification. The dose estimate is based on the complete radionuclide inventory given in the WIPP Waste Data System for drum 68660, which was breached in 2014. The use of this source term is consistent with Appendix D of Part 61 and with similar analyses performed when Station B was modified to include the Interim Ventilation System.[1] It represents a conservative upper limit of the radionuclide inventory that could potentially be mobilized during routine operations. The actual source term associated with the subject drum has been significantly reduced by decontamination and panel closure activities that have taken place in the underground since 2014, and radionuclide measurements made during the January 31, 2021 test of fan 700C confirmed that actual emissions will be far below this bounding level.[2] The modeled receptor,

[1] Chavez, 2014. Regulatory Assessment of Adding Interim Ventilation, Attachment C, 40 CFR 61 Appendix D Calculation for Breached Drum.
[2] 02RC-002, March 2021. 700C Fan Test, Periodic Confirmatory Measurement Report for the U.S. Department of Energy Waste Isolation Pilot Plant.

located at the Safety Significant Confinement Ventilation System construction office 812 meters west-northwest of the 700C fan exhaust point, is consistent with the 2020 Annual Periodic Confirmatory Report used to demonstrate compliance with Subpart H. The Agency notes the inclusion of an occupancy factor correlating to a 60-hour work week to account for the occupational use of this location and concurs that this is reasonable and consistent with EPA's guidance for the use of the CAP-88 dose model.

To understand how regulatory compliance will be demonstrated following the restart of fan 700C, the Agency requested and reviewed the DOE internal procedures that describe emissions sampling and analysis at the WIPP. A review of DOE/WIPP-97-2238, *Periodic Confirmatory Measurement Protocol for the Waste Isolation Pilot Plant,* Rev. 14, effective July 22, 2021 and WP 12-RE3004, *Periodic Confirmatory Analysis, Reporting, and Compliance Activities,* Rev. 8, effective August 17, 2021, indicate that samples will be collected for analysis at both Station A, which samples all air exhausted from the underground, and the newly-established Station H, which will measure any additional contributions of radionuclide contamination to the exhaust from the above-ground duct work. These procedures indicate that WIPP's processes will meet the sampling and analysis requirements of 40 CFR § 61.93 and are consistent with its historical compliance activities. EPA will continue to oversee DOE's compliance by reviewing its compliance reports and conducting periodic inspections.

If your staff have any questions, please contact Jonathan Walsh at (202) 343-9238 or walsh.jonathan@epa.gov.

Sincerely,

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Lee Ann B. Veal
Director
Radiation Protection Division

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