

Occupational Exposure Evaluation of Data from 700C

On January 31, 2021 the Waste Isolation Pilot Plant (WIPP) conducted a test of the 700C fan. Radiological monitoring and measurements were performed and samples collected in accordance with technical basis document (TBD) 20-003 *Sampling Plan for the 700C Fan Startup and Testing*. Samples were measured at the site and then sent to the WIPP analytical laboratory in Carlsbad, NM for further analysis.

Detailed reviews of the laboratory analysis concluded the results were less than the maximum results predicted by Technical Evaluation 20-002 *Radiological Assessment of the Startup and Testing of the 700C Fan*. All radioactivity results from ground level deposition samples collected during the test, when analyzed by the WIPP analytical laboratory, were found to be far below the removable radioactivity limits specified in 10 CFR 835, *Occupational Radiation Protection Program* and DOE O 458.1, *Radiation Protection of the Public and the Environment*.

During operation of the 700C fan, air samples were collected at specific locations on the site in accordance with TBD 20-003 *Sampling Plan for the 700C Fan Startup and Testing* to measure airborne radioactivity during the test, when analyzed the air results showed levels that were significantly below all applicable regulatory levels. Continuous air monitors (CAMs) were also required to be located and operated at specified locations to ensure the test would be stopped if any unforeseen issues arose. At no point during the test did any activity cause an activation of a CAM alarm.

“Stop Level Set Points” were established prior to the test for radiological protection of workers conducting the test and site workers. At no point during the test were any of the “Stop Level Set Points” reached. All near ground level radiological deposition analytical results, both during and after the test, were well within WIPP surface contamination and airborne radioactivity limits, and in full compliance with 10 CFR 835, *Occupational Radiation Protection Program*.

700-C Fan Test Results and Regulatory Limits	
Removable contamination results from 700C test	(1.38 dpm/100cm² alpha, 1.83 dpm/100cm² beta) (note: Highest values taken from different locations)
Regulatory Limit (10 CFR 835, Appendix D, Transuranics)	20 dpm/100cm ² Removable 500 dpm/100cm ² Total (Fixed + Removable)
Regulatory Limit (10 CFR 835, Appendix D, Beta-gamma emitters)	1,000 dpm/100cm ² Removable 5,000 dpm/100cm ² Total (Fixed + Removable)

In summary: the test did not generate any radioactive contamination (in air or on the surface) that exceeded any controls established for the test or by operational procedure or federal regulation for the safe operation of the WIPP site.