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JUN 14 2017

Mr. John E. Kieling, Chief
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New Mexico Environment Department
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Santa Fe, New Mexico 87505-6303

Subject: Class 1 Permit Modification Notifications to the Waste Isolation Pilot Plant Hazardous Waste Facility Permit Number: NM4890139088-TSDF

Dear Mr. Kieling:

Enclosed is a Notification of Class 1 Permit Modifications for the following items:

- Update Attachment E, Table E-1
- Update Figure D-4 in Attachment D
- Editorial Change to Emergency Equipment List in Table D-2
- Update Description of Roving Watch Qualification Card in Attachment F2
- Editorial Change in Attachment C4
- Update Information Repository Contents in Permit Part 1.14.2
- Update Chronology in Attachment A
- Update Figure N-2 in Attachment N
- Update the Underground Ventilation System Description in Attachment A2

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. George T. Basabilvazo at (575) 234-7488.

Sincerely,

Signatures on File

Todd Shrader, Manager
Carlsbad Field Office

Bruce C. Covert, Project Manager
Nuclear Waste Partnership LLC

Enclosure

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*ED denotes electronic distribution

Class 1 Permit Modification Notifications

Update Attachment E, Table E-1

Update Figure D-4 in Attachment D

Editorial Change to Emergency Equipment List in Table D-2

Update Description of Roving Watch Qualification Card in Attachment F2

Editorial Change in Attachment C4

Update Information Repository Contents in Permit Part 1.14.2

Update Chronology in Attachment A

Update Figure N-2 in Attachment N

Update the Underground Ventilation System Description in Attachment A2

**Waste Isolation Pilot Plant
Carlsbad, New Mexico**

WIPP Permit Number - NM4890139088-TSDF

June 2017

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Acronyms and Abbreviations

CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
HEPA	high-efficiency particulate air
MOC	Management and Operating Contractor
MSHA	Mine Safety and Health Administration
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NFPA	National Fire Protection Association
NWP	Nuclear Waste Partnership LLC
Permit	Hazardous Waste Facility Permit
PMN	Permit Modification Notification
SVS	Supplemental Ventilation System
TSDf	treatment, storage, and disposal facility
UVS	Underground Ventilation System
WIPP	Waste Isolation Pilot Plant

Overview of the Permit Modification Notifications

This document contains nine Class 1 Permit Modification Notifications (**PMNs**) for the Waste Isolation Pilot Plant (**WIPP**) Hazardous Waste Facility Permit (**Permit**) Number NM4890139088-TSDF.

These PMNs are being submitted by the U.S. Department of Energy (**DOE**) and Nuclear Waste Partnership LLC, collectively referred to as the Permittees, in accordance with Permit Part 1, Section 1.3.1. (20.4.1.900 New Mexico Administrative Code (**NMAC**) incorporating Title 40 of the Code of Federal Regulations (**CFR**) §270.42[a]). The PMNs in this document are necessary to notify the New Mexico Environment Department (**NMED**) of changes which impact the Permit. These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modifications to the Permit and any related supporting documents are provided in these PMNs. The proposed modifications to the text of the Permit have been identified using **red** text and double underline and a ~~strikeout~~ font for deleted information. Direct quotations are indicated by italicized text.

Attachment A
Description of the Class 1 Permit Modification Notifications

Table 1. Class 1 Hazardous Waste Facility Permit Modification Notifications

Item No.	Affected Permit Section	Change Description	Category
1.	Attachment E, Table E-1, Pages E-14, E-15, E-16, and E-18	<p>This modification adds an annual inspection frequency required by National Fire Protection Association (NFPA) 72 and associated with procedure WP 12-FP0027 to the Fire Detection and Alarm System line item. This inspection is for the Underground Fuel Station Fire Suppression System. This modification also adds the criteria for this annual inspection to the line item in addition to clarifying text that distinguishes between the semi-annual and annual inspection criteria.</p> <p>This modification revises the Fire and Emergency Response Vehicles (Fire Trucks, Fire Suppression Cart, and Rescue Carts/Trucks) line item to change "Rescue Carts/Trucks" to "Rescue Cart/Truck."</p> <p>This modification revises the Mine Pager Phones (between surface and underground) line item and Site Notification System; Underground Evacuation Alarm System line item to include the annual testing of these two essential plant communication systems and adds procedure WP 04-PC3018 to both line items.</p> <p>This modification revises the Bulkhead in Filled Panels line item to add a new procedure, PM000015.</p>	A.1
2.	Attachment D, Figure D-4, Page D-39	<p>This modification revises Figure D-4, <i>Underground Escapeways/Evacuation Routes</i>, to be consistent with the most current version of the Underground Escape and Evacuation Map in use at the WIPP facility. The figure has been updated to remove escape routes through areas that are no longer accessible and illustrate the current primary and secondary escapeways.</p>	A.1
3.	Attachment D, Table D-2, Page D-31	<p>This modification revises the Underground Self-Rescuer Units Line Item in Table D-2 by replacing the term "rebreathers" with "self-rescue devices" in the Description and Capabilities column.</p>	A.1
4.	Attachment F2, Page F2-115	<p>This modification revises the Facility Operations Roving Watch Qualification Card description to:</p> <ul style="list-style-type: none"> • Designate a Surface Facility Operations Roving Watch and an Underground Facility Operations Roving Watch; • Include the new Underground Roving Watch Qualification Card, MO-UGRW-4; and • Indicate that the existing Qualification Card, FO-RW-1, is for the Surface Facility Operations Roving Watch. <p>This modification revises the description of the Facility Operations Roving Watch Qualification Card to remove information concerning the Central Monitoring Room Operator Qualification and the Facility Operations Shift Engineer Qualification.</p>	B.5.b
5.	Attachment C4, Section C4-3g, Page C4-11	<p>This modification corrects a typographical error in Section C4-3g by changing the reference to "Table C6-3" to "Table C6-2."</p>	A.2

Item No.	Affected Permit Section	Change Description	Category
6.	Permit Part 1, Section 1.14.2., Page 1-15	This modification updates Item 3 of the list of documents that are required to be contained in the WIPP Information Repository. The modification clarifies that "Permit modification notifications and requests" are "Permit modifications at the request of the Permittees" and include Class 1, Class 1*, Class 2, Class 3, and requests for determination of class. The modification also revises Item 3 to clarify that such requests include temporary authorization requests and any associated withdrawals of requests by the Permittees.	A.1
7.	Attachment A, Section A-6, Page A-7	<p>This modification updates the chronology in Section A-6, <i>Chronology of Events Relevant to Changes in Ownership or Operational Control</i>, which describes the Management and Operating Contractor (MOC), Nuclear Waste Partnership LLC (NWP). A partner within NWP has changed its name from "URS Energy & Construction, Inc." to "AECOM Energy & Construction, Inc."</p> <p>This modification corrects a typographical error by changing "URS Energy and Construction" to "URS Energy & Construction" in five places to reflect the use of the ampersand.</p>	A.1 A.2
8.	Attachment N, Figure N-2, Page N-26	This modification updates Figure N-2, <i>VOC Monitoring System Design (continued)</i> , to change the caption from "TYPICAL PASSIVE AIR SAMPLING KIT WITH CANISTER" to "TYPICAL SUBATMOSPHERIC SAMPLING ASSEMBLY WITH CANISTER."	A.1
9.	Attachment A2, <i>List of Figures</i> , Page A2-ii; Attachment A2, Section A2-1, Pages A2-1 and A2-2; Attachment A2, Section A2-2a(2), Page A2-4; Attachment A2, Section A2-2a(3), Pages A2-7, A2-9, and A2-10; Attachment A2, Figure A2-9, Page A2-33; Attachment G2, Table G2-9, Pages G2-27 and G2-28	This modification updates descriptive language in the Permit regarding the underground ventilation system to include the Supplemental Ventilation System (SVS). The SVS includes adding an underground fan. The SVS will provide additional air to the underground that can be exhausted using an unfiltered exhaust path to facilitate mining. This modification keeps the Permit current with routine changes to the facility (such as upgrades to the Underground Ventilation System (UVS)) or its operation. Attachment A2, Figure A2-9, <i>Underground Ventilation System Airflow</i> , has been revised and renumbered to Attachment A2, Figure A2-9a. This Figure A2-9 (new Figure A2-9a) has been updated to reflect the Interim Ventilation System and make other editorial changes, such as replacing "WASTE DISPOSAL AREA" with "DISPOSAL CIRCUIT." A new figure Attachment A2, Figure A2-9b, <i>Underground Ventilation System Airflow (with SVS)</i> , has been added for completeness.	A.3

Item 1

Description

This modification revises Permit Attachment E, Table E-1, *Inspection Schedule/Procedures*.

An annual inspection frequency required by National Fire Protection Association (NFPA) 72 and associated with procedure WP 12-FP0027 has been added to the Fire Detection and Alarm System line item. This inspection is for the Underground Fuel Station Fire Suppression System. The criteria for this annual inspection have been added to the line item in addition to clarifying text that distinguishes between the semi-annual and annual inspection criteria.

The Fire and Emergency Response Vehicles (Fire Trucks, Fire Suppression Cart, and Rescue Carts/Trucks) line item has been revised to change "Rescue Carts/Trucks" to "Rescue Cart/Truck."

The Mine Pager Phones (between surface and underground) line item and Site Notification System; Underground Evacuation Alarm System line item have been revised to include the annual testing of these two essential plant communication systems and add procedure WP 04-PC3018 to both line items.

The Bulkhead in Filled Panels line item has been revised to add another inspection procedure, PM000015.

Basis

These changes are classified as "Administrative and informational changes" and are, therefore, Class 1 modifications pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion

The modification to the Fire Detection and Alarm System line item addresses a streamlined process for inspecting the Underground Fuel Station Fire Suppression System. The WP 12-FP0027 procedure, *U/G Fuel Station Dry Chemical Fire Suppression System*, now includes steps to perform and document the annual NFPA 72 required inspection for the fire detectors, pull stations, and audible/visual alarm devices associated with the Underground Fuel Station tanks. Previously, the WP 12-FP0027 procedure only addressed the NFPA 17 dry chemical fire suppression system inspection requirements, and the NFPA 72 annual inspection for the Underground Fuel Station Fire Suppression System was performed via the WP 12-FP0028 procedure. Since this fuel station system is underground, and the inspection requirements for both NFPA standards are similar, it was determined to be more efficient to conduct the NFPA 17 and 72 inspections at the same time via one procedure. The WP 12-FP0028 procedure will still be used to perform the NFPA 72 required inspections for other Fire Detection and Alarm Systems at the WIPP facility addressed by the Permit. This change is needed to update the Permit with current information.

The modification to the Fire and Emergency Response Vehicles (Fire Trucks, Fire Suppression Cart, and Rescue Carts/Trucks) line item changes "Rescue Carts/Trucks" to "Rescue Cart/Truck" to match the description in Permit Attachment D, Table D-2, which requires only one Rescue Cart/Truck as required equipment (a minimum of one underground rescue cart and one

surface rescue truck). Table E-1 inaccurately uses "Rescue Carts/Trucks" in the System/Equipment Name column. This editorial change is needed to make Table D-2 consistent with Table E-1 with regard to the Rescue Cart/Truck.

The modification to the Mine Pager Phones (between surface and underground) line item and Site Notification System; Underground Evacuation Alarm System line item adds the WP 04-PC3018, *Annual Essential Plant Communication Systems Testing*, procedure to each line item for the annual testing of these two essential plant communication systems. Currently, Table E-1 only specifies monthly testing (WP 04-PC3017) of these two systems. Upon review of both WP 04-PC3017 and WP 04-PC3018, it was determined that the monthly testing was conducted at limited locations, whereas the yearly testing includes numerous locations with stationed observers for verification. This change is needed to update the Permit with current information.

The modification to the Bulkhead in Filled Panels line item adds the PM000015 procedure to Table E-1. This procedure provides instructions for performing the inspection of Panel 6 Bulkheads, 622 and 623, and Panel 7 Bulkheads, 710 and 711. The PM000011 procedure currently included in this line item provides instructions for performing the inspection of Bulkheads 367, 372, 467, and 470 in Panels 3 and 4. This change is needed to update the Permit with current information.

Proposed Revised Permit Text:

**Table E-1
Inspection Schedule/Procedures**

System/Equipment Name	Responsible Organization	Inspection^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria^h
Air Intake Shaft Hoist	Underground Operations	Preoperational ^c See Lists 1b and c	WP 04-HO1004 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m in accordance with Mine Safety and Health Administration (MSHA) requirements
Ambulance (Surface) and Medical Cart (Underground)	Fire Department	Weekly See List 11	WP 12-FP0030 Inspecting for Mechanical Operability ^m , Deterioration ^b , and Required Equipment ⁿ
Adjustable Center of Gravity Lift Fixture	Waste Handling	Preoperational ^c See List 8	WP 05-WH1410 Inspecting for Mechanical Operability ^m and Deterioration ^b
Backup Power Supply Diesel Generators	Facility Operations	Monthly See List 3	WP 04-ED1301 Inspecting for Mechanical Operability ^m and Leaks/Spills by starting and operating both generators. Results of this inspection are logged in accordance with WP 04-AD3008.
Facility Inspections (Water Diversion Berms)	Facility Engineering	Annually See List 4	WP 10-WC3008 Inspecting for Damage, Impediments to water flow, and Deterioration ^b
Central Monitoring Systems (CMS)	Facility Operations	Continuous See List 3	Automatic Self-Checking
Contact-Handled (CH) TRU Underground Transporter	Waste Handling	Preoperational ^c See List 8	WP 05-WH1603 Inspecting for Leaks/Spills, Mechanical Operability ^m , Deterioration ^b , and area around transporter clear of obstacles
Conveyance Loading Car	Waste Handling	Preoperational ^c See List 8	WP 05-WH1406 Inspecting for Mechanical Operability ^m , Deterioration ^b , path clear of obstacles, and guards in the proper place

System/Equipment Name	Responsible Organization	Inspection ^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria ^h
Facility Transfer Vehicle	Waste Handling	Preoperational ^c See List 8	WP 05-WH1204 Inspecting for Mechanical Operability ^m , Deterioration ^b , path clear of obstacles, and guards in the proper place
Emergency Lighting	Fire Department	Monthly/annually See List 11	WP 12-FP0051 Inspecting for Deterioration ^b , and Operability of indicator lights in accordance with NFPA 101
Exhaust Shaft	Underground Operations	Quarterly See List 1a	PM041099 Inspecting for Deterioration ^b and Leaks/Spills
Eye Wash and Shower Equipment	Equipment Custodian	Weekly See List 5	WP 12-IS1832 Inspecting for Deterioration ^b
		Semi-annually See List 2a	WP 12-IS1832 Inspecting for Deterioration ^b and Fluid Levels—Replace as Required
Fire Detection and Alarm System	Fire Protection Engineering	Semi-annually/ <u>annually</u> See List 12	WP 12-FP0027 Inspecting for Deterioration ^b and Operability of underground fuel station fire suppression system in accordance with NFPA 17 (<u>semi-annual inspection</u>); <u>Inspecting for Deterioration^b and Operability of the alarm panel and transmitter, audible/visual alarm devices, detectors, and pull stations in accordance with NFPA 72 (annual inspection)</u>
		Monthly/quarterly/annually See List 12	WP 12-FP0028 Inspection for Deterioration ^b , and Operability of the alarm panel and transmitter, audible/visual alarm devices, detectors, and pull stations in accordance with NFPA 72
Fire Extinguishers ^j	Fire Department	Monthly See List 11	WP 12-FP0036 Inspecting for Deterioration ^b , Leaks/Spills, Expiration, seals, fullness, and pressure
Fire Hoses	Fire Department	Annually (minimum) See List 11	WP 12-FP0031 Inspecting for Deterioration ^b and Leaks/Spills
Fire Hydrants	Fire Protection Engineering	Semi-annual/annually See List 12	WP 12-FP0034 Inspecting for Deterioration ^b and Leaks/Spills

System/Equipment Name	Responsible Organization	Inspection ^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria ^h
Fire Pumps	Fire Protection Engineering	Weekly See List 12 Annually (Electric Pump) See List 12 Annually (Diesel Pump) See List 12	WP 12-FP0026 Inspecting for Deterioration ^b , Leaks/Spills, fire water valve positions(s), and panel light status WP 12-FP5113 Inspection for Deterioration ^b , operability, flow, discharge pressure, suction pressure, and pump speed WP 12-FP5114 Inspecting for Deterioration ^b , operability, flow, discharge pressure, suction pressure, and pump speed
Fire Sprinkler Systems	Fire Protection Engineering	Monthly/ quarterly/ annually See List 12	WP 12-FP0025, WP 12-FP0063, and WP 12-FP0064 Inspecting for Deterioration ^b , Leaks/Spills, water pressures, and main drain test
Fire and Emergency Response Vehicles (Fire Trucks, Fire Suppression Cart, and Rescue Carts/Trucks)	Fire Department	Weekly See List 11	WP 12-FP0033 Inspecting for Mechanical Operability ^m , Deterioration ^b , Leaks/Spills, and Required Equipment ⁿ
Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment)	Waste Handling	Preoperational ^c See List 8	WP 05-WH1201, WP 05-WH1207, WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and WP 05-WH1412 Inspecting for Leaks/Spills, Mechanical Operability ^m , Deterioration ^b , and On board fire suppression system
Automatic on-board fire suppression systems	Fire Protection Engineering	Semi-annually See List 12	WP 12-FP0060 Inspecting for Mechanical Operability ^m and Deterioration ^b
Hazardous Material Response Equipment	Fire Department	Quarterly See List 11	WP 12-FP0033 Inspecting for Deterioration ^b , and Required Equipment ⁿ
Head Lamps	Facility Personnel	Daily ^j	Head lamps are operated daily and are repaired or replaced upon failure
Miners First Aid Station	Fire Department	Quarterly See List 11	WP 12-FP0035 Inspecting for Required Equipment ⁿ

System/Equipment Name	Responsible Organization	Inspection^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria^h
Mobile Phones	Facility Personnel	Daily ⁱ	Mobile Phones are operated daily and are repaired or replaced upon failure
Mine Pager Phones (between surface and underground)	Facility Operations	Monthly/ <u>Annually</u> ^o See List 3	WP 04-PC3017 <u>WP 04-PC3018</u> Testing of Mine Pager Phones at essential locations
MSHA Air Quality Monitor	Maintenance/ Underground Operations	Daily ^j See Lists 1 and 10	WP 12-IH1828 Inspecting for Air Quality Monitoring Equipment Functional Check
Perimeter Fence, Gates, Signs	Security	Daily See List 6	WP 17-SS1023 Inspecting for Deterioration ^b and Posted Warnings
Mine Rescue Self- Contained Breathing Apparatus (SCBA)	Mine Rescue Team	30 days See List 5	Inspection for Deterioration ^b and Pressure ^g
Fire Department SCBA	Fire Department	Weekly/monthly See List 11	WP 12-FP0029 Inspecting for Deterioration ^b and Pressure
Site Notification System; Underground Evacuation Alarm System	Facility Operations	Monthly/ <u>Annually</u> See List 3	WP 04-PC3017 <u>WP 04-PC3018</u> Testing of PA and Underground Alarms
Radio Equipment	Facility Personnel	Daily ⁱ	Radios are operated daily and are repaired or replaced upon failure
Salt Handling Shaft Hoist	Underground Operations	Preoperational ^c See List 1b and c	WP 04-HO1002 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m in accordance with MSHA requirements
Self-Rescuers and Self- Contained Self-Rescuers	Underground Operations	Quarterly See List 1c	WP 04-AU1026 Inspecting for Deterioration ^b and Functionality in accordance with MSHA requirements
Surface TRU Mixed Waste Handling Area ^k	Waste Handling	Preoperational ^c or Weekly ^e See List 8	WP 05-WH1101 Inspecting for Deterioration ^b , Leaks/Spills, Required Aisle Space, Posted Warnings, Communication Systems, Container Condition, and Floor coating integrity

System/Equipment Name	Responsible Organization	Inspection^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria^h
TRU Mixed Waste Decontamination Equipment	Waste Handling	Annually See List 8	WP 05-WH1101 Inspecting for Required Equipment ⁿ
Underground Openings— Roof Bolts and Travelways	Underground Operations	Weekly See List 1a	WP 04-AU1007 Inspecting for Deterioration ^b of Accessible Areas
Underground— Geomechanical Instrumentation System (GIS)	Geotechnical Engineering	Monthly See List 9	WP 07-EU1301 Inspecting for Deterioration ^b
Underground TRU Mixed Waste Disposal Area	Waste Handling	Preoperational ^c See List 8	WP 05-WH1810 Inspecting for Deterioration ^b , Leaks/Spills, mine pager phones, equipment, unobstructed access, signs, debris, and ventilation
Uninterruptible Power Supply (Central UPS)	Facility Operations	Daily See List 3	WP 04-ED1542 Inspecting for Mechanical Operability ^m and Deterioration ^b with no malfunction alarms. Results of this inspection are logged in accordance with WP 04-AD3008.
TDOP Upender	Waste Handling	Preoperational ^c See List 8	WP 05-WH1010 Inspecting for Mechanical Operability ^m and Deterioration ^b
Ventilation Exhaust	Maintenance Operations	Quarterly See List 10 Quarterly See List 10 Semi-annually See List 10	IC413000 (700, 860, and 960 Fans) Flow Verification of total mine airflow for fans in service IC041098 (700 Fans) Check for Deterioration ^b and Calibration of Mine Ventilation Rate Monitoring Equipment and flow verification of individual fans IC413005 (860 Fans) IC041087 (960 Fans) Check for Deterioration ^b , and Calibration of Mine Ventilation Rate Monitoring Equipment and flow verification of individual fans
Waste Handling Cranes	Waste Handling	Preoperational ^c See List 8	WP 05-WH1407 Inspecting for Mechanical Operability ^m , Deterioration ^b , and Leaks/Spills

System/Equipment Name	Responsible Organization	Inspection^a Frequency and Job Title of Personnel Normally Making Inspection	Procedure Number and Inspection Criteria^h
Waste Hoist	Underground Operations	Preoperational ^c See List 1b and c	WP 04-HO1003 Inspecting for Deterioration ^b , Safety Equipment, Communication Systems, and Mechanical Operability ^m , Leaks/Spills, in accordance with MSHA requirements
Water Tanks	Facility Operations	Daily See List 3	WP 04-AD3008 Inspecting for Deterioration ^b , valve lineup and water levels. Results of this inspection are logged in accordance with WP 04-AD3008.
Push-Pull Attachment	Waste Handling	Preoperational ^c See List 8	WP 05-WH1401 Inspecting for Damage and Deterioration ^b
Trailer Jockey	Waste Handling	Preoperational ^c See List 8	WP 05-WH1405 Inspecting for Leaks/Spills, Mechanical Operability ^m and Deterioration ^b
Explosion-Isolation Walls	Underground Operations	Quarterly See List 1	PM000032 Integrity and Deterioration ^b of Accessible Areas
Bulkhead in Filled Panels	Underground Operations	Monthly See List 1	PM000011 PM000015 Integrity and Deterioration ^b of Accessible Areas
Bolting Robot	Waste Handling	Preoperational ^c See List 8	WP 05-WH1203 Mechanical Operability ^m
Yard Transfer Vehicle	Waste Handling	Preoperational ^c See List 8	WP 05-WH1205 Mechanical Operability ^m , Deterioration ^b , Path clear of obstacles and Guards in proper place
Payload Transfer Station	Waste Handling	Preoperational ^c See List 8	WP 05-WH1208 Mechanical Operability ^m , Deterioration ^b , and Guards in proper place
Monorail Hoist	Waste Handling	Preoperational ^c See List 8	WP 05-WH1202 Mechanical Operability ^m , Deterioration ^b , and Leaks/Spills
Bolting Station	Waste Handling	Preoperational ^c See List 8	WP 05-WH1203 Mechanical Operability ^m , Deterioration ^b , and Guards in proper place

Item 2

Description

This modification revises Permit Attachment D, Figure D-4, *Underground Escapeways/Evacuation Routes*.

Figure D-4 has been revised to be consistent with the most current version of the Underground Escape and Evacuation Map in use at the WIPP facility. The figure has been updated to remove escape routes through areas that are no longer accessible and illustrate the current primary and secondary escapeways.

Basis

These changes are classified as “Administrative and informational changes” and are, therefore, Class 1 modifications pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion

These changes are needed to ensure that Figure D-4 is consistent with the Underground Escape and Evacuation Map referenced in the *Underground Escape and Evacuation Plan*. The Underground Escape and Evacuation Map has recently been updated to reflect the current primary and secondary escapeways and remove specific escape routes through areas that are no longer accessible due to deteriorating ground conditions.

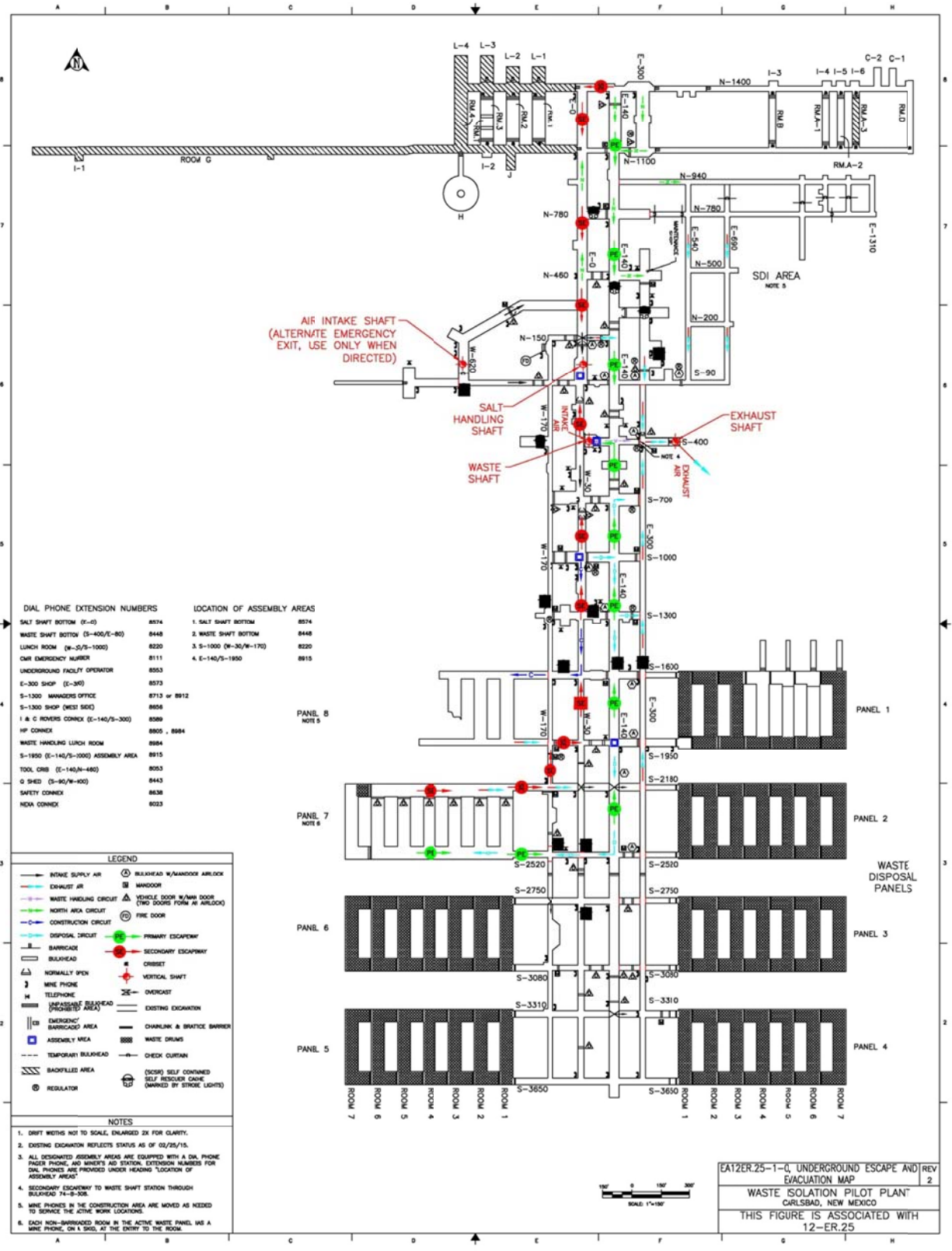


Figure D-4
Underground Escapeways/Evacuation Routes

Item 3

Description

This modification revises Permit Attachment D, Table D-2, *Emergency Equipment Maintained at the Waste Isolation Pilot Plant*.

The term “rebreathers” has been replaced with “self-rescue devices” in the Description and Capabilities column of the Underground Self-Rescuer Units line item.

Basis

This change is classified as “Administrative and informational changes” and is, therefore, a Class 1 modification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion

This change is needed to ensure the Permit description of the Underground Self-Rescuer Units is accurate. “Rebreather” is a respiratory protective device that generates oxygen chemically and is, therefore, to be used for self-rescue in an oxygen deficient ambient atmosphere. The Self-Rescuer units used at the WIPP facility are air purifying respirators for escape use which are not for use in oxygen deficient ambient atmospheres. The term, “self-rescue devices” is, therefore, consistent with the description in the Mine Safety and Health Administration (**MSHA**) regulation at 30 CFR 57.15030 and more appropriately describes the type of personal protective equipment used by personnel in the WIPP underground for self-rescue.

Proposed Revised Permit Text:

**Table D-2
Emergency Equipment Maintained at the Waste Isolation Pilot Plant**

Equipment	Description and Capabilities	Location
Communications		
Building Fire Alarms	Fire alarm panels, fire alarm transmitter, audible alarm devices (e.g., horns, bells, tones) that provide notification of fires; transmitted to the CMR	Guard and Security Building (Building 458), Water Pumphouse (Building 456), Warehouse/Shops Building (Building 453), Exhaust Shaft Filter Building (Building 413), Support Building (Building 451), CMR/Computer Room, Waste Handling Building (Building 411), TRUPACT Maintenance Building (Building 412), Salt Handling (SH) Shaft Hoisthouse (Building 384), Auxiliary Warehouse Building (Building 455), Engineering Building (Building 486), Training Building (Building 489), Safety and Emergency Services Facility (Building 452), , and surface Hazardous Waste Staging Areas (Buildings 474A and 474B)
Underground Fire Alarms	Fire alarm panels, fire alarm transmitter, and audible/visual alarm devices (e.g., horns, bells, strobes) that provide notification of fires; transmitted to the CMR	Fire detection and control panel locations: Waste Shaft Underground Station, SH Shaft Underground Station, Between E-140 and E-300 in S-2180 Drift, Fuel Station (N150/W170)
Site Notification System; Underground Evacuation Alarm System	For surface, alarms and notifications transmitted over paging channel of the public address system, manually initiated; for underground, audible alarm	Site-wide
Public Address System	Includes intercom phones; handset stations and loudspeaker assemblies	Site-wide

Equipment	Description and Capabilities	Location
Mine Pager Phones	Battery-operated paging system	Underground at S550/W30, S1000/W30, S1950/E140, SH Shaft Collar and Underground Station Waste Shaft Collar and Underground Station; – surface at Support Building (Building 451, FSM desk, CMR, lamproom), Safety and Emergency Services Facility (Building 452, Fire Department workstation area, Mine Rescue Room)
Portable Radios	Two-way, portable; transmits and monitors information to/from other transmitters	Issued to individuals
Plant Base Radios	Two-way, stationary; transmits and monitors information to/from other transmitters	Safety and Emergency Services Facility (Building 452), Guard and Security Building (Building 458), Support Building (Building 451, CMR, FSM desk)
Mobile Phones	Provide communications link between emergency response personnel, as needed	Issued to individuals plus emergency vehicles
Spill Response Equipment and Materials		
HAZMAT Equipment	Spill response equipment and supplies, PPE, and decontamination supplies stored and maintained in accordance with NFPA 1901 and as documented in WIPP facility files	Surface, in designated areas near Safety and Emergency Services Facility (Building 452)
Absorbent Materials	Containment or cleanup of spills, including: Pressurized spill-response gun; Absorbent sheets and/or dikes for containment or cleanup of spills of oil, petroleum-based chemicals, and general liquids; Spill-control material for solvents and neutralizing absorbents and for acids/caustics	Surface, in designated areas near Safety and Emergency Services Facility (Building 452)
Medical Resources		
Ambulance	A minimum of one ambulance, maintained and equipped in accordance with the New Mexico Ambulance Standard, 18.3.14 NMAC, and as documented in WIPP facility files	Surface at Safety and Emergency Services Facility (Building 452, Vehicle Bay)
Medical Cart	A minimum of one medical cart, equipped to provide basic life support operations, as documented in WIPP facility files	Underground (Emergency Vehicle Parking/Charging Area at S700/E140)
Miners First Aid Stations	Equipped per 30 CFR 57.15001	Underground (Salt Shaft Area, Waste Shaft Area, E300 Maintenance Shop, and at S1000/W30, S1300/W30, and S1950/E140)

Equipment	Description and Capabilities	Location
Fire Detection and Fire Suppression Equipment		
Building Smoke, Thermal Detectors, or Manual Pull Stations	Devices that trigger an alarm and/or fire suppression system	Guard and Security Building (Building 458), Warehouse/Shops Building (Building 453), Support Building (Building 451, CMR/Computer Room), Waste Handling Building (Building 411), TRUPACT Maintenance Building (Building 412), Underground Fuel Station (N150/W170), SH Shaft Hoisthouse (Building 384), Engineering Building (Building 486), Safety and Emergency Services Facility (Building 452), and Training Building (Building 489)
Fire Trucks	A minimum of two fire trucks to assist in fighting fires; firefighter equipped in accordance with NFPA 1901 and/or 1906 and as documented in WIPP facility files	Surface at Safety and Emergency Services Facility (Building 452, Vehicle Bay)
Rescue Cart/Truck	A minimum of two special-purpose vehicles, one on the surface and one in the underground; light rescue units, equipped in accordance with the NFPA 1901 and as documented in WIPP facility files	Surface at Safety and Emergency Services Facility (Building 452, Vehicle Bay) and Underground (Emergency Vehicle Parking/Charging Area at S700/E140)
Fire Suppression Cart	A minimum of one special-purpose electric cart to assist in fighting fires; equipped with a minimum of one fire extinguisher	Underground (Emergency Vehicle Parking/Charging Area at S700/E140)
Fire Extinguishers	Hand-held fire extinguishers; located throughout the facility in accordance with NFPA-10	Surface and underground locations used for hazardous waste management, as documented in WIPP facility files
Automatic Dry Chemical Extinguishing Systems	Automatic; actuated by thermal detectors or by manual pull stations	Underground fuel station (N150/W170)
Automatic Fire Suppression Systems on liquid fueled vehicles	Individual automatic fire suppression systems installed on applicable liquid-fueled vehicles, as determined by a fire risk assessment performed in accordance with NFPA 122	Surface and underground locations used for hazardous waste management, as documented in WIPP facility files

Equipment	Description and Capabilities	Location
Sprinkler Systems	NFPA water-based fire suppression systems	Water Pumphouse (Building 456), Guard and Security Building (Building 458), Waste Handling Building (Building 411, CH Bay, RH Bay, and Overpack Repair Areas only), TRUPACT Maintenance Building (Building 412), Exhaust Shaft Filter Building (Building 413), and surface Hazardous Waste Staging Areas (Buildings 474A and 474B)
Water Tanks, Hydrants	Fire suppression water supply; one 180,000-gallon capacity tank, plus a second tank with 100,000 gallon reserve	Tanks are at southwestern edge of WIPP facility; pipelines and hydrants are throughout the surface
Fire Water Pumps	Fire suppression water supply; pumps are minimally rated at 125 pounds per square inch, 1,500 gallons per minute centrifugal pump, one with electric motor drive, the other with diesel engine; pressure maintenance jockey pump	Water Pumphouse (Building 456)
Personal Protection Equipment		
Head Lamps	Mounted on hard hat; battery operated	Each person underground
Underground Self-Rescuer Units	Short-term rebreathers rebreathers <u>self-rescue devices</u> per 30 CFR 57.15030	Each person underground
Self-Contained Self-Rescuer	Air supply; a minimum of 12 caches in the underground; self-contained rescue units shall be adequate to protect an individual for one hour or longer or, alternatively, sufficient to allow the employee time to reach an additional self-contained self-rescue device in the underground per NMSA 69-8-16	Cached throughout the underground
Mine Rescue Self-Contained Breathing Apparatus (SCBA)	Oxygen supply; 4-hour closed circuit units consistent with 30 CFR 49.6; a minimum of 12 units, one for each Mine Rescue Team member	Safety and Emergency Services Facility (Building 452, Mine Rescue Training Room)
Fire Department Self-Contained Breathing Apparatus (SCBA)	Air supply; a minimum of 12 units; SCBAs shall meet the minimum requirements established per NFPA 1981	Surface Fire Trucks and Rescue Truck; Underground Rescue Cart
General Plant Emergency Equipment		
Emergency Lighting	For employee evacuation, and fire/spill containment; linked to main power supply, and selectively linked to back up diesel power supply and/or battery-backed power supply	Waste Handling Building (Building 411); TRUPACT Maintenance Building (Building 412), and Exhaust Shaft Filter Building (Building 413)
Backup Power Sources	A minimum of two diesel generators, and battery-powered uninterruptible power supply (UPS)	Generators are east of Safety and Emergency Services Facility (Building 452); UPS is located at the essential loads
Emergency Hoist	Hoist in Air Intake Shaft	Air Intake Shaft (Building 361)

Equipment	Description and Capabilities	Location
Emergency Showers	For emergency flushing of chemical contact or injury	Waste Handling Building (Building 411) is served by the decontamination shower trailer located north of Building 411, in front of Building 952, between Buildings 243 and 455; and surface Hazardous Waste Staging Areas (Building 474A)
Emergency Eyewash Equipment	For emergency flushing of affected eyes	Waste Handling Building (Building 411, RH Bay, Site Derived Waste Area, Waste Shaft Collar, and Room 108 TRUPACT III only), TRUPACT Maintenance Building (Building 412), Exhaust Shaft Filter Building (Building 413), surface, Hazardous Waste Staging Areas (Building 474A , Waste Oil Retainer Area), and the underground Hazardous Waste Staging Area (S550/E140)
Overpack containers for TRU Mixed Waste	85 Gallon drums SWBs TDOP	Warehouse Annex (Building 481)
Aquaset or Cement	Material for solidification of liquid waste generated as a result of fire fighting water or decontamination solutions	Surface Connex A, located south of Waste Handling Building (Building 411)
TDOP Upender	Upender facilitates overpacking standard waste boxes	Waste Handling Building (Building 411)
Non hazardous Decontaminating Agents	For decontamination of surfaces, equipment, and personnel	Waste Handling Building (Building 411); Surface Connex A, located south of Building 411

Item 4

Description

This modification updates Attachment F2, *Training Course and Qualification Card Outlines*.

The Facility Operations Roving Watch Qualification Card description has been revised to:

- Designate a Surface Facility Operations Roving Watch and an Underground Facility Operations Roving Watch;
- Include the new Underground Roving Watch Qualification Card, MO-UGRW-4; and
- Indicate that the existing Qualification Card, FO-RW-1, is for the Surface Facility Operations Roving Watch.

The Facility Operations Roving Watch Qualification Card description has been revised to remove information concerning the Central Monitoring Room Operator Qualification and the Facility Operations Shift Engineer Qualification.

Basis

These changes are classified as “Changes in the training plan...Other changes” and are, therefore, Class 1 modifications pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, B.5.b.).

Discussion

This change is needed to ensure that the Facility Roving Watch Qualification Card description in the Permit is consistent with the current WIPP Facility Operations Training Program Plan. Facility Operations has recently been divided into two separate organizations, Surface Facility Operations and Underground Facility Operations, thereby creating the need for an Underground Roving Watch Qualification Card, MO-UGRW-4.

Discussion of the Central Monitoring Room Operator Qualification has been deleted from the scope description since this qualification is already addressed in Attachment F2. Discussion of the Facility Operations Shift Engineer Qualification has been deleted because the job title is not designated in the Permit for hazardous waste management or emergency response and is not relevant to the Facility Operations Roving Watch. These changes are needed to update the Permit with current information.

Proposed Revised Permit Text:

**ATTACHMENT F2
TRAINING COURSE AND QUALIFICATION CARD OUTLINES**

QUALIFICATION CARD: Facility Operations Roving Watch

DURATION: Six to nine months

CLASSROOM TRAINING: Various classroom courses are utilized to reinforce the training received as part of the qualification card. The candidate is required to complete the classroom training courses, satisfactorily, prior to completion of the qualification card.

SCOPE: The Facility Operations Roving Watch qualification is the foundation for all of the Facility Operations qualifications. Roving Watch personnel are designated as either "Surface" or "Underground." ~~The qualifications developed utilizing the Facility Operations Roving Watch qualification are the Central Monitoring Room Operator Qualification (FO-CMRO-2) and the Facility Operations Shift Engineer Qualification (FO-FOSE-3) (for FSM).~~ This qualification is used by all Facility Operations personnel qualifying. All of the requirements of the applicable qualifications must be completed by the candidate before operating any equipment or performing any operating evolutions without direct supervision of a qualified operator.

REFERENCES: Facility Operations Roving Watch Qualification Card (FO-RW-1 (Surface) or MO-UGRW-4 (Underground))

WIPP Operations Watchstation Qualification Card Guide Book (FO-GUIDE-1)

Item 5

Description

This modification revises Attachment C4, *TRU Mixed Waste Characterization Using Acceptable Knowledge*, Section C4-3g, *Audits of Acceptable Knowledge*.

A typographical error has been corrected in Section C4-3g by changing the reference to “Table C6-3” to “Table C6-2.”

Basis

This change is classified as a “Correction of typographical errors” and is, therefore, a Class 1 modification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.2).

Discussion

Section C4-3g, *Audits of Acceptable Knowledge* in Attachment C4 specifies that audit checklists shall include Table C6-3 in Permit Attachment C6. The correct table reference is “Table C6-2.” The change is needed to ensure the accuracy of the Permit text.

Proposed Revised Permit Text:

C4-3g Audits of Acceptable Knowledge

DOE will conduct an initial audit of each site prior to certifying the site for shipment of TRU mixed waste to the WIPP facility. This initial audit will establish an approved baseline that will be reassessed annually DOE. These audits will verify compliance with the requirements specified in the WAP (Permit Attachment C). The audits will be used to verify compliance with the compilation, application, and interpretation requirements of acceptable knowledge information specified in this Permit at all sites, and to evaluate the completeness and defensibility of site-specific acceptable knowledge documentation related to hazardous waste characterization. Permit Attachment C6 gives a description of the overall audit program and a required checklist. Figure C4-2 includes the primary steps associated with the audit process of acceptable knowledge.

Site-specific audit plans will be prepared by DOE and provided to NMED, and will identify the scope of the audit, requirements to be assessed, participating personnel, activities to be audited, organizations to be notified, applicable documents, and schedule. Audits will be performed in accordance with written procedures and site-specific checklists that will be developed by DOE prior to the audit and provided to NMED. The site-specific audit checklists will include items associated with the compilation and evaluation of the required acceptable knowledge information as specified in the checklist required by Permit Attachment C6.

Audit checklists shall include Table C6-3~~2~~ in Permit Attachment C6, and will include but not be limited to the following elements for review during the audit:

1. Documentation of the process used to compile, evaluate, and record acceptable knowledge is available and implemented;
2. Personnel qualifications and training are documented;
3. All of the required acceptable knowledge documentation specified in Section C4-2 has been compiled in an auditable record;

Item 6

Description

This modification updates the Permit Part 1, Section 1.14.2., *Contents of the Information Repository*.

Item 3 of the list of documents that are required to be posted to the WIPP Information Repository has been revised to clarify that “Permit modification notifications and requests” are “Permit modifications at the request of the Permittees” and include Class 1, Class 1*, Class 2, Class 3, and requests for determination of class. Item 3 has also been revised to clarify that such requests include temporary authorization requests and any associated withdrawals of requests by the Permittees.

Basis

These changes are classified as “Administrative and informational changes” and are, therefore, Class 1 modifications pursuant to 20.4.1.900 NMAC (incorporating 40 CFR §270.42, Appendix I, A.1).

Discussion

In a January 13, 2017, letter to the Permittees, the NMED identified that since temporary authorizations fall under 20.4.1.900 NMAC (incorporating 40 CFR §270.42), temporary authorization requests made by the Permittees are required to be posted to the WIPP Information Repository. This modification incorporates that guidance as well as clarifies other documents that need to be included in the WIPP Information Repository.

The changes are needed to update the Permit concerning temporary authorization requests, and the editorial changes are needed to correct and clarify existing Permit text.

Proposed Revised Permit Text:

1.14.2. Contents of Information Repository

The Permittees shall ensure that the IR contains the following documents:

1. The Permittees' Part A and Part B Permit Applications associated with the permit renewal;
2. A complete copy of this Permit, as it may be modified;
3. Permit modifications at the request of the Permittees (i.e., Class 1, Class 1*, Class 2, Class 3, requests for determination of class) and temporary authorization requests ~~notifications and requests~~ associated with this Permit submitted pursuant to 20.4.1. 900 NMAC (incorporating 40 CFR §270.42) and any associated withdrawals by the Permittees and responses from the Secretary;
4. The Waste Minimization Report submitted pursuant to Permit Section 2.4;
5. Requests for extensions of time submitted pursuant to Permit Section 1.10.3;
6. Corrective action documents submitted pursuant to Permit Part 8;
7. Each report submitted pursuant to Permit Sections 1.7.11 and 1.7.13 if such report is required to be submitted in writing;
8. Notices of deficiency or disapproval (NODs), NOD responses, final approval letters, and directives from the Secretary associated with the documents identified in paragraphs 1, 3, and 6 above;
9. Notices of violation, administrative compliance orders, responses to these documents required by the Secretary, and directives from the Secretary associated with the Permit;
10. Biennial Report submitted pursuant to Permit Section 2.14.2.

Item 7

Description

This modification updates Attachment A, Section A-6, *Chronology of Events Relevant to Changes in Ownership or Operational Control*.

The chronology that describes the Management and Operating Contractor (**MOC**), Nuclear Waste Partnership LLC (**NWP**), has been revised. A partner within NWP has changed its name from "URS Energy & Construction, Inc." to "AECOM Energy & Construction, Inc."

A typographical error has been corrected by changing "URS Energy and Construction" to "URS Energy & Construction" in five places to reflect the use of the ampersand.

Basis

These changes are classified as "Administrative and informational changes" and are, therefore, Class 1 modifications pursuant to 20.4.1.900 NMAC (incorporating 40 CFR §270.42, Appendix I, A.1).

These changes are also classified as "Correction of typographical errors" and are, therefore, Class 1 modifications pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.2).

Discussion

URS Energy & Construction, Inc. changed its name to AECOM Energy & Construction, Inc., which was effective on September 19, 2016. The MOC is comprised of AECOM Energy & Construction, Inc. and BWXT Technical Services Group, Inc. This change is needed to update the Permit with current information. It does not reflect a transfer of the Permit nor a change in ownership of the MOC or operational control pursuant to 20.4.1.900 NMAC (incorporating 40 CFR §270.40(b)), and it does not require a change to the Part A Permit Application.

Correction of a typographical error by changing "URS Energy and Construction" to "URS Energy & Construction" in five places is needed to ensure accuracy of the Permit text by reflecting the correct use of the ampersand.

Proposed Revised Permit Text:

A-6 Chronology of Events Relevant to Changes in Ownership or Operational Control

- December 19, 1997 NMED received notification of a change of name/ownership from Westinghouse Electric Corporation to CBS Corporation. The WIPP Management and Operating Contractor (**MOC**), Westinghouse Waste Isolation Division (**WID**), became a division of Westinghouse Electric Company, which in turn was a division of CBS Corporation. Notification to NMED was made by the permit applicant in a letter dated December 18, 1997. The permit application was under review, but a draft permit was not yet issued.
- September 22, 1998 NMED received notification of a pending transfer of ownership for the MOC, Westinghouse WID, from CBS Corporation to an as-yet-to-be-named limited liability company owned jointly by British Nuclear Fuels, plc and Morrison-Knudsen Corporation. The transfer of ownership was scheduled to occur on or about December 15, 1998. Notification to NMED was made by the permit applicant in a letter dated September 17, 1998. The draft permit had been issued for public comment, but the final permit was not yet issued.
- March 9, 1999 NMED again received notification of the pending divestiture of the MOC, Westinghouse WID, by CBS Corporation to the limited liability company owned jointly by British Nuclear Fuels, plc and Morrison-Knudsen Corporation known as MK/BNFL GESCO LLC. The new MOC would be renamed to Westinghouse Government Environmental Services Company LLC. Notification to NMED was made by the permit applicant in a letter dated March 2, 1999. The public hearing on the permit was underway, but the final permit was not yet issued.
- March 26, 1999 NMED received official notification of the divestiture of Westinghouse Electric Company by CBS Corporation to MK/BNFL GESCO LLC effective March 22, 1999. The MOC was renamed Westinghouse Government Environmental Services Company LLC (**WGES**), of which Westinghouse Waste Isolation Division was a division. This transaction constituted a change of operational control under 20.4.1.900 NMAC (incorporating 40 CFR §270.40). Notification to NMED was made by the permit applicant in a letter dated March 24, 1999. The public hearing on the permit was nearly concluded, but the final permit was not yet issued.
- April 28, 1999 NMED received a revised Part A Permit Application in a letter dated April 21, 1999, reflecting that the Westinghouse Waste Isolation Division, co-operator of the WIPP hazardous waste facility, was now a part of WGES. However, the final permit, issued October 27, 1999, did not reflect the change in ownership.
- July 25, 2000 NMED received a Class 1 permit modification in a letter dated July 21, 2000, changing the name in the Permit from Westinghouse Electric Corporation to Westinghouse Government Environmental Services Company LLC (**WGES**), Waste Isolation Division (**WID**). However, this

notification did not constitute the required permit modification under 20.4.1.900 NMAC (incorporating 40 CFR §270.40) necessary to reflect the transfer of the permit to a new operator.

- December 15, 2000 DOE announced that it had awarded a five-year contract for management and operation of WIPP to Westinghouse TRU Solutions LLC, a limited liability company owned jointly by WGES LLC and Roy F. Weston, Inc. The announcement further stated that, following a brief transition period, the new contractor would assume MOC responsibilities on February 1, 2001. This transaction constituted a change of operational control under 20.4.1.900 NMAC (incorporating 40 CFR §270.40) requiring a Class 1 permit modification with prior written approval of NMED.
- February 5, 2001 NMED received a Class 1 permit modification in a letter dated February 2, 2001, which notified NMED of an organizational name change of the MOC from Westinghouse Government Environmental Services Company LLC Waste Isolation Division to Westinghouse TRU Solutions LLC. However, this notification did not constitute the required permit modification under 20.4.1.900 NMAC (incorporating 40 CFR §270.40) necessary to reflect the transfer of the permit to a new operator.
- December 31, 2002 NMED received a Class 1 permit modification in a letter dated December 27, 2002, which changed the name of the MOC from Westinghouse TRU Solutions LLC to Washington TRU Solutions LLC. Again, this notification did not constitute the required permit modification under 20.4.1.900 NMAC (incorporating 40 CFR §270.40) necessary to reflect the transfer of the permit to a new operator.
- February 28, 2003 NMED received a Class 1 permit modification requiring prior agency approval in a letter dated February 28, 2003, to satisfy the requirements specified in 20.4.1.900 NMAC (incorporating 40 CFR §270.40) to reflect the transfer of the permit to a new operator.
- September 16, 2004 NMED received a Class 1 permit modification requiring prior agency approval in a letter dated September 16, 2004, describing a change of ownership of Washington TRU Solutions LLC (**WTS**). WTS is owned jointly by WGES, managing member, and Weston Solutions, Inc. WGES had been owned jointly by Washington Group International, Inc. (**WGI**), and BNFL Nuclear Services, Inc. However, WGI has acquired BNFL's prior interest in the former Westinghouse government services businesses, which includes BNFL's prior interest in WGES.
- August 6, 2007 NMED received notification in a letter dated August 2, 2007 of the pending acquisition of WGI by URS Corporation at an unknown future date. This acquisition would be related to operational control, because WGI is the sole owner of WGES, managing member of the joint venture, along with Weston Solutions, Inc., that owns WTS, the WIPP MOC. This notification was submitted to assure compliance with 20.4.1.900 NMAC (incorporating 40 CFR §270.40(b)).

- November 26, 2007 NMED received a Class 1 permit modification requiring prior agency approval in a letter dated November 19, 2007, describing a change of ownership of WTS. On November 15, 2007, WGI was acquired by URS Corporation. WTS is owned jointly by WGES, managing member, and Weston Solutions, Inc. WGES, formerly owned by WGI, is now owned by URS Corporation.
- October 1, 2012 NMED received a Class 1 permit modification requiring prior agency approval in a letter dated June 25, 2012 describing a change in the MOC for the WIPP facility. The new MOC for the WIPP facility will be Nuclear Waste Partnership LLC. The new MOC is comprised of URS Energy & Construction, Inc. and Babcock and Wilcox Technical Services Group, Inc.
- April 1, 2014 URS announced an organizational realignment to move Global Management and Operational Services Group (GMOS) from URS Energy & Construction to URS Federal Services Division. Nuclear Waste Partnership LLC is part of GMOS and remains in this group. The MOC is comprised of URS Federal Services, Inc. and Babcock and Wilcox Technical Services Group, Inc.
- January 5, 2015 On January 5, 2015 URS merged with AECOM. The WIPP Management and Operating Contractor (MOC), Nuclear Waste Partnership LLC, is comprised of URS Energy & Construction, Inc. (an organization within AECOM) and Babcock and Wilcox Technical Services Group, Inc. This merger is therefore not related to a change in operational control because URS Energy & Construction, Inc. continues to be 70% owner of Nuclear Waste Partnership LLC.
- July 1, 2015 On June 8, 2015 the Babcock & Wilcox Company announced its intent to change the name to BWXT Technical Services Group, Inc. (BWXT TSG). This change was effective July 1, 2015. No changes are being made to the Management and Operating Contractor (MOC). The MOC is comprised of URS Energy & Construction, Inc. and BWXT Technical Services Group, Inc.
- September 19, 2016 URS Energy & Construction, Inc. changed its name to AECOM Energy & Construction, Inc. This name change was effective September 19, 2016. No changes are being made to the Management and Operating Contractor (MOC). This is a name change only; there was no change in operational control. The MOC, Nuclear Waste Partnership LLC, is comprised of AECOM Energy & Construction, Inc. and BWXT Technical Services Group, Inc. This change does not constitute the required permit modification under 20.4.1.900 NMAC (incorporating 40 CFR §270.40) necessary to reflect the transfer of the permit to a new operator.

Item 8

Description

This modification updates Attachment N, Figure N-2, *VOC Monitoring System Design (continued)*.

An inaccuracy in the caption for Figure N-2 has been corrected. The text "TYPICAL PASSIVE AIR SAMPLING KIT WITH CANISTER" has been changed to "TYPICAL SUBATMOSPHERIC SAMPLING ASSEMBLY WITH CANISTER."

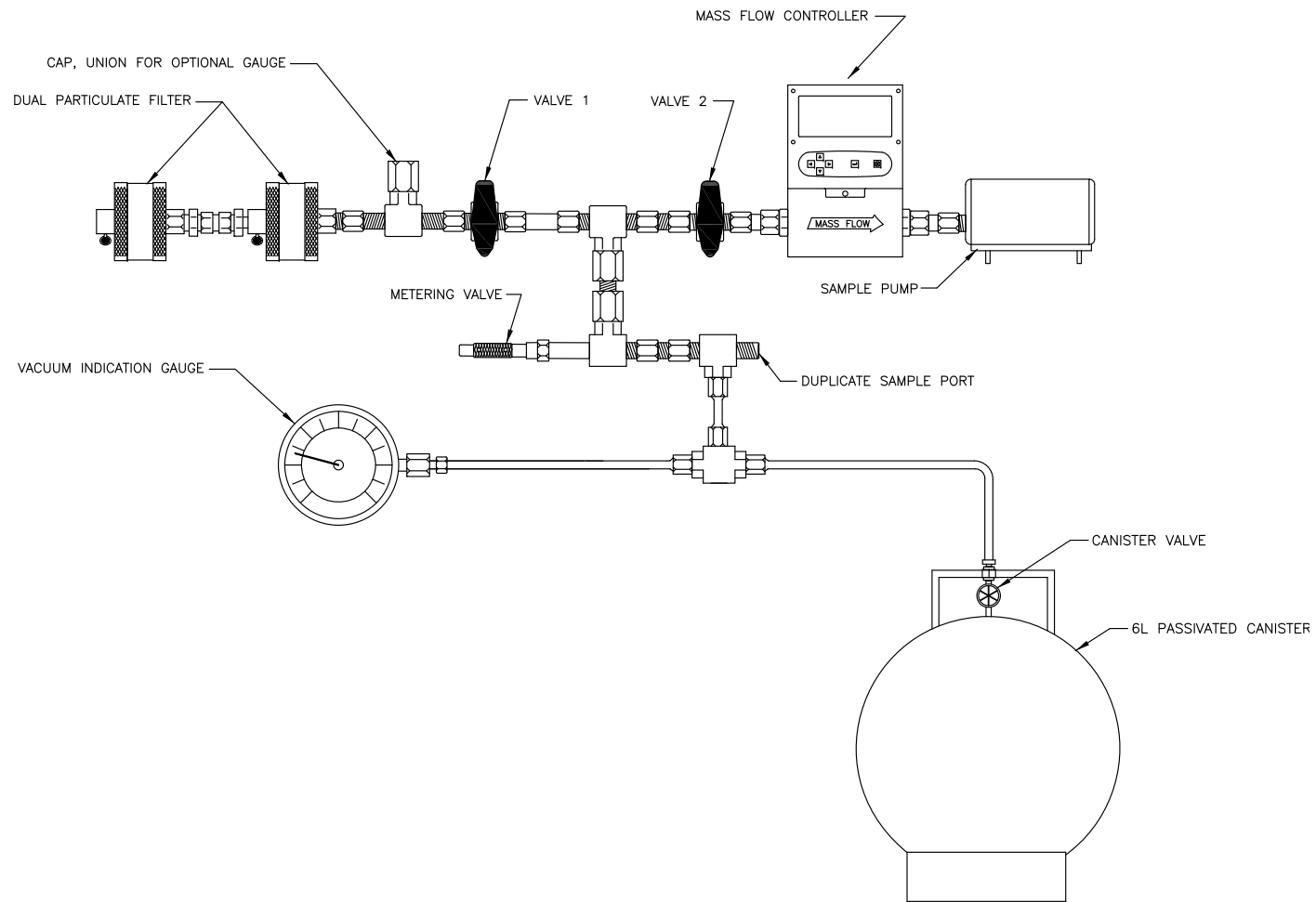
Basis

This change is classified as "Administrative and informational changes" and is, therefore, a Class 1 modification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR §270.42, Appendix I, A.1).

Discussion

This change is needed to correctly describe Figure N-2, thereby ensuring the accuracy of the Permit.

Proposed Revised Permit Figure:



~~TYPICAL PASSIVE AIR SAMPLING KIT WITH CANISTER~~ TYPICAL SUBATMOSPHERIC SAMPLING ASSEMBLY WITH CANISTER

**Figure N-2
VOC Monitoring System Design (continued)**

Item 9

Description

This modification updates descriptive language in the Permit regarding the underground ventilation system to include the Supplemental Ventilation System (**SVS**). The SVS includes adding an underground fan. The SVS will provide additional air to the underground that can be exhausted using an unfiltered exhaust path to facilitate mining. This modification keeps the Permit current with routine changes to the facility (such as upgrades to the Underground Ventilation System (**UVS**)) or its operation by modifying descriptive language in the following areas of the Permit:

- Attachment A2, *List of Figures*
- Attachment A2, Section A2-1, *Description of the Geologic Repository*
- Attachment A2, Section A2-2a(2), *Shafts*
- Attachment A2, Section A2-2a(3), *Subsurface Structures*
- Attachment G2, Table G2-9, *Summary of Information Describing Existing WIPP Shafts*

Attachment A2, Figure A2-9, *Underground Ventilation System Airflow*, has been revised and renumbered to Attachment A2, Figure A2-9a. This Figure A2-9 (new Figure A2-9a) has been updated to reflect the Interim Ventilation System and make other editorial changes, such as replacing “WASTE DISPOSAL AREA” with “DISPOSAL CIRCUIT.” A new figure, Attachment A2, Figure A2-9b, *Underground Ventilation System Airflow (with SVS)*, has been added for completeness.

Basis

The changes regarding the addition of the SVS are classified as “Equipment replacement or upgrading with functionally equivalent components (e.g., pipes, valves, pumps, conveyances, controls)” because the SVS upgrades the UVS with an underground fan and an unfiltered exhaust path. This upgrade provides an unfiltered exhaust path for mining purposes equivalent to what was available prior to the February 2014 radiological event. Since the event, underground exhaust air has been filtered through High-Efficiency Particulate Air (**HEPA**) filters. Mining activities have been limited to maintenance (e.g., bolting). With the SVS upgrade, additional mining activities, such as mining of Panel 8, can resume with minimal impacts to the HEPA filtration system.

This modification provides the necessary update to the UVS description to include the SVS. This modification adds descriptive text relative to the SVS; it does not eliminate any ventilation system modes of operation nor does it propose changes to the minimum ventilation flow rate or the volatile organic compound monitoring requirements in Permit Part 4. Therefore, because these changes do not substantially alter the Permit conditions, this is a Class 1 modification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.3).

Furthermore, this modification does not reduce the capacity of the facility to protect human health or the environment for the following reasons:

- Separate ventilation circuits (North, Construction, Disposal, and Waste Shaft Station) will be maintained consistent with MSHA and as described in the Permit (new Figures A2-9a and A2-9b)

- The SVS does not negatively impact the ability to operate the HEPA system for filtration of the Disposal Circuit
- The status of essential underground equipment, including the ventilation and contamination detection systems, will continue to be monitored by a central monitoring system as required by the Permit, Attachment A2, Section A2-2a(3)

Discussion

In order to accommodate mining operations while maintaining waste handling operations, the Permittees are upgrading the UVS. This upgrade is meant to provide additional airflow to the underground and will facilitate mining. Revisions have been made to the Permit text and Figure A2-9 to change the designation of ventilation areas to ventilation circuits (i.e., North, Construction, Disposal, and Waste Shaft Station). This was done to make the Permit consistent with common terminology used at the WIPP facility to describe the routes of the ventilation airflow in the underground. These are functional designations because the ventilation routes may change as the underground facility changes (e.g., moving a panel from the Construction Circuit to the Disposal Circuit once mining is complete). The ventilation system upgrade has resulted in a revision to the configuration and operation of the ventilation system which includes an additional ventilation fan and operating mode and an option to use the Salt Handling Shaft as an exhaust shaft for areas of the underground that do not need filtration, such as the North and Construction Circuits. As a result, the descriptions in the Permit have been revised and a new figure has been added to depict the ventilation circuits when operating the SVS.

The changes to the Permit text include updates to text and figures that describe the WIPP facility UVS, including a description of the SVS. The Permittees submitted a notification of planned alteration to the permitted facility to the NMED on April 22, 2015, describing this system. Consistent with this notification, the NMED will be provided with the New Mexico Professional Engineer's certification of the installation and be afforded an opportunity to inspect the modified portion of the facility.

In addition, the Permittees have added a new Figure A2-9b, "Underground Ventilation System Airflow (with SVS)," to depict the UVS while the SVS is in operation and updated Attachment A2, Figure A2-9, which has been renamed to Figure A2-9a, to reflect the Interim Ventilation System and terminology that is consistent with the Permittees' documentation.

The changes to descriptive text and figures are needed to update the Permit.

Proposed Revised Permit Text and Figures:

ATTACHMENT A2 GEOLOGIC REPOSITORY

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A2-1 Description of the Geologic Repository

Four shafts connect the underground area with the surface. The Waste Shaft Conveyance headframe and hoist are located within the Waste Handling Building (**WHB**) and will be used to transport containers of TRU mixed waste, equipment, and materials to the repository horizon. The waste hoist can also be used to transport personnel. The Air Intake Shaft and the Salt Handling Shaft provide ventilation to all areas of the mine except for the Waste Shaft Station. This area is ventilated by the Waste Shaft itself. The Salt Handling Shaft is also used to hoist mined salt to the surface and serves as the principal personnel transport shaft. The Exhaust

Shaft serves as a common exhaust air duct for all areas of the mine. In some cases (such as during mining activities), the Salt Handling Shaft will be used as an unfiltered exhaust shaft. The Salt Shaft exhaust air will come from the North or Construction Circuits (i.e., areas of the underground that are not contaminated and do not need High-Efficiency Particulate Air (HEPA) filtration). The relationship between the WIPP surface facility, the four shafts, and the geologic repository horizon is shown on Figure A2-2.

A2-2a(2) Shafts

The Waste Shaft is located beneath the WHB and is 19 to 20 ft (5.8 to 6.1 m) in diameter. The Salt Handling Shaft, located north of the Waste Shaft beneath the salt handling headframe, is 10 to 12 ft (3 to 3.6 m) in diameter. Salt mined from the repository horizon is removed through the Salt Handling Shaft. The Salt Handling Shaft is the main personnel and materials hoist and also serves as a secondary-supply air duct for the underground areas. The Air Intake Shaft, northwest of the WHB, varies in diameter from 16 ft 7 in. (4.51 m) to 20 ft 3 in. (6.19 m) and is the primary source of fresh air underground. The Exhaust Shaft, east of the WHB, is 14 to 15 ft (4.3 to 4.6 m) in diameter and serves as the exhaust duct for the underground air. In some cases, the Salt Handling Shaft may be used as an unfiltered exhaust shaft to ventilate areas of the underground that do not need filtration.

A2-2a(3) Subsurface Structures

Underground Facilities Ventilation System

The underground is divided into specific areas that are supported by different ventilation flows referred to as ventilation circuits. Consequently, the main underground ventilation system is divided into comprised of four separate flows (circuits, as designated on Figure A2-9a): one serving the northern experimental areas (North Circuit), one flow serving the mining-construction areas (Construction Circuit), one serving the northern experimental areas, one serving the waste disposal areas (Disposal Circuit), and one serving the Waste Shaft and station area (Waste Shaft Station Circuit). The four main airflows circuits are recombined near the bottom of the Exhaust Shaft, which serves as a common exhaust route from the underground level to the surface. In some cases, the Salt Handling Shaft may be used as an unfiltered exhaust shaft (Figure A2-9b) to ventilate areas of the underground that do not need filtration.

Underground Ventilation System Description

The underground ventilation system consists of centrifugal exhaust fans, two identical High Efficiency Particulate Air (HEPA) HEPA-filter assemblies arranged in parallel, isolation dampers,

a filter bypass arrangement, two skid-mounted HEPA-filter assemblies arranged in parallel, and associated ductwork. The fans, connected by the ductwork to the underground exhaust shaft so that they can independently draw air through the Exhaust Shaft, are divided into three groups. One group consists of three main exhaust fans, two of which are utilized to provide the nominal air flow of 425,000 standard ft³ per minute (**scfm**) throughout the WIPP facility underground during normal (unfiltered) operation. One main fan may be operated in the alternate mode to provide 260,000 scfm underground ventilation flow. These fans are located near the Exhaust Shaft. The second group consists of three filtration fans, and each can provide 60,000 scfm of air flow. These fans, located at the Exhaust Filter Building, can be operated in the filtration mode, where exhaust is diverted through HEPA filters, or in the reduced or minimum ventilation mode, where air is not drawn through the HEPA filters. The third group consists of two skid-mounted filtration fans and HEPA-filter assemblies, each of which can provide approximately 23,000 scfm of air flow. The skid-mounted filtration fan and HEPA-filter assemblies, referred to as the Interim Ventilation System (**IVS**) located south of the Exhaust Filter Building, are only operated in filtration mode, where exhaust is diverted through HEPA filters. In addition to the surface fans, an underground fan has been installed to ventilate uncontaminated areas in the North and Construction Circuits. This system is referred to as the Supplemental Ventilation System (**SVS**) and will be used in conjunction with IVS (as shown in Figure A2-9b). When this fan is operating, the Salt Shaft will serve as an unfiltered exhaust shaft for the North and Construction Circuits. A portion of the airflow provided by the SVS to the Construction Circuit can also be used to provide fresh air to the Disposal Circuit, if needed. In this case, the air from the Disposal Circuit will continue to be exhausted through the HEPA filtration system.

The ventilation path for the waste disposal side is separated from the construction (e.g., mining) side by means of air locks, bulkheads, and salt pillars. A pressure differential is maintained between the construction mining side and the waste disposal side to ensure that any leakage is towards the disposal side. The pressure differential is produced by the surface fans in conjunction with the underground air regulators.

Underground Ventilation Modes of Operation

The underground ventilation system is designed to perform under ~~two~~ three types of operation: normal (the HEPA exhaust filtration system is bypassed), ~~and~~ filtered (the exhaust is filtered through the HEPA filtration system), if radioactive contaminants are detected or suspected, or a combined mode in which the air in the Disposal Circuit is filtered and the air in the North and Construction Circuits is unfiltered.

The possible modes of exhaust fan operation are as follows:

- 2 main fans in operation
- 1 main fan in operation
- 1 filtration fan in filtered operation
- 2 fans in filtered operation (one filtration fan and one IVS fan or two IVS fans)
- 3 fans in filtered operation (one filtration fan and two IVS fans)
- 1 filtration fan in unfiltered operation
- 2 filtration fans in unfiltered operation
- 1 main and 1 filtration fan in unfiltered operation

- 3 fans in filtered operation (one filtration fan and two IVS fans exhausting through the Exhaust Shaft) and an underground SVS fan in operation (boosting fresh air into the mine causing the Salt Handling Shaft to serve as an unfiltered exhaust shaft for the North and Construction Circuits)

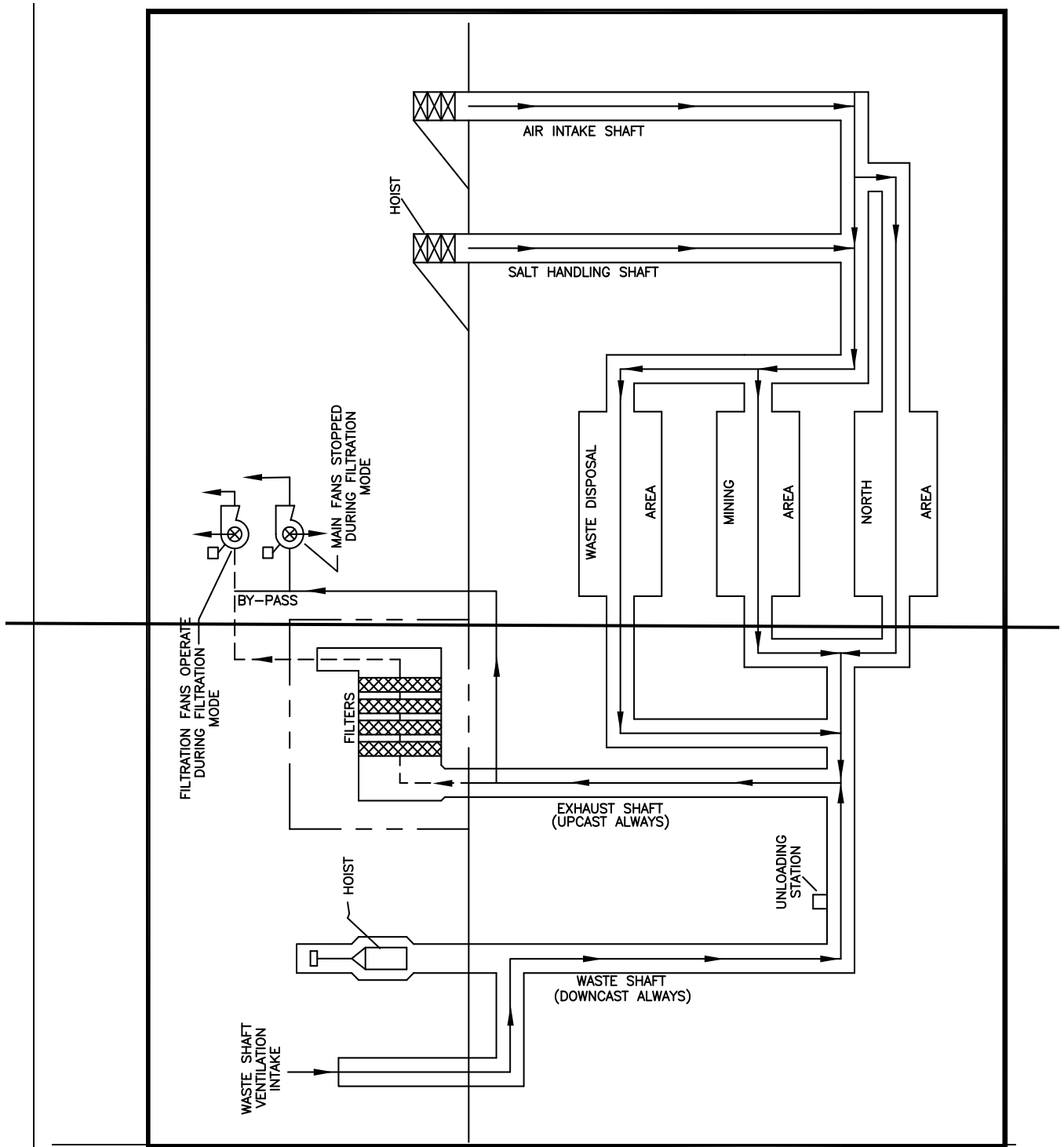
Under some circumstances (such as power outages and maintenance activities, etc.), all mine ventilation may be discontinued for short periods of time.

In the normal mode, two main surface exhaust fans, located near the Exhaust Shaft, will provide continuous ventilation of the underground areas. ~~All~~ In this mode, underground flows join at the bottom of the Exhaust Shaft before discharge to the atmosphere. However, in some cases, the Salt Handling Shaft may be used as an unfiltered exhaust shaft to ventilate areas of the underground that do not need filtration.

Typically, outside ~~Outside~~ air will be supplied to the ~~mining~~ construction areas and the waste disposal areas through the Air Intake Shaft, the Salt Handling Shaft, and access entries. A small quantity of outside air will flow down the Waste Shaft to ventilate the Waste Shaft station. The ventilation system is designed to operate with the Air Intake Shaft as the primary source of fresh air. Under these circumstances, sufficient air will be available to simultaneously conduct all underground operations (e.g., waste handling, mining, experimentation, and support). Ventilation may be supplied by operating fans in the configurations listed in the above description of the ventilation modes.

An underground SVS fan, located in the S-90 drift, provides additional ventilation to the underground facility, as needed. The SVS ventilates the following:

- The North and Construction Circuits, exhausting through the Salt Handling Shaft and
- The disposal areas of the underground, exhausting through the Exhaust Shaft and through the filtration system



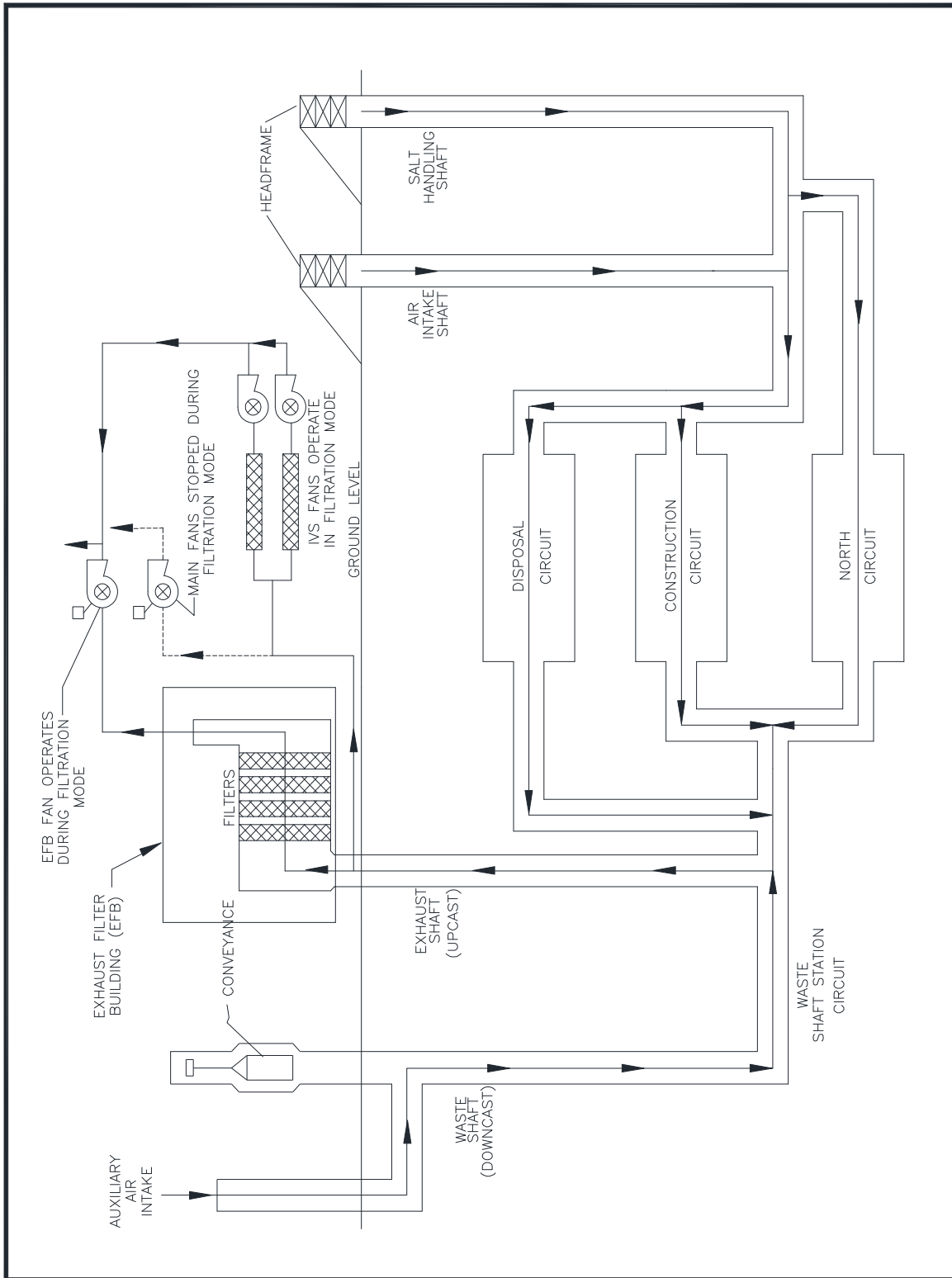


Figure A2-9a
Underground Ventilation System Airflow

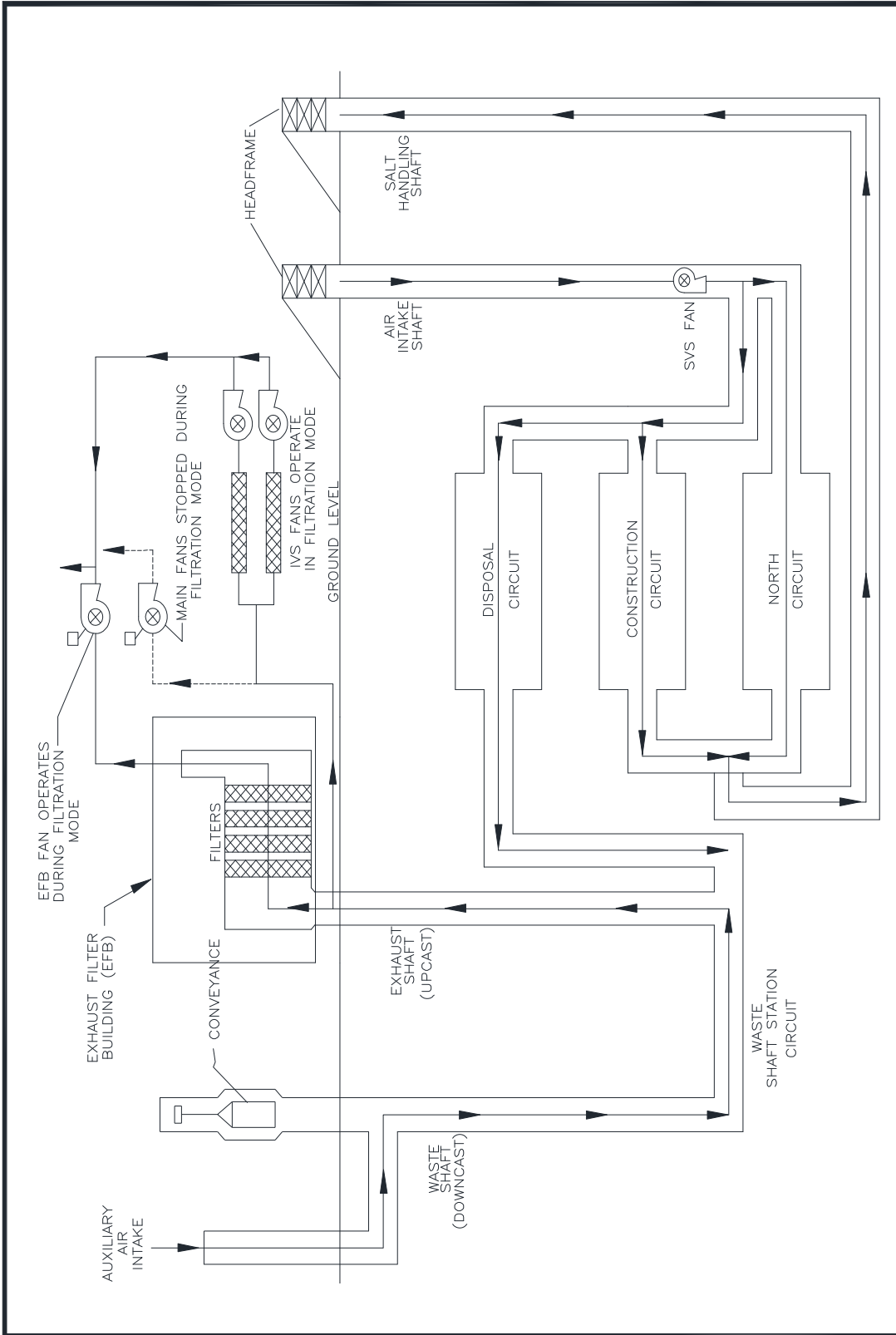


Figure A2-9b
Underground Ventilation System Airflow (with SVS)

**Table G2-9
Summary of Information Describing Existing WIPP Shafts**

	Shafts			
	Salt Handling	Waste	Air Intake	Exhaust
A. Construction Method				
i. Sinking method	Blind bored	Initial 6' pilot hole slashed by drill & blast (smooth wall blasting)	Raise bored	Initial 6' pilot hole slashed by drill & blast (smooth wall blasting)
ii. Dates of shaft sinking	7/81-10/81	Drilled 12/81-2/82 Slashed 10/83-6/84	12/87-8/88	9/83-11/84
iii. Ground treatment in water-bearing zone	Grout behind steel liner during construction	Grouted 1984 & 1988	Grouted 1993	Grouted 1985, 1986, & 1987
iv. Sump construction	Drill & blast	Drill & blast	No sump	No sump
B. Upper Portion of Shaft *				
i. Type of liner	Steel	Concrete	Concrete	Concrete
ii. Lining diameter (ID)	10'-0"	19'-0"	18'-0"/16'-7"	14'-0"
iii. Excavated diameter	11'-10"	20'-8" to 22'-4"	20'-3"	15'-8" to 16'-8"
iv. Installed depth of liner	838.5'	812'	816'	846'
C. Key Portion of Shaft *				
i. Construction material	Reinf. conc. w/chem. seals	Reinf. concrete w/chem. seals	Reinf. concrete w/chem. seals	Reinf. concrete w/chem. seals
ii. Liner diameter (ID)	10'-0"	19'-0"	16'-7"	14'-0"
iii. Excavated diameter	15'-0" to 18'-0"	27'-6" to 31'-0"	29'-3" to 35'-3"	21'-0" to 26'-0"
iv. Depth-top of Key	844'	836'	834'	846'
v. Depth-bottom of Key	883'	900'	897'	910'
vi. Dow Seal #1 depth	846' to 848'	846' to 849'	839' to 842'	853' to 856'
vii. Dow Seal #2 depth	853' to 856'	856' to 859'	854' to 857'	867' to 870'
viii. Dow Seal #3 depth	868 to 891'	NA	NA	NA
ix. Top of salt (Rustler/Salado contact)	851'	843'	841'	853'

	Shafts			
	Salt Handling	Waste	Air Intake	Exhaust
D. <u>Lower Shaft (Unlined)</u> *				
i. Type of support	Unlined	Chain link mesh	Unlined	Chain link mesh
ii. Excavated diameter	11'-10"	20'-0"	20'-3"	15'-0"
iii. Depth-top of "unlined"	882'	900'	904'	913'
iv. Depth-bottom of "unlined"	2144'	2142'	2128'	2148'
E. <u>Station</u> *				
i. Type of support	Wire mesh		Wire mesh	Wire mesh
ii. Principal dimensions	21H x 31W	12H x 30W	25H x 36W	12H x 23W
iii. Depth-top of station	2144'	2142'	2128'	2148'
iv. Depth-floor of station	2162'	2160'	2150'	2160'
F. <u>Sump</u> *				
Depth-top of sump	2162'	2160'	No sump	No sump
Depth-bottom of sump	2272'	2286'		
G. <u>Shaft Duty</u>	Construction hoisting of excavated salt; personnel hoisting; <u>for intake (fresh) air; in some cases, unfiltered exhaust shaft to ventilate areas of the underground that do not need filtration</u>	Hoisting shaft for lowering waste containers; personnel hoisting until waste receipt	Ventilation shaft for intake (fresh) air; personnel hoisting	Exhaust air ventilation shaft

*This information is from the MOC drawings identified on Sheets 2, 3, 7, 8, 12, 13, 17, and 18 of Drawing SNL-007 (see Appendix G2-E).