

WP 04-AD3008

Revision 8

Shift Operating Logs and Round Sheets

Management Control Procedure

EFFECTIVE DATE: 12/08/10

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APPROVED FOR USE

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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
8	12/08/10	Editorial change to update the Baseline Reference to the Hazardous Waste Facility Permit.

INTRODUCTION ¹

The purpose for this procedure is to provide guidance for maintaining operations logbooks and round sheets.

Performance of this procedure generates the following record(s), as applicable:

- Completed operations round sheets
- Surveillance Data Sheets
- Logbooks

REFERENCES

BASELINE DOCUMENTS

- DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*
- DOE/WIPP-07-3372, Waste Isolation Pilot Plant Documented Safety Analysis
- DOE/WIPP-07-3373, Waste Isolation Pilot Plant Documented Safety Analysis
- WP 04-AD3001, Facility Mode Compliance
- WP 04-CO, Conduct of Operations
- Hazardous Waste Facility Permit, Identification No. NM4890139088-TDSF

PRECAUTIONS AND LIMITATIONS

- The Waste Isolation Pilot Plant (WIPP) Technical Safety Requirements (TSRs) contain Limiting Conditions for Operation (LCOs) and Specific Administrative Controls (SACs) which provide specific preventative or mitigative limits and required actions for identified accident scenarios. Failure to comply with LCOs or SACs may constitute a violation and must be immediately reported to the Facility Shift Manager (FSM). The step affected by the LCO/SAC is followed by the LCO/SAC number in bold brackets (e.g., [**LCO 3.X.X**]). Applicable LCO/SAC Surveillance Data Sheets SHALL be completed as required per WP 04-AD3001. (All Surveillance Data Sheets are identified in WP 04-AD3001.)

- Failure to complete a Surveillance Requirement (SR) within its specified frequency SHALL constitute a violation of the associated LCO and must be immediately reported to the FSM. Specific LCO SRs applicable during the performance of round sheets are referenced at the end of the surveillance item I bold brackets, e.g., **[SR x.x.x.x]**.
- Completed Surveillance Data Sheet(s) and all associated documentation must be forwarded to the FSM for review and approval.
- All LCO-required surveillances that are performed underground will be faxed to the Central Monitoring Room (CMR). The CMR Operator (CMRO) will then put them in the surveillance collection basket. Originals must be taken to the CMR at the end of each shift and placed in the surveillance collection basket.
- All surveillances performed on the surface must be hand-carried to the CMR and placed in the surveillance collection basket.
- The FSM will collect the surveillances and update the status board.
- Personnel that will perform the surveillances and fax or carry them to the CMR will be designated by name each shift during turnover.
- A surveillance check sheet will be added to the Facility Ops turnover sheet and will be reviewed by both FSMs and CMROs during turnover each shift to verify that all required surveillances have been completed within their assigned periodicity.
- The TSR must be reviewed, and the appropriate requirements must be documented before making any revision to the parameters of limits.
- Parameters for a particular piece of equipment should be grouped together on the round sheet to facilitate trending on that particular equipment (e.g., parameters for the pump bearing cooling water temperature and the pump discharge pressure should be grouped together rather than placing the pump bearing cooling water temperature parameter among other equipment cooling water parameters). Areas and equipment to be monitored should be listed in the same sequence that they would be normally encountered during the round.
- Operation parameters, including specific equipment identification number, must be sufficiently described to ensure a clear identification of the instrument being used to obtain the data for the parameter being recorded.
- Each parameter must include the units of measurement of the data, where applicable. The units of measurement recorded on the round sheet must be the same as the units indicated on the instrument, except when an operator aid or controlled conversion chart is provided.

- In those instances where parameters are not measured using specific units of measurement, as indicated on an instrument, (e.g., measuring an oil level via the use of a dipstick), specific measurement values such as 3/4 full, half-full, should be specified rather than use of "OK" or a check mark on the round sheet.
- Where appropriate, maximum and/or minimum acceptable values must be provided to allow quick identification of out-of-specification parameters.
- Where more than one set of limits exist for an operating parameter, the most conservative limits must be used.
- FSM/Cognizant Operations Manager (COM) are responsible for reviewing logbooks and round sheets for completeness, and for validating the round sheets by signing the validation space as indicated on the round sheets.
- Operations Shift Personnel (Facility Operations, Underground Services, and Waste Handling) are responsible for maintaining a logbook of Operational Status changes, problems, incidents, or other pertinent information.
- Operations Shift Personnel are responsible for the recording of systems or equipment operations parameters as read from gauges, meters, or other indicating devices as required by the round sheets.

PERFORMANCE

NOTE

Attachment 3, Logbook Entry Examples, provides application examples of the requirements contained in this instruction.

1.0 NARRATIVE LOGBOOKS

- 1.1 Provide narrative logbook entries with sufficient technical detail so that correct and understandable information can be passed from one qualified person to another qualified person.
- 1.2 Make log entries as the events occur, except when making entries interferes with mitigation of events.
- 1.3 Record the following information in the narrative logbooks, as applicable:
 - Facility mode or condition changes
 - Abnormal facility configurations
 - Status changes to safety related and other major facility equipment

- TSR and/or LCO SRs completed and documented
 - Occurrence of any reportable event
 - Security incidents
 - Shift relief
 - Maintenance actions
 - Site or equipment problems and corrective actions
 - Other significant evolutions involving the associated system/equipment or shift positions
- 1.4 Begin each narrative logbook entry with the time based on the 24-hour clock.
- 1.5 Use only approved abbreviations, acronyms, and symbols found in Attachment 4, Acronyms and Abbreviations, in the narrative logbooks.
- 1.6 Make log entries in black waterproof ink, and ensure that they are concise, legible, and understandable.
- 1.7 If corrections are necessary, draw a single line through each incorrect entry. Initial and date each correction.
- 1.8 FSM, COM, or designee, review the narrative log once per shift to ensure the entries are accurate and adequate.
- 1.9 Begin the narrative log each day with a midnight entry that provides a brief description of the watch station status, major equipment running, out-of-commission equipment, and out-of-service equipment.
- 1.10 For positions and/or watches not manned around the clock, begin the narrative log with an entry similar to the one described above, once the position or watch is assumed.
- 1.11 Make a log entry for problems requiring corrective action by the watchstanders.
- 1.11.1 When problems are solved, log the resolution also.
 - 1.11.2 Status entries on problems.
- 1.12 Operators, end each calendar day by drawing a single diagonal line through the remaining portion of the current logbook page, then enter "NO FURTHER ENTRIES THIS DATE" on the diagonal line and initial.

- 1.13 At year's end, December 31, close out the existing logbook and start a new one on January 1. During the year when a logbook is full, close out and start a new one.
- 1.14 Identify an entry not in chronological sequence as Late Entry using the following method:
- Record the time of the readings.
 - Enter the words "Late Entry."
 - Enter Time of occurrence for the entry being entered late.
 - Write the entry's narrative.

NOTE

The review should take place prior to accepting the watch.

- 1.15 FSM/COM/designee and Operating Technician, signify review of the previous shift entries and acceptance of the watch by signing into the narrative logbook.
- 1.16 Handle completed narrative logs as follows:
- Keep 24-hours of logs available for watchstander review.
 - Maintain logbooks available for review by operators who return after a period greater than 24 hours from their regular duties.
 - Forward completed logbooks to the Operations Section Records Coordinator.

2.0 PREPARATION OF ROUND SHEETS

- 2.1 Prepare round sheets as follows:
- COM, FSM, or designee, approve the development of round sheets for each facility under your cognizance. Round sheet content should be limited to necessary parameters needed to baseline facility (equipment) operations.
 - Develop round sheets for specific items to be monitored (e.g., a round sheet would be developed for Facility Operations Operator and would include parameters for all areas and equipment that the Facility Operations Operator monitors). Areas and equipment to be monitored should be listed in the same sequence that they would be normally encountered during the round.

- Ensure each round sheet is a unique controlled document and is identified with a descriptive title, document number, revision number, and approval or effective date.
- Ensure each round sheet shall include a space on each page to identify the actual time period covered by the round sheet. The period of time covered by a round sheet will be dependent upon the frequency of data collection required to achieve the SR, SAC, or trending objective. Normally, a round sheet should cover a period of no less than 12 hours and no greater than 7 (seven) days.
- Operator, record the specific start and completion times for each round using military time (i.e., 0823 for 8:23 A.M., 1956 for 7:56 P.M., etc.).
- Facility Operations Manager and/or Cognizant Engineer, ensure recording of parameters are frequent enough to recognize trends in order that equipment may be protected from damage (e.g., taking readings once per hour for operating equipment versus once every eight hours).
- COM, FSM, or designee, designate specific areas to be inspected less frequently due to adverse radiological or equivalent personnel safety conditions, or more frequently if problems have been encountered.
- Provide spaces on each round sheet to record all important parameters for equipment and areas.
- Verify important equipment parameters include, but are not limited to, operating limits as specified by equipment manufacturers, TSR limits, Resource Conservation and Recovery Act (RCRA) or New Mexico Environment Department (NMED) requirements, etc.
- Provide a narrative section on each round sheet unless an operating log is maintained by the operator effected.
- Where applicable, provide a separate block(s) to document each required supervisory review of completed round sheets per the requirements of this procedure.

3.0 ROUND SHEETS

NOTE

All round sheets are electronic attachments (EAs) for which this procedure is the parent document.

- 3.1 COM/designee, control and develop round sheets and any required change to them.

- 3.2 If a change in plant and equipment requires temporary or permanent changes to the round sheets, COM, mark up the master round sheet(s), sign and date it for immediate use until a new revision and approval is done on the affected round sheet(s).

NOTE

Not all groups require Engineering concurrence for round sheet changes; therefore, Attachment 1 is to be used at the COM's discretion.

- 3.3 COM, obtain Engineering concurrence to round sheet changes as required.
- 3.4 Engineering, when applicable, document concurrence using Attachment 1.
- 3.5 If Engineering concurrence is not required, COM, record the changes onto Attachment 1, and sign, date, and file the form.
- 3.6 COM, file Attachment 1 with master round sheets.
- 3.7 COM, approve the round sheet for use and place in the master file.

NOTE

The inspection frequency and organization responsible for the inspection will be included on the round sheets.

- 3.8 Operators, use the operations round sheets to verify that systems are operating within design parameters. The watchstander will perform a comprehensive evaluation of each system.
- 3.9 Watchstanders, perform a comprehensive evaluation of each system, annotating any abnormalities identified in the round sheets.
- 3.10 Where appropriate, include maximum/minimum values or expected operating ranges for equipment parameters to enable the watchstander to recognize abnormal readings quickly.
- 3.11 Make round sheet entries in waterproof black ink, concise, and legible.
- 3.12 Perform the following for entries outside specified minimum/maximum parameters, or for instruments past calibration due dates:
- Circle the entry in red ink (note that this is the only authorized use of red ink on the round sheets).
 - Enter the next consecutive comment number above the parameter.

- Enter a note in the comments section of the round sheet, including the note number, reason for the abnormality, action request number (when provided), or original date Action Request (AR) submitted and corrective action taken.
 - Take the necessary actions to restore the parameter to its normal operating band.
 - Notify the FSM/COM of the abnormal parameters, and inform the FSM/COM when the reading has returned to normal.
- 3.13 Correct mistakes on round sheets by drawing a single line through the mistake, and then initial and date this entry.
- 3.14 Provide printed name and initials as appearing on the round sheets in the space provided for those persons whose initials appear on the round sheets.
- 3.15 Start a new set of round sheets each Sunday night by performing the following:
- Enter the date covered by the round sheets (e.g., 01-03-94 to 01-09-94).
 - Carry over the last set of readings from the previous week's round sheets to the new round sheets, if applicable.
 - Carry over the applicable notes from the comments section.

4.0 ROUND SHEET REVIEW AND VALIDATION

NOTE

The operations round sheets will be reviewed once per shift by the FSM/COM/designee. The reviewing personnel will initial in the space provided on the round sheets.

- 4.1 Forward the completed round sheets to the COM for review.
- 4.2 COM, perform the following:
- 4.2.1 Initial in the space provided.
 - 4.2.2 Forward the round sheets to a FSM/COM/designee to validate the records by signing as indicated.
- 4.3 FSM/COM/designee, forward the completed records to the respective Operations Section Records Coordinator.

Attachment 1 - Round Sheet Change/Comment Resolution Sheet Page ____ of ____

Round Sheet Number	Round Sheet Title	Cognizant Organization
Change	Comment	Resolution
REVIEWER: Sign your name, completing this section (1) if you have no comments for this review; (2) if your comments have been resolved; or (3) if you recommend approval of this change without requiring resolution to your comments.		
PRINTED NAME	SIGNATURE	DATE

Attachment 2 - Definitions

- In Service (I/S) - System/Equipment that is in operation and performing its function.
- Out of Service (OOS) - Equipment or systems that have failed or are not operational for corrective maintenance, preventive maintenance, or evolution support requiring the equipment/system not to be operating.
- Round Sheets - Official records containing columns that delineate the parameter to be recorded, normal indication, the minimum and/or maximum allowable indication of a parameter, and spaces for entering the required data at specified intervals.
- Logbook - A numbered, bound, ledger retained by required shift personnel to record pertinent shift information and the operational history of the associated system/equipment.
- Parameter - Gauge and/or meter indications that provide associated system or equipment operating variable data.
- Secured (SEC) - System or equipment is secured, shut down, or turned off.
- Standby (STBY) - System or equipment will automatically start on system demand.
- Tagged (TAG) - System or equipment is tagged out of service.

Attachment 3 - Logbook Entry Examples

DATE	COMMENTS
TIME	
0000	
	EFB: 860A I/S Minimum Ventilation. Filtration Disabled
	871/882 I/S. 700B & 860B secured.
	WHB: 41-B-804/806 I/S. 41-B-812/816/835/861 I/S.
	41-K-015 I/S.
	Support Bldg: HVAC zones 1 through 5 I/S. Zone 6 Stby. train
	I/S. 45-B-114 & 118 in manual. 45-B-102 & 137 flow con-
	trollers manual. 45-G-400A/B & 403 A/B in stby. 45-K-400
	& 401 I/S.
	Site Power: Plant Sub Normal. Sub 3 CB-18 removed from cub-
	icle. Both Diesel Generators available. U/G on all three
	feeders. Main UPS normal
	Site Air: 41-G-021B/41-K-001 I/S. 41-G-021A & 45-G-030A/B available.
	Pumphouse: 604A/B secured, 604C in manual. Both Fire Pumps
	aligned for automatic operation/Normal.
	Chillers: 890A in lead, 891A in manual, & 891B secured.
	CMS: LPU 822 secured for U/G ground control. UPS 310 has no
	battery backup.
	OOS Equipment: 41-B-700A, 41-B-860A/B/C Kurz units, 41-B-860C,
	41-B-890B, 45-B-114 Kurz unit, 45-B-133, 41-B-813,
	Chlorine Analyzer.
	Fire Sys Impairments: # 10971, 11266, 11278, 11304, 11317.
0644	Salt Hoist In Service
0649	Waste Hoist In Service
0700	CMR Relieved by John Doe, Off going CMR sig, John Doe sig.
0710	FSM Relieved by James Doe, Off going FSM sig, James Doe sig.
0712	RW Relieved by L. Doe, Off going RW sig, L. Doe sig.

Attachment 3 - Logbook Entry Examples

DATE	COMMENTS
TIME	
0730	Mine Phone Checks Satisfactory.
0752	Bldg. 489 CMS indication of fire panel sys. trouble alarm cleared. FSM notified. There is an active sys. impairment
	Tag in place.
0756	FSM reports local fire sys. trouble alarm bldg. 489 is still in alarm, and that there is an active AR to repair problem.
0804	Roving Watch secured 45-B-102, and tagged for maint. PM
0830	CB-1 at Plant Sub. opened remotely from CMR, requested by Fac Eng, supporting Hoisting Maint. PM's.
0832	U/G Ops reports bulkhead door checks complete, now ready to start a 700 fan.
0836	Secured 41-B-860A. Started 41-B-700B at 260 kcfm.
0910	Secured 41-G-021B air compressor for maint. PM. 021A I/S.
0955	Site Employee reports oil leaking from Ford tractor parked at southwest area of site near the Pumphouse. Estimates one quart of liquid. FSM notified.
1002	HP tech reports changing filters on Sta. A Cams.
1005	FSM reports spill verified by himself and on duty EST. Agrees, approx. one quart oil spilled. FSM verified a non-reportable event. EST will make arrangements to clean up the spill and dispose of properly.
1030	HP tech complete with filter change on STA. A Cams.
1042	Roving Watch cleared tags on 45-B-102 and returned zone 1 HVAC to normal operation. Retest Satisfactory.
1048	LATE ENTRY: 0930 Facility tech secured 41-B-804/806, and started 41-B-803/805. RH area ventilation I/S for thermography.
1216	Site Nurse notified CMR, Site employee being transported to

Attachment 3 - Logbook Entry Examples

DATE	COMMENTS
TIME	
	GMC in Carlsbad, Chest Pains. FSM notified, FMD notified.
	FMD request we log incident as non-reportable, non-work related.
1220	FPE reports oil spill reported at 0955 has been cleaned up and disposed of properly.
1225	I&C calibration work complete on 700B, returned fan flow to normal 260 kcfm.
1245	Hoisting requesting support to close Plant Sub CB-1
1250	FOT at plant sub. Closing CB-1 from CMR.
	CB-1 verified closed.
1304	CMS indicates 41-B-861 shutdown, Roving Watch responding FSM notified.
1312	Roving Watch reports the breaker for 861 in the trip position, cause unknown. Placed 41-B-863 I/S per FSM.
1341	TRUPACT Roadshow leaving site in route to <small>JRF 3/12/96</small>
	Salt Lake City, Utah.
1342	EST reports ambulance back on site. FSM notified.
1356	EST request PA, fire alarm testing in bldg. 459.
1410	PA fire alarm testing complete bldg. 459.
1415	Roving Watch started filling Domestic Water tanks.
1417	LPU 823 in alarm. U/G personnel notified.
1428	U/G personnel did not find a problem with LPU 823, reset, LPU back on line now, seems OK.
1533	Salt Hoist reported secured.
1537	Waste Hoist reported secured.
1540	Secured 41-G-021A air compressor, Started 021B after PM's.
	Retest in progress.
1552	41-G-021B failed retest, drive belts slipping. Maint. will be notified Monday morning.

Attachment 3 - Logbook Entry Examples

DATE	COMMENTS
TIME	
0000	<p>Plant Status:</p> <p>EFB: 860B I/S Min. Ventilation, Filtration Disabled.</p> <p style="padding-left: 40px;">41-G-022A/B in stby. 41-K-002/016 I/S. 41-B-870/881 & 871/882 I/S. 700B & 860A secured.</p> <p>WHB: 41-B-803/805 I/S. 41-B-812/816/835/863 I/S.</p> <p style="padding-left: 40px;">41-K-015 I/S.</p> <p>Support Bldg: HVAC zones 1 through 5 I/S, Zone 6 Stby train I/S. 45-B-114 & 118 in manual. 45-B-102 & 137 flow controllers in manual. 45-G-400A/B & 403 A/B in stby.</p> <p style="padding-left: 40px;">45-K-400/401 I/S.</p> <p>Site Power: Plant Sub normal. Sub 3 CB-18 removed from Cubicle. Both Diesel Generators available. U/G on all three feeders. Main UPS normal.</p> <p>Site Air: 41-G-021B/41-K-001 I/S. 41-G-030A/B available.</p> <p>Pumphouse: 604A/B secured. 604C in manual. Both Fire Pumps aligned for automatic operation / Normal.</p> <p>Chillers: 890A In lead, 891A in manual, & 890B/891B secured</p> <p>CMS: LPU 822 secured for U/G ground control, UPS 310 has no battery backup.</p> <p>OOS Equipment: 41-B-700A, 41-B-860A/B/C Kurz units, 41-B-860C, 41-B-890B, 45-B-114 Kurz unit, 45-B-133, 41-B-813, Chlorine Analyzer.</p>
0638	Waste Hoist In Service
0644	Salt Hoist In Service
0708	CMR relieved by.....etc. etc. etc.

Attachment 4 - Acronyms and Abbreviations

AAIS	Auxiliary Air Intake Shaft
AC	Alternating Current
A/C	Air Conditioning
ACGLF	Adjustable Center of Gravity Lift Fixture
AHU	Air Handling Unit
AIS	Air Intake Shaft
ALARA	As Low As Reasonably Achievable
ALM	Alarm
AR	Action Request
AUX	Auxiliary
BHD or BKHD	Bulkhead
BLDG	Building
BLM	Bureau of Land Management
BKR or CB	Breaker (Circuit)
CAL	Calibration
CAM	Continuous Air Monitor
CBFO	Carlsbad Field Office
CFR	Code of Federal Regulations
CH	Contact-Handled
CMC	Carlsbad Medical Center
CMR	Central Monitoring Room
CMRO	Central Monitoring Room Operator
CMS	Central Monitoring System
C/O	Carry Over
COM	Cognizant Operations Manager
CP	Control Panel
CPR	Cardiopulmonary Resuscitation
CRT	Cathode Ray Tube
CW	Chilled Water or Cooling Water
DC	Direct Current
DEG	Degrees
DFP	Diesel Fire Pump
D/G or DG	Diesel Generator
DNFSB	U.S. Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
DOT	Department of Transportation
DP	Distribution Panel
D/P	Differential Pressure
DR	Door
DSA	Documented Safety Analysis
DW	Domestic Water

Attachment 4 - Acronyms and Abbreviations

EA	Electronic Attachment
ECO	Engineering Change Order
ECP	Engineering Change Proposal
EEG	Environmental Evaluation Group
EFB	Exhaust Filter Building (Building 413)
ELEC	Electric or Electrical
EMERG	Emergency
EMI	Engineer Station (CMS)
ENG	Engineer
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
ERT	Emergency Response Team
EST	Emergency Services Technician
EVAC	Evacuation
EXH	Exhaust
EXT	Extension
FacOps	Facility Operations
FAC	Facility
FAP	Fire Alarm Panel
FAS	Fixed Air Sampler
FAX	Facsimile
FLIRT	First Line Initial Response Team
FMD	Facility Manager Designee
FO	Facility Operations
FOR	Fiber-Optic Repeater (CMS)
FP	Fire Pump
FPE	Fire Protection Engineer
FSM	Facility Shift Manager
FOT	Facility Operations Technician
FT	Foot
FW	Fire Water
GAL	Gallon
GFCI	Ground Fault Circuit Interrupter
G&SB	Guard and Security Building (Building 458)
HAZMAT	Hazardous Material
HEPA	High Efficiency Particulate Air
HMAR	Hazardous Materials Area Representative
HO	Hoisting Operations
HPT	Health Physics Technician
HSR	Historical Storage and Retrieval System (CMS)
HVAC	Heating, Ventilation and Air Conditioning
HWO	Hazardous Waste Operations

Attachment 4 - Acronyms and Abbreviations

IART	Incident/Accident Response Team
IC	Incident Commander
I&C	Instrumentation and Calibration
ID	Identification or Identifier
IN	Inch
I/P	In Progress
I/S	In Service
ITR	Information Technology Resources (VAX)
Kcfm	Kilo-Cubic Feet per Minute
KVA	Kilovolt-Amperes
KVAR	Kilovolt-Amperes (Reactive)
KW	Kilowatt
LB	Pound
LCMC	Lea County Medical Center
LCO	Limiting Condition for Operation
LP	Lighting Panel
LPU	Local Processing Unit (CMS)
LVL	Level
MAINT	Maintenance
MAN	Manual
MCC	Motor Control Center
MET	Meteorological
MGR	Manager
MOC	Management and Operating Contractor
MOU	Memorandum of Understanding
MPC	Mini Power Center
MRT	Mine Rescue Team
MSE	Monitoring Systems Engineering (CMS)
MSHA	U.S. Mine Safety and Health Administration
MT	Maintenance Technician
MW	Mega-Watt
N/A or NA	Not Applicable
NEPA	National Environmental Policy Act
NO or #	Number
NORM	Normal
NMED	New Mexico Environment Department
NRC	Nuclear Regulatory Commission
OAT	Operational Assistance Team
OJT	On-the-Job Training
OJTE	On-the-Job Training Evaluator
OMI	Operator Station (CMS)
OOC	Out of Commission

Attachment 4 - Acronyms and Abbreviations

OOS	Out of Service
OPS	Operations
ORR	Operational Readiness Review
O/RR	Overpack and Repair Room
OSHA	U.S. Occupational Safety and Health Administration
OZ	Ounce
PC	Personal Computer
PCH	Personal Computer On-Highway (CMS)
PCN	Procedure Change Notice
PG	Page
PIC	Person-In-Charge
PKG	Package
PM	Preventive Maintenance
PMI	Preventive Maintenance Instruction
POD	Plan of the Day
PPE	Personal Protective Equipment
PPM	Parts Per Million
PRESS	Pressure
PSI	Pounds Per Square Inch
PTR	Printer
PWR	Power
QA	Quality Assurance
QT	Quart
QTY	Quantity
RAT	Radiological Assistance Team
RCRA	Resource Conservation and Recovery Act
RFAR	Remote Fire Alarm Reporter (or Repeater)
RH	Remote Handled
RM	Room
RMS	Radiation Monitoring System
RW	Roving Watch
RWP	Radiological Work Permit
SAA	Satellite Accumulation Area
SAR	Safety Analysis Report
SB	Support Building (Building 451)
SCFM	Standard Cubic Feet per Minute
S/D or SD	Shut down
SEC	Secured
SGWR	Site Generated Waste Room
SH	Salt Handling
SME	Subject Matter Expert
SNS	Site Notification System (Paging)
SOMM	Surface Operations/Maintenance Manager

Attachment 4 - Acronyms and Abbreviations

SPS	Southwestern Public Service Company
SR	Surveillance Requirement
STA	Station
STBY	Standby
S/U or SU	Start-up
SUB	Substation (Electrical)
SUPV	Supervisor
SWGR	Switchgear (Electrical)
SWP	Safe Work Permit
SWRK	Switchrack (Electrical)
SYS	System
TAG	Tagged out (Danger Tag)
TCC	TRANSCOM Control Center
TECH	Technician
TEMP	Temperature or Temporary
TK	Tank
TMF	TRUPACT Maintenance Facility (Building 412)
TO/LO	Tagged Out (Danger Tag)/Locked Out
TPM	Temporary Plant Modification
TRLR	Trailer
TRNG	Training
TRUPACT	Transuranic Package Transporter
TRU	Transuranic
TSR	Technical Safety Requirement
UFE	Underground Facility Engineer
UFT	Underground Facilities Technician
U/G or UG	Underground
UGRW	Underground Roving Watch
U/I or UI	Under Instruction
UPS	Uninterruptible Power Supply
USQ	Unreviewed Safety Question
UVFS	Underground Ventilation and Filtration System
VENT	Ventilation
VIB	Vibration
WAC	Waste Acceptance Criteria
WCN	Work Change Notice
WDPF	Washington Distributed Processing Family (CMS)
WH	Waste Hoist
WHB	Waste Handling Building (Building 411)
WHO	Waste Handling Operations
WIPP	Waste Isolation Pilot Plant
WRES SEC	Washington Regulator and Environmental Services Site Environmental Compliance

Attachment 4 - Acronyms and Abbreviations

WTS Washington TRU Solutions LLC

XFMR Transformer (Electrical)