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WP 04-CO
Revision 10

Conduct of Operations

Cognizant Section: Facility Operations

Approved by: Leroy Bostick

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1.0   INTRODUCTION [1, 2, 3]

The purpose of this manual is to provide specific guidance for implementation of the Conduct of Operations Plan into departmental activities at the Waste Isolation Pilot Plant (WIPP). This manual follows the format of Conduct of Operations Matrix, and allows the user to reference implementing documents and procedures applicable to the Management and Operating Contractor (M&OC).

The scope of this manual is to assemble into one document the good operating practices by which personnel in M&OC organizations are expected to perform. The practices in this manual supplement other instructions provided in M&OC administrative, system, and operating procedures.

2.0   REFERENCES

2.1   Baseline References

- Conduct of Operations Matrix

2.2   Referenced Documents

- DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*

- DOE-STD-1029-92, *Writer's Guide for Technical Procedures*

- DOE-STD-1037-93, *Guide to Good Practices for Operations Aspects of Unique Processes*

- DOE/WIPP-95-2065, *WIPP Contact Handled (CH) Documented Safety Analysis*

- DOE/WIPP-95-2125, *Waste Isolation Pilot Plant Contact Handled (CH) Technical Safety Requirements*

- DOE/WIPP-06-3174, *WIPP Remote Handled (RH) Documented Safety Analysis*

- DOE/WIPP-06-3178, *Waste Isolation Pilot Plant Remote Handled (RH) Technical Safety Requirements*

- MP 1.29, Mission, Goals, and Responsibilities

- MP 1.30, Required Reading

- MP 1.46, WTS Value Management/Value Engineering Program

- WP 02-EC.12, Site Users Guide for Organizations, Personnel, or Companies that Perform Work on U.S. DOE Property or Rights-of-Way on or Around the Waste Isolation Pilot Plant Site

- WP 04-AD.01, Operations Events Critiques

- WP 04-AD3005, Administrative Control of System Lineups

- WP 04-AD3008, Shift Operating Logs

- WP 04-AD3011, Equipment Lockout/Tagout

- WP 04-AD3012, Temporary Plant Modification Control

- WP 04-MD3003, Control of Operator Aids

- WP 09-CN3007, Engineering and Design Document Preparation and Change Control

- WP 09-CN3021, Component Indices

- WP 10-2, Maintenance Operations Instruction Manual

- WP 10-AD3005, Control and Use of Maintenance Locks

- WP 10-WC3010, Maintenance PM/MWI Controlled Document Processing

- WP 10-WC3011, Maintenance Process

- WP 12-5, Waste Isolation Pilot Plant Radiation Safety Manual

- WP 12-IS.01, Industrial Safety Program - Structure and Management

- WP 12-IS.01-5, Industrial Safety Program - Hazardous Locations & Working Surfaces

- WP 12-ES3918, Reporting Occurrences in Accordance with DOE Order 232.1A

- WP 12-IS.01-7, Industrial Safety Program - General Electrical Safety

- WP 14-TR.01, WIPP Training Program

- WP 14-TR3005, Preparation, Administration and Grading of Examinations

- WP 14-TR3305, Instructor Qualification

- WP 14-TR3307, Qualification Programs

- WP 14-TR3308, On-the-Job Training

- WP 15-MD3102, Event Investigation

- WP 15-PS.1, Management Control Procedure Writer's Guide

- WP 15-PS.2, Procedure Writer's Guide

- WP 15-PS3002, WTS Controlled Document Processing

- WP 15-SE.01, Science Experiment Support Plan

3.0   MISSIONS, GOALS, AND RESPONSIBILITIES

All requirements of this section are covered by Management Policy (MP) 1.29, Missions, Goals and Responsibilities, and MP 1.46, WTS Value Management/Value Engineering Program.

4.0   SHIFT ROUTINES AND OPERATING PRACTICES

4.1   Status Practices

4.1.1   Operation of the facility will be in accordance with approved operating procedures, and will be performed by qualified personnel.

4.1.2   The Central Monitoring Room (CMR) will be notified promptly of all changes in facility status, abnormalities, and difficulties or unexpected situations encountered when performing assigned tasks.

4.1.3   The CMR Operator (CMRO) will notify the Facility Shift Manager (FSM) of the above reported conditions.

4.1.4   When an unexpected event or series of events occurs, **OR** when the cause and consequences cannot be readily determined, the situation will be investigated and appropriate action taken before resuming operation.

4.1.5   An initial entry will be made in the CMR log, as well as other applicable logs, stating the initiating event. Log entries will be clear, complete, and concise. Proper log keeping is further described in WP 04-AD3008, Shift Operating Logs.

4.1.6   An on-shift assessment meeting will be held by the FSM as soon as possible after an event to determine pertinent information relating to the event. If necessary, the shift will be held over to obtain this information.

4.1.7   Evidence regarding the cause of a problem will be safeguarded as sensitive information.

4.1.8   Notifications will be made in accordance with WP 12-ES3918, Reporting Occurrences in Accordance with DOE Order 232.1A.

4.1.9   All managers, operators, and technicians are responsible and accountable for the operations conducted during their shift. They will be cognizant of the status of all equipment, systems, and records of respective watch stations.

4.2   Safety Practices

4.2.1   All personnel are expected to report to work alert and prepared to carry out the full range of required duties.

4.2.2   If, due to sudden illness or any other reason, on-duty personnel become unable to perform duties, the cognizant manager will arrange relief for the affected party.

4.2.3   Pre-job briefings will be conducted by the cognizant individual before evolutions that are new or complex in nature, and/or where proficiency at the task is questioned, and/or prior to any evolution that will require manipulation of safety class or safety significant equipment listed in DOE/WIPP-06-3174, *WIPP Remote Handled (RH) Documented Safety Analysis;* DOE/WIPP-95-2065, *WIPP Contact Handled (CH) Documented Safety Analysis*; DOE/WIPP-06-3178, *Waste Isolation Pilot Plant Remote Handled (RH) Technical Safety Requirements*; or DOE/WIPP-95-2125, *Waste Isolation Pilot Plant Contact Handled (CH) Technical Safety Requirements* (TSRs). This will ensure the evolutions will be conducted properly and safely.

4.2.4   In all situations, employees will place personnel safety, facility safety, and environmental safety above facility production. Work that violates prescribed safe work practices must be stopped and the situation immediately reported to the cognizant manager.

4.2.5   Personnel will wear personal protective equipment (e.g., proper hearing, eye, head, foot, and respiratory protection) in designated areas to reduce the potential for injury. Clothing will not be so tight as to restrict movement or so loose as to get caught in moving machinery.

4.2.6   Planning for safety is the responsibility of all employees. Strict compliance with applicable safety standards and/or precautions will be maintained at all times. Safety precautions may be posted or be described or referenced in job-specific procedures or work instructions.

4.2.7   Personnel will not climb or walk on facility components and insulation because this could result in personnel injury or damage to equipment.

WP 12-IS.01-5, Industrial Safety Program - Hazardous Locations & Working Surfaces, discusses the proper use of man-lifts, temporary scaffolding, and ladders.

4.2.8 Personnel will exercise appropriate precautions when entering or working in or around energized panels or equipment. WP 12-IS.01-7, Industrial Safety Program - General Electrical Safety, discusses specific requirements for working around energized equipment.

4.2.9 Doors or passageways that serve as fire protection, security, and ventilation barriers will not be propped open for the passage of energized electrical leads or pressurized hoses, or for any other reason without the cognizant manager's approval.

4.3 **Operator Inspection Tours**

4.3.1 Operators will conduct a thorough tour of all areas within their responsibility at least once per shift, or more often if directed by the cognizant manager. The initial tour will normally be made early in the shift before the operator attends to other duties. Equipment will be inspected during area tours to ensure that the equipment is operating properly and, for standby equipment, to verify that it is fully operable (i.e., able to perform its intended function). Operators will operate the facility in a deliberate, methodological manner as follows:

• In addition to strict adherence to procedures, the individual must continually evaluate that all operations are based on a logical approach.

• Before performing any procedure, the operator must think ahead about what could go wrong, what could occur as various steps are performed, and what to do if expected events do not occur. Problems are less likely to occur if the operator takes a few minutes to consider the situation, consult procedures, and then take action.

• Operators will report unexpected conditions such as equipment vibrations, unusual noises or smells, or excessive temperatures to the FSM and/or their managers so that the awareness of conditions will result in initiating repairs, troubleshooting, or additional operator actions, as necessary.

• Watch station personnel will be aware of the effects on system operation and operability caused by out-of-commission equipment.

• Watch station personnel will be aware of the effects of testing equipment/ systems within the watch station.

• Watch station personnel are responsible for operations at that watch station and will be free from other duties to enable them to monitor the watch station and respond to alarms properly.

• A desire to conduct assigned tasks expeditiously will not interfere with good watch-standing practices and sound judgment.

4.3.2 Operator tours will include, but are not limited to, the following activities:

• Cognizant management will designate specific areas to be inspected more frequently due to such considerations as areas of high personnel activity, or where known problems exist. They may also designate areas to be inspected less frequently due to existing personnel safety concerns.

• Operator rounds will be monitored periodically by management personnel to ensure that comprehensive inspections continue to be conducted, including, as necessary, periodic inspections of equipment and areas not listed on the round sheets.

• Determine the status of equipment to allow proper response to problems that may occur (e.g., operating, standby, work-in-progress, or out-of-service).

• Inspect all assigned areas and note in the applicable log any deficiencies that may be present. Appropriate action will be taken to correct or report any deficiencies noted during tours through such means as work control administration documentation.

• Monitor system performance, related parameters, and indications in that area to determine whether the entire system is operating properly. A proper assessment of total system performance includes determining trends and current operating characteristics such as unusual noise, vibration, and temperature.

• Check panel alarm light bulbs and annunciators to ensure satisfactory operation of visual and audible abnormal condition indicators.

• Inspect components such as electrical panels, alarm panels, auto-start standby equipment, and circuit breakers for abnormal or unusual conditions.

• Inspect fluid and air systems for leakage.

• Inspect area for burned out light bulbs; seismic concerns, such as open electrical panels and mobile objects; clogged floor drains; roof leaks; and doors that do not close properly.

• Inspect areas for general housekeeping or cleanliness problems.

• Inspect areas where hot work permits are being used.

• Be alert for fire and safety hazards.

- Be alert for unauthorized personnel.

- Verify air locks are functioning properly.

- Inspect areas and equipment for missing or damaged labels. Any noted deficiencies will be corrected.

- Underground operators will remain alert to changing back, floor, and rib conditions.

4.4   Round/Tour Inspection Sheets

This section addresses operating log sheets and narrative logbooks. Operating personnel and support staffs will use the operating logs as a tool to verify that systems are operating within the design envelope. Specific guidance for keeping operating log sheets and narrative logbooks is found in WP 04-AD3008.

4.4.1   Operating logs will be developed and approved by the cognizant manager.

4.4.2   For those shift positions manned on a part-time basis, an operating log (or a logbook) will be established to ensure that pertinent information is passed from operator to operator.

4.4.3   Operating logs will include areas located within the associated shift position or watch station and will include important parameters for equipment being operated within that watch station.

4.4.4   Where appropriate, equipment parameters will include maximum/minimum values or expected operating ranges to enable the watch station personnel to recognize abnormal readings quickly.

4.4.5   Equipment will be listed on operating logs in the same order it is encountered during a normal tour of the watch station.

4.4.6   Operating logs will have a narrative section to record narrative information pertinent to the equipment and activities of the associated watch station. A logbook may serve this function if a logbook has been established for that watch station.

4.4.7   Operators will use the operating log narrative section to document equipment major evolutions, causes of abnormal conditions, and actions taken to correct abnormal conditions.

4.4.8   Data recorded on operating logs will be at the time(s) specified by management.

4.4.9   When operating log data are not recorded within one-half hour of the time specified, the operator will perform the following:

•   Data will be recorded at the first opportunity.

•   An operating or narrative entry will be made stating when the data were recorded.

•   The late data entry will be reported to the cognizant manager.

•   The data will be evaluated for out-of-limit conditions as soon as possible.

•   An explanation will be included in the applicable narrative log section.

4.4.10   When watch station operating log readings are taken that are abnormal or outside the minimum or maximum operating log limits, the operator will perform the following:

•   Red-circle the parameter.

•   Take the necessary actions to restore the parameter to its normal operating band.

•   Notify the CMR and the cognizant manager.

•   Note in the operating log narrative section, or logbook, the reason for the abnormal parameter.

•   The operator and cognizant manager, if necessary, will promptly investigate the cause of the out-of-limit condition, if not already known.

•   Inform the cognizant manager when the reading has returned to the normal band.

4.4.11   Whenever abnormalities or problems requiring corrective action by the operator are encountered, a log entry will be made.

4.4.12   When problems are solved, the resolution will also be logged.

4.4.13   Operating log data and narrative entries will be made in black, waterproof ink.

4.4.14   Correct watch station operating log entries as follows:

•   If correction of an operating log data entry is necessary, the incorrect entry will have a single line drawn through it. The operator will enter their initials and date in the data space or the right-hand margin of the operating log, to the right of where the incorrect entry occurred.

- The correct data will be entered in the data space or right-hand margin of the operating log to the right of where the incorrect entry occurred.

- Necessary corrections to operating log narrative entries will follow the guidance for incorrect logbook entries provided by WP 04-AD3008.

4.4.15   Instrument log parameter blanks will be marked as follows for instruments meeting the associated condition:

- OOC for instruments out of commission.

- TAG or TAGGED for instruments or associated systems that are danger tagged.

- STBY (standby) for instruments or systems not running but on standby condition.

4.4.16   The cognizant manager/or designee will review operating logs each shift to identify trends or abnormal readings, and to verify that data have been recorded properly. The CMRO may review non-CMR Facility Operations logs; or the Surface Facility Engineer may review surface Facility Operations logs and the Underground Engineer may review Underground Facility Operations logs.

4.4.17   Cognizant managers will monitor operator rounds periodically. This ensures that comprehensive tours and periodic inspections of equipment and tour areas within their watch station that are not addressed by the operating logs continue to be conducted by the operators.

4.4.18   Completed operating logs will be handled as follows:

- Logs of the previous 24 hours will be kept available for watch station personnel review.

- Logs will be available for review by operators who return after an absence of more than 24 hours from their regular duties.

- Completed logs shall be retained in accordance with applicable documentation (e.g., Records Inventory Disposition Schedules [RIDS]).

4.4.19   Recorder charts will be marked with the date, time, recorder identification number, and operator initials upon installation of a new chart and removal of a completed chart. If possible, recorders will be inspected to be in proper operation on a daily basis with date, time, and operator's initials annotated on the chart.

4.4.20   Recorder charts will be kept in accordance with the cognizant operation's RIDS.

4.5   Personnel Protection

4.5.1   Personnel will be appropriately qualified and follow personal protection practices to meet safety requirements for radiological exposure, chemicals, toxic materials, and other personnel hazards. Guidance for personal protection practices is found in WP 12-IS.01, Industrial Safety Program - Structure and Management, and WP 12-5, Waste Isolation Pilot Plant Radiation Safety Manual.

4.5.2   Personnel will observe the following requirements:

•   Adhere to all posted personnel protection requirements.

•   Observe all proper practices and precautions while in controlled access areas.

•   Use appropriate monitoring instruments correctly when such instruments are required.

•   Be cognizant of personal exposure levels and take appropriate actions to minimize exposure.

•   Be knowledgeable of the proper use of radiological work permits, hot work permits, inhalation limits, heat stress indications, and noise limits when and where needed.

•   Promptly report personnel protection deficiencies and hazards to the cognizant manager and appropriate protection personnel (e.g., health physics personnel) as warranted.

•   Take immediate action to reduce or correct hazards.

•   Follow proper safety and quality assurance practices.

4.5.3   Managers will periodically review cumulative radiation exposure levels of operating personnel to ensure that limits are not exceeded.

4.5.4   Emphasis will be placed on determining the adverse factors that contribute to personnel exposures and minimizing those factors to keep exposures within as low as reasonably achievable (ALARA) specifications.

4.6   Response to Indications

4.6.1   A fundamental principle of safe facility operation is to believe your indications. Operators will:

•   Assume that the alarm condition, gauge reading, meter reading, etc., is accurate, unless proven otherwise.

•   Take appropriate response action.

•   Check other indications, if possible, when unexpected readings are observed.

•   Never assume that an indication is in error without first evaluating other available information relating to the indicated condition.

•   Take prompt action to investigate the cause of abnormal or unexpected indications so that prompt corrective action can be taken.

4.6.2   When taking readings, the operator will check the calibration stickers. If an instrument is overdue for calibration, or if the calibration sticker is missing, the operator will inform instrument and control personnel by initiating corrective action(s) in accordance with appropriate work control administration documents.

4.6.3   Pay particular attention to normal gauge ranges. Familiarity should be gained with indicating instruments so that watch station personnel can spot whether a parameter has fallen outside its normal range.

4.6.4   Evaluate all erratic gauge indications (wobble, pulse, etc.). Determine if this is due to irregular system behavior or faulty gauge movements.

4.6.5   Investigate any differences in readings between instruments monitoring the same parameter.

4.6.6   Evaluate recording devices and past log readings for trends. Investigate and report any off-normal trends.

4.6.7   The operator will initiate the action manually if an automatic action from an alarm or process fails to occur.

4.6.8   When malfunctioning or inaccurate instruments are discovered, appropriate operator action will be taken to identify the instruments to prevent subsequent confusion:

•   Record the malfunctioning or inaccurate instruments in the narrative section of operating logs or in log books.

- Inform the cognizant manager of the situation.

- Inform instrument and control personnel by initiating corrective action(s) in accordance with appropriate work control administration documentation.

4.6.9 All alarms are indications of condition(s) that need action and will be acknowledged promptly.

4.6.10 When an alarm response is directed by the CMRO, watch station personnel will inform the CMRO that the response is in progress.

4.6.11 When the response actions have been completed, watch station personnel will notify the CMRO.

4.6.12 When a facility watch station alarm actuates, the cause of the alarm, any local panel indications, and the action being taken will be reported to the CMRO.

4.6.13 The results of the action will be reported to the CMRO.

4.7 Resetting Protective Devices

4.7.1 Cognizant managers are the only personnel who can authorize the resetting of tripped devices, and then only once without specific engineering and maintenance guidance.

4.7.2 When a protective device trips, a visual inspection of the device and associated equipment will be performed.

4.7.3 An attempt will be made to understand the cause of the trip of a protective device before the device is reset.

4.7.4 Operators and/or managers will ensure that no abnormal condition exists that would preclude resetting the protective device before taking action to reset the device.

4.7.5 Facility trips and unplanned forced shutdowns will be investigated thoroughly in accordance with WP 04-AD.01, Operations Events Critiques.

4.8 Load Changes

4.8.1 Power and process rate changes at WIPP are controlled by Facility Operations, Hoisting Operations (hoist speed), and Mining Operations (mining process). This requirement is not applicable to other organizations, as the organizations have no control over power/process changes.

4.8.2 Changes of hoisting speeds for different operations (salt haulage/personnel) are made by the hoisting manager/operator.

4.8.3   The CMRO may decrease load or rate changes without approval, if necessary, in response to facility conditions in accordance with WIPP response procedures.

4.9   Authority to Operate Equipment

This requirement applies only to plant system and equipment.

4.9.1   The FSM is in charge of plant operations 24 hours a day.

4.9.2   The FSM's operational judgment will be considered definitive. This judgment may be overruled only by the Surface Operation Maintenance Manager, the Operations Manager, or the M&OC General Manager.

4.9.3   The FSM is responsible for maintaining the plant in a safe configuration during normal and abnormal situations.

4.9.4   Managers are responsible for reporting plant conditions that affect the operation or operability of the facility to the FSM.

4.9.5   The FSM approves of operations and/or maintenance of plant equipment and systems each day through approval of the Plan of the Day (POD).

4.9.6   Managers will obtain approval before performance of operations and maintenance of plant equipment and systems each day through the POD.

4.9.7   The priority of shift operations is the responsibility of the appropriate managers. These priorities will be arranged as follows:

•   Personnel safety

•   Facility emergencies with equipment and systems

•   Environment

4.9.8   Operations at WIPP will be performed only by properly trained or qualified personnel.

4.9.9   Nonroutine operations of controls will be made only with specific approval of the FSM, or cognizant manager, as appropriate.

4.9.10   During emergencies, operators will take necessary immediate required actions without prior approval to ensure personnel, plant, and environmental safety. The FSM will be informed promptly of the actions and situation.

4.9.11   Operators will establish plant safety conditions over facility production conditions for all off-normal and emergency facility situations.

4.9.12   The cognizant managers will maintain security of their respective Operations key locker and its contents.

4.10   Shift Operating Bases

4.10.1   Each operating base will be equipped with appropriate office equipment for the operator to maintain necessary procedures and references to conduct administrative duties.

4.10.2   Necessary communication equipment will be available at each operating base.

4.10.3   Shift turnovers typically will be conducted at each operator's operating base.

4.10.4   Operating bases will be located at a convenient place within the area of responsibility for the shift position.

4.10.5   The FSM operating base is the Facility Operations Office area.

4.10.6   The CMRO operating base is the CMR.

4.10.7   The operating bases for other operating personnel are as follows:

•   Facility Operations Shift Engineer - Facility Operations offices

•   Facility Operations Roving Watch - Facility Operations offices

•   Underground Facilities Engineer - Underground Operator Station

•   Underground Facility Operators - Underground Operator Station

•   Hoist Operations Manager - Building 384A

•   Hoist Operator - Hoist control stations, as assigned

•   Shaft Tenders - Bottomlander or Toplander station, as assigned

•   Mining Operations Manager - Underground office

•   Mining Technicians - As assigned

•   Waste Handling Engineer - Contact-handled bay field office

•   Operational Health Physics (OHP) - As assigned

4.11 Potentially Distractive Written Material and Devices

Some devices, such as radios, are allowed in administrative work areas. Non-job-related written materials may be present in the administrative work areas, but personnel are not allowed to read these during work hours. Non-work-related televisions, video players, and computer games are not allowed on the site.

4.11.1 Written material that does not relate to operations, and entertainment devices (such as radios, televisions, tape players, and computer games), are prohibited for use by on-duty operating personnel to minimize distractions from their operating responsibilities.

4.11.2 Non-work-related written materials and entertainment devices will not be brought to operator work stations.

4.11.3 Operators may read training bulletins, technical manuals, and operating experience information, or review other written, audible, and visual materials that relate to operator duties.

5.0 CONTROL AREA ACTIVITIES FOR WIPP

5.1 Control Area Access

Four Control Areas have been identified at WIPP. These areas are the CMR and a Hoist Control Room at each of the three hoists. Therefore, this section applies only to facility and hoisting operations. All other organizations on site are trained on Conduct of Operations concerning these areas and are to abide by the established rules and posted signs in those areas.

5.1.1 Access to Control Areas will be limited to persons who need to be in Control Areas on official business.

5.1.2 Access to Control Areas will be granted by the Control Area operator.

5.1.3 The "at-the-controls" area of Control Areas will be clearly identified with a boundary understood by all persons who are granted access to the area.

5.1.4 The "at-the-controls" area will be restricted to persons needing to be in that area.

5.1.5 Facility Operations management and designated Operations Assistance Team personnel, when the team is requested, are granted unrestricted access to the CMR.

5.2   Professional Behavior

5.2.1   The CMR is the operating base and coordination point for plant operations activities.

5.2.2   Activities in Control Areas will be businesslike.

5.2.3   A professional atmosphere conducive to safe and efficient operation will be maintained in Control Areas.

5.2.4   Non-job-related discussions in Control Areas will be minimized so as not to interfere with conduct of the shift or the monitoring of key parameters.

5.2.5   Only those activities essential to supporting operations and activities authorized by management will be conducted in Control Areas.

5.3   Monitoring the Main Control Panels

5.3.1   The Control Area operators will be alert and attentive to control panel indications and alarms.

5.3.2   The Control Area operators will frequently and closely monitor and trend control panel indications to detect problem situations early.

5.3.3   The Control Area operators will take prompt action to determine the cause and to correct abnormalities.

•   Operator response to alarms will be timely.

•   Operators will address and correct alarm causes.

•   All reasonable actions will be taken to clear alarming conditions.

•   The number of evolutions that affect Control Area indications, and are being performed concurrently, will be limited to ensure that the Control Area operator's ability to detect and respond to abnormal conditions is not compromised.

5.3.4   All employees are responsible for notifying the CMRO before performing any maintenance or other evolution that will affect the Central Monitoring System (CMS). Examples of these are changing equipment status, altering flow indications, actuating alarms, etc.

5.3.5   If there is any doubt about the effect to the CMS, contact the CMRO. FSM authorization for work packages does not constitute notification of the CMRO.

5.3.6   The CMRO may direct the routine operation and configuration of systems and equipment. The FSM will be kept informed of changes in plant status.

5.3.7   The CMRO will be aware of (1) all CMS parameters that have an alarm point disabled, and (2) the operational impact of the alarm being disabled.

5.4   Control Operator Ancillary Duties

5.4.1   Duties assigned to operators should not interfere with their ability to monitor facility parameters.

5.4.2   If an operator is involved in administrative tasks, other qualified operators will assume responsibility to monitor the facility.

5.4.3   The administrative work load of operators responsible for monitoring and operating control boards will be minimized.

5.5   Operation of Control Area Equipment

5.5.1   Only persons specifically authorized by Operations Department qualification programs will operate Control Area equipment.

5.5.2   Trainees, when allowed to operate control area equipment, will be supervised and controlled properly by the operator who would normally perform the evolutions.

6.0   COMMUNICATIONS

6.1   Emergency Communications Systems

6.1.1   When personnel are working in areas where the public address (PA) system or emergency signals cannot be heard, alternate methods for alerting these persons, such as the following, will be used:

•   Plectron (Site Notification System)

•   Flashing lights

•   Personal pagers that vibrate and can be felt

•   Persons dedicated to notifications.

6.1.2   The cognizant managers will provide the appropriate notification methods for their responsible areas.

6.1.3   Emergency communications systems will be tested in accordance with approved documentation to ensure that they are functional.

6.1.4   The CMR will have the capability to override other users of the PA system for emergency announcements.

6.2   Public Address System Usage

6.2.1   The use of the PA system will be controlled to ensure that the system retains its effectiveness.

6.2.2   Excessive use of the PA system for paging of personnel and unnecessary announcements will be avoided. The following guidance applies to announcement categories:

•   Operational announcements are made at the discretion of the CMRO.

•   Personnel announcements are made at the discretion of the FSM/Operations management.

•   Sitewide notification of personnel for nonoperational purposes is made at the discretion of Operations management.

6.2.3   Facility telephones and other point-to-point communications systems/channels will be used instead of the PA system whenever practical.

6.2.4   PA system communications stations throughout the WIPP site are to be used as follows:

•   Channel 1 will be used to communicate with the CMR (e.g., to respond to CMRO direction, to report abnormal situations to the CMRO)

•   Channel 1 may be used locally to make zone announcements only during emergencies, and only when the CMRO is unable to make the announcement.

•   All other channels can be used to conduct personal communications.

6.2.5   The CMR is the focal point for communications between surface and underground operations.

6.3   Contacting Operators

6.3.1   Methods in place to ensure that operators can be contacted quickly include the PA system, the Site Notification System (SNS) via plectrons and radios, beepers, mine phones, and dial telephones.

6.3.2   Communications to general employees of an abnormal or emergency situation will be performed as follows:

- When making sitewide announcements, the CMRO will use the PA system, the SNS, and the mine phone.

- If an announcement is applicable to only surface personnel and will not affect underground personnel, the CMRO will employ only the SNS and the surface zone page on the PA system.

- If an announcement is applicable to the underground only and will not affect surface personnel, the CMRO will employ only the mine phone, and the Zone 4 page on the PA system.

- If an emergency or response announcement is to be made, the CMRO will sound an introduction tone to the announcement.

- The applicable personnel required to respond (FSM, emergency services technician, Underground Facility Engineer) will acknowledge the receipt of the alarm to the CMRO.

- If the CMRO does not receive an acknowledgment from the applicable responder, the CMRO will take other appropriate measures and/or repeat the message.

- If the response action is ongoing, the CMRO will repeat the announcement every 15 to 30 minutes to keep personnel informed.

6.4   Radios

6.4.1   Portable radios may be used for point-to-point communication. Operators must maintain awareness of the potential impact of radio frequency interference on sensitive electronic equipment.

- Areas containing radiosensitive equipment will be posted to prohibit radio usage except during emergency conditions.

- Employees discovering equipment to be affected by radio frequency in an area that is not posted as such will report the condition to the FSM immediately for further evaluation.

6.5   Abbreviations and Acronyms

Abbreviations and acronyms used in written communications will be defined within the document, or be so common as to not require definition (i.e., M&OC, WIPP, DOE). In oral communications, the person speaking will ensure that the receiver clearly understands any acronyms used.

6.6   Oral Instructions and Informational Communications

6.6.1   Facility operating oral instructions, directions, requests, and reports will be brief, clear, concise, and objective. It is essential that both sender and receiver be certain that the message is understood correctly.

6.6.2   The sender and the intended receiver will be identified clearly in all equipment/systems operations-related communications.

6.6.3   The phonetic alphabet will be used when conducting spoken communications.

6.6.4   To ensure that instructions are correctly understood, instructions involving the operation of equipment will be conducted as follows:

•   Case I - The Verbatim Repeat Back

-           This method will be used to direct watch station personnel action or to request reports (feedback) from the operator.

-           The receiver will repeat the message word for word.

•   Case II - Paraphrasing

-           This method will be used in noncritical and non emergency situations only.

-           Used when the sender delivers a long message.

-           Receiver replies with the basic intent of the message.

6.6.5   Operators will ask for clarification of any communication that is not understood.

7.0   CONTROL OF ON-SHIFT TRAINING

7.1   Adherence to Training Programs

7.1.1   Equipment/systems qualification training will occur in the form of instructed On-the-Job Training (OJT), following established training programs, as addressed by training documentation, to maintain instructional uniformity. The responsibilities of the manager, instructor, and trainee are specifically identified in WP 14-TR3308, On-the-Job Training.

7.2   On-Shift Instructor Qualification

7.2.1   On-shift training will be conducted by Level 1 instructors (e.g., Subject Matter Experts [SMEs]), or OJT evaluators. WP 14-TR3305, Instructor Qualification, identifies requirements for SMEs and OJT evaluators.

7.2.2   SMEs will be specifically designated in writing by the section manager. The manager, in selecting SMEs, will take into account communication skills, technical knowledge, and ability to instruct trainees properly using hands-on experience, in accordance with WP 14-TR3305.

7.2.3   OJT will adhere to established training programs, as addressed by WP 14-TR3308, to maintain instructional uniformity.

7.3   Supervision and Control of Trainees

7.3.1   Trainees will be used effectively and appropriately and will be made aware of operating limits and hazards.

7.3.2   A qualified operator will observe the trainee to ensure that the trainee does not make an error that could adversely impact the facility.

7.3.3   The instructor will be held responsible for the operations performed by a trainee being supervised.

7.3.4   Until the trainee has demonstrated reasonable proficiency in an operation, the trainee will discuss procedure steps, warnings, cautions, and notes with the instructor prior to operating any equipment.

7.3.5   Trainees will demonstrate actions to be performed by pointing to the control switch, valve, breaker, etc., that will be manipulated prior to actual operation.

7.3.6   The instructor will not become complacent with the trainee and will monitor the trainee closely while remaining in a position to intervene, or assume control, if necessary.

7.3.7   When trainees record equipment parameters on official operating logs, the instructor will verify and initial that the recorded information is correct.

7.3.8   The instructor and the trainee will discuss out-of-specification or abnormal readings and the consequences of allowing those trends to continue.

7.4   Operator Qualification Program Approval

The qualification program will be approved by the section manager. The details of the qualification program can be found in WP 14-TR3307, Qualification Programs.

7.5 Training Documentation

Training procedures provide documentation guidance for operator qualification programs. Training is documented in accordance with WP 14-TR.01, WIPP Training Program.

7.5.1 Completion of operator qualification requirements will be documented formally by obtaining signatures for requirements specified by each qualification card. WP 14-TR3308 lists specifics for On-the-Job Training.

7.5.2 Classroom requirements and written exam results are documented by Technical Training in accordance with WP 14-TR3005, Preparation, Administration and Grading of Examinations.

7.6 Suspension of Training

7.6.1 Trainee operation of equipment will be suspended immediately during unanticipated or abnormal events, accident conditions, or whenever the instructor believes suspension is necessary to ensure safe and reliable equipment operation.

7.6.2 Trainees will provide assistance during abnormal or emergency condition only at the direction of the SME.

7.7 Maximum Number of Trainees

7.7.1 On-the-Job training for qualification shall be conducted on a one-on-one basis.

7.7.2 The maximum number of trainees participating in any particular training session/evolution shall be limited to a number that can be effectively trained without causing adverse impact to the facility.

8.0 INVESTIGATION OF ABNORMAL EVENTS

All requirements of this section are covered by WP 04-AD.01.

9.0 NOTIFICATIONS

All requirements of this section are covered by WP 12-ES3918.

10.0 CONTROL OF EQUIPMENT AND SYSTEM STATUS

The FSM, as the senior operating person on shift, is tasked with maintaining a broad overview of operations. The FSM's perspective of the status of WIPP must be the focal point for shift operations.

10.1   Status Change Authorization and Reporting

10.1.1   Responsibility for maintaining proper configuration, and authorizing changes of general surface and underground equipment and systems rests with the FSM.

10.1.2   Responsibility for maintaining proper configuration and authorizing changes of hoisting equipment and systems rests with the hoisting manager.

10.1.3   Responsibility for maintaining proper configuration and authorizing changes of waste handling equipment and systems rests with the waste handling manager.

10.1.4   The FSM, hoisting manager, or waste handling organization, as appropriate, will be advised of the status of equipment and systems delegated by the FSM, hoisting manager, or waste handling manager to other shift positions. The cognizant manager will ensure that equipment status changes are effectively communicated to the CMR and other shift positions and operators as appropriate. Operations managers must report status changes of mode compliance and plant availability equipment.

10.1.5   Watch station personnel will monitor the equipment and systems of the assigned watch station frequently, especially after starting components, to assure proper operation.

10.1.6   When changing the operational status of equipment/systems and anticipated results are not received, the operator will:

•   Stop, and inform the cognizant manager.

•   Take necessary action to restore the equipment/system to a proper operating status or place it in a safe operating condition.

•   Place the equipment or system in a safe condition and obtain direction from the cognizant manager before proceeding if an unexpected result occurs while performing an operating procedure.

10.2   Equipment and Systems Alignment

Individual components of specified WIPP equipment and systems will be properly aligned or checked for proper alignment before placing the equipment or system into operation. Instructions for implementation of these requirements are found in WP 04-AD3005, Administrative Control of System Lineups.

10.3   Equipment Locking and Tagging

All requirements of this section are covered by WP 04-AD3011, Equipment Lockout/Tagout, and WP 10-AD3005, Control and Use of Maintenance Locks.

10.4   Operational Limits Compliance

Limiting Conditions for Operations (LCO) and Administrative Controls are required by the CH and RH Technical Safety Requirements and are procedurally implemented.

10.5   Equipment Deficiency Identification and Documentation

Equipment deficiencies will be documented in the work control system for correction by maintenance in accordance with work control administration documentation.

10.6   Work Authorization and Documentation

10.6.1   The FSM, hoisting manager, or waste handling manager, as appropriate, will authorize all shift actions (including maintenance) for equipment that is important to plant safety, affects operations, or changes control indications or alarms. For emergent work, when FSM approval through the POD is not feasible, the hoisting manager or waste handling manager, as appropriate, will ensure FSM approval is obtained before authorizing work.

10.6.2   The above authorization will be in writing on the document controlling the activities or work.

10.6.3   The POD will be available to document the "status of work in progress" for review by all personnel.

10.7   Equipment Post-Maintenance Testing and Return to Service

10.7.1   Equipment will be tested following maintenance to demonstrate the capability of performing the intended function. Maintenance testing will be performed in accordance with WP 10-2, Maintenance Operations Instruction Manual.

10.7.2   The cognizant operations manager will ensure that testing proves equipment operability.

10.8   Alarm Status

10.8.1   The status of control panel and/or local panel alarms will be readily available to operating personnel.

10.8.2   Information will be made available for the following alarm conditions:

•   Alarms that are totally disabled.

- Alarms with individual inputs disabled.

- Alarms with temporarily changed set points.

- Alarms that normally are lighted during operations.

10.8.3   Appropriate actions will be taken to monitor equipment parameters for abnormal conditions that would be masked by deficient alarms.

10.9   Temporary Modification Control

All requirements of this section are covered by WP 04-AD3012, Temporary Plant Modification Control, and WP 09-CN3007, Engineering and Design Document Preparation and Change Control.

10.10   Distribution and Control of Equipment and System Documents

10.10.1   WP 09-CN3007 ensures that operating personnel receive the latest revisions of engineering drawings and specifications.

10.10.2   Engineering drawings and specifications distribution include all operating-related groups and the administration distribution specified on the Engineering Change Order.

11.0   LOCKOUTS AND TAGOUTS

All requirements of this section are covered by WP 04-AD3011 and WP 10-AD3005.

12.0   INDEPENDENT VERIFICATION

Specific guidance on independent verification is found in WP 04-AD3005.

13.0   LOG KEEPING

At a minimum, a logbook will be maintained by the CMRO. Specific guidance on log keeping is found in WP 04-AD3008.

14.0   OPERATIONS TURNOVER

Shift turnover is a critical period during which it is essential that the on-coming shift, or relief personnel, is provided with a complete and accurate transfer of information regarding the facility or process status. Turnovers shall be performed by any group where activities or processes are transferred from one shift to another. Before assuming responsibility for their shift position, the on-coming shift reviews all process activities and documents. This review is as intensive as necessary for the on-coming personnel to understand important history, present status, and planned events.

14.1   Turnover Checklists

14.1.1   Managerial positions routinely conducting shift turnovers will use a turnover checklist for the process. These checklists will provide vital information about the site operational status. The managerial checklists will also require documenting the review of certain status documents (i.e., lockout/tagout, POD, required reading).

14.1.2   Operator equipment checklists, or other formal documentation, will be used to provide on-coming operators with the following status information:

•   Status of major components (i.e., operating pumps, trains of equipment in service)

•   Abnormal lineups

•   Valid alarms on all pertinent local control panels

•   Evolutions planned or in progress

14.1.3   Turnover checklists will be provided so that a review of operating logs and logbooks have been performed by on-coming shift personnel.
WP 04-AD3008 requires signatures by watch station personnel after review of operating logs and logbooks.

14.1.4   Each operator turnover checklist will be provided with enough space for the off-going person to list other important information the relief will need or require.

14.2   Document Review

14.2.1   On-coming personnel and their managers will review documents specified on their turnover checklists before assuming responsibility for their shift position.

14.2.2   This document review will be as intensive as necessary for the on-coming personnel to understand important history, present status of the facility, and planned events.

14.2.3   Logbook entries for the previous 24-hour period, or since the relieving operator's last shift will be reviewed.

14.2.4   Logbooks and operating logs will be reviewed so that personnel and their managers are familiar with all active entries, which emphasize changes that have occurred since the last shift.

14.3   Control Panel Walk-Down

14.3.1   On-coming managers will walk-down main control panels during, or shortly after, shift turnover.

14.3.2   Control area on-coming and off-going personnel will walk-down their main control panel(s) together.

14.4   Discussion and Exchange of Responsibility

14.4.1   The off-going manager or operator will explain all items noted on the turnover checklist at a time when facility conditions are stable.

14.4.2   When facility conditions are changing, or unusually complicated conditions exist, watch relief will not occur until directed by the cognizant manager.

14.4.3   Turnover communications will include the on-coming operator or manager asking any pertinent questions.

14.4.4   Each unusual reading, significant log entry, or out-of-specification reading will be discussed, and reasons for any questionable entries resolved, before watch relief.

14.4.5   After reviewing the logs, the on-coming and off-going watch station personnel will "talk through" the current watch station status, using the turnover checklist (as applicable), noting the following (as appropriate):

•   Work order/maintenance work in progress

•   Work order/maintenance retest in progress or waiting retest

•   Reason for equipment being out-of-commission

•   Abnormal equipment conditions, system lineups, or alarm status

•   Evolutions and tests in progress

•   Potential problem areas

14.4.6   On-coming operator or manager assumption of responsibility will be concluded with an entry into a logbook or operating log, as appropriate for the shift position.

14.5   Shift Crew Briefing

14.5.1   A crew briefing will be conducted by the cognizant manager, as required by shift turnover circumstances.

14.5.2   The crew shift briefing will include a review of facility and equipment status, problems with equipment, and evolutions in progress or planned during the shift.

14.5.3   Shift operators and personnel from support groups will attend shift briefings when their activities can directly affect facility operations.

14.5.4   Shift briefings will result in operating and support personnel understanding shift priorities and objectives.

14.6   Reliefs Occurring During the Shift

14.6.1   Shift reliefs occurring during the shift will result in a turnover that ensures that the on-coming person is at least as knowledgeable of the conditions as would have occurred had a complete shift turnover process been conducted.

14.6.2   Shift positions will not leave their assigned watch station without a formal relief by another qualified person.

14.6.3   Shift positions manned on a part-time basis may be secured by the cognizant manager.

15.0   OPERATIONS ASPECTS OF FACILITY UNIQUE PROCESSES

15.1   Operator Responsibilities

WIPP has no systems dedicated to facility chemistry or unique processes directly associated with the site mission as described in Chapter XIII of DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*. However, as part of the support for science, WIPP hosts experimental installations that collect data for scientific consortia or university studies. Typically, these installations are located underground and are self-contained, but rely on WIPP infrastructure and support for operation. Organizational roles and responsibilities for these installations are outlined in WP 15-SE.01, Science Experiment Support Plan. In addition, WIPP operates a laboratory where samples are counted. If sample processing is required, it is done off-site. DOE-STD-1037.93, *Guide to Good Practices for Operations Aspects of Unique Processes*, requires that plant personnel supporting or monitoring these installations have sufficient knowledge of processes and plant interfaces to ensure safety is maintained. In addition, the standard requires that lines of communication exist between operators and process (e.g., laboratory/experiment) personnel to promote effective coordination of activities).

15.1.1   Laboratory/experiment personnel should advise the FSM prior to starting a process that requires continuity of services such as electrical power to ensure safety (e.g., vent hoods operating continuously).

15.1.2   If possible, operators should inform appropriate process personnel prior to commencing evolutions that could potentially affect the integrity and safety of process or installation activities.

15.1.3   Laboratory/experiment personnel should advise the FSM prior to starting a new process.

15.1.4   Operators will periodically monitor safety indicators (e.g., alarms) to ensure safe operability of process or installation.

15.1.5   Non-WIPP laboratory/experiment personnel will comply with the requirements set forth in WP 02-EC.12, Site Users Guide for Organizations, Personnel or Companies that Perform Work on U.S. DOE Property or Rights-of-Way on or Around the WIPP Site.

16.0   REQUIRED READING

All requirements of this section are covered by Management Policy 1.30, Required Reading.

17.0   TIMELY ORDERS TO OPERATORS

Orders to operators are essential tools used to communicate special conditions and instructions to shift personnel. Operator orders consist of Shift Instructions and Field Revisions. Shift Instructions are used to communicate special conditions, requirements, and/or administrative instructions to personnel. Shift Instructions are short-term and temporary, and are not used to circumvent procedures. Field Revisions are "on-the-spot" changes to procedures, which are then incorporated into a procedure revision. Shift Instructions and Field Revisions are prepared in accordance with WP 15-PS3002, WTS Controlled Document Processing.

18.0   OPERATIONS PROCEDURES

Operating procedures are developed, reviewed, and approved to provide appropriate direction to ensure that the facility is operated within its design bases. Approved procedures should be effectively used to support safe operation of the facility.

18.1   Procedure Development

Procedures are developed using DOE-STD-1029-92, *Writer's Guide for Technical Procedures*, and required to meet the format guidance in WP 15-PS.2, Procedure Writer's Guide. Maintenance procedures are developed in accordance with WP 10-WC3010, Maintenance PM/MWI Controlled Document Processing; and WP 10-WC3011, Maintenance Process.

18.2   Procedure Content

The uniformity of content is controlled by WP 15-PS.2. Maintenance procedures' content is controlled by WP 10-WC3010 and WP 10-WC3011.

18.3   Procedure Changes and Revisions

Procedure revisions are controlled using WP 15-PS3002. Maintenance procedures' revisions and changes are controlled by WP 10-WC3010 and WP 10-WC3011.

18.4   Procedure Approval

New or revised procedures are approved in accordance with WP 15-PS3002. New, revised, or changed maintenance procedures are approved in accordance with WP 10-WC3010 and WP 10-WC3011.

18.5   Procedure Review

New or revised procedures are reviewed in accordance with WP 15-PS3002. Maintenance procedures are approved in accordance with WP 10-WC3010 and WP 10-WC3011.

18.6   Procedure Availability

Procedures are made available to operators through compliance with WP 15-PS3103, Document Distribution. Maintenance procedures are made available to craft personnel in accordance with WP 10-WC3010 and WP 10-WC3011.

18.7   Use of Procedures

18.7.1   Procedures will be adhered to at all times. As the sole exception to this requirement, operators may take whatever action is necessary during emergency conditions to place the facility in a safe condition, and to protect equipment, personnel, and public safety without first initiating a procedure change.

18.7.2   If the evolution is stopped for more than one shift, the operator will re-verify the procedure is the current revision/procedure change notice prior to restarting the evolution.

18.7.3   Numbered procedure steps will be performed in the order written, unless specifically stated otherwise. Procedure subsets preceded by a bullet are not order-dependent.

18.7.4   If, in the opinion of the operator, a procedure cannot be performed as written, the system or component will be placed in a safe condition and the cognizant manager informed so the discrepancy can be corrected.

18.7.5　　Maintenance procedures will be divided into three categories in accordance with WP 10-2 and WP 10-WC3011.

- 　　Continuous Use: Maintenance procedures that the craft personnel are required to have at the work site, open during the operation, and follow step-by-step. Maintenance procedures containing sign-offs will be continuous use as defined in WP 10-2, Section 1.0.

- 　　Reference Only: Maintenance procedures that the craft personnel are required to have at the job site and use as needed to complete the task. These procedures are not required to be following in a step-by-step manner.

- 　　Information Only: Maintenance procedures that the craft personnel are not required to have at the job site.

18.7.6　　Procedures have been prepared anticipating facility condition. In the event of a situation not covered by an approved procedure, personnel will:

- 　　Minimize risk of personnel injury and personnel exposure to hazards.

- 　　Minimize hazardous material release to the environment.

- 　　Protect facility equipment.

- 　　Protect experimental data.

- 　　Notify the cognizant manager.

18.7.7　　Procedures will be open and followed step-by-step under the following conditions:

- 　　A trainee is conducting activities under the supervision of an SME/OJT evaluator.

- 　　Evidence exists in the form of incidents or observations that show a general weakness in procedural knowledge.

- 　　The procedure contains sign-offs.

- 　　An error in performance could cause significant adverse impact on the facility.

18.7.8　　An operator will not be required to have the procedure open and in step-by-step use under the following conditions:

- 　　The operation is frequently performed and is of a nature that an error in performance will not have a significant adverse impact on the facility.

- The procedure is readily available and the operation is being conducted exactly as stated in the procedure.

- The operator is performing immediate actions of an alarm response or abnormal event procedure. The procedure will be reviewed after the response to verify that all required actions have been taken.

- The Maintenance procedures fall into either the Reference Only, or Information Only Category.

18.7.9   Operators will be capable of performing the immediate action steps of abnormal event procedures without reference to the procedure.

18.7.10   A controlled copy of annunciator response procedures will be easily accessible to operators responsible for responding to associated alarms.

18.7.11   Only controlled or working (a copy of a controlled copy that has been verified correct) copies of procedures will be used by operators. This ensures that the procedures are up to date with all procedure change notices and revisions.

19.0   OPERATOR AID POSTINGS

Requirements of this section are covered by WP 04-MD3003, Control of Operator Aids.

20.0   EQUIPMENT AND PIPING LABELING

Requirements of this section are covered by WP 09-CN3021, Component Indices.