

WP 04-CO.01
Revision 0

Conduct of Operations

Cognizant Department: Site Operations & Disposal

Approved by: Wes Bryan



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Acronyms and Abbreviations

| | |
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| ALARA | As Low As Reasonably Achievable |
| CBFO | Carlsbad Field Office |
| CH | contact-handled |
| CMR | Central Monitoring Room |
| CMRO | Central Monitoring Room Operator |
| COM | Cognizant Operations Manager |
| DOE | U.S. Department of Energy |
| DSA | Documented Safety Analysis |
| HWFP | Hazardous Waste Facility Permit |
| ISMS | Integrated Safety Management System |
| LCO | Limiting Conditions for Operations |
| MSHA | Mine Safety and Health Administration |
| M&OC | Management & Operating Contractor |
| OSHA | Occupational Safety and Health Administration |
| PPE | Personal Protective Equipment |
| RCA | root cause analysis |
| RCRA | Resource Conservation and Recovery Act |
| RH | remote-handled |
| TRU | transuranic |
| TSR(s) | Technical Safety Requirement(s) |
| WHB | Waste Handling Building |
| WIPP | Waste Isolation Pilot Plant |
| WTS | Washington TRU Solutions LLC |

1.0 INTRODUCTION

Conduct of Operations is an overall philosophy for achieving excellence in the operation of U.S. Department of Energy (DOE) facilities. The elements of Conduct of Operations are described in DOE O 5480.19, *Conduct of Operations Requirements for DOE Facilities*, and are applicable to each Waste Isolation Pilot Plant (WIPP) organization that conducts or supports WIPP operations. The formality and disciplined implementation of DOE O 5480.19, as described in the WP 04-CO.01 series documents and others identified on the Implementation Matrix in Attachment 1 of this document, is integral to implementation of the Integrated Safety Management System (ISMS), per DOE P 450.4, *Safety Management System Policy*.

2.0 RESPONSIBILITIES

The WIPP Site Operations and Disposal department is identified in Management Charter, MC 6.1 and is comprised of the following sections:

- Facility Operations
- Contact Handled (CH) and Remote Handled (RH) waste handling
- Maintenance
- Repository Development Project (includes Underground Services, Mining, Ground Control, and Geotechnical monitoring)
- Operations Support including Emergency Management and Site Security
- Project Management

Site Operations and Disposal is responsible for operation of the WIPP facility and for identifying the programs and procedures by which DOE O 5480.19 is implemented at WIPP. The detailed responsibilities for section/groups within the Site Operations and Disposal department are further defined in WP 04-CO.01-01, Operations Organization and Administration. Additionally, the organization is responsible for the following:

- Reviewing the Conduct of Operations Implementation Matrix periodically for accuracy and updating the matrix as necessary.
- Ensuring personnel assigned to perform operating tasks are trained and qualified to perform the job.
- Identifying the long-range staffing plan for Site Operations and Disposal department sections and groups.
- Maintaining an on-call list of qualified personnel to support WIPP operations.

- Ensuring shift operating crews consist of at least the minimum shift staffing levels identified in the WIPP technical safety requirements.
- Defining operations performance goals and update those goals annually.
- Performing management assessments in accordance with WP 15-GM1000, Management Assessments.
- Investigating abnormal operating events and ensuring that operating incidents are reported as required by WP 12-ES3918, Reporting Occurrences in Accordance with DOE Order 231.1A.
- Monitoring performance indicators for evidence of operational performance improvement and/or decline in accordance with WP 13-QA3006, Data Analysis and Trending.
- Ensuring personnel and managers are held accountable for their operating performance. This includes counseling, retraining, and/or discipline, as appropriate, for personnel involved in violations of operating practices.
- Establishing guidance and processes for preplanning operational activities to ensure worker safety and compliance with environmental requirements.

2.1 Operations Expectations

Operations personnel at WIPP are expected to adhere to site policies, programs, and procedures. The following expectations also apply to site personnel:

- Personnel will identify and elevate problems without fear of retribution from their management chain.
- Personnel will notify the Central Monitoring Room (CMR) when they or a co-worker is injured or when something unusual occurs which may include, but not be limited to, unexpected equipment operation or malfunction, unexpected plant configuration or deviation from that identified in procedures or drawings; encountering conditions that may warrant an investigation/action by Security.
- Activities are generally prioritized as follows:
 - a. Imminent safety hazard
 - b. Documented Safety Analysis/Technical Safety Requirements (DSA/TSR) compliance
 - c. Environmental and Regulatory compliance

- d. Items necessary to meet operational objectives
- e. Process improvements
- Employees will place personnel safety, facility safety, and environmental safety above facility production.
- Doors or passageways that serve as fire protection, security, and ventilation barriers will not be propped open for the passage of energized leads or pressurized lines unless approved by the cognizant manager.
- Operations personnel will have knowledge of the TSRs such that personnel recognize equipment that is TSRs-related and when TSRs may affect or be affected by a work assignment
- Each individual shall keep work areas neat and clean, paying particular attention to nuclear and industrial safety items such as combustible loadings, blocked exits, fire extinguishers, full or overflowing trash bins, etc.
- Personal adhere to the expectations identified in the WIPP Employee Handbook.
- Procedure compliance is mandatory. All personnel are expected to operate systems and perform work in accordance with established procedures. When instructions/procedures are inadequate or incorrect for the task assigned, personnel shall stop work, notify their manager, and resolve the issue before continuing with the work.
- Access to WIPP shall be limited to individuals on official business and/or those with work assignments at WIPP.

3.0 PROCESS

WIPP is required to comply with DOE Orders; Mine Safety and Health Administration (MSHA), Occupational Safety and Health Administration (OSHA), and Resource Conservation and Recovery Act (RCRA) requirements; engineering codes and standards; and other applicable federal, state, and local statutes/regulations.

This document and the supporting WP 04-CO.01-xx series documents constitute the Conduct of Operations Manual. The manual follows the content of Attachment 1 to DOE O 5480.19, *Guidelines for the Conduct of Operations at DOE Facilities*. The Conduct of Operations Manual is an integral part of WIPP management and operating contractor (M&OC) charters, policies, programs, and procedures. The Conduct of Operations Implementation Matrix contained in Attachment 1 of this document references the WIPP charters, policies, programs, and procedures that implement DOE O 5480.19 at WIPP.

Changes to the Conduct of Operations Implementation Matrix require approval by Carlsbad Field Office (CBFO).

4.0 REFERENCES

- DOE P 450.4, *Safety Management System Policy*
- DOE O 5480.19, *Conduct of Operations Requirements for DOE Facilities*
- Hazardous Waste Facility Permit, Waste Isolation pilot Plant, Permit #NM4890139088 TSDF, Issued by new Mexico Environment Department
- MC 6.1, Site Operations and Disposal Department
- WP 04-CO.01-xx Series Documents
- WP 12-ES3918, Reporting Occurrences in Accordance with DOE Order 231.1A
- WP 13-QA3006, Data Analysis and Trending
- WP 15-GM1000, Management Assessments

Attachment 1 – Conduct of Operations Implementation Matrix

Waste Isolation Pilot Plant CONDUCT OF OPERATIONS IMPLEMENTATION MATRIX

Revision 0

As indicated by the signatures below, the WIPP Conduct of Operations Implementation Matrix has undergone a comprehensive review and verification for implementation of the applicable requirements as indicated in the matrix.

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| WTS Review | <u>Signature on file</u> W. H. Bryan, Site Operations & Disposal Manager | <u>06/29/10</u> Date |
| CBFO Review | <u>Signature on file</u> H.L. Budweg, Site Operations Director | <u>06/29/10</u> Date |

Formal transmittal and approval of the matrix occurs through the WTS General Manager's Office to the CBFO Office of the Manager.

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| Chapter Guidelines (DOE O 5480.19) | Applicability Y = Yes N = No P = Partial | WIPP Implementing Document or Basis for Deviation |
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| Chapter 1 -OPERATIONS ORGANIZATION AND ADMINISTRATION | | |
| <p>I.C.1 Operations Policies Procedures or other definitive documentation should specify policies that are to be applied for operations.</p> <p>These policies should specify goals and the means to achieve those goals.</p> <p>These documents should also provide for the types of controls necessary to implement policies as discussed in this and other chapters of the guidelines.</p> <p>Responsibilities for implementing these policies, including the responsibility of shift personnel, if applicable, should be clearly defined. Operations personnel should clearly understand their authority, responsibility, accountability, and interfaces with other groups.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.1 • MP 1.21, Management Responsibility and Accountability • MP 1.29, Mission, Goals, and Responsibilities • MP 1.54, Conduct of Operations Policy • MC 6.1, Site Operations and Disposal • MP 6.5, Maintenance Management |
| <p>Physical security should be in accordance with DOE 5630.11.</p> | N* | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3. 1 • MC 11.1, Safeguards and Security • Security Operations Manual • Protective Force Manual • DOE WIPP Site Security Plan <p>*DOE 5630.11 has been superseded by DOE O 470.4. Physical security for the WIPP facilities is governed by DOE O 470.4 as a requirement of the prime contract</p> |
| <p>I.C.2 Resources The operations supervisor for DOE facilities should be provided with sufficient resources in materials and personnel to accomplish assigned tasks without requiring excessive overtime by the operations staff.</p> <p>These resources should include technical personnel needed to support the operations.</p> <p>A long-range staffing plan that anticipates personnel losses should be developed and implemented</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3. 2 • MP 1.54, Conduct of Operations Policy • MC 6.1, Site Operations and Disposal • WP 15-2, Management Control System |
| <p>I.C.3 Monitoring of Operating Performance Operating problems should be documented and evaluated. Based on assessments of these</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 |

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| <p>problems, corrective actions should be taken to improve the performance of the operations department performance. Additionally, frequent direct observation of operations activities by supervisors and managers is essential to performance of monitoring operations.</p> <p>Operations goals in areas such as the following should be established:</p> | | <ul style="list-style-type: none"> • MP 1.29, Mission, Goals, and Responsibilities • WP 04-IM1000, Issues Management Processing of WIPP Forms, Section 2.0 • WP 13-QA3006, Data Analysis and Trending, Section 3.0 • WP 15-GM1000, Management Assessments, Section 2.0 • WP 15-MD3102, Event Investigation, Section 4.0 |
| <p>- minimizing the unavailability of safety systems</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 • WP 09-CN3025, Annual System Walkdown/Requalification • WP 10-2, Maintenance Operations Instruction Manual, Section 2.0 • WP 10-WC3011, Maintenance Process • MP 6.5 Maintenance Management |
| <p>- minimizing personnel errors</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 • MP 1.52, Just Culture Management Policy • MC 9.28, Human Performance Improvement Committee |
| <p>- As-Low-As Reasonably-Achievable (ALARA)</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 • WP 12-2, WIPP ALARA Program Manual, Section 4.0 • MC 9.4, Radiological ALARA Committee • WP 12-5, WIPP Radiation Safety, Sections 1.18 and 1.19 • General Employee Training (GET) |
| <p>- minimizing lost facility capability</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 • WP 10-WC3011, Maintenance Process |
| <p>- minimizing the number of unscheduled facility shutdowns per year</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 • WP 10-WC3011, Maintenance Process |
| <p>- timely completion of scheduled surveillance</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 • WP 04-AD3001, Facility Mode Compliance, Section 1, 2, 3, 4, Attachment 4 • WP 10-2, Maintenance Operations Instruction Manual, Section 13 Preventive Maintenance Program • |

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| - minimizing the amount of overtime | Y | <ul style="list-style-type: none"> WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 MP 4.5, Overtime Guidelines |
| - achieving and maintaining complete staffing and training of shift positions | Y | <ul style="list-style-type: none"> WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 WP 04-AD3001, Facility Mode Compliance, Attachment 1 WP 14-TR.01, WIPP Training Program, Sections 1.0, 2.0 |
| - minimizing waste | Y | <ul style="list-style-type: none"> WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 WP 02-EC.11, Waste Isolation Pilot Plant Pollution Prevention Program Plan, Sections 3.0 & 4.0 WP 12-IH.02-4, WIPP Industrial Hygiene Program – Hazard Communication and Hazardous Materials Management Plan, Section 17. |
| - minimizing the number of lighted annunciators | Y | <ul style="list-style-type: none"> WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 WP 10-WC3011, Maintenance Process, Section 1.0 |
| Goals should be auditable, measurable, realistic, and challenging. Meeting goals should require a definite set of actions or an action plan. The action plan should be developed with input from personnel involved in conducting operations, reviewed by the operations supervisor at DOE facilities, and approved by management. | Y | <ul style="list-style-type: none"> WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 PBIs/ABCs/Deliverables in accordance with WP 15-2, Management Control System WP 15-3, WTS Program Execution Plan, Section 3.2 WP 13-QA3006, Data Analysis and Trending, Section 2.0 WP 12-IS.01, Industrial Safety Program, Section 5.1 MP 1.29, Mission, Goals and Responsibilities |
| The progress toward completing the action plan and achieving goals should be monitored periodically. If results show a significant variance from the desired progress in achieving goals, management should review the action plan to ensure that it is adequate and is being executed. | Y | <ul style="list-style-type: none"> WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 PBIs/ABCs/Deliverables in accordance with WP15-2, Management Control System WP 15-GM1000, Management Assessments, Section 1.0 WP 13-QA3006, Data Analysis and Trending, Section 3.0 MP 1.29, Mission, Goals and Responsibilities . |
| An audit of performance relative to operating goals should be provided to facility management and DOE. This summary should include an explanation of performance and actions planned to improve future performance. | Y | <ul style="list-style-type: none"> WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 MP 1.20 Management Assessments |

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| | | <ul style="list-style-type: none"> • WP 13-QA3006, Data Analysis and Trending, Section 3.0 • WP 13-QA.03, Quality Assurance Independent Assessment Program • 15-2, WTS Program Execution Plan, Section 6.0 |
| Line managers and supervisors should perform routine observations of personnel performing operating activities. Deficiencies identified should be documented, trended, and corrected. | Y | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 • WP 15-GM1000, Management Assessments, Sections 3.1, 3.2, 3.9 • WP 13-QA3006, Data Analysis and Trending, Section 3.0 • MP 1.20, Management Assessments • MP 1.28, Integrated Safety Management • WP 15-GM.03, Integrated Safety Management System Description, Section 5 |
| Other groups, such as quality assurance personnel, should periodically review and assess operation performance. | Y | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.3 • WP 13-QA.03, Quality Assurance Independent Assessment Program • MP 1.20, Management Assessments • WP 15-GM1000, Management Assessments Section 1.0 |
| <p>I.C.4 Accountability Workers and their supervisors are held accountable for operating performance.</p> <p>Personnel involved in significant or frequent violations of operating practices are counseled, retrained and disciplined, as appropriate.</p> <p>Supervisor performance appraisals and promotions include an assessment of operating performance.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.4 • MP 1.21, Management Responsibility and Accountability • MP 1.52, Just Culture Management Policy • MP 1.7, Employee Performance Appraisal • Employee Handbook • Union Contract |
| <p>I.C.5 Management Training Formalized supervisory and management training is incorporated into training programs.</p> <p>The formalized supervisory and management training apply to the first line supervisors on shift and aids them in managing shift activities.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.5 • MP 1.40, Management and Supervisor Training • MAS-100 through MAS-130 Manager and Supervisory Training Modules • HPI-101 HPI Fundamentals Training • OPS-115/115A CONOPs Training/Refresher • HR Manager Training Program |

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| <p>I.C.6 Planning for Safety Facility guidance should exist which describes safety preplanning requirements for all operational activities.</p> <p>The guidance should explain the role of safety analysis reviews, job safety analysis, and the handling of safety matters.</p> <p>All operations personnel should understand safety planning requirements</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-1, Conduct of Operations Program - Organization and Administration, Section 3.6 • MP 1.12, Worker Protection Policy • MP 1.48, Emergency Management Program • WP 04-AD3029, Fire Brigade Staffing, Introduction, Section 1.0 • WP 10-2, Maintenance Operations Instruction Manual, Section 3 Job Hazard Analysis Checklist • WP 10-WC3011, Maintenance Process, Section 1.0 & Attachment 4 • WP 12-IS3002, Job Hazard Analysis Development, Section 1.0 • WP 12-IH.02-4, WIPP Industrial Hygiene Program – Hazard Communication and Hazardous Materials Management Plan, Section 12.0 • WP 12-NS.03, Hazard Analysis Guidance, Section 4.0 • WP 12-RP.01, Emergency Planning Hazards Survey, Section 3.0 • WP 12-2, ALARA Program Manual, Section 6.0 & 7.0 • WP 15-GM.03, Integrated Safety Management System Description, entire manual |
| <p>Chapter 2, Shift Routines and Operating Practices</p> | | |
| <p>II.C.1 Status Practices The operator responsible for the facility should be promptly notified of all changes in facility status, abnormalities, or difficulties encountered in performing assigned tasks. Similarly, the operator should notify the shift supervisor (or cognizant manager for research and test facilities) of any unexpected situations.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.1 |
| <p>II.C.2, Safety Practices Operations personnel should adhere to the requirements of the facility industrial safety program.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.2 |
| <p>Proper hearing, eye, head, foot, and respiratory protection should be worn in designated areas to reduce the potential for injury.</p> | | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.2 • WP12-IS.01-4, Emergency and Personal Protective Equipment, Section 3.0 |
| <p>Similarly, ladders or other approved means should be used to access equipment located in the overhead when permanent steps or catwalks are not available</p> <p>Operators should not routinely climb or walk on facility components and insulation.</p> | | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.2 • WP12-IS.01-10, Fall Prevention and Protection • WP 12-IS.01-5, Industrial Safety Program - Hazardous Locations and Working Surfaces. |

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| <p>Operators should exercise appropriate precautions when entering or working in or around energized panels or equipment. For example, operators should ensure that electrical panel closures are securely fastened prior to making the breakers operable to energize equipment.</p> | | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.2 • WP 12-IS.01-7, Industrial Safety Program - General Electrical Safety, Section 3.0 |
| <p>II.C.3, Operator Inspection Tours Operator tours should be of sufficient detail to ensure that the status of equipment is known.</p> <p>Each operator should conduct a thorough tour of all areas within his/her responsibility, making appropriate equipment inspections at designated times at least once per shift. However, the operations supervisor may designate specific rooms to be inspected less frequently because of adverse radiological or equivalent personnel safety conditions, or more frequently if problems have been encountered. In these cases, the operations supervisor (or cognizant manager for research test facilities) should specify an alternate inspection schedule.</p> <p>Plant security concerns should not override operator safety assessment duties.</p> <p>A tour normally should be made early in the shift, before the operator attends to other duties, so that he/she can become familiar with the condition and status of equipment for which he/she is responsible.</p> <p>During the tour, equipment should be inspected to ensure that it is operating properly or, in the case of standby equipment, that it is fully operable.</p> <p>In addition, the following-activities should be conducted in conjunction with the tour:</p> <ol style="list-style-type: none"> The status of equipment (i.e., operating, standby, work in progress, or out-of-service) should be determined so that the operator will be best able to respond to problems he/she may face during his/her shift. Components, such as electrical panels, alarm panels, auto start or standby equipment, and breakers should be inspected for abnormal or unusual conditions. Unexpected conditions such as equipment vibrations, unusual noises or smells, or excessive temperatures should be reported to the control room so that supervisors will be aware of the conditions and be able to direct repairs, troubleshooting, or additional operator action, as necessary. Equipment panel alarm light bulbs and annunciators should be periodically checked to ensure satisfactory operation of visual and audible abnormal condition indicators. Each operator should inspect all areas for which he/she is responsible and note any deficiencies that may be present. These deficiencies may include steam, oil, or water leaks; fire and safety hazards or radiological problems; seismic concerns such as open electrical panels and mobile objects; clogged floor drains; housekeeping or cleanliness problems; and building deficiencies such as inoperative lighting, roof leaks, or doors that do not close properly. | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.3 |

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| <p>Operators should take appropriate action to correct or report deficiencies noted during tours. Equipment deficiencies should also be documented in accordance with the facility maintenance work request system.</p> | | |
| <p>II.C.4, Round/Tour Inspection Sheets Round inspection sheets should be developed and approved by the operations supervisor (or cognizant managers for test and research facilities).</p> <p>They should include areas located within the particular shift position and important parameters for equipment. Where appropriate, equipment parameters should include maximum/minimum values or expected operating ranges to enable operators to recognize abnormal readings quickly.</p> <p>Safety limits derived from Technical Specifications or Operational Safety Requirements should be highlighted.</p> <p>Equipment should be listed on round sheets in the same order that it would be encountered during a normal tour of the operating station, and the round sheets should include a narrative section.</p> <p>Operators should use the narrative section to document evolutions, causes of abnormal conditions, and actions taken to correct abnormal conditions. A narrative log book may be substituted for the narrative section on the-round sheet.</p> <p>Data should be recorded on round sheets at the times specified by the operations supervisor. When round sheet data is not obtained within one hour of the specified time, the actual time the data was obtained should be noted on the round sheet.</p> <p>Parameters exceeding the specified maximum/minimum values should be circled or otherwise highlighted on the round sheet and promptly reported to the control room and/or the cognizant operations manager. The causes of abnormal indications should be promptly investigated with supervisors becoming involved as appropriate.</p> <p>The round sheet data should be reviewed by a supervisor each shift to identify trends or abnormal readings and to verify that data has been properly recorded.</p> <p>Operator rounds should be periodically monitored by supervisory personnel to ensure that comprehensive tours continue to be conducted, including, as necessary, periodic inspections of equipment and areas not listed on the round sheets.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.4 • WP04-AD3008, Shift Operating Logs and Round Sheets, Sections 1.0, 2.0 & 3.0 |

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| <p>II.C.5, Personnel Protection Operations personnel should be appropriately qualified to follow good personnel protection practices to maintain personnel exposure as low as reasonably achievable (ALARA) to radiation (DOE 5480.11), chemicals, electromagnetic fields, toxic materials, or other personnel hazards. In particular, operations personnel should observe the following requirements: a. Operators should adhere to all posted personnel protection requirements and observe proper practices and precautions while in controlled areas. b. Operators should correctly utilize appropriate monitoring instruments when required. c. Operators should be cognizant of their own exposure levels and take appropriate action to minimize exposures. d. Operators should be knowledgeable of the proper use of radiation work permits, safe work permits, or inhalation limits, where applicable. e. Operators should promptly report protection deficiencies and hazards to the control personnel and/or appropriate protection personnel. In addition, operators should take appropriate immediate actions to reduce or correct the hazards. f. Appropriate protection personnel should be informed prior to evolutions or activities that have a potential to significantly change conditions in the facility.</p> <p>Operations supervisory personnel should periodically review exposure trends of operating personnel under their supervision. Emphasis should be placed on determining the adverse factors that contribute to personnel exposures and minimizing those factors to keep exposures as low as reasonably achievable.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.5 • WP12-2, ALARA Program Manual Section, Section 4.0 • WP12-IH.02, WIPP Industrial Hygiene Program Manual, Section 4.0 • WP12-5, WIPP Radiation Safety Manual, Section 1.0 • WP12-DS3310, Processing Radiation Dose Record and Radiation Dose Reports, Section 11.0 • WP12-HP3600, Radiological Work Permits, Section 1.0 |
| <p>II.C.6, Response to Indications Operators should believe instrument readings and treat them as accurate unless proven otherwise. In general, operators should check other indications, if possible, when unexpected readings are observed.</p> <p>Prompt action should be taken to investigate the cause of abnormal or unexpected indications so that prompt corrective action can occur.</p> <p>When malfunctioning or inaccurate instruments are discovered, they should be appropriately identified to prevent subsequent confusion and instrument and control personnel should be notified to effect repairs.</p> <p>In situations of operator doubt, operators should be instructed to achieve facility, personnel, and environmental safety above facility production.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.6 • WP10-WC3011, Maintenance Process, Section 1.0 • MP 1.2, WORK SUSPENSION AND STOP-WORK DIRECTION • WP12-IS.01, Industrial Safety Program-Structure and Management, Section 5.0. |
| <p>II.C.7, Resetting Protective Devices When protective devices trip (e.g., circuit breakers, fuses, reactor protection channels where multichannel logic exists), an attempt should be made to understand the cause of the trip</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.7 |

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| <p>before the device is reset.</p> <p>Normally, before action is taken, an operator should ensure no abnormal condition exists that would preclude reset. However, because the consequences of inappropriately resetting protective devices vary considerably, good judgment and specific guidance are necessary in this area.</p> <p>The operations management should provide the appropriate guidance so that tripped protective devices will be properly addressed. Facility trips and unplanned forced shutdown require a thorough investigation in accordance with the guidance of Chapter VI.</p> | | <ul style="list-style-type: none"> • WP04-ED1021, Surface Electrical Distribution (Precautions and Limitations) • WP04-ED1621, Underground Electrical Distribution (Precautions and Limitations) |
| <p>II.C.8, Load Changes</p> <p>The shift supervisor, the control room leads operator, or the cognizant manager for a test and research facility should approve all power or process rate changes because these persons are held accountable for safe operation. Additionally, they will probably be the persons most knowledgeable of problems that occur as a result of load changes. However, the operator could decrease load or rate without approval, if necessary, to respond to a facility emergency situation in accordance with the facility's emergency procedures.</p> | <p>P*</p> | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.8 <p>*Those power and process rate change specific to WIPP are identified in Section 3.8 of WP04-CO.01-2</p> |
| <p>II.C.9, Authority to Operate Equipment</p> <p>The overall operation of the facility should be directed by the operations supervisor for a large DOE facility and by the cognizant manager for a test and research facility.</p> <p>Operations management should ensure that only trained and qualified personnel operate plant equipment.</p> <p>In general, the operator and the operations supervisor should be aware of all activities affecting equipment.</p> <p>The operations supervisor should specify those general activities that may normally be performed without informing the supervisor and should amplify these specifications as appropriate.</p> <p>However, non-routine operation of controls should not be made without specific approval of the shift supervisor.</p> <p>In addition, during emergencies, operators may take necessary immediate actions required to ensure personnel, plant, and environmental safety without obtaining prior approval; however, appropriate supervisors should be promptly informed of these actions.</p> <p>Operators should be instructed that plant safety should be achieved over facility production for off normal and emergency facility conditions.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.9 |

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| <p>II.C.10, Shift Operating Bases The operating base is the facility area where an operator returns when he is not performing in-plant duties. An operating base should be established for each shift position. Each operating base should be equipped with appropriate office equipment for the operator to maintain necessary procedures and references and to conduct administrative duties, and necessary communication equipment should be available at the operating base. Shift turnovers should be conducted within those facility areas assigned to the operations department and typically at the operating base. The operating bases should be located at a convenient place within the area of responsibility for that shift position.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.10 |
| <p>II.C.11, Potentially Distractive Written Material and Devices Written material that does not relate to operation and entertainment devices (such as radios, televisions, tape players, and computer games) should be prohibited from use by on-duty operations personnel in order to minimize distractions from their responsibilities. Written material and entertainment devices should not be brought to work stations. However, operators may read training bulletins, technical manuals, or operating experience information or review other written, audible, or visual materials that relate to operator duties. Judgment should be used to ensure the operators' primary duties are not compromised. The operations supervisor (or equivalent) should provide guidance to the shift crews for the use of potentially distractive materials and devices.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-2, Conduct of Operations Program - Shift Routines and Operating Practices, Section 3.11 |
| <p>Chapter 3, Control Area Activities for DOE Facilities</p> | | |
| <p>III.C.1, Control Area Access Control area access should be limited to those persons on official business only. The "at-the-controls" area of the control room should be clearly identified, and its boundary should be understood by all persons who are granted access to the control room. Access to the "at-the-controls" area should be restricted to persons who need to be in the area. Entry into this area should be granted by designated individuals, and persons who might need to enter this area should know who can grant access.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-3, Conduct of Operations Program - Control Area Activities for DOE Facilities, Section 3.1 |
| <p>III.C.2, Professional Behavior Professional behavior should be displayed in the control area at all times. Only activities essential to supporting operation and activities authorized by management should be conducted in the control area. Potentially distracting activities (such as radio listening, game playing, and horseplay) should be prohibited. Non- job-related discussions should be minimized so as not to interfere with conduct of the shift or monitoring of key parameters.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-3, Conduct of Operations Program - Control Area Activities for DOE Facilities, Section 3.2 |

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| <p>III.C.3, Monitoring the Main Control Panels Operators should be alert and attentive to control panel indications and alarms.</p> <p>Control panel indications should be monitored frequently, and prompt action should be taken to determine the cause of and correct abnormalities.</p> <p>Emphasis should be placed on closely monitoring and trending to detect problem situations early.</p> <p>Operator response to alarms should be timely, and actions should be taken to address and correct the alarm causes.</p> <p>All reasonable action should be taken to clear alarming conditions.</p> <p>The number of evolutions affecting control panel indications that are performed concurrently should be limited so that the operators' ability to detect and respond to abnormal conditions will not be compromised.</p> <p>If computer or automated systems are in place, there should be an appropriate backup to those systems.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-3, Conduct of Operations Program - Control Area Activities for DOE Facilities, Section 3.3 <p>Note: Individual equipment and system operating procedures provide direction for manual/local operation in the event of a central monitoring system failure at WIPP.</p> |
| <p>III.C.4 Control Operator Ancillary Duties Duties assigned to operators should not interfere with their ability to monitor facility parameters.</p> <p>Activities such as preparation of tagging orders, reviews of operating procedures, required reading, and review of maintenance work activities should not comprise a major portion of these operators' shift responsibilities.</p> <p>The administrative workload of operators responsible for monitoring and operating the control board should be minimized.</p> <p>If one operator is involved in administrative tasks, other operators should assume responsibility to monitor the unit.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-3, Conduct of Operations Program - Control Area Activities for DOE Facilities, Section 3.4 |
| <p>III.C.5, Operation of Control Area Equipment Only persons specifically authorized by the administrative procedures of the operations department should operate control area equipment.</p> <p>When trainees operate this equipment, they should be supervised and controlled by the operator who normally would perform the operations.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-3, Conduct of Operations Program - Control Area Activities for DOE Facilities, Section 3.5 • WP14-TR.01, WIPP Training Program, Section 4.10 |

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| Chapter 4– Communications | | |
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| <p>IV.C.1, Emergency Communications System Methods should be implemented to ensure all facility personnel are promptly alerted to facility emergencies.</p> <p>When personnel are working in areas where the public address system or emergency signals cannot be heard, alternate methods for alerting these persons should be utilized. (Flashing lights, personal pagers that vibrate and can be felt, and persons dedicated to notifications are examples-of alternate methods that might be effective.)</p> <p>Emergency communications systems should be periodically tested to ensure that they are functional.</p> <p>Control areas should have the capability of overriding other users of the public address system for emergency announcements</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-4, Conduct of Operations Program–Communications; Section 3.1 • WP 02-EM1024, EM&H Field Work, Section Equipment; Section 1 • WP 04-CM1301, Public Address System control Operation, Section Precautions and Limitations; Section 1.0 & 4.0 • WP 04-HO1002, Salt Handling Shaft Hoist Operations, Precautions and Limitations • WP 04-HO1003, Waste Handling Hoist Operation, Precautions and Limitations, Attachment 1, Attachment 2 • WP 12-ER1002, Conducting Emergency Response Notification Testing; Section 2.0 • WP 04-PC3017, Essential Plant Communication Systems Testing; Section 2.0, 3.0 • WP 12-9, WIPP Emergency Management Program, Section 6 • SDD CM00-PC00, WIPP Plant Monitoring Communications, Part II, Chapter III, Section 2.0, 3.0 |
| <p>IV.C.2, Public Address System Use of the facility public address system (page) should be administratively controlled to ensure it retains its effectiveness in contacting plant personnel.</p> <p>Excessive use of the public address system for paging of personnel and unnecessary announcements should be avoided because excessive use can reduce the impact of important announcements and can be distracting.</p> <p>Facility telephones and other point-to-point communications channels should be used in lieu of the public address system whenever practical.</p> <p>Consideration should be given to dedicating certain paging system channels to specific groups or functions, (e.g., a dedicated channel for routine operations or a dedicated channel used only for emergencies).</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-4, Conduct of Operations Program–Communications; Section 3.2 • SDD CM00-PC00, WIPP Plant Monitoring Communications, Part II, Chapter III, Section 2.0 • WP 04-CM1301, Public Address system control Operation, All Sections • WP 04-PC3017, Essential Plant Communication Systems Testing, all Sections • WP 12-ER1002, Conducting Emergency Response Notification Testing, Section 1.0 |
| <p>IV.C.3, Contacting Operators Methods should be implemented to ensure that control areas can quickly contact on-shift operators or supervisors.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-4, Conduct of Operations Program–Communications; Section 3.3 • WP 02-EM1024, EM&H Field Work, Section Equipment; Section 1 |

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| To avoid operator confusion, distinction should be made between routine and emergency notifications. | | <ul style="list-style-type: none"> WP 12-ER1002, Conducting Emergency Response Notification Testing; Section 1.0 WP 12-9, WIPP Emergency Management Program, Section 6 |
| IV.C.4, Radios <ul style="list-style-type: none"> Radio usage should not be allowed in areas where electronic interference with plant equipment may result. Areas where radio use is prohibited should be delineated. Instructions regarding frequencies (channels) and postings should be provided. Consideration should be given to dedicating certain radio channels to specific groups or functions (e.g., a dedicated channel for security or a dedicated channel employed integrated surveillance tests). | Y | <ul style="list-style-type: none"> WP 04-CO.01-4, Conduct of Operations Program– Communications; Section 3.4 SDD CM00-PC00, WIPP Plant Monitoring Communications, Part II, Chapter III, Section 2.0, 3.0 |
| IV.C.5, Abbreviations and Acronyms Only abbreviations and acronyms obtained from an approved list should be used in facility communications. Both written and spoken terms should be prescribed in the list. | P* | <ul style="list-style-type: none"> MC WP 04-CO.01-4, Conduct of Operations Program – Communications, Section 3.5 Approved Acronym Listing on GM Webpage WP 04-AD3008, Shift Operating Logs and Rounds Sheets, Section 1.0 and Attachment 4 WIPP acronym list is not inclusive of every acronym and several acronyms are identical yet have different application. |
| IV.C.6, Oral Instructions and Informational communications <ul style="list-style-type: none"> Oral instructions should be clear and concise. In all communications, the sender and intended receiver should be readily identifiable. Instructions involving the operation of equipment should be repeated by the receiver to the extent necessary for the sender to ensure the instructions are correctly understood. | Y | <ul style="list-style-type: none"> WP 04-CO.01-4, Conduct of Operations Program– Communications; Section 3.6 WP 04-PC3017, Essential Plant Communication Systems Testing, all Sections |
| Chapter 5– Control of On-Shift Training | | |
| V.C.1, Adherence to Training Programs On-shift training should be conducted in accordance with training programs that specifically identify items the trainee must accomplish on shift . The knowledge requirements for each item should be defined as well as what the trainee must do (perform, simulate, observe, or discuss). Both the instructor and the trainee should understand what is required for each training item. | Y | <ul style="list-style-type: none"> WP 04-CO.01-5, Conduct of Operations Program – Control of On-Shift Training, Section 3.1 WP 14-TR.01,WIPP Training Program, Section 4.0 WP 14-TR3307, Qualification Program, Section 5.0 WP 14-TR3308, On-The-Job Training, Attachment 1 |
| V.C.2, On-Shift Instructor Qualifications On-shift training should be conducted by qualified operators. This may require the successful completion of appropriate instructor training requirements for on-shift training. However, operator-qualified training department personnel may also be used. | Y | <ul style="list-style-type: none"> WP 04-CO.01-5, Conduct of Operations Program – Control of On-Shift Training, Section 3.2 WP 14-TR3308, On-The-Job Training Section 1.0 WP 14-TR3307, Qualification Program |

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| <p>The on-shift instructors should be specifically selected, taking into account communication skills, technical knowledge, and ability to provide trainees with hands-on experience.</p> | | <ul style="list-style-type: none"> • WH-Guide-1, WIPP Operations Waste Handling Operations Qualification Program Guide Book • RH Operator Qualification Cards RH-01A, 01B, 01A-G, 01C-G, B-07, |
| <p>V.C.3, Qualified Operator Supervision and Control of Training Whenever trainees operate equipment, a qualified operator serving as an on-shift instructor should observe the trainee in order to ensure the trainee does not make an error that could adversely impact the facility.</p> <p>Until the trainee has demonstrated reasonable proficiency in an operation, he/she should discuss the procedure steps, cautions, and notes with the instructor.</p> <p>Trainees should demonstrate actions to be performed by pointing to the control switch, valve, breaker, etc., that will be manipulated.</p> <p>The instructor should always monitor the trainee closely and remain in a position to intervene or assume control, if necessary.</p> <p>When trainees record equipment parameters on official round sheets (as opposed to practice round sheets) or logs, the on-shift instructor should verify that the recorded information is correct.</p> <p>The trainee and on-shift instructor should discuss any out-of-specification readings and the consequences of allowing such trend to continue.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-5, Conduct of Operations Program - Control of On-Shift Training, Section 3.3 • WP14-TR3308, On-The-Job Training, Section 1.4 • WP 14-TR.01, WIPP Training Program, Section 4.10 |
| <p>V.C.4, Operator Qualification Program Approval The operator qualification program should be approved by the operations supervisor.</p> <p>Changes to the program should be coordinated with the training department.</p> <p>For operating positions requiring certification, qualifications should be based on one-to-one instruction at that station.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-5, Conduct of Operations Program – Control of On-Shift Training, Section 3.4 • WP 14-TR.01,WIPP Training Program, Section 4.0 • WP 14-TR3307, Qualification program Section 1.0 thru 4.0 • WP 14-TR3308, On-The-Job Training Section 1.0 |
| <p>V.C.5, Training Documentation Completion of the operator qualification program should be formally documented.</p> <p>Classroom requirements and written exam results should be documented by training department instructors.</p> <p>On-shift training and system checkouts should be documented by on-shift instructors</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-5, Conduct of Operations Program – Control of On-Shift Training, Section 3.5 • WP 14-TR.01,WIPP Training Program • WP 14-TR3308, On-The-Job Training, Section 1.0 |
| <p>V.C.6, Suspension of Training</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-5, Conduct of Operations Program – |

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| <p>Trainee operation of equipment should be immediately suspended during unanticipated or abnormal events, accident conditions, or whenever the operations personnel or on-shift instructor believes suspension is necessary to ensure safe and reliable facility operation.</p> <p>During abnormal or accident conditions, trainees should provide assistance at the discretion of the qualified operator.</p> | | <ul style="list-style-type: none"> Control of On-Shift Training, Section 3.6 WP 14-TR3308 On-The-Job Training, Section 1.0 |
| <p>V.C.7, Maximum Number of Trainees The maximum number of trainees allowed to simultaneously participate in any particular training evolution needs to be considered. Consideration should be given to training effectiveness and to the potential for adverse effects on the facility.</p> <p>A maximum limit for the trainee-to-instructor ratio will ensure that the trainee is provided with the most effective instruction and will ensure that the instructor is not distracted by having too many trainees at once.</p> <p>Shift supervisors should ensure that established limits are observed.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-5, Conduct of Operations Program – Control of On-Shift Training, Section 3.7 WP 14-TR3308 On-The-Job Training Section 1.0 |
| <p>Chapter 6 – Investigation of Abnormal Events</p> | | |
| <p>VI.C.1, Events Requiring Investigation Events that occur in the facility and adversely affect operations, personnel safety, or DOE requirements (DOE 5000.3A) should receive a thorough investigation.</p> <p>The criteria for when to perform an event investigation should be clearly established.</p> <p>Specific events requiring investigation should be listed for supervisory use, along with criteria for use in deciding what “near miss” situations should receive review. The following conditions and situations should require an investigation:</p> <ul style="list-style-type: none"> Design limits are violated for Technical Specification (Tech Specs), Operational Safety Requirements (OSR), Safety Analysis Requirements (SAR), or other limits). Facility system performance is unusual, abnormal or unexplained. Facility safety conditions are abnormal or unexplained. Safety or system features are improperly positioned. Reportability to DOE or other agencies (e.g., EPA) is appropriate. An unplanned shutdown or significant loss of operation occurs. A procedural violation or personnel error occurs that caused or could have caused serious personnel injury or equipment damage or could have affected facility safety. Equipment failure occurs that could affect facility capability or safety. Radiological or toxic material limits are exceeded or radioactive or toxic material is lost or released. Actual or attempted sabotage is suspected. | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-6, Conduct of Operations Program– Investigation of Abnormal Events, Section 3.1 WP 12-ES3918, Reporting Occurrences in Accordance with DOE Order 231.1A, Section 1.4, 1.6 WP 15-MD3102, Event Investigation, Sections 1.0 through 5.0 |

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| <ul style="list-style-type: none"> • Chemistry or process parameters are out of specification or indicate unexplained trends. • A department head or the facility safety review committee deems an investigation is appropriate. • Loss of Special Nuclear Material. • Repetitive problems occur. <p>NOTE: The above list is not intended to be all-inclusive. At the discretion of the operations supervisor (or other appropriate department head), other specific events should receive a formal investigation.</p> <p>"Near miss" situations should also receive a formal review at the discretion of the responsible supervisor. It is important to review "near miss" situations to uncover aspects of the situation that, if not identified and corrected, can cause recurrence of the event, possibly with more serious consequences. A "near miss" situation is one which an inappropriate action occurs (or a necessary action is omitted) but is detected and corrected before an adverse effect on personnel or equipment results.</p> | | |
| <p>VI.C.2, Investigation Responsibility The operations supervisor or another manager should be responsible for event investigations.</p> <p>He/she may delegate specific investigations or portions of investigations to other personnel. For example, the initial review following a reactor trip might be conducted by the shift supervisor. Based on the results of the shift supervisor investigation, the need for further review will be established. Examples of specific tasks of an investigation that may be delegated include gathering necessary records, conducting interviews, recommending restart following a reactor trip, and determining the long-term corrective action to prevent recurrence. The overall responsibility for the consistency and thoroughness of event should be the responsibility of the appropriate manager.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-6, Conduct of Operations Program– Investigation of Abnormal Events, Section 3.2 and Section 2.0 • WP 12-ES3918, Reporting Occurrences in Accordance with DOE Order 231.1A, Section 1.0 • WP 15-MD3102, Event Investigation, Section 4.0, 5.0 |
| <p>VI.C.3, Investigator Qualification The credibility of the investigative process is highly dependent upon the knowledge and experience of the individuals performing the investigation.</p> <ul style="list-style-type: none"> • It is important that individuals performing an investigation be technically knowledgeable and well respected by the facility staff. • Investigators should not have a bias or a vested interest in the results of the investigation. • Investigators should be trained in facility systems and operations and other major disciplines appropriate for the event under investigation. | Y | <ul style="list-style-type: none"> • WP 04-CO.01-6, Conduct of Operations Program– Investigation of Abnormal Events, Section 3.3 |

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| <p>Investigators should be trained in techniques for conducting an investigation. This can include training in areas such a root cause determination, diagnostics for plant events, interviewing techniques, and factors affecting human performance.</p> | | |
| <p>VI.C.4, Information to be Gathered Sufficient data must be collected to allow the event investigators to perform a reconstruction and analysis of the event.</p> <p>An individual should be assigned responsibility for collecting the required information and assembling the information for review. It is important to collect the necessary information as soon as possible after the event. This will minimize the possibility of losing information or that observers of the event will be unavailable.</p> <p>Information should be gathered in the following areas:</p> <ul style="list-style-type: none"> • Initial facility conditions. • Statements of operators and personnel involved in the event (this should be permanently recorded). • Pertinent computer printouts (post-trip log sequence of events) and strip charts. • Pertinent documentation (such as operator logs, radiation work permits, chemistry logs, and radiological surveys) as required to establish conditions prior to and during the event. <p>Statements of operators and facility personnel involved in the event should be obtained. Methods for collecting this information can vary; however, the event investigation-containing relevant information should be permanently recorded for future reference.</p> <p>When collecting hard copy (such as strip charts) annotate the data with its source, chart speed (if applicable), and a time mark to aid in coordinating the data during the reconstruction of the event.</p> <p>The collection of data should not interfere with the continued operation of the facility.</p> <p>Temporary interference should occur only if necessary to understand the event.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-6, Conduct of Operations Program– Investigation of Abnormal Events, Section 3.4 • WP 15-MD3102, Event Investigation, Section 1.0, 2.0, 3.0, 4.0 |
| <p>VI.C.5, Event Investigation Upon completion of the data collection, a structured review of the abnormal event should occur. The format of the investigation will depend upon the significance of the event. Each event investigation should include the following steps, with emphasis placed on each individual step depending upon the severity or potential consequences of the event:</p> <p>Event Reconstruction</p> <ul style="list-style-type: none"> • The abnormal event should be reconstructed using the collected information. When | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-6, Conduct of Operations Program– Investigation of Abnormal Events, Section 3.5 • WP 15-MD3102, Event Investigation, Sections 2.0, 3.0, 4.0 • WP 15-GM1001, Root Cause Analysis, Section 1.0 |

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| <p>applicable, this is best accomplished using the sequence of events recorder printout as a basis.</p> <ul style="list-style-type: none"> • If the sequence of events printout is not available (or not applicable) or if the abnormal event was not of sufficient magnitude or nature to impact the sequence of events recorder, then a chronological listing of events should be developed. • It is desirable to include the personnel involved in the event in the reconstruction process. <p>Event Analysis and Evaluation</p> <ul style="list-style-type: none"> • Once the facts of the event have been established, the event should be analyzed to determine the response of equipment and involved personnel. • During the analysis, emphasis should be placed on determining the proper response of systems, comparison of actual and expected response, adequacy of procedures, and factors affecting human performance. • When available, the event should be compared with previous event investigations of similar events or transients. • During the analysis, a safety evaluation should be performed to ascertain the proper response of equipment and to identify detrimental effects on facility equipment. • If the event was a process shutdown, the acceptability of restart may be determined at this time. • A Root-Cause determination and a Corrective Action Determination may be required prior to restart. • Supervisors need to be sure no further corrective action is required prior to restart. <p>Root-Cause Determination - The root cause of the event should be determined. The root cause can be defined as those causal factors that, if corrected, would preclude a recurrence of the event.</p> <p>Corrective Action Determination</p> <ul style="list-style-type: none"> • Appropriate corrective action should be established for each event investigation, and specific personnel should be assigned responsibilities for the corrective action. • Corrective action can take the form of procedure changes, training, design modifications, and changes to administrative controls. <p>The final approval for corrective action should be made by the facility manager</p> | | |
| <p>VI.C.6, Investigative Report An investigative report should be prepared in a timeframe determined by the responsible authority. The report should include:</p> <ul style="list-style-type: none"> • A description of the event (including pertinent conditions) • A discussion of the impact of the event | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-6, Conduct of Operations Program– Investigation of Abnormal Events, Section 3.6 • WP 15-MD3102, Event Investigation, Section 3.0, 4.0, 5.0 • WP 15-MD3100, Operating Experience Program, 3.4, Sections 4.0 & 5.0 |

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| <ul style="list-style-type: none"> • A root cause • The lessons learned • The proposed corrective action(s) <p>The report should include positive aspects of the event (such as particularly effective personnel responses).</p> <p>The investigative report should be approved by the facility manager and reviewed by appropriate supervisors, managers, and the safety review committee.</p> <p>It is important that the lessons learned from an event investigation be shared with all appropriate personnel who could benefit from the lessons learned. For example, a problem with an operations procedure might also exist in another department’s procedures.</p> | | |
| <p>VI.C.7, Event Training</p> <p>In-house events should be evaluated by the operations supervisor to determine if the event should be included in the training program for operations personnel.</p> <p>In some cases, due to the severity or possible safety consequences of some events, it is appropriate to train shift operations personnel on the event immediately.</p> <p>A mechanism should exist-so that appropriate shift personnel could be immediately trained on an event when they next report for work</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-6, Conduct of Operations Program – Investigation of Abnormal Events, Section 3.7 • WP04-CO.01-14, Conduct of Operations Program – Required Reading, Section 3.1 • WP 14-TR.01, WIPP Training Program, Section 4.1 • WP 15-MD3102, Event Investigation, Sections 3.0, 4.0 • WP 15-MD3100, Operating Experience Program, Section 5.0 • MP 1.30, Required Reading |
| <p>VI.C.8, Event Trending</p> <p>Patterns of deficiencies such as operator errors or inadequate procedures should be trended.</p> <p>A periodic summary report of events, causes, and trends should be submitted to department heads, the facility manager, and appropriate managers.</p> <p>Department heads should ensure training programs include appropriate material from the summary report.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-6, Conduct of Operations Program– Investigation of Abnormal Events, Section 3.8 • WP 12-ES3918, Reporting Occurrences in Accordance with DOE Order 231.1A, Attachment 6 • WP 13-QA3006, Data Analysis and Trending, Section 3.0 |
| <p>VI.C.9, Sabotage</p> <p>Acts of known or suspected sabotage are a special case of event investigations. If an act of sabotage is discovered or suspected, it is important to begin an investigation immediately.</p> <p>It is important for the investigation to accomplish the following:</p> <ul style="list-style-type: none"> • Determine the condition of the affected system(s) and ensure the operability of all safety-related systems; • Decide if continued operation is justified or if systems are available to support safe | Y | <ul style="list-style-type: none"> • WP 04-CO.01-6, Conduct of Operations Program– Investigation of Abnormal Events, Section 4.0 • WP 15-MD3102, Event Investigation, Sections 1.0, 2.0 |

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| <p>facility shutdown; and</p> <ul style="list-style-type: none"> Minimize the impact of discovered acts of sabotage and deter future acts of sabotage | | |
| <p>Chapter 7– Notifications</p> | | |
| <p>VII.C.1, Notification Procedures Procedures should be developed to address appropriate notifications. These procedures should include the following elements:</p> <ul style="list-style-type: none"> Specific responsibilities for notifications; Identification of events and conditions requiring notifications; Identification of primary and alternate personnel to be notified for various situations; Establishment of time requirements for notifications that are consistent with the facility emergency plan Definition of recordkeeping requirements that documents the reason for notifications, the time of notifications, and the person notified. | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-7, Conduct of Operations Program– Notifications, Section 3.1 WP12-9 WIPP Emergency Management Program, Section 6.2 WP12-ER3002, Emergency Operations Center Activation, Section 3.0, Attachment 1 WP12-ES3918, Reporting Occurrences in Accordance with DOE Order 231.1A, Section 1.0, 2.0 WP12-ER3906, Categorization and Classification of Operational Emergencies Sections, Introduction; 1.0 & 2.0; Table 1; Attachment 3 WP 15-MD3102, Event Investigation, Section 1.0 |
| <p>VII.C.2, Notification Responsibility The operations supervisor should ensure that all appropriate personnel receive notification when required.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-7, Conduct of Operations Program– Notifications, Section 3.2 WP12-9, WIPP Emergency Management Program; Section 2.0, 6.0 WP12-ER3906, Categorization and Classification of Operational Emergencies; Section 2.0, Attachment 3 WP 15-MD3102, Event Investigation, Section 1.0 WP 12-ES3918, Reporting Occurrences in Accordance with DOE Oder 231.1A, Section 1.0 |
| <p>VII.C.3, Names and Phone Numbers Names of primary and alternate contacts and current phone numbers and page codes should be readily available to the person assigned to make the notifications</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-7, Conduct of Operations Program– Notifications, Section 3.3 WP12-9, WIPP Emergency Management Program; Section 6.2 WP12-ER3002, Emergency Operations Center Activation; Section 3.0, Attachment 1 WP12-ER3906, Categorization and Classification of Operational Emergencies, Section 2.0 & Attachment 1 and 3 |
| <p>VII.C.4, Documentation All notifications should be documented. A formal record of notifications should be maintained.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-7, Conduct of Operations Program– Notifications, Section 3.4 WP04-CO.01-11, Logkeeping; Section 3.7 WP12-ER3002, Emergency Operations Center Activation; Section 3.0 , Attachment 1 |

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| | | <ul style="list-style-type: none"> WP12-ER3906, Categorization and Classification of Operational Emergencies; Introduction, Section 2.0 and Attachments 1, 3 WP12-ES3918, Reporting Occurrences in Accordance with DOE Order 231.1A, Section 2.0 |
| <p>VII.C.5, Communications Equipment Adequate communication equipment should be maintained in the main control area to meet the objectives of this chapter.</p> | Y | <ul style="list-style-type: none"> WP 04-CO.01-7, Conduct of Operations Program– Notifications, Section 3.5 WP 04-PC3017, Essential Plant Communication Systems Testing, entire procedure WP12-9, WIPP Emergency Management Program; Section 6.2 |
| <p>Chapter 8 – Control of Equipment and System Status</p> | | |
| <p>VIII.C.1, Status Change Authorization and Reporting The operations supervisor is responsible for maintaining proper configuration and should authorize status changes to major equipment and systems.</p> <p>Authorization of status changes to equipment and systems of lesser importance may be delegated by the operations supervisor to other cognizant shift positions.</p> <p>The shift supervisor should be advised periodically of changes in status of equipment and systems so assigned.</p> <p>Since the operators must be aware of equipment and system status, the supervisor should ensure that all changes in status are communicated to these persons.</p> <p>Changes in the status of facility equipment and systems should be reported to the governing stations (e.g., control area) or to the individual (or his relief) who authorized the change.</p> <p>Changes in status of safety-related equipment and systems should be authorized by the supervisor and reported to the control area.</p> | | <ul style="list-style-type: none"> WP 04-CO.01-8, Conduct of Operations Program - Control of Equipment and Systems Status, Section 3.1 WP 04-CO.01-2, Shift Routines and Operating Practices, Section 1.0, 3.0 WP 04-CO.01-12, Operations Turnover, Sections 1.0 - 3.0 |
| <p>VIII.C.2, Equipment and System Alignment Prior to first placing the equipment or system into operation, individual components for facility equipment and systems should be properly aligned or checked for proper alignment.</p> <p>Alignment checklists should be used to guide the operator in establishing the correct component positions. The alignment checklists should include provisions for equipment nomenclature that matches the nomenclature placed on the component, a location for individual documentation of the check of each component, the required alignment position for each component, and a location for annotating deviations from the required alignment.</p> | Y | <ul style="list-style-type: none"> WP 04-CO.01-8, Conduct of Operations Program - Control of Equipment and Systems Status, Section 3.2 WP12-FP0026, Weekly Surveillance for Fire Water Supply and Distribution System PM000054, Annual Surveillance for Fire Suppression System PM000100, Testing WHB Interlocks for the CUR Shield Door and Upper Hot Cell Shield Plugs |

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| <p>The supervisor should review and approve completed alignment checklists</p> <p>The need for a complete alignment of equipment and systems should be based on the level of control that has been maintained over the status of the components. Typical situations that may require equipment and systems to be aligned include startup from cold shutdown, major outages, and mode changes.</p> <p>In addition, safety-related equipment and systems should be functionally tested in accordance with surveillance requirements in the technical specifications/operational safety requirements following maintenance and before the equipment or system is considered capable of performing its design function</p> <p>Records of equipment and system alignments should be retained for reference by the operating shift. Administrative controls that analyze and document deviations from the reference alignment should be established. Administrative control programs (e.g., tagout/lockout, temporary modification, etc.) are addressed in other chapters of these guidelines</p> | | <ul style="list-style-type: none"> • PM000102, Testing RH WHB Hot Cell Grapple Pintle Contact Interlock With Pivot Dogs • PM000103, Testing RH WHB Interlocks-FCLR Grapple Pintle Contact Interlock With Pivot Dogs • PM000104, Testing WHB Interlocks- FCLR Grapple Hoist, Grapple and Facility Cask Top Valve • PM000105, Testing WHB Interlock- FCLR Grapple Hoist and Shield Bell, Telescoping Port Shield, Facility Cask Lower Shield Valve, and Transfer Cell Ceiling Shield Valve • PM000106, Testing WHB Interlocks-FCLR Grapple Hoist, Facility Cask Bottom Shield Valve and Transfer Cell, Ceiling Shield Valve. • PM000107, Testing WHB Interlocks-Transfer Cell Shuttle Car, CUR Shield Valve, Upper Hot Cell Shield Valve, and Transfer Cell Ceiling Shield Valve • PM000109, Testing Underground Interlocks-Facility Cask Front and Rear Shield Valves, HERE Tilt Sensors, Alignment Fixture Proximity Switches, Transfer Mechanism Proximity Switches • PM000110, Testing of Underground Interlocks-Facility Cask Front Shield Valve-Transfer Mechanism Location Interlock, Grapple Pintle Detect Interlock , Facility Cask Rear Shield Valve-transfer Mechanism Location Interlock • WP04-AD3005, Administrative Control of System Lineups, Sections 1.0 to 6.0 • WP 04-AD3011, Equipment Lockout/Tagout, Section 7.0 |
| <p>VIII.C.3, Equipment Locking and Tagging</p> <p>Locks and Tags should be used on those components that require special administrative control for safety or other reasons.</p> <p>In this respect, all personnel should receive training regarding their responsibilities concerning the manipulation of locked or tagged controls.</p> <p>Note: More details about requirements for Lockout and Tagout are found in Chapter IX.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-8 Conduct of Operations Program - Control of Equipment and System Status, Section 3.3 • GET General Employee Training • WP 04-AD3011 Equipment Lockout/Tagout, Sections 1.0 and 2.0 • WP10-AD3005, Control and Use of Maintenance Locks, Section 1.0, 2.0, 3.0 • WP 12-IS.01-2, Industrial Safety Program – Lockout/Tagout and Nonelectrical Energy Hazards, Section 3.3 |

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| <p>VIII.C.4, Operational Limits Compliance Administrative controls should be established to document compliance with requirements of operational limits (limiting conditions for operation).</p> <p>The operations supervisor should be cognizant of action taken to comply with operational limit requirements and should ensure that the actions taken are appropriate and correct or mitigate any adverse consequences to the facility.</p> <p>Logs, status sheets, turnover checklists, or other appropriate documentation should reflect the entry conditions and actions that are taken in response to operational limits requirements.</p> <p>Appropriate operating personnel should be apprised of limiting conditions for operations and actions for which they may be responsible.</p> <p>Responsible personnel should periodically review the limiting conditions for operation and action statements in effect to ensure that the required actions are met.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-8 Conduct of Operations Program - Control of Equipment and System Status, Section 3.4 • WP 04-AD3001 Facility Mode Compliance and associated Electronic Attachments for TSR surveillances • WP 04-FP1201 Site Fire Water Supply System • WP 04-VU1612, WIPP Mine Ventilation Rate Monitoring, Section 1.0, 2.0 • WP 05-WH1011, CH Waste Processing, Precautions and Limitations • WP05-WH1101, CH Surface Transuranic Mixed Waste Handling Area Inspections, Sections 1.0-6.0, Attachments 1-5 • WP 05-WH1601, 20-Ton Diesel Forklift 52-H-125, Precautions and Limitations and Section 1.0 • WP 05-WH1602, 41-Ton Diesel Forklift 52-H-005A, Precautions and Limitations and Section 1.0 • WP05-WH1710, 72B RH Processing • WP05-WH1711, 6-Ton Diesel Forklift 52-H-007C, Precautions and Limitations, Section 1.0 • WP05-WH1723, Underground RH Transuranic Mixed Waste Area Inspections, Precautions and Limitations and Section 1.0 • WP05-WH1744, Surface RH Transuranic Mixed Waste Handling Area Inspections, Section 3.0s • WP 04-AD3001, Facility Mode Compliance, Section 1.0,2.0,3.0,4.0 • WP 04-AD3027, TSR Violation and Recovery, Sections 1.0, 2.0, 3.0 • WP 15-PS.2, Procedure Writer's Guide, Section 3.1 • |
| <p>VIII.C.5, Equipment Deficiency Identification and Documentation Equipment deficiencies should be noted by facility operating personnel and identified in the work control system for correction.</p> <p>Methods that identify deficient equipment to operating personnel should be established.</p> <p>Some facilities can use unique deficiency tags to identify equipment problems. Others may use logs, status sheets, shift turnover sheets, or caution tags to ensure deficiencies are communicated to personnel responsible for monitoring and operating the equipment.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-8 Conduct of Operations Program – Control of Equipment and System Status, Section 3.5 • WP04-AD3016, Equipment Inactivation, Section 1.0 • WP08-NT3105, Transportation “Out-of-Service” Tags, Section 1.0 • WP 04-AD3007, CMS Alarm Disable Authorization, Sections 1.0, 2.0 • WP 04-AD3011, Equipment Lockout/Tagout,1.0,2.0, 9.0 • WP05-WH1101, CH Surface Transuranic Mixed |

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| | | <p>Waste Handling Area Inspections, Sections 1.0-6.0, Attachments 1-5</p> <ul style="list-style-type: none"> • WP 04-AD3012, Temporary Plant Modification Control, Prerequisites and Section 1.0 • WP 10-WC3011, Maintenance Process, Precautions and Limitations • WP 13-QA3004, Nonconformance Report, Section 1.0 • |
| <p>VIII.C.6, Work Authorization and Documentation The operations supervisor or his/her designee should authorize all shift activities (including Maintenance) on equipment that is important to safety, that affects operations, or that changes control indications or alarms.</p> <p>This authorization should be in writing on the document controlling the work.</p> <p>Documentation of the status of work in progress should be available in the control area for review by operating personnel.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-8 Conduct of Operations Program– Control of Equipment and System Status, Section 3.6 • WP 04-AD3011 Equipment Lockout/Tagout, Section 3.0 • WP 04-CO.01-1, Operations Organization and Administration, Section 6.1 |
| <p>VIII.C.7, Equipment Post-Maintenance Testing and Return to Service Equipment should be tested following maintenance to demonstrate that it is capable of performing its intended function.</p> <p>The testing should include performance of all functions that may have been affected by the maintenance.</p> <p>The testing should also verify that the maintenance performed served to correct the original problem and that no new problems were introduced.</p> <p>Any testing following maintenance should be specified on the maintenance work order or accompanying documentation (e.g., maintenance procedure).</p> <p>The operations supervisor should ensure that testing appropriately proves equipment operability.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-8 Conduct of Operations Program– Control of Equipment and System Status, Section 3.7 • WP 10-WC3011, Maintenance Process, Flow Chart Page 24 |
| <p>VIII.C.8, Alarm Status The status of control panel and/or local panel alarms should be readily available to appropriate operating personnel.</p> <p>Information that should be available includes</p> <ul style="list-style-type: none"> • Alarms that are totally disabled, • alarms with individual inputs disabled, | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-8, Conduct of Operations Program – Control of Equipment and System Status, Section 3.8 • WP04-AD3007, CMS Alarm Disable Authorization, Section 1.0 |

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| <ul style="list-style-type: none"> alarms with temporarily changed setpoints, alarms that are normally lighted during power operation, and multiple input alarms that do not reflash when more than one input is activated. <p>Appropriate actions should be taken to monitor equipment parameters for abnormal conditions that would be masked by deficient or non-reflashing alarms.</p> | | |
| <p>VIII.C.9, Temporary Modification Control Administrative control systems should be established for installation of temporary modifications such as</p> <ul style="list-style-type: none"> electrical jumpers, lifted leads, pulled circuit boards, disabled annunciators/alarms, mechanical jumpers/bypasses, temporary setpoint changes, installed or removed block flanges, disabled relief or safety valves, installed or removed filters or strainers, plugged floor drains, and temporary pipe supports. <p>Prior to modification, these controls should provide for communicating the installation of temporary modifications to the design authority to allow for</p> <ul style="list-style-type: none"> technical oversight and an evaluation of the impact on current design activities, and approval of the design modification. <p>These control systems should make provisions</p> <ul style="list-style-type: none"> for safety reviews, installation approval, independent verification of correct installation and removal, documentation of the modification, update of operating procedures and documents, training, marking of installed modifications, and periodic audits of outstanding modifications | Y | <ul style="list-style-type: none"> WP 04-CO.01-8, Conduct of Operations Program – Control of Equipment and System Status, Section 3.9 WP04-AD3007, CMS Alarm Disable Authorization, Section 2.0 WP 04-AD3012, Temporary Plant Modification Control, Precautions and Limitations and Section 1.0 WP 09-CN3007, Engineering and Design Document Preparation and Change Control, Section 4.0 WP 10-WC3011, Maintenance Process, Precautions and Limitations and Flowchart |
| <p>VIII.C.10, Distribution and Control of Equipment and System Documents A system should be established to ensure that the operations personnel receive and utilize the latest revisions of engineering drawings and specifications.</p> | Y | <ul style="list-style-type: none"> WP 04-CO.01-8, Conduct of Operations Program – Control of Equipment and System Status, Section 3.9 WP09-CN3007, Engineering and Design Document Preparation and Change Control, Sections 1.0 & 2.0 |

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| <p>Operations personnel should be made aware of all changes to these documents. The document distribution should include all operations related activities such as procedures review groups, maintenance groups, facility safety analysis groups, and testing groups.</p> | | <ul style="list-style-type: none"> • WP 09-CN3022, Engineering File Room Operations, Sections 11.0 and 15.0 • WP 10-WC3011, Maintenance Process, Flowchart |
| <p>Chapter 9– Lockouts and Tagouts</p> | | |
| <p>IX.C.1, Lockout/Tagout Use Locks and Tags should be placed on controls when for safety or other special administrative reasons controls must be established.</p> <p>Lockout is the application of a lock on a control to render the control inoperative.</p> <p>Keys and/or combinations for locks are controlled.</p> <p>Tagout is the application of a danger or warning device on the control, which indicates that the control is not to be used except under conditions indicated by the tag.</p> <p>Tags should be placed on the control that is tagged out, or as close as possible to indicate clearly the condition</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout, Section 3.1 • WP04-AD3011, Equipment Lockout/Tagout, Section 4.0 • WP10-AD3005, Control and Use of Maintenance Locks |
| <p>IX.C.2, Lockout/Tagout Implementations</p> <p>If a device (e.g., for energy or toxic material isolation) has the capability of being locked out, it should be locked out.</p> <p>If the isolating device cannot be locked out, it should be tagged out</p> <p>New equipment design and major modifications to existing equipment should be designed to provide the capability of being locked out</p> <p>The following administrative guidance is an example that could be established to outline acceptable controls over locked components:</p> <p>A list of components that are required to be locked should be established and approved by the operations supervisor or appropriate manager.</p> <p>The list should be separate from the standard alignment checklists.</p> <p>Criteria for locking of additional components and necessary authorizations should be provided.</p> <p>When key operated locks are used, access to the keys should be restricted to authorized personnel.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout, Section 3.2 • WP04-AD3011, Equipment Lockout/Tagout, Section 4.0 • WP04-AD3011, Equipment Lockout/Tagout, Attachment 1 (Keys) • WP04-AD3011, Equipment Lockout/Tagout, Section 6.0 (Additional Tagging) |

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| <p>Keys should be readily available to appropriate personnel.</p> <p>Specific techniques for verifying the position of locked components should be established.</p> <p>A hands-on physical check of critical equipment or the observation of a reliable position indicator should be used whenever possible.</p> <p>When locked components must be unlocked or placed in a position other than the normal locked position, the deviation should be authorized and documented.</p> <p>Periodic checks of locked components should be performed to ensure that locking devices are properly attached and that the component is in the required position.</p> | | |
| <p>IX.C.3, Protective Materials and Hardware</p> <p>Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware should be provided for isolating, securing, or blocking machines or equipment from energy sources.</p> <p>Lockout and Tagout devices should be singularly identified (i.e., should be the only devices used for controlling energy and should not used for other purposes) and should meet the following requirements:</p> <ol style="list-style-type: none"> 1) Durable - Should be capable of withstanding the environment to which they are exposed for the maximum period of time for exposure is expected; should be constructed to minimize deterioration of the tag or the message when exposed to weather conditions; should not deteriorate when used in corrosive environments where acid and/or alkali chemicals are handled and/or stored. 2) Standardized - Lockout and Tagout devices should be standardized within the facility in at least one of the following criteria: color, shape, or size. In addition, tagout devices should utilize standardize print and format. 3) Substantial - Lockout devices should be substantial enough to prevent removal, without the use of excessive force or unusual techniques, such as the use of bolt cutters or other metal cutting tools. <p>When used as the sole means of preventing operation of an energy isolating device, Tagout devices, including their means of attachment shall, in addition to other requirements for their use, be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout, Section 3.3 • WP04-AD3011, Equipment Lockout/Tagout, General requirements • WP10-AD3005, Control and Use of Maintenance Locks, Section 1.0, 2.0, 3.0, Attachment 2 & 5 |

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| <p>piece, all-environment-tolerant nylon cable tie</p> <p>Tagout device attachment means should be of a non-reusable type, attachable by hand, self locking, and/or releasable</p> <p>4) Identifiable - Tagout/Lockout devices should indicate the identity of the personnel and the organization applying the device.</p> <p>5) Warning - Tagout devices should warn against hazardous conditions if the machine or equipment is energized and should include a legend such as the following <u>Do Not Start, Do Not Open; Do Not Close; Do Not Energize; Do Not Operate</u></p> | | |
| <p>IX.C.4, Lockout/Tagout Program A Lockout/Tagout program should be established consisting of procedures to control potentially hazardous energy and materials and personnel training. This program should ensure that potentially hazardous energy or toxic material sources are isolated and rendered inoperative during servicing or maintenance or in any case where unexpected energizing, startup, or release of stored energy or toxic material can cause injury.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout, Section 3.4 • WP04-AD3011, Equipment Lockout/Tagout, Attachment 1 |
| <p>IX.C.5, Procedures for Lockout/Tagout Procedures should be developed, documented, validated, and utilized for control of potentially hazardous energy or material. Procedures should clearly and specifically state the scope, purpose, authorization, rules, and techniques of the Lockout/Tagout program.</p> <p>a. Procedures should include, but not be limited to, the following:</p> <ol style="list-style-type: none"> 1) Specific statement of intent of use; 2) Specific procedural steps for isolating, blocking and securing machines or equipment for hazardous energy or material; 3) Specific procedural steps for the placement, removal, and transfer of the Lockout/Tagout device(s); and 4) Specific requirements to test machines and to determine and verify the effectiveness of Lockout, Tagout or other control measures. <p>b. It is not necessary to document the required procedure for a particular machine or equipment, when all of the following elements exist.</p> <ol style="list-style-type: none"> 1) The machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shutdown which could endanger personnel. 2) The machine or equipment has a single energy source which can be readily identified and isolated. 3) The isolation and locking out of that energy source will completely de-energize and de-activate the machine or equipment. | Y | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout, Section 3.5 • WP04-AD3011, Equipment Lockout/Tagout, Sections 1.0, 4.0, 7.0, Attachment 1 |

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| <p>4) The machine or equipment is isolated from that energy source and locked out during servicing or maintenance.</p> <p>5) A single lockout device will achieve a locked out condition.</p> <p>6) The lockout device is under the exclusive control of the authorized personnel performing servicing of maintenance.</p> <p>7) The servicing or maintenance does not create hazards to other personnel.</p> <p>8) The employer, in utilizing the exception, has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.</p> <p>c. Documentation of Lockout/Tagout - Lockout/Tagout placement, activation and removal should be recorded including any information relevant to their occurrence. This record should be maintained by the shift supervisor or appropriate manager to ensure accuracy and completeness. The Lockout/Tagout record should be reviewed periodically by operations and maintenance personnel as guidance.</p> | | |
| <p>IX.C.6, Application of Lockout/Tagout The established procedure for the application of energy control (implementing Lockout/Tagout) should cover the elements and actions in the following sequence:</p> <p>a. Preparation for Shutdown -- Before a machine is turned off, personnel should be informed of the type and magnitude of the energy, the hazards and the methods of control.</p> <p>b. Machine or Equipment Shutdown -- The equipment should be shutdown using the procedures required by this chapter. An orderly shutdown should be utilized to avoid any added hazard.</p> <p>c. Equipment Isolation -- All Lockout/Tagout devices needed for control are physically located and operated in such a manner as to isolate the equipment from the energy source.</p> <p>d. Affixing Locks/Tags -- Lockout or Tagout devices should be affixed to each isolation device by qualified personnel in a manner that will hold the devices in a "safe" or "off" position or clearly indicate that operation of the device is prohibited.</p> <p>e. Stored Energy - Upon application of Lockout or Tagout devices, all potentially hazardous stored or residual energy should be relieved, disconnected, restrained, or otherwise rendered safe. If stored energy might re-accumulate to a hazardous level, verification of isolation should be continued until the servicing or maintenance is completed.</p> <p>f. Verification of Installation - Prior to starting work on equipment that has been locked or tagged out, personnel should verify that isolation and de-energization have been accomplished.</p> <p>g. Release from Lockout/Tagout - Before Lockout or Tagout devices are removed and energy restored to the equipment, procedures should be followed and actions taken by personnel to ensure the following:</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout, Section 3. • WP04-AD3011, Equipment Lockout/Tagout, Section 4.0, 7.0 • WP10-AD3005, Control and Use of Maintenance Locks, Section 1.0, 2.0, 3.0, Attachment 2 & 4 |

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| <p>1) Equipment/workspace. The machine or equipment is operationally intact. The area has been inspected to ensure that nonessential items have been removed. The individual authorizing tag removal should specify the final component position and, when appropriate, the sequence in which components should be positioned. In addition, the need to check the positioning of other components that were not locked, or tagged, but are related to the operation of the Lockout/Tagout component, should be determined at this time and appropriate instructions should be developed. These checks should be done when necessary, to ensure that components within the Locked/Tagout boundaries are correctly aligned to support operation.</p> <p>2) Personnel. The workspace should be checked to ensure that all personnel have been positioned safely or removed from the area. Before Lockout/Tagout devices are removed and equipment energized, affected personnel should be notified that equipment will be energized.</p> <p>3) Lockout/Tagout Device Removal. Each Lockout/Tagout device should be removed from each energy-isolating device by the person who applied the device. He/she should reposition the components in the sequence specified and check the positioning as deemed necessary. The removal of Locks or Tags should be documented. Tags should be returned to the operations supervisor or authorizing manager. The supervisor/manager should be satisfied that all tags and safety devices associated with this Lockout/Tagout are removed and are accountable.</p> <p>When the person who applied the Lockout/Tagout device is not available to remove it, that device may be removed under the direction of the appropriate supervisor/manager, provided that specific procedures and training for such removal have been developed and incorporated into the facility program. The supervisor should demonstrate that the specific procedure provides equivalent safety to the removal of the device by the authorized personnel who applied it. The specific procedure should include the following elements:</p> <ul style="list-style-type: none"> - Verification by the supervisor/manager that the person who applied the device is not available. - Assurance that all reasonable efforts are made to inform him/her that the device has been removed. - Ensuring that all relevant personnel have this knowledge before he/she resumes work at the facility. | | |
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| <p>IX.C.7, Testing or Positioning of Equipment or Components</p> <p>Temporary removal of Lockout/Tagout devices should be discouraged. However, situations in which Lockout/Tagout devices must be temporarily removed and the equipment energized, the following sequence of operations should be followed: Clear the equipment of tools and materials. Remove personnel from the equipment area. Remove the Lockout/Tagout device as procedures indicate. Energize and proceed with testing or positioning. De-energized all systems and reapply the lockout/tagout.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout Section 3.7 • WP04-AD3011, Equipment Lockout/Tagout, Section 4.0 & 7.0 |
| <p>IX.C.8, Periodic Inspections</p> <p>Periodic inspections should be conducted by authorized personnel, supervisor, or appropriate manager, to determine whether procedures are being followed and to correct any deviations or inadequacies observed.</p> <p>Inspections should include a review of the responsibilities of personnel and supervisors.</p> <p>The supervisor or appropriate manager should certify that the periodic inspections have been performed, documenting the equipment and procedures involved, dates of inspection, personnel participating in the inspections, and personnel performing the inspections.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout Section 3.8 • WP04-AD3011, Equipment Lockout/Tagout, Section 13.0 |
| <p>IX.C.9, Caution Tags</p> <p>Caution tags should not be used for personnel protection (i.e., caution tags should not be used where it is appropriate to use a Lockout or Tagout device). Administration of caution tags could, however, be accomplished as part of the Lockout/Tagout program or it could be covered separately. The use of caution tags should be restricted to those situations in which a component or system is functional, but when some precaution or item(s) of information is necessary prior to operation. In addition, the program should include the following elements:</p> <p>a. Caution tags should be uniquely identifiable and different in appearance from other station tags. The following information should be included on the tags as an aid in administer the program:</p> <ol style="list-style-type: none"> (1) caution tag number; (2) component name and number; (3) effective date; (4) precaution or information applicable to the particular; situation and/or component or system; and (5) signature of authorizing individual and organization. <p>b. Situations that require special operator or maintenance precautions or amplifying information should be brought to the attention of the shift supervisor or appropriate manager. The supervisor or manager should ensure that issuing a caution tag is</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout Section 3.9 • WP04-AD3011, Equipment Lockout/Tagout, Sections 9.0 -12.0 |

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| <p>necessary and that the tag is not being used in place of more appropriate administrative action (such as a temporary procedure change, placing an operator aide, use of the work control system, or issuance of a safety Lockout or Tagout). The supervisor review should also ensure that any instruction contained in the caution tag does not deviate from established facility procedures, technical specifications, or OSR's.</p> <p>c. A record of all active caution tags and associated amplifying information should be available to the appropriate personnel. This record and associated tags should be reviewed periodically by qualified personnel. This review should verify the continued need and applicability for each caution tag and ensure that the caution tag index accurately reflects all active caution tags. This review should be documented. Any caution tags remaining in an active status for extended periods (e.g., longer than three months, as appropriate) should be brought to the attention of the operations supervisor or manager. The operations supervisor or manager should determine what action is needed to resolve the continued use of the caution tag.</p> <p>d. Caution Tag Placement</p> <p>Caution tags should be placed in such a way that they do not interfere with or obscure indications, switches, or other control devices but are readily apparent to an individual prior to the operation of the tagged device. Placement of caution tags should be documented</p> | | |
| <p>IX.C.10, Training and Communication</p> <p>a. Training should be provided and documented to ensure that the purpose and function of the Lockout/Tagout program is understood by all personnel and that they have the knowledge and skills required for safe application, use, and removal of Lockouts and Tagouts. Training should include the following:</p> <ol style="list-style-type: none"> 1. Recognition of applicable hazardous energy sources, type and magnitude of energy or materials involved and methods to isolate and control. 2. Personnel involved should be instructed in the purpose and use of the Lockout/Tagout procedures. 3. All personnel who may enter the area should be trained to recognize the Lockout/Tagout and to understand the procedure and prohibition relating to attempts to restart or re-energize machines or equipment. <p>b. When Tagout systems are used, personnel should be trained in the limitations of tags:</p> <ol style="list-style-type: none"> 1. Tags are essentially warning devices and do not provide physical restraint on those devices as are provided by a lock. 2. When a Tag is attached, it is not to be removed without authorization of the person | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout Section 3.10 • WP 04-AD3011, Equipment Lockout/Tagout, Attachment 1 • WP 12-IS.01-2, Industrial Safety Program – Lockout/Tagout, Entire document |

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| <p>responsible for it, it should not be bypassed, ignored, or otherwise defeated.</p> <ol style="list-style-type: none"> 3. Tags must be legible and understandable by all personnel. 4. Tags and their means of attachment should be able to withstand the environmental conditions encountered in the workplace. 5. Tags may evoke a false sense of security and their meaning needs to be understood. 6. Tags must be securely attached so they cannot be inadvertently or accidentally detached during use. <p>c. When Lockout systems are used, personnel should be trained in the limitations of Locks, especially concerning the following:</p> <ol style="list-style-type: none"> 1. Operation of the facility may be hindered (this is significant when local component operations are necessary, such as remote shutdown or remote control). 2. Locks and chains installed on small instrument line isolation valves can contribute to seismic loading and may not have been considered during safety analysis. <p>d. Retraining - Retraining should be provided for all authorized or affected personnel whenever there is a change in job, procedures, machines, equipment or processes that present new hazards or periodic inspection determines it is needed.</p> <p>e.</p> | | |
| <p>IX.C.11, Lockout or Tagout Implementation</p> <p>Lockout or Tagout should only be accomplished by authorized, qualified personnel.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout Section 3.11 • WP04-AD3011, Equipment Lockout/Tagout, Attachment 1 |
| <p>IX.C.12, Notification of Personnel</p> <p>A supervisor or appropriate manager should notify affected personnel of the application and removal of Lockout/Tagout devices. Notification should be given before the devices are applied and after they are removed.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout Section 3.12 • WP04-AD3011, Equipment Lockout/Tagout, Attachment 1 |
| <p>IX.C.13, Outside Contractors</p> <p>Whenever outside servicing personnel are to be engaged in activities covered by the scope of the Lockout/Tagout program, the facility and the outside contractor should inform each other of their respective Lockout/Tagout procedures and should ensure that their personnel are aware of the changes.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout Section 3.13 • WP04-AD3011, Equipment Lockout/Tagout, Attachment 1 |
| <p>IX.C.14, Group Lockouts or Tagouts</p> <p>When servicing or maintenance is performed by a crew, craft, department, or other group, they should utilize a procedure that will provide for equivalent safety provided by the personal Lockout or Tagout device</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout, Section 3.14 • WP04-AD3011, Equipment Lockout/Tagout, Attachment 1 |

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| <p>IX.C.15, Shift or Personnel Changes</p> <p>Specific procedures should be utilized during shift of personnel changes to ensure the continuity of Lockout or Tagout protection, including provision for the orderly transfer of Lockout or Tagout devices between personnel or shifts.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-9, Conduct of Operations Program – Lockout/Tagout, Section 3.15 • WP04-AD3011, Equipment Lockout/Tagout, Section 4.0 • WP 04-CO.01-12, Conduct of Operations Program, Operations Turnover, Section 3.2 • WP10-AD3005, Control and Use of Maintenance Locks, Section 1.0, 2.0, 3.0, Attachment 2 & 4 |
| <p>Chapter 10 – Independent Verification</p> | | |
| <p>X.C.1, Components Requiring Independent Verification</p> <p>Components that are critical to ensure safe and reliable operation should receive an independent verification of their position when circumstances warrant.</p> <p>These components should be identified explicitly in facility procedures or other official documents so that unnecessary interpretation of requirements will be minimized .</p> <p>Each facility should use an accepted safety analysis method (e.g., fault-tree analysis, Probability Risk Analysis) and/or expert opinion to determine its own facility specific list of systems and components, which should receive independent verification In accordance with the following guidelines:</p> <p>a. Safety Related Systems – All components in systems that have safety related functions should be considered for independent verification. If the following criteria are met, some components might not need independent verification:</p> <ol style="list-style-type: none"> 1) Mispositioning would not affect system performance 2) The mispositioning would be known immediately to an operator 3) Significant radiation exposure would be received by the person performing the independent verification. <p>Variations from independent verification requirements in accordance with the above criteria should be approved by the operations supervisor.</p> <p>b. Systems not related to safety – Independent verifications should be performed for certain components that are not related to safety which if mispositioned, could lead to unplanned shutdowns, challenges to safety systems or cause radioactive or toxic material release..</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-10, Conduct of Operations Program - Independent Verification, Section 3.1 • WP04-AD3005, Administrative Control of System Lineups, Attachment 1 and 2, Sections 1.0, Attachment 3 |
| <p>X.C.2, Occasions Requiring Independent Verification</p> <p>Components receive independent verification when the equipment they serve must be available and when a reasonable possibility exists that the components might have been mispositioned.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-10, Conduct of Operations Program - Independent Verification, Section 3.2 • WP04-AD3005, Administrative Control of System Lineups, Section 2.0 • WP 04-AD3011, Equipment Lockout/Tagout, Section |

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| <p>The following guidelines describe situations where independent verification would be appropriate:</p> <p>a. Returning equipment to service following maintenance or testing. Independent reviews should be performed to ensure systems are properly aligned when equipment is returned to service. Also, additional components that could have been mispositioned during maintenance should be selected for verification on a case-by-case basis by the individual authorizing equipment for return to service.</p> <p>b. Removing equipment from service. To ensure that only the specific items of equipment intended to be removed from service are affected by tagouts, independent verifications should be performed when equipment is removed from service.</p> <p>c. System lineups – When system lineups are performed, the Independent verifications are performed to verify system lineups before start-up after extended shutdowns have occurred.</p> <p>d. Periodic checks during Facility Operation – In order to verify that all associated equipment is fully functional, DOE facilities should perform routine, periodic verifications of certain critical components during normal operations.</p> | | <p>4.0, 7.0</p> |
| <p>X.C.3, Verification Techniques Operators should be trained in the appropriate techniques for verifying the positions of all facility components. In addition, a reference document should be provided explaining what an operator should do when verifying a component position.</p> <p>Each facility should use its most experienced personnel to develop these instructions, using applicable manufacturer's recommendations where available.</p> <p>The instructions should describe the techniques for verifying manual valves, motor and air operated valves, solenoid operated valves, circuit breakers, blank flanges, removable links and fuses and the availability of control power.</p> <p>The following guidelines applying to component verification techniques are being followed:</p> <p>a. Independence - Independent verifications should be conducted in a manner such that each check constitutes an actual identification of the component and a determination of both its required and actual positions.</p> <p>b. Remote Position Indicators - Independent verification should be performed locally unless ALARA or other overriding factors preclude such verification.</p> <p>c. Process parameters - Facility procedures should specify where and when process parameters are acceptable indicators of component position.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-10, Conduct of Operations Program - Independent Verification, Section 3.3 • WP 04-AD3005, Administrative Control of System Lineups, Entire procedure |

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| <p>d. Throttled valves - Verifying throttled valves by shutting and reopening the valve by a prescribed number of turns should be avoided because this practice has the potential to create valve mispositioning. Instead, position indicators, scribe marks, or other officially recognized and designated indicators should be used to determine throttled valve positions.</p> <p>e. Surveillance Testing – Surveillance testing should not be used as independent verification unless it can be shown that the test conclusively proves the position of the components in question. The applicability of surveillance testing to satisfy independent verification should be approved beforehand by the operations supervisor.</p> <p>f. Operations Self-appraisal and Verification – Programmatic operations appraisals should be independently conducted and/or verified to ensure that environment, safety, and health considerations, and operations functions are being conducted in accordance with established operational criteria.</p> | | |
| <p>Chapter 11– Logkeeping</p> | | |
| <p>XI.C.1, Establishment of Operating Logs Narrative logs should be established at all key shift positions</p> <p>As a minimum, a narrative log should be maintained by the operations supervisor or the control area operator</p> <p>For those shift positions that are manned on a part-time basis a log should be established to ensure that pertinent information is passed from operator to operator</p> <p>A narrative section should be provided on round sheets when a narrative log is not used for a particular shift position.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-11, Conduct of Operations Program - Logkeeping, Section 3.1 • WP04-AD3008, Shift Operating Logs and Round Sheets; Section 1.0, 2.1 |
| <p>XI.C.2, Timeliness of Recordings Information should be promptly recorded in the logs.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-11, Conduct of Operations Program - Logkeeping, Section 3.2 • WP04-AD3008, Shift Operating Logs and Round Sheets; Section 1.2 |
| <p>XI.C.3, Information to be Recorded The operations supervisor should provide written guidance to define thoroughly the type and scope of entries for each log and the format for making entries.</p> <p>The following information should be recorded in at least one station log, although any one log might not contain all these items:</p> <ul style="list-style-type: none"> • Facility mode or condition changes (e.g., shutdown, operations, run, startup, refueling, etc.); | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-11, Conduct of Operations Program – Logkeeping, Section 3.3: • WP04-AD3008, Shift Operating Logs and Round Sheets; Precautions and Limitations, Section 1.0 • WP15-MD 3102, Event Investigation, Section 1.0 |

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| <ul style="list-style-type: none"> • Criticalities and appropriate critical data (for DOE reactors); • Abnormal facility configurations; • Status changes to safety-related and other major facility equipment; • Occurrence of any reportable events; • Initiation and completion of surveillance tests; • Entering and exiting operational limit actions; • Security incidents; • Out-of-specification chemistry or process results; and Shift reliefs. <p>To aid in event reconstruction, as much significant information as possible should be logged during emergencies and abnormal or unexpected events.</p> <p>Logkeeping should not take precedence over controlling and monitoring the facility.</p> | | |
| <p>XI.C.4, Legibility Log entries should be made in a manner such that they can be easily read and understood. Log entries should be readily reproducible with standard photocopy machines. For these reasons, black, waterproof ink is recommended.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-11, Conduct of Operations Program - Logkeeping, Section 3.4 • WP04-AD3008, Shift Operating Logs and Round Sheets, Section 1.0 |
| <p>XI.C.5, Corrections A standardized method for correcting any erroneous entries should be established. The method chosen should not obscure the incorrect entry. Log entries should not be erased or covered up. Corrections can be made by placing a single line through the incorrect entry and writing the correct entry in a nearby space. All corrections should be initialed and dated.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-11, Conduct of Operations Program – Logkeeping, Section 3.5 • WP04-AD3008, Shift Operating Logs and Round Sheets, Section 1.0 |
| <p>XI.C.6, Log Review Control area logs should be reviewed periodically by the operations supervisor. Logs kept by operators outside the control area should be reviewed by the control area operator or an appropriate supervisor. These reviews should ensure that entries are accurate and adequate</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-11, Conduct of Operations Program - Logkeeping, Section 3.6 • WP04-AD3008, Shift Operating Logs and Round Sheets, Precautions and Limitations, Section 1.0 |
| <p>XI.C.7, Care and Keeping of Logs Management should provide written guidance on the disposition of completed logs. This guidance should address the following:</p> <ul style="list-style-type: none"> - Making the logs available for operators who return after periods of absence from their regular duties; - Storing the completed logs to ensure preservation for the expected life of the facility; and - Retrieving stored logs should this become necessary. | Y | <ul style="list-style-type: none"> • WP 04-CO.01-11, Conduct of Operations Program – Logkeeping, Section 3.7 • WP04-AD3008, Shift Operating Logs and Round Sheets, Section 1.0 |
| Chapter 12 – Operations Turnover | | |
| <p>XII.C.1, Turnover Checklists Supervisory positions should have a turnover checklist to be used in the turnover process.</p> | Y | <ul style="list-style-type: none"> • WP 04-CO.01-12, Conduct of Operations Program – Operations Turnover, Section 3.1 |

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| <p>a. Equipment Operator Checklists Equipment operator checklists, or other formal documents, should provide for noting major components status (e.g., operating pumps, trains in service, etc.), abnormal lineups, valid alarms on all pertinent local control panels, and surveillances or evolutions planned or in progress.</p> <p>Provisions should also be made for documenting that a review of round sheets and narrative logs has been performed by the oncoming operator.</p> <p>b. Operator Checklists</p> <p>Operator checklists or other documents reviewed at shift change should provide for recording vital information about the following facility status. Examples may include:</p> <ol style="list-style-type: none"> (1) Facility power level, test status, or equivalent; (2) Key temperatures limit status; (3) Key pressures limit status; (4) Important tank levels; (5) Safety equipment status; (6) Operational limits in effect; (7) Other important parameters; (8) Required chemistry or process sample times; (9) Maintenance, surveillances, tests, or evolutions (in progress or planned); (10) Problems experienced with equipment and major equipment out of service; (11) When specific planned actions are required; (12) Changes in radiological or hazardous materials conditions; (13) Temporary procedure changes in effect <p>Operator checklists may require documenting reviews of certain facility status documents. These may include the operator's own operating (narrative) log, the Tagout (clearance) log, the temporary modification and jumper logs, the out-of-service annunciator log, the operational limit action log, the shift order books, and required reading since the last shift. Each operator turnover checklist should be provided with enough space for the offgoing operator to list other important information his relief should have.</p> <p>c. Operations Supervisory Checklists</p> <p>Operations supervisory checklists or other documents reviewed at shift change should provide vital information about facility status. Examples may include:</p> <ol style="list-style-type: none"> (1) Facility status; (2) Evolutions (completed, in progress, or planned); (3) Controlled key status; (4) Abnormal lineups or conditions; | | <ul style="list-style-type: none"> • WP 04-CO.01-2, Shift Routines and Operating Practices, Section 1.0, 2.0 • WP 04-CO.01-8, Control of Equipment and System Status Control, Section 3.1 |
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| <p>(5) Changes in radiological or hazardous substance conditions; (6) Surveillance tests planned or in progress; (7) Maintenance planned or in progress; and (8) Waste management status.</p> <p>Operations supervisory checklists should require documenting review of certain status documents. These can include the supervisor’s own narrative log, the status log, the equipment status checklist, the emergency safeguards equipment list, shift order books, and required reading since the last shift.</p> | | |
| <p>XII.C.2, Document Review Oncoming operators and supervisors should review documents specified on their checklists prior to assuming responsibility for their shift position.</p> <p>Document review should be as intensive as necessary for the oncoming personnel to understand important history, present status, and planned events.</p> <p>Narrative log entries for the previous 24-hour period or since his/her last shift should be reviewed.</p> <p>Status logs should be reviewed so that the operator and supervisors are familiar with all currently active entries, with an emphasis on what has changed since he/she last had the shift.</p> | <p>Y</p> | <p>WP 04-CO.01-12, Conduct of Operations Program – Operations Turnover, Section 3.2</p> |
| <p>XII.C.3, Control Panel Walkdown Walkdowns of appropriate control panels should be conducted by each shift watch stander.</p> <p>The purpose of a panel walkdown is to determine plant status through observation of system lineups, switch positions, lighted annunciators, chart recorders, and status lights.</p> <p>Oncoming operations supervisors should walk down the main control panels before, during, or shortly after shift turnover.</p> <p>Oncoming and offgoing control area operators should walk down their unit’s main control panel together.</p> <p>Equipment operators should review all pertinent local control panels, (e.g., fuel supplies, lubrication levels, makeup water treatment, and ventilation) during their tour early in the shift.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-12, Conduct of Operations Program – Operations Turnover, Sections 3.3 |

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| <p>XII.C.4, Discussion and Exchange of Responsibility At a time when facility conditions are stable, the offgoing supervisor or operator should explain all items noted on the turnover checklist, and the oncoming operator or supervisor should ask any pertinent questions.</p> <p>When all operations personnel are satisfied that the oncoming crew is fully cognizant of the plant conditions, the oncoming operators and supervisors should state that he/she is assuming responsibility for the shift position with an entry into the log.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-12, Conduct of Operations Program – Operations Turnover, Sections 3.4 |
| <p>XII.C.5, Shift Crew Briefing Crew briefing should be conducted by the operations supervisor as required and may be conducted after he has accepted responsibility for the shift.</p> <p>The briefing should include a review of the status, problems with equipment, and evolutions in progress or planned during the shift.</p> <p>Shift operators, personnel from support groups (e.g., contractors, vendors, and test groups) should also attend briefings when their activities can directly affect operations.</p> <p>Shift briefings practices results in better understanding of shift priorities and objectives among operations and support personnel.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-12, Conduct of Operations Program – Operations Turnover, Section 3.5 |
| <p>XII.C.6, Reliefs Occurring During the Shift Reliefs occurring during the shift (e.g., exchange of control supervisory function) should have a turnover to ensure that the oncoming person is at least as knowledgeable of the conditions as he would have been had a complete shift turnover process been conducted. For example, control panel walkdowns and log reviews may or may not be necessary, depending on the oncoming person’s familiarity with the current conditions.</p> | <p>Y</p> | <ul style="list-style-type: none"> WP 04-CO.01-12, Conduct of Operations Program – Operations Turnover, Section 3.6 |
| <p>Chapter 13 – Operations Aspects of Facility chemistry and Unique Processes</p> | | |
| <p>XIII.C.1, Operator Responsibilities The operations supervisor should define each operator's specific responsibilities with respect to process control.</p> <p>In general, operators should monitor chemistry or process parameters using control room instruments and other instruments related to equipment under operations control.</p> <p>Operators should be able to recognize out-of-specification conditions or adverse trends and be familiar with corrective actions associated with chemistry or process problems.</p> | <p>P*</p> | <ul style="list-style-type: none"> WP 04-CO.1-13. Conduct of Operations Program - Operations Aspects of Facility Chemistry and Unique Processes, Section: 3.1 WP04-AD3001, Facility Mode Compliance, Attachment 3 and associated forms EA04-AD3001-SR41, EA04-AD3001-SR42, and EA04-AD3001-SR43 WP04-EM4300, Operation and Inspection of the VOC Capture Depletion System, Precautions and Limitations and Sections 1.0 & 3.0 WP15-SE.01, Scientific Experiment Support Plan, Section 2.2 Unique processes at WIPP include experiments in the north part of the underground that are conducted by national lab and university personnel. VOC |

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| | | <p>monitoring is another unique process in which the underground ventilation and the type of waste being received may have an effect on the overall VOC concentrations. Operator responsibilities are fully implemented for identified WIPP Unique Processes. WIPP is not a processing facility and therefore, the chemical attributes of DOE Order 5480.19, Chapter 13, do not apply.</p> |
| <p>XIII.C.2, Operator Knowledge Operators should be knowledgeable about aspects of facility processes and safety that affect operation and should be able to analyze off-normal situations and take appropriate action to correct the causes(s) of problems.</p> <p>Examples of the types of concepts and processes with which operations personnel should be familiar include the following:</p> <ol style="list-style-type: none"> Concepts of pH, conductivity, cation conductivity, and dissolved oxygen and the effect these parameters have on the facility. The radiochemical indications of failed fuel (for DOE reactors). How demineralizers work and how to determine if they are performing inefficiently. The purpose and hazards associated with facility storage and use of such chemicals as boron, acids, caustics, chromates, hydrazine, ammonia, solvents containing chlorinated hydrocarbons, and chemicals containing organics. Chemical and radiochemical parameters, including calculations associated with technical specifications/operational safety requirements. Chemistry parameters monitored in the control room or on local panels under the responsibility of facility equipment operators. Properties and hazards of such gases as hydrogen, nitrogen, carbon dioxide, chlorine, and halon. Corrosion problems, including stress corrosion, intergranular cracking, and ammonia attack of copper alloys. The chemical constraints, process equipment, and controls associated with the radioactive or toxic waste systems. Operation of such water pretreatment equipment as clarifiers or charcoal filters (if such equipment is operated or monitored by operations personnel). Knowledge of operating limits and characteristics of off-normal and unique processes. Knowledge of appropriate response and recovery from off-normal or hazardous conditions. <p>The operations supervisor should ensure that these and other topics are appropriately addressed in training programs.</p> | <p>P*</p> | <ul style="list-style-type: none"> • WP 04-CO.1-13. Conduct of Operations Program - Operations Aspects of Facility Chemistry and Unique Processes , Section: 3. * The concepts/processes of failed fuel, and chemistry parameters monitored in the control room, do not apply to WIPP. Operators are not specifically trained on these topics and may not be knowledgeable. Operator knowledge is fully implemented for identified WIPP Unique Processes. WIPP is not a processing facility and therefore the chemical attributes of DOE Order 5480.19, Chapter 13, do not apply. • WP04-EM4300, Operation and Inspection of the VOC Capture Depletion System- Introduction, Precautions and Limitations, Sections 1.0 and 3.0 • WP15-SE.01, Scientific Experiment Support Plan, Section 2.2. • WP 02-EC.12 Site Users Guide for Organizations Personnel, or Companies that Perform Work on the U. S. Department of energy Property or Right-of-Way on or Around the Waste Isolation Pilot Plant, Attachment 1. |

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| <p>XIII.C.3, Operator Response to Process Problems Each operator should be capable of correctly interpreting the chemistry or process parameters that he is responsible for and be able to provide appropriate, timely, corrective action when required. High air in-leakage and poor quality makeup water are examples of conditions that could require operator identification and response.</p> | <p>P*</p> | <ul style="list-style-type: none"> • WP 04-CO.1-13, Conduct of Operations Program - Operations Aspects of Facility Chemistry and Unique Processes, Section 3.3 • WP04-AD3001, Facility Mode Compliance, Attachment 3 and associated forms EA04-AD3001-SR41, EA04-AD3001-SR42, and EA04-AD3001-SR43 • WP04-EM4300, Operation and Inspection of the VOC Capture Depletion System- INTRODUCTION, Precautions and Limitations, Sections 1.0 and 3.0 • WP15-SE.01, Scientific Experiment Support Plan, Section 2.2 • Operator Response to Process Problems are fully implemented for identified WIPP Unique Processes. WIPP is not a processing facility and therefore, the chemical attributes of DOE Order 5480.19, Chapter 13 do not apply. |
| <p>XIII.C.4, Communication Between Operations and Process Personnel If possible, operators should inform appropriate process personnel prior to commencing evolutions that could potentially affect facility processes or require action from support technicians. Operators should receive reports from the process department on key day-to-day process results and problems. When process-related problems occur, operations and process-personnel should work closely to provide prompt corrective action</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.1-13, Conduct of Operations Program - Operations Aspects of Facility Chemistry and Unique Processes, Section 3.4 • WP04-AD3001, Facility Mode Compliance, Attachment 3 • WP04-AD3008, Shift Operating Logs and Rounds Sheets, Precautions and Limitations • WP04-EM4300, Operation and Inspection of the VOC Capture Depletion System, Sections 3.0 • WP 15-SE.01, Scientific Experiment Support Plan, Section 2.2 |
| <p>Chapter 14 Required Reading</p> | | |
| <p>XIV.C.1, File Index A list of the types of documents to be included in the required-reading file should be maintained. The list should include the following documents: a. Procedure changes; b. Equipment design changes; c. Related industry and in-house operating experience information; and d. Other information necessary to keep operations department personnel aware of current facility activities. Reading material should be screened to ensure that only appropriate material is placed in the file.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-14, Conduct of Operations Program – Required Reading Section 3.1 • Management Policy 1.30, Required Reading |

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| <p>XIV.C.2, Reading Assignment A method should be in place to designate which documents need to be read by the individuals filling each position. The reading file should be readily available to those individuals</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-14, Conduct of Operations Program – Required Reading Section 3.2 • Management Policy 1.30, Required Reading |
| <p>XIV.C.3, Required Dates for Completion of Reading A required completion date should be designated for reading each document. This date would be determined based on the nature of the material. Personnel should complete their reading assignments by the required date. Certain documents may be designated for “immediate reading.” These should be read before assuming responsibility for a shift position.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-14, Conduct of Operations Program – Required Reading Section 3.3 • Management Policy 1.30, Required Reading |
| <p>XIV.C.4, Documentation Completion of reading should be documented. The documentation should be retained.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-14, Conduct of Operations Program – Required Reading Section 3.4 • Management Policy 1.30, Required Reading |
| <p>XIV.C.5, Review The reading file should be periodically reviewed to ensure that all department personnel complete readings by the required dates. Material that has been read by all appropriate personnel should be removed from the active file.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-14, Conduct of Operations Program – Required Reading Section 3.5 • Management Policy 1.30, Required Reading |
| <p>Chapter 15–Timely Orders to Operators</p> | | |
| <p>XV.C.1, Content and Format Orders should be clearly written, dated, and maintained in the control room. Information and policies intended as permanent should be incorporated into appropriate administrative procedures. The operator orders program should not be used to change operating procedures, because the changes noted in the operator orders might be missed by a procedure user. Information intended to supplement operating procedures should be promptly incorporated into the appropriate procedure by a procedure change or revision.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-15, Conduct of Operations Program - Timely Orders to Operators, Sections 3.1 |
| <p>XV.C.2, Issuing, Segregating and Reviewing Orders Operator orders should be issued by the operations supervisor or his/her designee whenever necessary to communicate instructions to the shift personnel. Operator orders should be segregated into daily and long-term orders in order to facilitate</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-15, Conduct of Operations Program - Timely Orders to Operators, Section: 3.2 |

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| <p>review by shift personnel. Daily orders that are postponed or prolonged should have daily review or updates. Reviews of long-term orders may not be required on a daily basis but should be made periodically and when changes occur.</p> <p>Appropriate operations personnel should review the orders early in the shift and document their review by initialing the log or notebook</p> | | |
| <p>XV.C.3, Removal Of Orders Orders that are no longer applicable or are outdated should be promptly removed or cancelled.</p> <p>The operations supervisor should periodically review the operator orders to ensure that only applicable and current orders remain effective.</p> | Y | <ul style="list-style-type: none"> WP 04-CO.01-15, Conduct of Operations Program - Timely Orders to Operators, Section 3.3 |
| <p>Chapter 16 – Operations Procedures</p> | | |
| <p>XVI.C.1, Procedure Development To ensure consistency among operations procedures, the methods for developing new procedures, including procedure formats, should be clearly defined.</p> <p>Administrative procedures and/or writers' guides should direct the development and review process for procedures.</p> <p>Procedures should be developed for all anticipated operations, evolutions, tests, and abnormal or emergency situations.</p> <p>Annunciator/alarm response procedures that guide the operator in verifying abnormal conditions or changes in plant status and provide the appropriate corrective action should be developed for all alarm panels.</p> <p>All procedures should provide administrative and technical direction to conduct the intent of the procedure effectively.</p> <p>The extent of detail in a procedure should depend on the complexity of the task, the experience and training of the user(s), the frequency of performance, and the significance of the consequences of error.</p> <p>Qualifications for procedure writers should be considered, including operating organization and experience.</p> <p>Review, verification, and validation should be formalized for written and software procedures</p> | Y | <ul style="list-style-type: none"> WP 04-CO.01-16, Conduct of Operations Program – Operations Procedures, Section 3.1 WP15-PS.2, Procedure Writers Guide, Section 5.0 WP 15-PS3002, WTS Controlled Document Processing, Sections 2.0, 3.0, 4.0, 8.0 |

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| <p>XVI.C.2, Procedure Content To provide uniformity in operations procedures, the content of procedures should conform to prescribed guidelines. The procedure aspects described below should be followed when developing operations procedures:</p> <ol style="list-style-type: none"> a. The scope and applicability of individual procedures should be readily apparent. Procedures with single-unit applicability should be distinctively identified to avoid confusion with sister-unit procedures. In addition, to enhance rapid retrieval, emergency procedures should be distinguishable from other procedures. Color coding could be used for these purposes. b. Procedures should incorporate appropriate information from applicable source documents, such as the facility design documents, safety analysis documents, and vendor technical manuals. c. Prerequisites and initial conditions should be detailed. Careful consideration should be given to the location of this information within the procedure in order to help ensure that the intent of the procedure is understood. In addition, any hoses, tools, or other temporary testing equipment should be verified operable, calibrated, or inspected and in good condition where possible, before implementing any test procedure, to ensure that they function as expected during the test. These verifications should be identified in the prerequisite section, with completion sign-offs required. "Hold" points (requiring independent verification and/or approval) should be clearly delineated. d. Definitions used in the procedure should be explained. e. Procedures should be easily understood, and actions should be clearly stated f. Procedures should contain only one action per step. g. Procedures should contain sufficient but not excessive detail. The skill level, experience, and training of the users should be considered. h. Warnings, notes, and cautions should be easily identifiable and should not contain action statements. The probability of missing an action step increases when it is included in a warning, note, or caution. i. Warnings and cautions should precede the step to which they apply. Warnings, notes, and cautions should appear on the same page as the step to which they apply. This ensures that operators are alerted to necessary information before performing a procedural step. j. Procedures should be technically and administratively accurate (i.e., the instructions and information should be correct; referenced documents should be correctly identified; and necessary instructions should represent to guide the user when transferring between procedures). k. Individual sign-offs should be provided for selected critical steps. One sign-off should not be applied to more than one action. l. Limits and/or tolerances for operating parameters should be specified and should be consistent with the readable accuracy of instrumentation. Operators should not be required to perform mental arithmetic to determine if a specified parameter is acceptable. m. Acceptance criteria for surveillance or test procedures should be easily discerned, including tolerances and units. if calculations are needed to compare data to acceptance | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-16, Conduct of Operations Program – Operations Procedures, Section 3.2 • WP15-PS.2, Procedure Writers Guide, Sections 2.0,3.0, 4.0, 5.0 • WP 15-PS3002, WTS Controlled Document Processing, Attachment 3 • WP12-ER4906, Surface Medical Emergency Response Section 3.0 • WP12-ER4912, Underground Medical Emergency Response, Section 3.0 |
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| <p>criteria, the calculations should be clearly explained.</p> <p>n. Sequence of procedural steps should conform to the normal or expected operational sequence. Training on this sequence, reinforced with procedures that show the same sequence, will serve to improve operator performance by development of patterns of action that are more easily remembered.</p> <p>o. Procedures should be developed with consideration for the human-factor aspects of their intended use. For example, references to components should exactly match drawing and label-plate identifiers, units should be the same as those marked on applicable instrumentation, and charts and graphs should be easily read and interpreted. Important factors (such as operating limits, warnings, cautions, etc.) should be highlighted.</p> <p>p. Emergency operating procedures should provide guidance in responding to single and multiple casualties.</p> <p>q. Portions or steps of other procedures that are used or referred to when performing a procedure should be specifically identified within the procedure so that operators will not be confused when transferring between procedures.</p> <p>r. Component or system shutdown and restoration following shutdown or a surveillance or test be specific and controlled by the procedure.</p> | | |
| <p>XVI.C.3, Procedure Changes and Revisions The review and approval process for each procedure change or revision should be documented. For the purpose of these guidelines, a “procedure change” refers to an on-the-spot change (whether for permanent or for one-time-only use). Procedure changes do not involve retyping or reissuing a procedure. “Procedure revisions” constitute a new, retyped edition of the procedure.</p> <p>Procedure changes and revisions should conform to the following practices:</p> <p>a. Procedure changes intended for use more than one time should be documented in a location readily available for operator reference. To avoid the possibility of error, these changes should also be referenced in procedure copies used by operators.</p> <p>b. Appropriate procedure changes and revisions should be initiated when procedure inadequacies or errors are noted.</p> <p>c. Procedure revisions should be initiated when a change has been outstanding for an extended period (e.g., greater than 6 months) or when a procedure has been affected by several changes (e.g., more than five). All currently effective procedure changes should normally be incorporated when the procedure is revised.</p> <p>d. Procedure revisions should be implemented concurrently with modifications. Procedure updates required by temporary modifications should be handled as procedure “change” and implemented concurrently with the temporary modification installation.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-16, Conduct of Operations Program – Operations Procedures, Section 3.3 • WP 15-PS3002, WTS Controlled Document Processing, Section 6.0 • WP 10-2, Maintenance Operations Instruction Manual, Section 1.0 |

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| <p>e. Important information regarding changed or revised procedures should be communicated to appropriate operations personnel via the required reading system (Chapter XIV), a pre-shift briefing, or a similar method</p> <p>f. Documentation of the reason for key procedure steps should be maintained and reviewed when implementing changes or revisions that alter these steps. This practice is important to ensure that the reason for any step is not overlooked.</p> <p>g. The review process should involve verification and validation of the procedure using walkthroughs or similar methods.</p> | | |
| <p>XVI.C.4, Procedure Approval Operating procedures should be approved by the operations supervisor.</p> <p>Procedures that affect safety-related equipment and emergency procedures should be reviewed by the facility safety review committee or by another appropriate review mechanism.</p> <p>Procedure revisions should receive the same depth of review and level of approval as the initial versions.</p> <p>New and revised procedures should be approved prior to use.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-16, Conduct of Operations Program – Operations Procedures, Section 3.4 • WP 15-PS3002, WTS Controlled Document Processing, Sections 2.0, 4.0 |
| <p>Changes in Operations procedure that do not affect the intent of operations procedure should be approved by two individuals; one should be a qualified operator, and the other should be a member of facility management. For this purpose, management could be interpreted to mean the operations supervisor or a more senior individual within the operating organization.</p> <p>Within 2 weeks, these procedure changes should be concurred with by the individuals who would normally approve a revision or the initial version of the procedure.</p> <p>Changes that alter the intent of a procedure should receive the same approval as a newer revised procedure.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 15-PS3002, WTS Controlled Document Processing, Section 6.0 |
| <p>XVI.C.5, Procedure Review New and revised operations procedures should be reviewed prior to issuance and at periodic intervals to ensure that the information and instructions are technically accurate and that appropriate human-factor considerations have been included.</p> <p>The frequency of subsequent reviews should be specified; it may vary with the type and complexity of the activity involved and with time as a given plant reaches operational maturity.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-16, Conduct of Operations Program – Operations Procedures, Section 3.5 • WP 15-PS3002, WTS Controlled Document Processing, Section 2.0, 8.0 |

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| <p>Applicable procedures should be reviewed after an unusual incident (such as an accident, an unexpected transient, significant operator error, or equipment malfunction). During reviews, procedures should be compared to source documents to verify their accuracy.</p> <p>New procedures should be validated by walk-throughs in the facility or by operation on a facility specific simulator to ensure workability.</p> | | |
| <p>XVI.C.6, Procedure Availability A controlled copy of all operations procedures should be maintained in the control area for operator reference.</p> <p>Selected controlled procedures should be maintained at other appropriate locations. (Controlled procedures for facility shutdown from outside the control area should be maintained at the remote shutdown location(s). It may be desirable to have procedures for routine evolutions available at local work stations.)</p> <p>Working copies of controlled procedures should be available for use during evolutions. Working copies should be controlled and a system should be in place to ensure that outdated procedures are not used by mistake, and that working copies are replaced according to approved procedures. For example, uncontrolled working copies could be verified by comparison to a controlled copy prior to use.</p> <p>Controlled annunciator response procedure information should be easily accessible to the operators responsible for responding to alarms. Some facilities can provide annunciator response procedures at local control panels. If this is not done, annunciator response procedures should be provided at an alternate location convenient to the equipment operator.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-16, Conduct of Operations Program – Operations Procedures, Section 3.6 • WP 15-PS3002, WTS Controlled Document Processing, Section 2.0 • WP15-PS.2, Procedure Writers Guide, Section 5.0 |
| <p>XVI.C.7, Procedure Use Facility operation should be conducted in accordance with applicable procedures that reflect the facility design basis.</p> <p>The requirements for use of procedures should be clearly defined and understood by all operators. If procedures are deficient, a procedure change should be initiated. In exception to this policy, 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.</p> <p>Operators should have procedures with them and follow them in a step-by-step manner when the procedures contain sign-offs for the various activities.</p> <p>Procedures should be referenced during infrequent or unusual evolutions when the operator is not intimately familiar with the procedure requirements or when errors could cause</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-16, Conduct of Operations Program – Operations Procedures, Section 3.7 • WP10-2, Maintenance Operations Instruction Manual, Section 1.5 |

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| <p>significant adverse impact to the facility.</p> <p>Operators need not reference emergency procedures during the performance of immediate actions since these actions, are committed to memory; however, the emergency procedure immediate action instructions should be reviewed after the actions are performed, thus, verifying, that all required actions have been taken</p> | | |
| <p>Chapter 17– Operator Aid Postings</p> | | |
| <p>XVII.C.1, Operator Aid Development</p> <p>Any facility employee could develop an operator aid; however, it should be approved prior to posting.</p> <p>Operator aids may often be posted by individuals other than operations personnel, therefore facility personnel should be informed of the importance of controlling posted information and the procedure to be followed when posting information.</p> | Y | <ul style="list-style-type: none"> WP 04-CO.01-17, Conduct of Operations Program - Operator Aid Postings, Section 3.1 WP04-MD3003, Control of Operator Aids, Introduction, Section 1.0 |
| <p>XVII.C.2, Approval</p> <p>The operations supervisor, or a higher authority, should approve all operator aids.</p> <p>The person approving an operator aid should ensure that the aid is necessary and correct.</p> <p>Operator aids that alter procedures should not be approved. Instead, appropriate procedures should be changed to incorporate the necessary information.</p> | Y | <ul style="list-style-type: none"> WP 04-CO.01-17, Conduct of Operations Program - Operator Aid Postings, Section 3.2 WP04-MD3003, Control of Operator Aids, Section 1.0 |
| <p>XVII.C.3, Posting</p> <p>Operator aids should not be posted in such a way as to obscure instruments or controls.</p> <p>The aids should be located in close proximity to the area of their expected use.</p> <p>The operator aids should, when possible, be protected (laminated) and should be securely fastened to the equipment to which they refer.</p> | Y | <ul style="list-style-type: none"> WP 04-CO.01-17, Conduct of Operations Program - Operator Aid Postings, Section 3.3 WP04-MD3003, Control of Operator Aids, Section 1.0 |
| <p>XVII.C.4, Use of Operator Aids</p> <p>Operator aids should be viewed as a convenience to the individual using them, not a requirement.</p> <p>Operator aids may supplement approved procedures, but they should not be used in lieu of approved procedures.</p> | Y | <ul style="list-style-type: none"> WP 04-CO.01-17, Conduct of Operations Program - Operator Aid Postings, Section 3.4 WP04-MD3003, Control of Operator Aids, Introduction |
| <p>XVII.C.5, Documentation</p> <p>A listing of all approved operator aids should be maintained along with a copy of each aid posted in the facility. This list should be used during periodic reviews of operator aids in</p> | Y | <ul style="list-style-type: none"> WP 04-CO.01-17, Conduct of Operations Program - Operator Aid Postings, Section 3.5 WP04-MD3003, Control of Operator Aids, Section 1.0 |

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| <p>order to help ensure that the posted aids remain current, and to provide a reference copy should an operator aid be missing during the review. The list should be kept in the control area, the operations supervisor's office, or other appropriate location. References from which operator aids were derived, control numbers (including revision), and dates of approval should be provided.</p> | | |
| <p>XVII.C.6, Review The posted operator aids should be reviewed periodically to ensure they are still correct and necessary. In addition, an operator should audit the control area listing to ensure that only currently posted aids are recorded on the listing.</p> <p>Operator aids no longer posted should be removed from the listing, and missing aids should be replaced.</p> <p>Some operator aids are graphs, curves, or other portions of approved procedures. To help ensure that these types of operator aids are the most current versions, they should be updated when the "parent" procedure is revised. .</p> <p>During routine facility inspections, operations personnel should review operator aids to ensure that they are approved. Unapproved postings should be submitted for approval or removed.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-17, Conduct of Operations Program - Operator Aid Postings, Section 3.6 • WP04-MD3003, Control of Operator Aids, Section 2.0 |
| <p>Chapter 18 – Equipment Piping and Labeling</p> | | |
| <p>XVIII.C.1, Components Requiring Labeling <u>The following components should be labeled:</u></p> <ol style="list-style-type: none"> Valves Major equipment (e.g., tanks, pumps, and compressors) Switches Circuit breakers (4.16KV, 480V, 120VAC/DC, etc.) Fuse blocks or fuse locations Instruments and gauges Busses and motor control centers Cabinets (including internal components such as relays terminals, etc.) Room doors Emergency equipment (such as fire alarm stations, sound powered phone headsets, etc.) Fire protection systems | <p>P*</p> | <ul style="list-style-type: none"> • WP 04-CO.01-18, Conduct of Operations Program– Equipment and Piping Labeling, Section 3.1 • WP09-CN3021, Component Indices, Introduction and Section 1.0 <p>* Fuse blocks; fuses are shown on drawings and are identified, but the fuses/fuse blocks may not be identified in the field. The fuses are typically clear from the drawings. Fire doors are labeled.. Doors to temporary structures may not be numbered or labeled in the field.</p> |
| <p>XVIII.C.2 Label Information Information on labels should be consistent with the information found in facility procedures, valve lineup sheets, and piping and instrument diagrams.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-18, Conduct of Operations Program– Equipment and Piping Labeling, Section 3.2 • WP09-CN3021, Component Indices, Section 1.0 |

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| <p>Abbreviations and nomenclature used should be standardized and should be understood by facility personnel.</p> <p>Labels should be permanent, securely attached, and have distinguishable, easy-to-read information.</p> <p>Each component label should list a unique component number. The accompanying component noun name or description and power supply, if applicable, should also be provided.</p> <p>Labels may be color coded for unit, system, and/or train designation. If color coding is used, the colors should be applied consistently and have only one meaning per color or combination.</p> <p>Piping should be labeled to indicate the fluid contained and the normal flow direction.</p> <p>OSHA color coding for pipes could be used, and pipes containing potentially radioactive fluids, toxic fluids, or explosive gases should be uniquely marked.</p> <p>Labels should be made from materials that are compatible with their particular application. For example, chloride-free labels should be used on stainless steel piping, and temperature-tolerant labels should be used on hot components.</p> <p>Adhesives used for label attachment should also be verified for compatibility.</p> | | |
| <p>XVIII.C.3 Label Placement Labels should be placed on or as near as practicable to the equipment to be labeled.</p> <p>The label should be oriented in a manner that is easy to read and so that the correct component is easy to identify.</p> <p>Labels for switches, indications, and breakers on control or power panels should be placed closer to the identified component than any other component so that the label clearly identifies the correct component.. Label placement should not interfere with equipment operation or obscure indicators.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-18, Conduct of Operations Program– Equipment and Piping Labeling, Section 3.3 • WP09-CN3021, Component Indices, Section 10.0 |
| <p>XVIII.C.4 Replacing Labels a. <u>Identifying Lost or Damaged Labels</u> Procedures should be established to ensure that misplaced or damaged labels are replaced.</p> <p>Since labels are often missing after maintenance, the post-maintenance test could require a check to ensure that the appropriate labels are attached. Another method that could be used to check for labels is to add another column to valve lineup sheets that would require the operator to verify that labels are present, readable, and undamaged.</p> | <p>Y</p> | <ul style="list-style-type: none"> • WP 04-CO.01-18, Conduct of Operations Program– Equipment and Piping Labeling, Section 3.4 • WP09-CN3021, Component Indices, Sections 9.0 and 10.0 |

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| <p>Operators should also look for missing or damaged labels during their normal tours and during other routine activities. They should become especially observant for situations where a black marking pen has been used for labeling (and then sometimes crossed out and re-labeled) and should replace these informal labels with the proper labels.</p> <p>b. <u>Providing New Labels</u> A method should exist to help ensure the prompt identification and correction of labeling deficiencies. A number of ways can be suggested to accomplish this: operators could make labels on their own, or operators could fill out forms and forward them to a central facility to have labels made.</p> <p>A temporary label should be attached to the component until the replacement label can be made. The replacement label should be approved by the operations supervisor (or higher authority).</p> <p>The attachment of temporary and/or replacement labels to correct components should be verified. The new label should meet the guidelines for label information as addressed in paragraph C2 of this chapter.</p> | | |
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