

# WP 12-ES3918

Revision 9

## Reporting Occurrences in Accordance with DOE Order 231.1A

Management Control Procedure

EFFECTIVE DATE: 12/10/08

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APPROVED FOR USE

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## INTRODUCTION <sup>1</sup>

This procedure establishes a system for the Facility Manager (FM)/Facility Manager Designee (FMD) to categorize and report occurrences at the Waste Isolation Pilot Plant (WIPP) in accordance with U.S. Department of Energy (DOE) requirements. Persons and organizations other than the FMD have supporting responsibilities as defined in Attachment 6, Responsibilities. This procedure applies to all departments and activities at WIPP and all DOE controlled facilities in Carlsbad. In addition, it includes occurrences resulting from activities performed by subcontractors at these facilities. This procedure is the implementing document for DOE Order 231.1A and DOE Manual 231.1-2.

As defined in DOE Manual 231.1-2, events may be categorized in accordance with one of the six categories listed below.

Operational Emergencies: Operational Emergencies are defined in DOE Order 151.1C. Operational Emergency occurrences are the most serious occurrences and require an increased alert status for on-site personnel and, in specified cases, for off-site authorities. The detailed initial notification requirements, definitions, criteria, and classifications of emergencies and appropriate responses are provided in WP 12-ER3906.

Significance Category 1: Occurrences in this category have a *significant impact* on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.

Significance Category R: Occurrences in this category are those identified as recurring, as determined from the periodic performance analysis of occurrences across the facility.

Significance Category 2: Occurrences in this category are nonemergency occurrences that have a *moderate impact* on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.

Significance Category 3: Occurrences in this category are nonemergency occurrences that have a *minor impact* on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.

Significance Category 4: Occurrences in this category are nonemergency occurrences that have *some impact* on safe facility operations, worker or public safety and health, public/business interests.

## PERFORMANCE SECTION

If the event is categorized by the Facility Shift Manager (FSM) as an Operational Emergency in accordance with WP 12-ER3906, the initial notifications of the Operational Emergency shall be made as required by that procedure and the written Occurrence Reports prepared in accordance with this procedure (WP 12-ES3918).

If the event is not categorized as an Operational Emergency, then the event shall be reviewed by the FM/FMD for possible categorization as a Significance Category 1, R, 2, 3, or 4 Occurrence as soon as practical, but, in all cases, within 2 hours of identification by the facility staff.

If the category is not clear, or if the occurrence exceeds the threshold of more than one criterion, the occurrence shall be categorized at the higher level being considered. As an example, discovery of a fire in an office trailer (reportable as a Significance Category 3 occurrence) that results in the hospitalization of three or more personnel (reportable as a Significance Category 1 occurrence) should be categorized at the higher level (Significance Category 1).

The occurrence category shall be elevated, maintained, or lowered as additional information is made available.

Based on the determined Significance Category, all the appropriate actions shall be taken as identified in the Occurrence Reporting Model (Attachment 2). This model includes the reporting time lines, verbal notifications, graded approach for investigation, problem analysis, corrective actions, lessons learned, and report approvals. For any later changes to the Significance Category based on new information, the level of actions will also be changed to comply with the actions associated with the new Significance Category. This includes any verbal notifications that may now be required.

Based on the determined Significance Category, a Notification Report shall be prepared and submitted as soon as practical, but, in all cases, by the time identified in the Occurrence Reporting Model.

Except for Significance Category 4 occurrences, an Update Report shall be prepared and submitted when significant and new information is available or upon request of the DOE.

Changes in categorization shall be documented in an Update Report and submitted before the close of the next business day from the time of recategorization (not to exceed 80 hours).

A Final Report shall be prepared and submitted to the Facility Representative when the causal factors of the occurrence have been determined, corrective actions determined with actual or target completion dates identified, and lessons learned identified as specified in the Occurrence Reporting Model. The Final Report shall be submitted as soon as possible, but no later than 45 calendar days after initial categorization or last update report was issued. If the required analysis cannot be completed within 45 calendar days, an Update Report shall be submitted within the 45 days and include a detailed explanation of the delay and an estimated date for submittal of the Final Report.

If the Final Report is rejected by either the Facility Representative or DOE Program Manager, a revised Final Report shall be prepared and submitted within 21 calendar days of disapproval.

Performance of this procedure may generate the following records:

- Occurrence Report <sup>2</sup>

## REFERENCES

### BASELINE DOCUMENTS

- DOE Order 231.1A, *Environment, Safety, and Health Reporting*
- DOE Manual 231.1-2, *Occurrence Reporting and Processing of Operations Information*
- | ● Letter from Dr. Inez Triay, Chief Operating Officer for Environmental  
| Management, U.S. Department of Energy, Occurrence Reporting Categorization  
| and Review, July 5, 2006
- | ● DOE/WIPP 95-2065, *Waste Isolation Pilot Plant Contact Handled (CH) Waste  
| Documented Safety Analysis*
- | ● DOE/WIPP-95-2125, *Waste Isolation Pilot Plant Contact Handled (CH) Technical  
| Safety Requirements*
- | ● DOE/WIPP-06-3174, *Waste Isolation Pilot Plant Remote Handled (RH) Waste  
| Documented Safety Analysis*
- | ● DOE/WIPP-06-3178, *Waste Isolation Pilot Plant Remote Handled (RH) Technical  
| Safety Requirements*
- WP 12-9, WIPP Emergency Management Program
- WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description

### REFERENCED DOCUMENTS

- 10 *Code of Federal Regulations* (CFR) Part 835, "Occupational Radiological Protection"
- 29 CFR Part 1904, "Recording and Reporting Occupational Injuries and Illnesses"
- 29 CFR Part 1910, "Occupational Safety and Health Standards"
- 40 CFR Part 302, "Designation, Reportable Quantities, and Notification"
- 40 CFR Part 355, "Emergency Planning and Notification"
- 49 CFR §171.15, "Immediate Notice of Certain Hazardous Materials Incidents"

- DOE Order 151.1C, *Comprehensive Emergency Management System*
- DOE Order 225.1A, *Accident Investigations*
- DOE Order 5400.5, *Radiation Protection of the Public and the Environment*
- DOE G 231.1-1, *Occurrence Reporting and Performance Analysis Guide*
- DOE-STD-1098-99, *DOE Standard Radiological Control*
- WP 12-ER3906, *Categorization and Classification of Operational Emergencies*
- WP 13-QA3016, *Root Cause Analysis*
- WP 15-MD3102, *Event Investigation*

## PERFORMANCE

### 1.0 DISCOVERY OF OCCURRENCE

#### 1.1 FSM, review the event for possible classification as an Operational Emergency per the requirements of WP 12-ER3906.<sup>3</sup>

If the event is classified as an Operational Emergency, the FSM will inform the FM/FMD. The FM/FMD shall then prepare a Notification Report and submit it before the close of the next working day from the time of categorization (not to exceed 80 hours).

#### 1.2 FM/FMD, if the event is not categorized as an Operational Emergency in accordance with WP 12-ER3906, review the event for possible categorization as a Significance Category 1, R, 2, 3, or 4 Occurrence in accordance with Attachment 1, Categorization of Reportable Occurrence by Group. Refer to Attachment 2, Occurrence Reporting Model, for specific information related to notifications and timeliness for each possible classification category.

If the Significance Category is not clear or the occurrence exceeds the threshold of more than one criterion, the FM/FMD shall categorize the occurrence at the higher level being considered. The occurrence categorization shall either be elevated, maintained, or lowered as information is made available. Any changes in categorization shall be documented in an Update Report in accordance with Section 3.0.

#### 1.3 FM/FMD, if the event falls below the reporting thresholds established by this procedure, inform the Facility Representative, the Price Anderson Amendments Act (PAAA) Coordinator, and the Occurrence Reporting Coordinator (ORC), by the close of the next working day or within 80 hours of the event.

- 1.4 FM/FMD, if the event falls below the reporting thresholds required by this procedure, notify the Responsible Manager (RM) based on the nature of the occurrence as soon as practical following categorization. The RM will review the event, and at their discretion, initiate an internal investigation in accordance with procedure WP 15-MD3102.
- 1.5 FM/FMD, notify the Facility Representative of event categorization as soon as practical after the Significance Category has been determined. Additionally, all Significance Category 1 items and those specific Significance Category 2, 3, and 4 items designated by an asterisk (see Attachment 1) require prompt (within two hours of categorization) notification to the DOE Headquarters (HQ) Emergency Operations Center. That DOE notification is made by e-mail using Attachment 3, Prompt Notification Form, as guidance. A follow-up phone call is required to ensure receipt of the report and to clarify any areas that may be questioned by DOE HQ personnel.
- 1.6 FM/FMD, after the occurrence, immediately initiate the collection of information pertaining to the event with the assistance of the FSM and initiate an investigation per the requirements of WP 15-MD3102.

The FM/FMD shall consider a graded approach when determining the level of effort required to investigate the cause of an occurrence. Refer to Attachment 2 for guidance in this graded approach.

## 2.0 PREPARATION OF NOTIFICATION REPORT

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### NOTE

Occurrence reports not submitted within the time lines established in Attachment 2 should include an explanation for the deviation.

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- 2.1 FM/FMD, prepare a notification report using the ORPS (Occurrence Reporting and Processing System) PC software program and the guidance in DOE G 231.1-1.
- 2.2 FMD, obtain approval of the Operations Manager or designee, and DOE Facility Representatives or designee, prior to uploading the Notification Report to the ORPS database.
- The approvals will be documented by signing the ORPS-generated report or by email. If the DOE Facility Representative does not respond within 24 hours, the FMD may proceed.
- 2.3 FM/FMD, provide the approval documentation to the ORC for filing.

- 2.4 ORC, provide a copy of the report to the responsible manager, the PAAA Coordinator, and other organization managers who may require knowledge of the reported event (e.g., Safety and Health Manager for items with a potential safety or health issue).
- 2.5 ORC, when the notification report has been filed for any event categorized as Significance Category 3 or higher, work through the Commitment Tracking System (CTS) Coordinator to enter a CTS item prompting the FMD to submit a final or update report within 45 days. (See the Note at Section 4.0 of this procedure.)

### 3.0 PREPARATION OF AN UPDATE REPORT

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#### **NOTE**

Any changes in categorization shall be documented in an Update Report and submitted before the close of the next working day from the time of recategorization (not to exceed 80 hours). A justification for the new categorization shall be included in the report.

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- 3.1 FM/FMD, submit an Update Report into ORPS if there is any significant and new information about the occurrence, to include the status of the investigation.
- 3.2 FM/FMD, prepare an update report using the ORPS PC software program and the guidance in DOE G 231.1-1.
- 3.3 FM/FMD, obtain the approval of the Operations Manager or designee, and DOE Facility Representative or designee, prior to uploading the Update Report to the ORPS database.  
  
The approvals will be documented by signing the ORPS generated report or by email. If the DOE Facility Representative does not respond within 24 hours, the FMD may proceed.
- 3.4 FM/FMD, provide the approval documentation to the ORC for filing.
- 3.5 ORC, provide a copy of the update report per Step 2.4.

#### 4.0 PREPARATION OF FINAL REPORT

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##### **NOTE**

A final Occurrence Report shall be prepared as soon as practical, but within 45 calendar days of categorization of the occurrence. If the required analysis cannot be completed within 45 calendar days after categorization, an Update Report shall be submitted within the 45 days. The Update Report shall explain the delay and provide an estimated date for submittal of the Final Report.

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4.1 FM/FMD, prepare the Final Report when the causal factors of the occurrence have been determined, corrective actions determined with target completion dates identified, and lessons learned identified as specified in the Occurrence Reporting Model.

4.2 FM/FMD, prepare a final report using the ORPS PC software program and the guidance in DOE G 231.1-1.

4.3 FM/FMD, obtain the approval of the Operations Manager or designee, and DOE Facility Representative or designee, prior to uploading the Final Occurrence Report to the ORPS database.

The approvals will be documented by signing the ORPS-generated report or by email. If the DOE Facility Representative does not respond within 24 hours, the FMD may proceed.

4.4 FM/FMD, provide the approval documentation to the ORC for filing.

4.5 ORC, provide a copy of the update report per Step 2.4.

#### 5.0 FINAL REPORTS NOT APPROVED

5.1 If the Final Report is not approved by the Facility Representative or the Program Manager, the report shall be returned to the FM/FMD with an explanation of the disapproval.

The revised Final Report shall be resubmitted within 21 calendar days of disapproval. If it can not be resubmitted within this time, an Update Report shall be submitted within the 21 calendar days explaining the delay and providing an estimated date for resubmittal of the Final Report.

## Attachment 1 - Categorization of Reportable Occurrence by Group <sup>4</sup>

### GROUP 1 OPERATIONAL EMERGENCIES

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*OE	An event that the FSM has categorized as an Operational Emergency (OE) not needing further classification in accordance with procedure WP 12-ER3906.
(2)	*OE	An event that the FSM has categorized as an Alert in accordance with procedure WP 12-ER3906.
(3)	*OE	An event that the FSM has categorized as a Site Area Emergency in accordance with procedure WP 12-ER3906.
(4)	*OE	An event that the FSM has categorized as a General Emergency in accordance with procedure WP 12-ER3906.

### GROUP 2 PERSONNEL SAFETY

#### Subgroup A - Occupational Illness/Injuries

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Any occurrence due to WIPP operations resulting in a fatality or terminal injury or illness.
(2)	*1	Any single occurrence requiring in-patient hospitalization of 3 or more personnel.
(3)	2	Any single occurrence resulting in 3 or more personnel having Days Away, Restricted or Transferred (DART) cases per 29 CFR §1904.7.
(4)	*2	Personnel exposure to chemical, biological or physical hazards above limits established by the Occupational Safety and Health Administration (refer to 29 CFR Part 1910) or American Conference of Governmental Industrial Hygienists, whichever is lower, and that requires the administration of medical treatment beyond simple first aid on the same day as the exposure.
(5)	3	Personnel exposure to chemical, biological or physical hazards above limits established by the Occupational Safety and Health Administration (refer to 29 CFR Part 1910) or American Conference of Governmental Industrial Hygienists.

### Attachment 1 - Categorization of Reportable Occurrence by Group <sup>4</sup>

- (6) 3 Any single occurrence resulting in a serious occupational injury. A serious occupational injury is an occupational injury that:
- (a) Requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received;
  - (b) Results in a fracture of any bone (except simple fractures of fingers, toes, nose, or a minor chipped tooth);
  - (c) Causes severe hemorrhages or severe damage to nerves, muscles, or tendons;
  - (d) Involves any internal organ; or
  - (e) Causes second or third-degree burns affecting more than five percent of the body surface.

#### Subgroup B - Fires/Explosions

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Any unplanned fire or explosion within primary confinement/containment boundaries for nuclear or hazardous material within a facility. At WIPP, the primary CH waste confinement/containment boundary is the unit (drum, TDOP, SWB, etc.) which is directly transported to the underground facility for disposal.  <b>Note:</b> For possible categorization of a fire in accordance with items (2) and (3) below, "nuclear facility" is any area used in the waste handling and storage/disposal process, including the underground (U/G) Ventilation Exhaust System. The "non-nuclear facility" is defined as all other areas of the site.
(2)	*2	Any unplanned fire or explosion in a nuclear facility not reported above that activates a fire suppression system (e.g., halon discharge, sprinkler heads activating) or disrupts waste handling operations for more than four hours. Fire suppression systems on mobile equipment are excluded from reporting under this criterion.
(3)	*3	Any unplanned fire or explosion in a non-nuclear facility that activates a fire suppression system or takes longer than 10 minutes to extinguish following the arrival of fire protection personnel. Fire suppression systems on mobile equipment are excluded from reporting under this criterion.
(4)	*4	Any wild land fire that has the potential to threaten the WIPP facility.

## Attachment 1 - Categorization of Reportable Occurrence by Group <sup>4</sup>

### Subgroup C - Hazardous Energy Control

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or disturbance of a previously unknown or mislocated hazardous energy source (e.g., electrical power circuit, pressurized gas) resulting in a person contacting (burn, shock, etc.) hazardous energy.
(2)	3	Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or other site activity that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks or other precautionary investigations made before work is authorized to begin.

### GROUP 3 NUCLEAR SAFETY BASIS

#### Subgroup A - Technical Safety Requirement Violations

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Not Applicable. WIPP has no defined Technical Safety Requirement (TSR) Safety Limits.
(2)	2	Any violation or noncompliance of a WIPP TSR, Limiting Condition for Operation (LCO), Administrative Control (AC), or Surveillance Requirement (SR).  Exception: An event consisting solely of a surveillance test performed after the prescribed surveillance period, and in which the equipment was found to be capable of performing its specified safety function. (See separate criterion for late surveillance tests in item 3A[4] below.)
(3)	3	Any violation or noncompliance of a hazard control specified in the WIPP Documented Safety Analysis or a DOE-issued Safety Evaluation Report, that is not addressed by Criteria 3A(1) or 3A(2).

#### Exceptions:

- (a) An event consisting solely of a violation of a safety management program (e.g., quality assurance, personnel training) cited in the Documented Safety Analysis.

### Attachment 1 - Categorization of Reportable Occurrence by Group <sup>4</sup>

- (b) An event consisting solely of a surveillance test performed after the prescribed surveillance period, and in which the equipment was found to be capable of performing its specified safety function.
- (4) 4 An event consisting solely of a surveillance test performed after the prescribed surveillance period, and in which the equipment was found to be capable of performing its specified safety function.

#### Subgroup B - Documented Safety Analysis Inadequacies

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Determination of a positive Unreviewed Safety Question (USQ) that reveals a currently existing inadequacy in the Documented Safety Analysis.
(2)	3	Declaration of a potential inadequacy of the Documented Safety Analysis (a potential positive USQ).

#### Subgroup C - Nuclear Criticality Safety

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	There is a loss of multiple nuclear criticality controls such that no valid controls are available to prevent a criticality accident. WIPP criticality controls consist of documented Waste Acceptance Criteria and disposal configuration requirements.
(2)	2	There is a loss of one or more nuclear criticality controls such that an accidental criticality is possible from the loss of an additional process-condition control, where processes include operation, transport, and storage of fissionable materials.

### GROUP 4 FACILITY STATUS

#### Subgroup A - Safety Structure/System/Component Degradation

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	3	Performance degradation of any Safety Class or Safety Significant Structure, System, or Component (SSC) that prevents satisfactory performance of its design function when it is required to be operable.
(2)	4	Performance degradation of any Safety Class SSC when not required to be operable.

## Attachment 1 - Categorization of Reportable Occurrence by Group <sup>4</sup>

### Subgroup B - Operations

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*2	A Stop Work Order issued by the DOE Carlsbad Field Office (CBFO).
(2)	2	Actuation of a Safety Class SCC, or its alarms, resulting from an actual unsafe condition. Spurious alarms should not be reported.
(3)	3	Actuation of a Safety Significant SSC, or its alarms, resulting from an actual unsafe condition. Spurious alarms should not be reported.
(4)	3	Any facility evacuation, not including a precautionary evacuation, in response to an actual occurrence.
(5)	4	A facility operational event caused by deviating from a written procedure or using an inadequate procedure resulting in an adverse effect on safety, such as termination or interruption of scheduled waste handling activities for greater than four hours, or inadvertent release of hazardous material from its engineered containment.
(6)	*4	Waste handling operations shutdown for greater than four hours as directed by management for safety reasons.
(7)	4	A facility or site stand-down resulting from safety reasons reportable as an occurrence or occurrences. (Note: This is a secondary Nature of Occurrence code, not a separate occurrence report.)
(8)	4	Any event or condition that would prevent immediate facility or off-site emergency response capabilities.

### Subgroup C - Suspect/Counterfeit Item or Material

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	3	Discovery of any suspect/counterfeit item or material found in a Safety Class or Safety Significant SSC.
(2)	4	Discovery of any suspect/counterfeit item or material other than office supplies, office equipment, or household products.
(3)	4	Discovery of any defective item or material, other than a suspect/counterfeit item or material, in any application whose failure could result in a loss of safety function, or present a hazard to public or worker health and safety.

## Attachment 1 - Categorization of Reportable Occurrence by Group <sup>4</sup>

A defective item or material is any item or material that does not meet the commercial standard or procurement requirements as defined by catalogues, proposals, procurement specifications, design specifications, testing requirements, contracts or the like. It does not include parts or services that fail or are otherwise found to be inadequate because of random failures or errors within the accepted reliability level.

### GROUP 5 ENVIRONMENTAL

Note: The Site Environmental Compliance Manager will provide necessary information to the FM/FMD and assist in making categorizations under Group 5.

#### Subgroup A - Releases

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*2	Any release (on-site or off-site) of a hazardous substance, material, waste, or radionuclide from a DOE facility, that is above permitted levels and exceeds one times and no greater than five times reportable quantities specified in 40 CFR Part 302 or 40 CFR Part 355.
(2)	2	Any discharge that exceeds 100 gallons of oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.
(3)	4	Any release (on-site or off-site) of a hazardous substance, material, waste, or radionuclide from a DOE facility that is above permitted levels and exceeds 50 percent and no greater than one times the reportable quantities specified in 40 CFR Part 302 or 40 CFR Part 355.
(4)	4	Any release (on-site or off-site) of a hazardous substance, material, waste, or radionuclide from a DOE facility that must be reported to outside agencies in a format other than routine periodic reports.

Note: Oil spills of less than 10 gallons and with negligible environmental impact need not be reported in ORPS.

## Attachment 1 - Categorization of Reportable Occurrence by Group <sup>4</sup>

### Subgroup B - Ecological and Cultural Resources

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Any occurrence causing significant impact to any ecological resource for which the DOE is a trustee (i.e., destruction of a critical habitat, damage to a historic/archeological site, damage to wetlands, etc.).

### GROUP 6 CONTAMINATION/RADIATION CONTROL

Note: The Radiological Control Manager will provide necessary information to the FM/FMD and assist in making categorizations under Group 6.

#### Subgroup A - Loss of Control of Radioactive Materials

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Identification of radioactive material off-site due to WIPP activities that exceeds applicable DOE-approved authorized limits (pursuant to DOE Order 5400.5). This applies to items/areas consisting of radioactive material. This does not apply to items with surface radioactive contamination. See Criterion 6B(1) below for identification of items with surface radioactive contamination.
(2)	2	Loss of radioactive material that exceeds 100 times the quantities specified in 10 CFR Part 835, Appendix E (excluding consumer products such as smoke detectors), or loss of accountability of such material for more than 24 hours. The 24-hour period begins when the loss of accountability is discovered.
(3)	3	Loss of radioactive material that exceeds 1 times and no greater than 100 times the quantities specified in 10 CFR Part 835, Appendix E (excluding consumer products such as smoke detectors), or loss of accountability of such material for more than 24 hours. The 24-hour period begins when the loss of accountability is discovered.

#### Subgroup B - Spread of Radioactive Contamination

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Identification of radioactive contamination off-site, due to WIPP activities, that exceeds applicable DOE-approved authorized limits (pursuant to DOE Order 5400.5) or, if there are none, the values found in 10 CFR Part 835, Appendix D.

[Attachment 1 - Categorization of Reportable Occurrence by Group](#) <sup>4</sup>

Note: All releases of property containing or potentially containing residual radioactivity are subject to requirements in DOE Order 5400.5. Compliance with 10 CFR Part 835, Appendix D, values does not necessarily satisfy those requirements.

- (2) 2 Identification of on-site radioactive contamination that is greater than 100 times the total contamination values in 10 CFR Part 835 Appendix D and that is found outside of the following locations: Contamination Areas, High Contamination Areas, Airborne Radioactivity Areas, Radiological Buffer Areas, and certain areas that are controlled in accordance with 10 CFR § 835.1102(c). For tritium, the reporting threshold is 100 times the removable contamination values in 10 CFR Part 835, Appendix D.

This criterion does not apply to contamination from residual radioactive material meeting applicable DOE-approved authorized limits. The exclusion from reporting contamination in a Radiological Buffer Area applies only when the area has been established next to a Contamination Area, High Contamination Area or Airborne Radioactivity Area and its exit requirements have adopted guidance from Article 338.2 of DOE-STD-1098-99.

- (3) 3 This criterion is identical to criterion 6B(2) above, except the identified radioactive contamination is greater than 10 times, but less than 100 times the CFR values.
- (4) 4 This item is not applicable to WIPP. In the DOE Manual, this item relates to legacy contamination. Legacy radioactive contamination is defined as resulting from historical operations that are unrelated to current activities. WIPP can not have Legacy Contamination in accordance with that definition.

**Subgroup C - Radiation Exposure**

Note: Unless specified otherwise, all doses specified in the following requirements are calculated as the total effective dose equivalent (TEDE), which is the sum of the committed effective dose equivalent (CEDE) due to radionuclides taken into the body (internal exposure) and the effective dose equivalent due to external exposure.

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Determination of a dose that exceeds the limits specified in 10 CFR Part 835, Subpart C, Occupational Radiation Protection, or DOE Order 5400.5, Chapter II, item 1 (100 mrem for off-site exposures to a member of the public).

### Attachment 1 - Categorization of Reportable Occurrence by Group <sup>4</sup>

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|-----|---|--|
| (2) | 2 | Any unmonitored exposure that exceeds the values for providing personal dosimeters and bioassays as stated in 10 CFR §835.402(a) or 10 CFR §835.40(c). |
| (3) | 3 | Any single occupational exposure that exceeds an expected exposure by 500 mrem CEDE or 100 mrem effective dose equivalent due to external exposure.    |
| (4) | 3 | Determination of a dose that exceeds 10 mrem, for off-site exposures to a member of the public from air pathways only.                                 |

### Subgroup D - Personnel Contamination

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*2	Any occurrence requiring off-site medical assistance for contaminated personnel, including transporting a person to an off-site medical facility or bringing off-site medical personnel on-site to perform treatment or decontamination.
(2)	2	Identification of personnel or clothing contamination off-site due to WIPP operations that exceeds the values for total contamination found in 10 CFR Part 835, Appendix D. For tritium, use the values for removable contamination found in 10 CFR Part 835, Appendix D.
(3)	4	Any on-site contamination of personnel or clothing (excluding WIPP-provided protective clothing) that exceeds 10 times the values for total contamination identified in 10 CFR Part 835, Appendix D. The contamination level shall be based on direct measurement and not averaged over any area. This criterion does not apply to tritium.

### GROUP 7 NUCLEAR EXPLOSIVE SAFETY

Group 7 is not applicable. WIPP has no nuclear explosive devices or nuclear explosive-like assemblies.

## Attachment 1 - Categorization of Reportable Occurrence by Group <sup>4</sup>

### GROUP 8 TRANSPORTATION

Note: An event for which another DOE facility has ORPS reporting responsibility will not require a WIPP-initiated report under this group.

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	<p>Any off-site transportation incident involving hazardous materials that would require immediate notice pursuant to 49 CFR §171.15, namely:</p> <ul style="list-style-type: none"> <li>(a) As a direct result of hazardous materials: <ul style="list-style-type: none"> <li>(i) A person is killed;</li> <li>(ii) A person receives injuries requiring hospitalization;</li> <li>(iii) Estimated property damage exceeds \$50,000;</li> <li>(iv) An evacuation of the general public occurs lasting one hour or more;</li> <li>(v) One or more transportation arteries or facilities are closed or shut down for one hour or more; or</li> </ul> </li> <li>(b) Fire, breakage, spillage, or suspected radioactive contamination occurs involving shipment of radioactive materials, or</li> <li>(c) Fire, breakage, spillage, or suspected contamination occurs involving shipment of infectious substances (etiologic agents), or</li> <li>(d) There has been a release of a marine pollutant in a quantity exceeding 450 liters (119 gallons) for liquids or 400 kilograms (882 pounds) for solids.</li> <li>(e) The operational flight pattern or routine of an aircraft is altered.</li> </ul>
(2)	3	Any off-site transport of hazardous material, including radioactive material, whose quantity or nature is different than intended, such that the receiving organization's operations were impacted/disrupted, or the transport resulted in the initiation of corrective actions by the originating organization. Simple manifest discrepancies that are readily resolved are not included in this criterion.
(3)	4	Any on-site transport of hazardous material, including radioactive material, whose quantity or nature is different than intended, such that the receiving

[Attachment 1 - Categorization of Reportable Occurrence by Group](#) <sup>4</sup>

organization's operations were impacted/disrupted, or the transport resulted in the initiation of corrective actions by the originating organization.

- (4) 4 Any packaging or transportation activity involving the on-site release of radioactive materials, etiologic agents, hazardous substances, hazardous waste, or marine pollutants.

**GROUP 9 NONCOMPLIANCE NOTIFICATIONS**

Note: MSHA CAVs issued as a result of an assist visit are not reportable under this group.

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	3	Any enforcement action (other than associated with the PAAA involving ten or more cited violations, and/or an assessed fine of \$10,000 or greater).
(2)	4	Any written notification from an outside regulatory agency that a site/facility is considered to be in noncompliance with a schedule or requirement (e.g., Notice of Violation, Notice of Intent to Sue, Notice of Noncompliance, Warning Letter, Finding of Violation, Finding of Alleged Violation, Administrative Order, or a similar type of notification or enforcement action).

**GROUP 10 MANAGEMENT CONCERNS / ISSUES**

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Any event resulting in the initiation of a Type A or B investigation as categorized by DOE O 225.1A, <i>Accident Investigation</i> .
(2)	(1-4)	Any event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manager to be of safety significance or of concern to other facilities or activities in the DOE complex.

One of the four significance categories should be assigned based on the potential consequences of the event and the corrective actions taken.

[Attachment 1 - Categorization of Reportable Occurrence by Group](#)<sup>4</sup>

- | (3) (1-3) A near miss, where no barrier or only one barrier prevented an event from having a reportable consequence.
  
- | One of the three significance categories should be assigned to the near miss, based on the potential consequences of the event and the corrective actions taken.
  
- (4) \*4 Any occurrence that may result in a significant concern by an affected state, tribal, local officials, press, or general population; that could damage the credibility of the DOE; or that may result in inquiries to HQ.
  
- (5) \*4 Any occurrence of such significant immediate interest to off-site personnel and organizations that it warrants prompt notification to the DOE HQ Emergency Operations Center, and which is not already designated elsewhere in this set of reporting criteria to have prompt verbal notification [denoted by having an asterisk (\*) next to the Significance Category].

Attachment 2 - Occurrence Reporting Model

OCCURRENCE REPORTING MODEL

Classification	Timelines <sup>1</sup>	Prompt Notification	Investigation	Problem Analysis	Corrective Actions	Report Approvals	Corrective Action Closures	Corrective Action Effectiveness	Lessons Learned <sup>3</sup>
Operational Emergencies (defined by WP 12-ER3906)	CAT: ASAP PN: NLT 15 min if further classified; NLT 30 min if not further classified WN: COB next business day not to exceed 80 hrs UR: As needed Final Report: 45 days	DOE Facility Representative & DOE Headquarters Operations Center	Team with Trained Investigator Lead. DOE Consider Accident Investigation.	Root Cause Determined	Remedy Problem, Prevent Recurrence, & Preclude Similar Problems	DOE Facility Representative & DOE Program Manager	Contractor Document & Independently Verify.	Contractor Assess Effectiveness to Prevent Recurrence.	Enter into DOE LL Database & Coverage in OE Summary.
Significance Category 1 Reportable Occurrence	Cat: NLT 2 hrs PN: NLT 2 hrs WN: COB next business day not to exceed 80 hrs UR: As needed Final Report: 45 days	DOE Facility Representative & DOE Headquarters Operations Center	Team with Trained Investigator  DOE Consider Accident Investigation.	Root Cause Determined	Remedy Problem, Prevent Recurrence, & Preclude Similar Problems	DOE Facility Representative & DOE Program Manager	Contractor Document & Independently Verify.	Contractor Assess Effectiveness to Prevent Recurrence.	Enter into DOE LL Database & Coverage in OE Summary.
Significance Category R. Includes Recurring Category 1, 2, 3, and/or 4 Occurrences	Cat: NLT 2 hrs  WN: COB next business day UR: As needed Final Report: 45 days		Trained Investigator	Root Cause Determined	Remedy Problem, Prevent Recurrence, & Preclude Similar Problems	DOE Facility Representative Approval	Contractor Document & Independently Verify.	Contractor Assess Effectiveness to Prevent Recurrence.	Enter into DOE LL Database & Optional Coverage in OE Summary.
Significance Category 2 Reportable Occurrence	Cat: NLT 2 hrs PN: NLT 2 hrs WN: COB next business day UR: As needed Final Report: 45 days	DOE Facility Representative  (DOE HQ at Facility Representative Discretion) <sup>2</sup>	Trained Investigator	Root Cause Determined	Remedy Problem & Prevent Recurrence	DOE Facility Representative Approval	Document & Verify by Sampling.	Optional	Enter into DOE LL Database & Optional Coverage in OE Summary.

Attachment 2 - Occurrence Reporting Model

Classification	Timelines <sup>1</sup>	Prompt Notification	Investigation	Problem Analysis	Corrective Actions	Report Approvals	Corrective Action Closures	Corrective Action Effectiveness	Lessons Learned <sup>3</sup>
Significance Category 3 Reportable Occurrence	Cat: NLT 2 hrs PN: NLT 2 hrs WN: NLT 2 business days Final Report: 45 days	DOE Facility Representative  (DOE HQ) <sup>2</sup>	Critique/Fact Finding	Apparent Cause Determined or Root Cause Required for Near Miss	Remedy Problem	Contractor Approval	Document (Verification Optional).	Optional	Per Site Specific Process
Significance Category 4 Reportable Occurrence	Cat: NLT 2 hrs PN: NLT 2 hrs Short Form Report: NLT 2 business days	DOE Facility Representative  (DOE HQ) <sup>2</sup>	No reporting of causal analysis or lessons learned in ORPS. The reporting of corrective actions is optional.  Reportable and nonreportable occurrences are managed per WIPP-specific corrective actions procedures.						

<sup>1</sup> Cat: Categorization Time from Discovery Date and Time  
 PN: Prompt Notification from Categorization Date and Time  
 WN: Written Notification from Categorization Date and Time  
 UR: Update Report  
 Final Report: Final Report from Categorization Date and Time  
 NLT: No Later Than  
 COB: Close of Business

<sup>2</sup> Specific Significance Category 2, 3, and 4 occurrences (identified with an asterisk in the reporting criteria listed in Attachment 1) also require Verbal Notification to the DOE HQ EOC.

<sup>3</sup> LL: Lessons Learned  
 OE: Operating Experience

## Attachment 3 - Prompt Notification Form

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**NOTE**

Certain Occurrences identified by an asterisk (\*) in the reporting criteria in Attachment 1 and the "Prompt Notification" section of Attachment 2 require prompt notification to the DOE HQ EOC. A written report shall be made using E-mail containing the information listed below. Within a few minutes after sending the E-mail, call the EOC on the phone to confirm receipt and answer any questions by EOC personnel.

E-mail: **doehqeoc@oem.doe.gov**

Phone: (primary) **202-586-8100**

Phone: (alternate) **202-586-8500**

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1. Name of Facility: (WIPP)
2. Name and telephone number of FMD or contact person:
3. Occurrence Reporting Criterion from Attachment 1:  
(e.g., 2B[2] for a fire in the WHB)
4. Significance Category from Attachment 1:  
(e.g., "2" for a fire in the WHB)
5. Location and description of event:  
(Systems, Building, Equipment, etc.)
6. Date and time of discovery:
7. Damage and casualties:
8. Impact of the event on other activities and operations:
9. Protective actions taken or recommended:
10. Weather conditions at the scene (if significant to event initiation or recovery):
11. Level of media interest in the event:
12. Other notifications made (law enforcement, regulatory organizations, emergency responders, etc.):

## Attachment 4 - Reporting Radiological Occurrences

Reporting Radiological Contamination Occurrences

**The information listed below provides guidance for completing an Occurrence Report that has been categorized under Group 6 of Attachment 1.**

Personnel Contamination Occurrences

<b>Description of Contamination Occurrence</b>	
<b>Type of Information</b>	<b>Suggested Statements</b>
1. Number and types of individuals	a. Contamination event involves single individual. b. Contamination event involves _____ individuals. c. Type of individual: radiation worker, general employee, member of the public, minor, visiting scientist or researcher, visiting DOE or other federal employee.
2. Type of contamination event	a. Only personal clothing of worker contaminated. b. Skin contamination involved. c. Potential internal contamination from inhalation/ingestion, further assessment being performed. d. Facial/nasal contamination, possible internal contamination. e. Internal contamination confirmed by bioassay. f. Radionuclide(s) involved if known. State general category (i.e., beta and/or gamma, alpha, etc.) if unknown.
3. Extent of contamination	a. Appropriate description of clothing (i.e., pants, shoes, shirt, etc.). b. Confined to limited area of body (i.e., tip of right index finger, hot particle on left shoulder, palm of right hand, etc.). c. If not confined, state area of body involved. d. Maximum detected activity: ____ dpm/100 cm <sup>2</sup> .
4. Location (area) where contamination occurred and worker activity	a. Occurred inside of radiological area (e.g., Contamination Area, High Contamination Area, Airborne Radioactivity Area). b. Occurred outside of radiological area, but on-site or within the facility. c. State worker activity being performed at time of occurrence.
5. Significance of occurrence relative to operations	a. Isolated event confined to room/facility/building/area. b. Event resulting from equipment or protective clothing malfunction. c. Event resulting from procedural violation or deficiency. d. Recurrent event.
<b>Immediate Action in Response to Contamination Occurrence</b>	
<b>Type of Information</b>	<b>Suggested Statements</b>
1. Status of decontamination	a. Personal clothing retained. b. Individual(s) successfully decontaminated below detectable levels. c. Individual(s) decontaminated below reporting criteria; however, residual contamination persists. d. Medical assistance required.

Attachment 4 - Reporting Radiological Occurrences

<b>Impact on Worker Health Due to Contamination Occurrence</b>	
<b>Type of Information</b>	<b>Suggested Statements</b>
1. Relative health consequence	<ul style="list-style-type: none"> <li>a. Less than/Approaching ___% of the annual deep or shallow DOE skin, lens of the eye, extremity, and/or committed effective dose limit (for any internal intake), as applicable. (Do not provide comparison to site or facility administrative control level.) No health consequence to individual(s).</li> <li>b. Greater than applicable DOE limit, potential health consequence being evaluated. Evaluation to be initiated pursuant to DOE Order 225.1.</li> <li>c. Concurrent injury requiring medical assistance on-site/off-site. State option a or b, as applicable, and nature of injury.</li> <li>d. No concurrent injury. State option a or b, as applicable. Indicate whether decontamination required on-site/off-site medical assistance.</li> </ul>

Area or Facility Contamination Occurrences

<b>Description of Contamination Occurrence</b>	
<b>Type of Information</b>	<b>Suggested Statements</b>
1. Location of occurrence	<ul style="list-style-type: none"> <li>a. Room.</li> <li>b. Building.</li> <li>c. Facility.</li> <li>d. Area.</li> <li>e. Site.</li> </ul>
2. Type of contamination	<ul style="list-style-type: none"> <li>a. Spill or loss of containment.</li> <li>b. Airborne release.</li> <li>c. Fixed/loose surface contamination.</li> <li>d. Radionuclide(s) involved if known. State general category (i.e., beta and/or gamma, alpha, etc.) if unknown.</li> </ul>
3. Extent of contamination	<ul style="list-style-type: none"> <li>a. Total area involved is ___ft<sup>2</sup>.</li> <li>b. Confined within room/building/facility/area/site.</li> <li>c. Release beyond or containment within above locations, as applicable.</li> </ul>
4. Impact on operations	<ul style="list-style-type: none"> <li>a. Normal operation not impacted.</li> <li>b. Designated equipment removed from service.</li> <li>c. Personnel access restricted until cleanup is completed.</li> </ul>
<b>Immediate Action in Response to Contamination Occurrence</b>	
<b>Type of Information</b>	<b>Suggested Statements</b>
1. Status of control and decontamination	<ul style="list-style-type: none"> <li>a. Affected area controlled and/or isolated to prevent spread of contamination.</li> <li>b. Decontamination initiated or completed.</li> </ul>

## Attachment 4 - Reporting Radiological Occurrences

<b>Impact on Worker Health Due to Contamination Occurrence</b>	
<b>Type of Information</b>	<b>Suggested Statements</b>
1. Status of control	<ul style="list-style-type: none"> <li>a. No contamination of individual(s) on-site.</li> <li>b. No potential for further spread of contamination.</li> <li>c. Affected area decontaminated.</li> </ul>
2. Significance relative to applicable limits	<ul style="list-style-type: none"> <li>a. Maximum contamination levels ___ dpm/100 cm<sup>2</sup> and units of curie per 100 cm<sup>2</sup>.</li> <li>b. Comparison with RadCon Manual Table 2-2 limits. Evaluation to be initiated pursuant to DOE Order 225.1 dependent upon level by which Table 2-2 is exceeded.</li> <li>c. General area dose rate as measured at 1 meter above contaminated surface.</li> <li>d. If worker involved, relate dose rate to actual dose received based on occupancy time spent in the contaminated area.</li> <li>e. No health consequence to worker if less than applicable dose limit. If worker contaminated, implement responses for personnel contamination provided above.</li> </ul>

## Attachment 5 - Cause Codes

The causal factors of occurrences are classified into seven broad categories and various subcategories. The seven categories of causes and their associated subcategories are as follows:

Note: Level A nodes are **bold and underlined**.  
Level B nodes are ALL CAPS.  
Level C nodes are in "sentence case"  
LTA = Less Than Adequate

### **A1 Design or Engineering Problem**

- B1 DESIGN INPUT LTA
  - C01 Design input cannot be met
  - C02 Design input obsolete
  - C03 Design input not correct
  - C04 Necessary design input not available
  
- B2 DESIGN OUTPUT LTA
  - C01 Design output scope LTA
  - C02 Design output not clear
  - C03 Design output not correct
  - C04 Inconsistent design output
  - C05 Design input not addressed in design output
  - C06 Drawing, specification, or data error
  - C07 Error in equipment or material selection
  - C08 Errors not detectable
  - C09 Errors not recoverable
  
- B3 DESIGN OR DOCUMENTATION LTA
  - C01 Design or documentation not complete
  - C02 Design or documentation not up-to-date
  - C03 Design or documentation not controlled
  
- B4 DESIGN OR INSTALLATION VERIFICATION LTA
  - C01 Independent review of design or documentation LTA
  - C02 Testing of design or installation LTA
  - C03 Independent inspection of design or installation LTA
  - C04 Acceptance of design or installation LTA
  
- B5 OPERABILITY OF DESIGN OR ENVIRONMENT LTA
  - C01 Ergonomics LTA
  - C02 Physical environment LTA
  - C03 Natural environment LTA

## Attachment 5 - Cause Codes

**A2 Equipment / Material Problem**

- B1 CALIBRATION FOR INSTRUMENTS LTA
  - C01 Calibration LTA
  - C02 Equipment found outside acceptance criteria
  
- B2 PERIODIC OR CORRECTIVE MAINTENANCE LTA
  - C01 Preventive maintenance LTA
  - C02 Predictive maintenance LTA
  - C03 Corrective maintenance LTA
  - C04 Equipment history LTA
  
- B3 INSPECTION OR TESTING LTA
  - C01 Start-up testing LTA
  - C02 Inspection or testing LTA
  - C03 Post-maintenance or post-modification testing LTA
  
- B4 MATERIAL CONTROL LTA
  - C01 Material handling LTA
  - C02 Material storage LTA
  - C03 Material packaging LTA
  - C04 Material shipping LTA
  - C05 Shelf life exceeded
  - C06 Unauthorized material substitution
  - C07 Marking or labeling LTA
  
- B5 PROCUREMENT CONTROL LTA
  - C01 Control of changes to procurement specifications or purchase order LTA
  - C02 Fabricated item did not meet requirements
  - C03 Incorrect item received
  - C04 Product acceptance requirements LTA
  
- B6 DEFECTIVE, FAILED OR CONTAMINATED
  - C01 Defective or failed part
  - C02 Defective or failed material
  - C03 Defective weld, braze or soldering joint
  - C04 End of life failure
  - C05 Electrical or instrument noise
  - C06 Contaminant

## Attachment 5 - Cause Codes

**A3 Human Performance LTA**

- B1 SKILL BASED ERROR
  - C01 Check of work was LTA
  - C02 Step was omitted due to distraction
  - C03 Incorrect performance due to mental lapse
  - C04 Infrequently performed steps were performed incorrectly
  - C05 Delay in time caused LTA actions
  - C06 Wrong action selected based on similarity with other actions
  - C07 Omission or repeating of steps due to assumptions for completion
  
- B2 RULE BASED ERROR
  - C01 Strong rule incorrectly chosen over other rules
  - C02 Signs to stop were ignored and step performed incorrectly
  - C03 Too much activity was occurring and error made in problem solving
  - C04 Previous success in use of rule reinforced continued use of rule
  - C05 Situation incorrectly identified or represented resulting in wrong rule used
  
- B3 KNOWLEDGE BASED ERROR
  - C01 Attention was given to wrong issues
  - C02 LTA conclusion based on sequencing of facts
  - C03 Individual justified action by focusing on biased evidence
  - C04 LTA review based on assumption that process will not change
  - C05 Incorrect assumption that a correlation existed between two or more facts
  - C06 Individual underestimated the problem by using past events as basis
  
- B4 WORK PRACTICES LTA
  - C01 Individual's capability to perform work LTA (e.g., Sensory or perceptual capabilities LTA, Motor or physical capabilities LTA, Attitude or psychological profile LTA)
  - C02 Deliberate violation

**A4 Management Problem**

- B1 MANAGEMENT METHODS LTA
  - C01 Management policy guidance or expectations not well-defined, understood or enforced
  - C02 Job performance standards not adequately defined
  - C03 Management direction created insufficient awareness of impact of actions on safety or reliability
  - C04 Management follow-up or monitoring of activities did not identify problems
  - C05 Management assessment did not determine causes of previous event or known problem

## Attachment 5 - Cause Codes

- C06 Previous industry or in-house experience was not effectively used to prevent recurrence
  - C07 Responsibility of personnel not well-defined or personnel not held accountable
  - C08 Corrective action responses to a known or repetitive problem was untimely
  - C09 Corrective action for previously identified problem or event was not adequate to prevent recurrence
- B2 RESOURCE MANAGEMENT LTA**
- C01 Too many administrative duties assigned to immediate supervisor
  - C02 Insufficient supervisory resources to provide necessary supervision
  - C03 Insufficient manpower to support identified goal or objective
  - C04 Resources not provided to assure adequate training was provided or maintained
  - C05 Needed resource changes not approved or funded
  - C06 Means not provided to assure procedures or documents or records were of adequate quality and up-to-date
  - C07 Means not provided for assuring adequate availability of appropriate materials or tools
  - C08 Means not provided for assuring adequate equipment quality, reliability, or operability
  - C09 Personnel selection did not assure match of worker motivations or job descriptions
  - C10 Means or method not provided for assuring adequate quality of contract services
- B3 WORK ORGANIZATION AND PLANNING LTA**
- C01 Insufficient time for worker to prepare task
  - C02 Insufficient time allotted for task
  - C03 Duties not well-distributed among personnel
  - C04 Too few workers assigned to task
  - C05 Insufficient number of trained or experienced workers assigned to task
  - C06 Planning not coordinated with inputs from walk downs or task analysis
  - C07 Job scoping did not identify potential task interruptions and/or environmental stress
  - C08 Job scoping did not identify special circumstances and/or conditions
  - C09 Work planning not coordinated with all departments involved in task
  - C10 Problem performing repetitive tasks
  - C11 Inadequate work package preparation
- B4 SUPERVISORY METHODS LTA**
- C01 Tasks and individual accountability not made clear to worker
  - C02 Progress or status of task not adequately tracked
  - C03 Appropriate level of task supervision not determined prior to task
  - C04 Direct supervisory involvement in task interfered with overview role

## Attachment 5 - Cause Codes

- C05 Emphasis on schedule exceeded emphasis on methods or doing a good job
- C06 Job performance and self-checking standards not properly communicated
- C07 Too many concurrent tasks assigned to worker
- C08 Frequent job or task "shuffling"
- C09 Assignment did not consider worker's need to use higher-order skills
- C10 Assignment did not consider worker's previous task
- C11 Assignment did not consider worker's ingrained work patterns
- C12 Contact with personnel too infrequent to detect work habit or attitude changes
- C13 Provided feedback on negative performance but not on positive performance

**B5 CHANGE MANAGEMENT LTA**

- C01 Problem identification did not identify need for change
- C02 Change not implemented in timely manner
- C03 Inadequate vendor support of change
- C04 Risks or consequences associated with change not adequately reviewed or assessed
- C05 System interactions not considered
- C06 Personnel or department interactions not considered
- C07 Effects of change on schedules not adequately addressed
- C08 Change-related training or retraining not performed or not adequate
- C09 Change-related documents not developed or revised
- C10 Change-related equipment not provided or not revised
- C11 Changes not adequately communicated
- C12 Change not identifiable during task
- C13 Accuracy or effectiveness of change not verified or not validated

**A5 Communication LTA****B1 WRITTEN COMMUNICATIONS METHOD PRESENTATION LTA**

- C01 Format deficiencies
- C02 Improper referencing or branching
- C03 Checklist LTA
- C04 Deficiencies in user aids (charts, graphs, etc.)
- C05 Recent changes not made apparent to user
- C06 Instruction step or information in wrong sequence
- C07 Unclear or complex wording or grammar

**B2 WRITTEN COMMUNICATION CONTENT LTA**

- C01 Limit inaccuracies
- C02 Difficult to implement
- C03 Data or computations wrong or incomplete
- C04 Equipment identification LTA

**Attachment 5 - Cause Codes**

- C05 Ambiguous instructions or requirements
- C06 Typographical error
- C07 Facts wrong or requirements not correct
- C08 Incomplete or situation not covered
- C09 Wrong revision used

**B3 WRITTEN COMMUNICATION NOT USED**

- C01 Lack of written communication
- C02 Not available or inconvenient for use

**B4 VERBAL COMMUNICATION LTA**

- C01 Communication between work groups LTA
- C02 Shift communications LTA
- C03 Correct terminology not used
- C04 Verification or repeat back not used
- C05 Information sent but not understood
- C06 Suspected problems not communicated to supervision
- C07 No communication method available

**A6 Training Deficiency****B1 NO TRAINING PROVIDED**

- C01 Decision not to train
- C02 Training requirements not identified
- C03 Work incorrectly considered "skill-of-the-craft"

**B2 TRAINING METHODS LTA**

- C01 Practice or hands-on experience LTA
- C02 Testing LTA
- C03 Refresher training LTA
- C04 Inadequate presentation

**B3 TRAINING MATERIAL LTA**

- C01 Training objectives LTA
- C02 Inadequate content
- C03 Training on new work methods LTA
- C04 Performance standards LTA

**A7 Other Problems****B1 EXTERNAL PHENOMENA**

- C01 Weather or ambient conditions
- C02 Power failure or transient
- C03 External fire or explosion
- C04 Other natural phenomena LTA

Attachment 5 - Cause Codes

B2 RADIOLOGICAL OR HAZARDOUS MATERIAL PROBLEM

C01 Legacy contamination

C02 Source unknown

## Attachment 6 - Responsibilities

### FM/FMD

The FM/FMD shall be available at all times via telephone or personal pager. The FM/FMD is responsible for the following:

- Categorizing the occurrence.
- Preparing the Notification Report, Update Report, and Final Report.
- Utilizing the ORPS database to document and distribute WIPP Occurrence Reports.
- Making appropriate notification to DOE-HQ OC and the CBFO Facility Representative.
- Notifying the appropriate WTS management personnel, the PAAA Coordinator, and the ORC of the occurrence, as soon as practical, but not later than the next working day.
- Appointing a Root Cause Analysis Team Leader (RCATL) to investigate the occurrence per the requirements of WP 13-QA3016, Root Cause Analysis.
- Ensuring the ORC reviews the ORPS database regularly to identify good practices and lessons learned from other facilities that can be used at WIPP.
- Ensuring that the ORPS database is kept up to date.
- Ensuring the ORPS database is monitored at frequent intervals for accepted and rejected Occurrence Reports and that the appropriate actions are initiated to revise the rejected OCCURRENCE REPORTS.
- Informing the ORC of changes in the personnel assigned as FMD.
- Coordinating with the CBFO Facility Representative and approving the Notification Report, Update Report, and Final Report prior to uploading the report into the ORPS database.
- Providing the Manager of Emergency Management (MEM) with the FMD on-call schedule. Informing the MEM of any changes to the published schedule.
- Preparing the investigative report per the requirements of WP 15-MD3102.

## Attachment 6 - Responsibilities

### Facility Shift Manager

The FSM is responsible for reporting occurrences to the FM/FMD and assisting the FM/FMD in the initial investigation. The FSM should take the necessary actions to preserve conditions for continued investigation; however, these actions are not to interfere with establishing a safe condition.

### Responsible Manager

The Responsible Manager is responsible for the following:

- Assisting in the occurrence reporting process as directed by the FM/FMD.
- Implementing corrective actions as directed by the FM/FMD.
- Ensuring corrective actions with past due completion dates have written justification from the cognizant department head before a new target date will be accepted and entered into the ORPS database. This justification is to be sent to the ORC.

### Root Cause Analysis Team

The RCAT, under the direction of the RCATL, shall have the authority to independently review and analyze any event to which it is assigned. The RCAT is responsible for the following:

- Analyze reportable occurrences, establish the causal factors, and issue a formal written report per the guidelines of WP 13-QA3016.
- Provide recommended corrective actions.

### Occurrence Reporting Coordinator

The ORC is responsible for assisting and providing support to the FM/FMD in the occurrence reporting process. The ORC is responsible for the following:

- Tracking incomplete corrective action status and updating the ORPS database as needed from the information provided by the FM/FMD.
- Assisting the FM/FMD in the preparation of the Notification Report, Update Report, and Final Report to ensure the reports are completed on schedule and uploaded to the ORPS database.

## Attachment 6 - Responsibilities

- Monitoring the ORPS database at frequent intervals for accepted and rejected Occurrence Reports and advising the FM/FMD to initiate the appropriate actions to revise the rejected reports.
- Following the FM/FMD's guidance, use the DOE Operational Data Base to evaluate other facility reports for operational data and lessons learned that may apply to WIPP.
- Maintaining this procedure and records pertaining to the occurrence reporting process.
- Assisting the FM/FMD in categorization of events.
- Notifying the WIPP Training Section when changes are made to the procedure that will affect course content.
- Distributing Final WIPP Occurrence Reports and Occurrence Summary Reports from other DOE facilities to the WIPP Lessons Learned Working Group.
- Maintain the ORPS database up-to-date on the status of the Final Report's corrective actions. Status of corrective actions shall be available at any time from the ORPS database.

### Employee

The employee is responsible for the following:

Notifying the Central Monitoring Room Operator of the occurrence/event/discrepancy and immediately responding, without endangering themselves or others, to stabilize and mitigate the consequences of the event. The employee will then notify line management of the event.

### Technical Training Section

The Technical Training Section is responsible for providing necessary training regarding each employee's duty to report an occurrence.

Attachment 6 - Responsibilities

Central Monitoring Room Operator

The Central Monitoring Room Operator is responsible for the following:

- Alerting the FSM to the occurrence/event as reported to the CMR.
- Initiating those immediate actions specified and or directed by the FSM in the stabilization or restoration of the facility operation to a safe condition.
- Recording all pertinent information to include details concerning the discovery of the occurrence and actions to stabilize or place the facility/operation to a safe condition.