

Emergency Management Competency 2.5

Competency 2.5 Emergency management personnel shall demonstrate a working level knowledge of the notification and reporting requirements in Department of Energy (DOE) Order 5000.3, Occurrence Reporting and Processing of Operations Information.

1. Supporting Knowledge and Skills

- a. Define “reportable occurrence” and the rationale associated with reporting as identified in DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information.
- b. Using an actual facility-specific occurrence report, discuss the factors that contributed to the occurrence.
- c. Using the Requirements Section of DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information, describe the intent and contents of the following for notification reports:
 - Analysis
 - Categorization
 - Closeout
 - Corrective action implementation
 - Generic implications
 - Identification
 - Notification process
 - Reporting philosophy
 - Reporting requirements
 - Root cause determination
 - Tracking
- d. Explain the responsibilities of the emergency management personnel and Management and Operating (M&O) contractors for occurrence reporting, including a discussion of the following:
 - Notification report
 - 10-day occurrence report
 - Final report
 - Closing out and verifying occurrence reports
 - Processing occurrence reports which cross lines of emergency management responsibility
 - Contractor occurrence reporting procedures

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- e. Explain the conceptual differences and relationship between “occurrence reporting” and “notification” as contained in DOE Order 5000.3, Occurrence Reporting and Processing of Operations Information, and DOE Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements.

2. Self-Study Activities (corresponding to the intent of the above competency)

Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	http://wastenot.inel.gov/cted/stdguido.html	DOE Standards, Guides, and Orders
U.S. House of Representatives	http://law.house.gov/cfr.htm	Searchable Code of Federal Regulations

Read DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*.

- EXERCISE 2.5-A Define “Reportable Occurrence” and the rationale associated with reporting as identified in DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*.
- EXERCISE 2.5-B Referring to DOE Order 5000.3B, describe three categories of Reportable Occurrences and provide an example of the types of events that could lead to each.
- EXERCISE 2.5-C Discuss time requirements for reporting occurrences.
- EXERCISE 2.5-D Describe the elements of the occurrence report.
- EXERCISE 2.5-E Briefly explain the main purpose of the Occurrence Reporting and Processing System (ORPS).
- EXERCISE 2.5-F Using Attachment I of DOE Order 5000.3B, list the nine groups of categorized occurrences.
- EXERCISE 2.5-G Differentiate between “direct cause,” “contributing cause,” and “root cause.”

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- EXERCISE 2.5-H List seven categories of causes.
- EXERCISE 2.5-I Describe the responsibilities of the Facility Manager for occurrence categorization and reporting.
- EXERCISE 2.5-J Explain the conceptual differences and relationship between occurrence reporting and notification as contained in DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*, and in DOE Order 5500.2, *Emergency Categories, Classes, and Notification and Reporting Requirements*.

3. Summary

DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*, establishes a system for reporting of operations information related to DOE-owned or -operated facilities and processing of that information to provide for appropriate corrective action.

The Order describes the requirements for reporting and processing of occurrences related to the operation of DOE-owned or -operated facilities, including occurrences related to safety, health, security, property, operations, or the environment, up to and including emergencies.

4. Exercise Solutions

EXERCISE 2.5-A Define “Reportable Occurrence” and the rationale associated with reporting as identified in DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*.

ANSWER 2.5-A Reportable Occurrences are events or conditions that (1) affect the health and safety of the public, (2) seriously impact the intended purpose of DOE facilities, (3) have a noticeable adverse effect on the environment, (4) endanger the health and safety of workers, or (5) adversely affect national security or the security interests of DOE.

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EXERCISE 2.5-B Referring to DOE Order 5000.3B, describe three categories of Reportable Occurrences and provide an example of the types of events that could lead to each.

ANSWER 2.5-B

Reportable Occurrences		
Type of Occurrence	Description	Examples of Events That Could Lead to the Occurrence
Emergencies	The most serious occurrences; require an increased Alert status for on-site personnel and, in specified cases, for off-site authorities.	<ul style="list-style-type: none"> any unintentional nuclear criticality that results or could result in actual or potential facility damage or release of radioactive material to the environment any actual or potential release of material to the environment that results or could result in significant off-site consequences any natural or man-made event posing an actual or potential threat to the integrity of the facility that results or could result in significant off-site consequences any event in process or having occurred that involves an actual or potential substantial degradation of the level of the safety of the facility that results or could result in significant off-site consequences any safeguards or security event that is an actual or potential threat to DOE operations, facilities, or personnel, and results or could result in significant effects on the public health and safety/or on national security any event that requires activation of the site emergency plan

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Reportable Occurrences		
Type of Occurrence	Description	Examples of Events That Could Lead to the Occurrence
Unusual Occurrence	A nonemergency event that has significant impact or potential for impact on safety, the environment, health, security, or operations.	<ul style="list-style-type: none"> • result in the release of radioactive or hazardous materials above limits established in, or in violation of, safety, environmental, or health requirements defined in Federal permits, Federal regulations, or DOE standards • present significant internal or external threats to safety, the environment, health protection, or the ability of a facility to operate • involve significant degradation of safety class equipment or environmental, safety, security, or health conditions • result in fatalities, exposures to hazardous or radioactive materials or off-site or on-site contamination that do not meet emergency criteria defined in DOE Order 5500.2B, but are in excess of regulatory limits, failure of environmental monitoring equipment necessary to demonstrate compliance, failure of safety equipment or systems reducing the capability below a minimum required safety function, or significant delay or cost in operations • result in the actuation of emergency systems or engineered safety features, except under approved testing • violate technical safety requirements, or involve an unreviewed safety question • violate DOE safety requirements, environmental requirements, or result in the loss of control or release of radioactive material above allowable limits • result in the release of a hazardous substance or material that exceeds a reportable quantity and is not Federally permitted as defined in Attachment I of DOE Order 5000.3B • result in failure or significant degradation of administrative controls that are required to ensure safety, security, or environmental protection.

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Reportable Occurrences		
Type of Occurrence	Description	Examples of Events That Could Lead to the Occurrence
Off-Normal Occurrence	An abnormal or unplanned event or condition that adversely affects, potentially affects, or is indicative of degradation in the safety, security, environmental, or health protection performance or operation of a facility.	<ul style="list-style-type: none"> • result in the release of radioactive or hazardous materials below limits established by Federal permits, Federal regulations, or DOE standards, but must be reported in writing to state or local agencies in other than routine monthly/quarterly reports • are internal or external threats to safety, security, environmental, or health protection or the ability of a facility to operate • involve degradation of environmental, safety, security, or health conditions • result in serious personnel injury or significant lost workdays, personnel contamination, assimilation, exposure, or significant on-site or off-site contamination of hazardous or radioactive materials in excess of administrative limits but within regulatory limits, or degradation of environmental monitoring equipment necessary to demonstrate compliance • result in violation of safety, environmental, or health administrative limits • involve operational procedural violations, including maintenance and administrative procedures that have the potential to impact the safety, security, environmental, or health performance or operation of a facility • involve discovery of a condition that could prevent the functioning of administrative controls necessary to ensure safety or environmental protection

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EXERCISE 2.5-C Describe the notification requirements for Reportable Occurrences.

ANSWER 2.5-C Emergencies - Oral notification to DOE and off-site authorities of emergencies shall be made within 15 minutes or less of categorization; a written notification report shall be prepared and submitted as soon as practical, but in all cases, before the close of the next business day from the time of categorization.

Unusual Occurrences - Oral notification to DOE shall be made as soon as sufficient information is obtained to indicate the general nature and extent of the occurrence, but in all cases, within two hours of categorization; a notification report shall be prepared and submitted before the close of the next business day from the time of categorization.

Off-Normal Occurrences - Oral notification to DOE is not mandatory; a notification report shall be prepared and submitted before the close of the next business day from the time of categorization.

EXERCISE 2.5-D Describe the required elements of the occurrence report.

ANSWER 2.5-D For every Reportable Occurrence, the Facility Manager shall determine and document the following in the occurrence report:

- a) the significance, nature, and extent of the event or condition;
- b) the cause(s) of the event or condition, including the root cause, as appropriate; and
- c) the corrective actions to be taken to correct the condition and prevent recurrence.

EXERCISE 2.5-E Briefly explain the main purpose of the ORPS.

ANSWER 2.5-E The major purpose of the ORPS is to provide feedback of safety and operational information identified in occurrence reports to other DOE nuclear facilities.

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EXERCISE 2.5-F Using Attachment I of DOE Order 5000.3B, list the nine groups of categorized occurrences.

ANSWER 2.5-F The nine groups of categorized occurrences are:

1. Facility Condition
2. Environmental
3. Personnel Safety
4. Personnel Radiation Protection
5. Safeguards and Security
6. Transportation
7. Value Basis Reporting
8. Facility Status
9. Cross-Category Items

EXERCISE 2.5-G Differentiate between “direct cause,” “contributing cause,” and “root cause.”

ANSWER 2.5-G Direct cause - The cause that directly resulted in the occurrence.

Contributing cause - A cause that contributed to the occurrence but, by itself, would not have caused the occurrence.

Root cause - The cause that, if corrected, would prevent recurrence of this and similar occurrences.

EXERCISE 2.5-H List seven categories of causes.

ANSWER 2.5-H Categories of causes:

1. Equipment/material problem
2. Procedure problem
3. Personnel error
4. Design problem
5. Training deficiency
6. Management problem
7. External phenomenon

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EXERCISE 2.5-I Identify the responsibilities of the Facility Manager in occurrence categorization and notification.

ANSWER 2.5-I Responsibilities of the Facility Manager in occurrence categorization and notification include the following:

- Categorization of the occurrence utilizing the facility-specific procedures developed in accordance with DOE Order 5000.3B.
- For oral notification, the Facility Manager shall simultaneously contact the DOE Facility Representative and the HQ EOC
- Preparation and submittal of the notification report and distribution of the report to the DOE Facility Representative and Program Manager

EXERCISE 2.5-J Explain the conceptual differences and relationship between “occurrence reporting” and “notification” as contained in DOE Order 5000.3B, *Occurrence Reporting and Processing of Operations Information*, and DOE Order 5500.2B, *Emergency Categories, Classes, and Notification and Reporting Requirements*.

ANSWER 2.5-J The purpose of occurrence reporting under DOE Order 5000.3B is to document events and to provide for appropriate corrective action. The purpose of reporting under 5500.2B is to ensure that appropriate response actions can be undertaken and that appropriate resources are available to mitigate the emergency.

DOE Order 5000.3B provides requirements for reporting event occurrences. Reportable events are categorized as Off-Normal Occurrences, Unusual Occurrences, and Emergencies. Once an event has been categorized under 5000.3B, oral notification to HQ and off-site agencies must be made within 2 hours of categorization for an Unusual Occurrence and within 15 minutes for an Emergency; written notification is required within 80 hours of the categorization.

If an event is categorized as an Emergency, it is further classified as an Alert, Site Area, or General Emergency by 5500.2B, and oral notification is required within 15 minutes of declaration of the emergency.