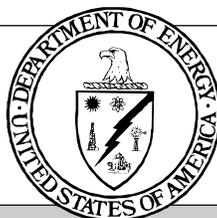


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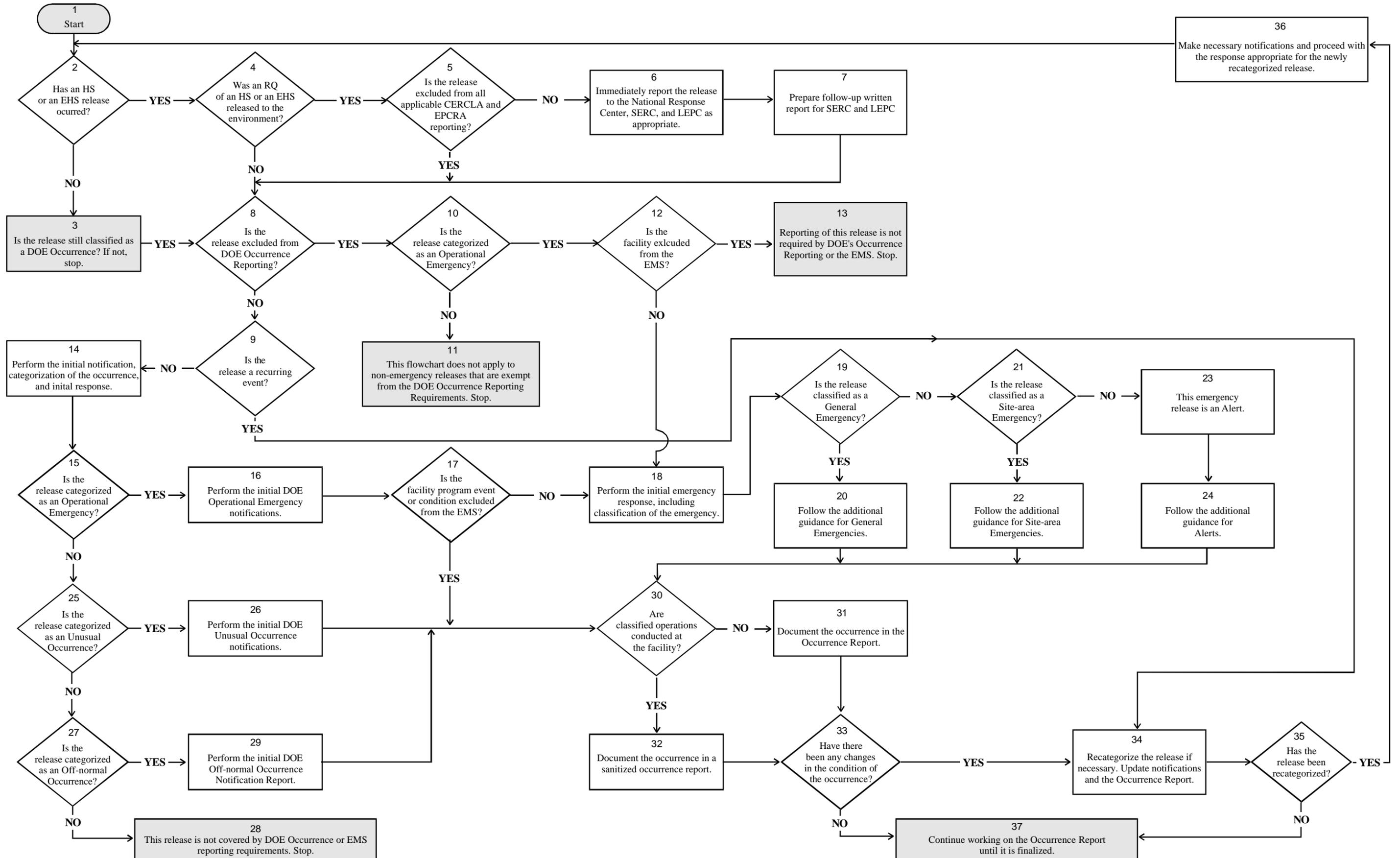
HAZARDOUS SUBSTANCE RELEASE REPORTING
under
CERCLA, EPCRA §304 & DOE Emergency
Management System/Occurrence
Reporting Requirements

June 1994

U.S. Department of Energy
Office of Environmental Guidance
RCRA/CERCLA Division, EH-231
Washington, D.C.

OVERVIEW OF RELEASE REPORTING UNDER CERCLA, THE EMERGENCY MANAGEMENT SYSTEM (EMS), AND DOE OCCURRENCE REPORTING REQUIREMENTS

(Use the supplemental information following this flowchart for guidance on using this flowchart for release response decision making.)



memorandum

DATE: May 24, 1994

REPLY TO
ATTN OF: Office of Environmental Guidance:Dailey:6-7117

SUBJECT: Environmental Guidance on Reporting Releases of Hazardous Substances at DOE Facilities

TO: Distribution

The purpose of this memorandum is to provide Department of Energy Program Offices and Field Organizations with a copy of an environmental guidance document entitled: "*Hazardous Substance Release Reporting Under CERCLA, EPCRA § 304, and DOE Emergency Management System/Occurrence Reporting System*". Developed by the Office of Environmental Guidance, RCRA/CERCLA Division (EH-231), this guidance document uses a graphic approach consisting of a flowchart and step-by-step instructions on how to comply with the requirements of the subject Federal statutes/regulations and DOE management systems upon the release of hazardous substances at DOE facilities.

In preparing this guidance, EH-231 distributed draft versions to the Program Offices cognizant for DOE's Emergency Management System and Occurrence Reporting System, as well as selected Field Organizations with responsibility for reporting releases of hazardous substances. All comments have been addressed in preparing the final document, and we believe the input provided by the reviewers has improved the utility, application and the quality of this guidance. EH-231 wishes to express its appreciation for the comprehensive, professional job that these organizations provided in reviewing this document and in assisting us in finalizing the guidance.

Questions regarding hazardous substance reporting requirements in general, or this guidance document in particular, may be directed to Rich Dailey of my staff at (202) 586-7117.



Thomas Traceski
Director, RCRA/CERCLA Division
Office of Environmental Guidance

HAZARDOUS SUBSTANCE RELEASE REPORTING
under
CERCLA, EPCRA §304 & DOE EMERGENCY
MANAGEMENT SYSTEM (EMS) and DOE OCCURRENCE
REPORTING REQUIREMENTS



June 1994

Prepared by

U.S. DEPARTMENT OF ENERGY
Office OF ENVIRONMENTAL GUIDANCE
RCRA/CERCLA DIVISION
(EH-231)
Washington, D.C.

Technical support by

Energetics, Inc.

Notice

This guidance document, which was published in June 1994, originally included three appendices:

- Appendix I: List of CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4 Table 302.4);
- Appendix II: List of Radionuclides and Reportable Quantities (40 CFR 302.4 Appendix B); and
- Appendix III: List of EPCRA Extremely Hazardous Substances and their Threshold Planning Quantities (40 CFR 355 Appendix A).

Since this time there have been changes to these lists. To avoid confusion, the Office of Environmental Policy and Assistance has elected to omit these three appendices from this portable document format (PDF) file.

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Introduction

Background

Releases of various substances from DOE facilities may be subject to reporting requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Emergency Planning and Community Right-to-Know Act (EPCRA), as well as DOE's internal "Occurrence Reporting and Processing of Operations Information" and the "Emergency Management System" (EMS).

CERCLA and EPCRA are Federal laws that require immediate reporting of a release of a Hazardous Substance (HS) and an Extremely Hazardous Substance (EHS), respectively, in a Reportable Quantity (RQ) or more within a 24-hour period.

DOE's Occurrence Reporting requirements establish a system for reporting operations information related to DOE-owned or -operated facilities (including Power Administration facilities) and processing that information to provide for appropriate corrective action. Releases of HSs or EHSs can be categorized (in order of decreasing severity) as Emergencies, Unusual Occurrences, and Off-Normal Occurrences. Each category of Occurrence requires a different level of reporting and response.

Releases that have been categorized as Emergencies are also subject to reporting under DOE's EMS. The EMS provides a framework for development, coordination, and direction of the planning, preparedness, and readiness assurance activities. Releases of HSs or EHSs that have been categorized as Emergencies can be classified (in order of decreasing severity) as General Emergencies, Site-area Emergencies, and Alerts. Each class of emergency requires a different level of reporting and response.

Purpose

To help explain the process of complying with distinct but sometimes overlapping requirements, the Office of Environmental Guidance, RCRA/CERCLA Division (EH-231), developed this guidance on hazardous substance release reporting. The requirements outlined in this guidance apply to all DOE facilities (Government-Owned, Contractor-Operated; Government-Owned, Government-Operated; and Power Administration facilities).

In accordance with Section 103 of CERCLA and 40 CFR 302.6, *the person in charge* of a DOE facility is responsible for reporting a release of an HS to the National Response Center (NRC). Similarly, DOE Orders 5000.3B, 5500.1B, and 5500.2B require that the *facility manager* promptly report HS releases that are categorized as reportable Occurrences to DOE and all applicable Federal, State, local, and tribal authorities. The facility manager at DOE-owned, contractor-operated facilities will be a contractor. Therefore, in accordance with the July 19, 1990, S-3 (DP-9) "Emergency Management and Off-Site Notification" policy memorandum issued by the Under Secretary, the contractor managing the facility from which an HS has been released will be responsible for complying with the reporting requirements unless DOE has

formally reclaimed that responsibility. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.

How to Use this Guidance

This guidance uses a flowchart, supplemental information, and tables to provide an overview of the process to be followed, and more detailed explanations of the actions that must be performed, when chemical releases of HSSs, EHSs, pollutants, or contaminants occur at DOE facilities. This guidance should be used in conjunction with, rather than in lieu of, applicable laws, regulations, and DOE Orders. Relevant laws, regulations, and DOE Orders are referenced throughout this guidance.

The flowchart is the central element of this guidance. The procedures that must be followed in response to a release are determined by the nature of the release. The flowchart outlines the appropriate path of actions to follow by providing clear decision points (diamonds) that allow the user to choose the correct course of action (rectangles) for a specific release.

Additional guidance for each step of the flowchart is provided in the "Supplemental Information" for the Release Reporting Flowchart (beginning on page 5). This document is designed to allow the user to view the flowchart and the supplemental information simultaneously. The supplemental information should be used to clarify and expand upon the information contained in the flowchart.

Two tables, "Categorization of Occurrences" and "Classification of Emergencies" follow the Supplemental Information. These tables provide additional assistance and guidance for categorizing and classifying releases according to the systems outlined in DOE's Occurrence Reporting and EMS requirements.

Three appendices have been attached that list and provide reportable quantities for (1) CERCLA Hazardous Substances (Appendix I), CERCLA Radionuclides (Appendix II), and EPCRA Extremely Hazardous Substances (Appendix III). Please note that these appendices may not contain all current hazardous substances or extremely hazardous substances. These lists are to be used in conjunction with, not in lieu of, the appropriate Federal regulations. (These appendices were prepared by ERM Computer Services, Inc., from computer tapes of the Federal Register and Code of Federal Regulations provided by the U. S. Government Printing Office. The tables are current as of November 1993.)

Additional Requirements

This guidance is not intended to detail the planning or preparedness phases of DOE's EMS. [DOE Order 5500.3A (9)(b)] However, be aware that as part of the EMS, DOE Elements and DOE contractors must establish and maintain emergency management programs consisting of plans and procedures for response to Operational Emergencies involving or affecting DOE facilities, including DOE transportation activities.

The programs must include the following elements:

- Emergency Response Organization,
- Off-site Response Interfaces,
- Operational Emergency Event Classes,
- Notification,
- Consequence Assessment,
- Protective Actions,
- Medical Support,
- Recovery and Reentry,
- Public Information,
- Emergency Facilities and Equipment,
- Training,
- Drills and Exercises, and
- Program Administration.

Also, facilities must establish Emergency Readiness Assurance Programs (ERAPs) and Appraisal Programs, as set forth in DOE Order 5500.10. [DOE Order 5500.3A (11)(a)]

Supplemental Information for the Release Reporting Flowchart

Step 1 Start

Step 2 As defined by CERCLA 101(22), a **release** is any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, or other closed receptacles containing any hazardous substance or pollutant or contaminant).

Hazardous Substances (HSs) regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) are listed in 40 CFR 302.4. Table 302.4 of that regulation, "List of Hazardous Substances and Reportable Quantities," is reproduced in Appendix I of this guidance. Appendix B of that regulation, the list of HS radionuclides and their reportable quantities, is reproduced in Appendix II of this guidance.

Extremely Hazardous Substances (EHSs) regulated under the Emergency Planning and Community Right to Know Act (EPCRA) are listed in 40 CFR 355 Appendix A. That appendix is reproduced in Appendix III of this guidance.

EPA has published a "List of Lists" that is a compendium of the lists of chemicals subject to reporting under EPCRA. These lists include the list of EPCRA EHSs, the list of CERCLA HSs, and the list of EPCRA 313 Toxic Chemicals. This publication is updated periodically and is available by calling the EPA EPCRA Hotline at (800) 535-0202.

Note: There is considerable overlap between the lists of EHSs and HSs.

YES If a release of an HS or EHS has occurred, proceed to Step 4 for guidance on applicable release reporting requirements under CERCLA or EPCRA.

NO If the material released is not an HS or EHS, proceed to Step 3 for guidance on applicable release reporting requirements under the DOE Occurrence Reporting System.

Step 3 **Events** or **conditions** that do not involve releases of HSs or EHSs may still be reportable under DOE's Occurrence reporting requirements. See the DOE 5000 series Orders for more information on responding to events and conditions that do not involve releases of HSs or EHSs.

An **event** is a real-time Occurrence (e.g., pipe break, valve failure, loss of power, environmental spill, etc.).

Supplemental Information (continued)

A **condition** is any as-found state, whether or not resulting from an event, that may have adverse safety, health, quality assurance, security, operational, or environmental implications. A condition is more programmatic in nature. For example, an error in analysis or calculation, an anomaly associated with design or performance, or an indication of a weakness in the management process are all conditions. [DOE Order 5000.3B (5)]

Step 4 The **Reportable Quantity (RQ)** applies to the amount of HSs or EHSs released within a 24-hour period. Note that the 24-hour period is the time frame for measuring the quantity released, not a time frame for reporting the release.

The RQ for each HS is designated in 40 CFR 302.4 Table 302.4, and that table is reproduced as Appendix I to this guidance. The RQ list for radionuclides is designated in 40 CFR 302.4 Appendix B, which is reproduced as Appendix II to this guidance. The RQ for each EHS is listed in 40 CFR 355 Appendix A, which is reproduced as Appendix III to this guidance. DOE has developed a computer program called "RQ Calculator" that can be used to facilitate comparisons of the quantity released with the applicable RQs. The RQ Calculator translates various units of measurement into the RQ unit; pounds for hazardous waste and curies for radionuclides.¹

YES If an RQ of an HS or EHS has been released, reporting under either CERCLA or EPCRA, or both, may be required; proceed to Step 5.

NO If an RQ of an HS or EHS has **not** been released, CERCLA and EPCRA reporting is not required; proceed to Step 8.

Step 5 (A) **Exclusions from CERCLA** episodic release reporting are (1) releases that are excluded from the definition of "release" under CERCLA 101(22), (2) continuous releases as defined by 40 CFR 302.8, (3) federally permitted releases as defined in CERCLA 101(10), (4) releases that are exempted by 40 CFR 302.6(c), (5) releases that are exempted by 40 CFR 302.6(d), (6) releases already reported pursuant to CERCLA 103(c), and (7) the normal application of pesticides.

- The term "release" under CERCLA 101(22) excludes the following:
 - Any release that results in exposure to persons solely within a workplace, regarding a claim that such persons may assert against the employer of such persons;

¹ The RQ Calculator has been distributed through normal EH-231 channels. For more information on the RQ Calculator software, contact EH-231 at (202) 586-5047.

Supplemental Information (continued)

- Emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine;
 - Release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954 (AEA), if such release is subject to requirements regarding financial protection established by the Nuclear Regulatory Commission under Section 170 of the AEA, or for the purposes of CERCLA 104 or any other response action, any release of source, byproduct, or special nuclear material from any processing site designated under Sections 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978; and
 - The normal application of fertilizer.
- 40 CFR 302.8 provides for reduced reporting of releases of hazardous substances that are continuous and stable in quantity and rate as described in 40 CFR 302.8(b).
 - CERCLA 103(a) provides an exemption from CERCLA notification requirements for federally permitted releases of hazardous substances. The term "federally permitted release," as defined in CERCLA 101(10), means:
 - Discharges in compliance with a permit under Section 402 of the Federal Water Pollution Control Act (FWPCA);
 - Discharges resulting from circumstances identified and reviewed and made part of the public record regarding a permit issued or modified under FWPCA 402 and subject to a condition of such permit;
 - Continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under FWPCA 402, that are caused by events occurring within the scope of relevant operating or treatment systems;
 - Discharges in compliance with a legally enforceable permit under FWPCA 404;
 - Releases in compliance with a legally enforceable final permit issued pursuant to Section 3005(a) through (d) of the Solid Waste Disposal Act from a hazardous waste treatment, storage, or disposal facility when such permit specifically identifies the hazardous substances and makes such substances subject to a

Supplemental Information (continued)

standard practice, control procedure, or bioassay limitation or condition, or other control on the hazardous substances in such releases;

- Any release in compliance with a legally enforceable permit issued under Sections 102 and 103 of the Marine Protection, Research, and Sanctuaries Act of 1972;
 - Any injection of fluids authorized under Federal underground injection control programs or State programs submitted for Federal approval (and not disapproved by the Administrator of the Environmental Protection Agency) pursuant to Part C of the Safe Drinking Water Act;
 - Any emission into the air subject to a permit or control regulation under Section 111, Section 112, Title I Part C, Title I Part D, or State implementation plans submitted in accordance with Section 110 of the Clean Air Act (CAA) (and not disapproved by the Administrator of the Environmental Protection Agency), including any schedule or waiver granted, promulgated, or approved under these Sections;
 - Any injection of fluids or other materials authorized under applicable State law (1) for the purpose of stimulating or treating wells for the production of crude oil, natural gas, or water, (2) for the purpose of secondary, tertiary, or other enhanced recovery of crude oil or natural gas, or (3) that are brought to the surface in conjunction with the production of crude oil or natural gas and that are reinjected;
 - The introduction of any pollutant into a publicly owned treatment works when such pollutant is specified in and in compliance with applicable pretreatment standards of the Clean Water Act (CWA) Section 307(b) or (c) and enforceable requirements in a pretreatment program submitted by a State or municipality for Federal approval under CWA 402; and
 - Any release of source, special nuclear, or byproduct material, as those terms are defined in AEA, in compliance with a legally enforceable license, permit, regulation, or order issued pursuant to AEA.
- In addition, 40 CFR 302.6(c) exempts the following categories of releases from the notification requirements of CERCLA 103:

Supplemental Information (continued)

- Releases of those radionuclides that occur naturally in the soil from land holdings such as parks, golf courses, or other large tracts of land;
 - Releases of radionuclides occurring naturally from the disturbance of land for purposes other than mining, such as for agricultural or construction activities;
 - Releases of radionuclides from the dumping of coal and coal ash at utility and industrial facilities with coal-fired boilers; and
 - Releases of radionuclides from coal and coal ash piles at utility and industrial facilities with coal-fired boilers.
- Also, 40 CFR 302.6(d) provides that except for releases of radionuclides, notification of the release of an RQ of solid particles of antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, or zinc is not required if the mean diameter of the particles released is larger than 100 micrometers (0.004 inch).
 - CERCLA 103(c) requires that any person who owns or operates or who at the time of disposal owned or operated a facility that is not a RCRA Subtitle C facility with an interim or final permit, and at which hazardous substances are or have been stored, treated, or disposed of, shall provide a one-time notification to EPA of the existence of such facility, specifying the amount and type of any hazardous substance to be found there, and any known, suspected, or likely releases of such substances from such facility.
 - The normal application of a pesticide registered under the Federal Insecticide, Fungicide, and Rodenticide Act, or the handling and storage of such a pesticide product by an agricultural producer, is exempt from CERCLA notification requirements under CERCLA 103(e).

(B) Exclusions from EPCRA 304 emergency release notification are the following:

- Any release that results in exposure to persons solely within the boundaries of the facility;

Note: *Although technically required only to report releases that extend beyond the site boundary, EPA strongly encourages facility owners and operators to report all releases that equal or exceed an RQ to the appropriate State Emergency Response*

Supplemental Information (continued)

Commission (SERC) or Local Emergency Planning Committee (LEPC) when that release is "into the environment" (EPA 9360.7-06 November 1990). Do facility managers should report all releases into the environment that equal or exceed an RQ, unless absolutely certain that the release has not and never will extended across the site boundary. The basis for such a determination should be appropriately documented. (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.

- Any release that is a "federally permitted release" as defined in CERCLA 101(10);
- Any release that is continuous and stable in quantity and rate under the definitions of 40 CFR 302.8(b);
- Any release of a pesticide product exempt from CERCLA 103(a) reporting under CERCLA 103(e);
- Any release not meeting the definition of "release" under CERCLA 101(22), and therefore exempt from CERCLA 103(a) reporting; and
- Any of the following radionuclide releases that occur:
 - Naturally in soil from land holdings such as parks, golf courses, or other large tracts of land;
 - Naturally from the disturbance of land for purposes other than mining, such as for agricultural or construction activities;
 - From the dumping of coal and coal ash at utility and industrial facilities with coal-fired boilers; and
 - From coal and coal ash piles at utility and industrial facilities with coal-fired boilers. [40 CFR 355.40(a)(2)(vi)]

YES If the release is excluded from all CERCLA and EPCRA emergency release reporting requirements, proceed to Step 8 to determine if the release may still be subject to DOE Occurrence Reporting.

Supplemental Information (continued)

NO If the release is **not** excluded from all CERCLA and EPCRA emergency release reporting requirements (i.e., is subject to any such requirements), proceed to Step 6 for guidance on release reporting under either CERCLA or EPCRA, or both.

- Step 6**
- When it is determined that an **RQ** of an **HS** has been released into the environment within a 24-hour period, the person in charge of the facility (i.e., generally the Facility Manager) must immediately (i.e., as soon as is practicable) telephone the **National Response Center**. (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)

When notifying the National Response Center, be prepared to provide the following information to the extent known at the time of notification and so long as no delay in notice or emergency response results:

- The location of the release,
- The type of material released,
- The estimated quantity released,
- The time and date of the release, and
- The possible source or sources of the release. [40 CFR 300.405(d)]

In addition to notifying the National Response Center, when an **RQ** of an **HS** is released into the environment, EPCRA release reporting requirements may also need to be met.

Reporting under EPCRA is required only when there is a release into the environment that goes beyond the facility/site boundary. [EPCRA 304] If the facility manager is positive (i.e., 100 percent certain) that the release will not migrate beyond the facility/site boundary, then reporting to State and local officials is not required. However, if the facility manager is not absolutely certain that the release will remain on site, the release should be reported under EPCRA, as well as to the National Response Center under CERCLA.

To report a release under EPCRA, the facility manager must notify the appropriate State Emergency Response Commission (SERC) and the Local Emergency Planning Committee (LEPC). If there is no LEPC, notification shall be provided to relevant local emergency response personnel. [40 CFR 355.40(b)]

Supplemental Information (continued)

- Although all releases of CERCLA HSs into the environment that have the potential to go beyond the facility boundary must be reported to the National Response Center, SERC, and LEPC, a similar release of an EHS that is not a CERCLA HS need not be reported to the National Response Center.

When notifying the SERC or LEPC be prepared to provide the following information to the extent known at the time of notice and so long as no delay in notice or emergency response results:

- The chemical name or identity of any substance involved in the release;
- An indication of whether the substance is an EHS;
- An estimate of the quantity of any such substance that was released into the environment;
- The time and duration of the release;
- The medium or media into which the release occurred;
- Any known or anticipated acute or chronic health risks associated with the release; and
- Where appropriate, advice regarding medical attention necessary for exposed individuals, proper precautions (including evacuation) to take as a result of the release (unless such information is readily available to the community emergency coordinator pursuant to the emergency plan), and the names and telephone numbers of the persons to be contacted for further information. [40 CFR 355]

Step 7 As soon as is practicable after a reportable release of an HS or EHS under EPCRA, the Facility Manager must provide a written follow-up emergency notice to the SERC and LEPC, updating the information previously provided in the oral notification (See Step 6), and including additional information regarding the following:

- Actions taken to respond to and contain the release;
- Any known or anticipated acute or chronic health risks associated with the release; and

Supplemental Information (continued)

- Where appropriate, advice regarding medical attention necessary for exposed individuals. [40 CFR 355.40(b)(3)]

Note: *The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.*

Step 8 Specifically excluded from DOE's Occurrence Reporting requirements (see DOE Order 5000.3B 3) are:

- Occurrence reporting and processing of operations information for activities that are regulated by the Nuclear Regulatory Commission (NRC) or a State under an agreement with the NRC;
- Reporting by the Power Marketing Administrations of major electrical power outages, disturbances, and fuel shortages that are subject to the emergency power system reporting requirements prescribed in 10 CFR 205 and 350 through 354, Report of Major Electric Utility Systems Emergencies;
- The Naval Nuclear Propulsion Program [Paragraph 9h];
- Reporting required by other DOE Orders for normal record-keeping purposes (e.g., DOE Order 5484.1); and
- Additional reporting as required by external regulatory agencies.

YES If the release is excluded from DOE Occurrence Reporting, proceed to Step 10. If the release is an Emergency, it may still be reportable under the Emergency Management System (EMS).

NO If the release is not excluded from DOE Occurrence Reporting, proceed to Step 9 for guidance on appropriate action if the release is a recurring event.

Step 9 For Occurrences resulting from and directly related to a previously identified cause that is currently documented in a non-finalized Occurrence Report, the Facility Manager, with concurrence from the Facility Representative and the Program Manager, may submit a 10-Day Update Report in lieu of a new Occurrence Report. The 10-Day Update Report must be submitted with the new information by the close of the next business day from the time of categorization (not to exceed 80 hours). [DOE Order 5000.3B 8.a.(3) and 8.b.(2)]

Note: *A recurring release of a CERCLA HS or an EHS may qualify as a continuous release (see 40 CFR 302.8).*

Supplemental Information (continued)

YES If the release is a recurring Occurrence, go to Step 34 and submit a 10-Day Update Report.

NO If the release is not a recurring Occurrence, go to Step 14 and perform the initial notification, categorization, and initial response.

Step 10 **Operational Emergencies** are the most serious events and consist of any unwanted operational, civil, natural-phenomenon, or security Occurrence that could endanger or adversely affect people, property, or the environment (DOE Order 5500.1B Attachment 2 (17)). Emergencies require an increased alert status for on-site personnel and, in specified cases, for off-site authorities. Use **Attachment I of DOE Order 5000.3B** for assistance in determining whether or not a release must be categorized as an Emergency. Table 1 of this document also provides selected examples of Emergency Occurrences.

Note: *The lists in Table 1, as well as in Attachment I in DOE Order 5000.3B, are not intended to be all-inclusive. Their purpose is to categorize Occurrences so that DOE field and operating contractors understand the degree of significance that is associated with the emergency, unusual, and off-normal categories defined in DOE Order 5000.3B. They provide a minimum set of standards necessary to allow specific sites/facilities to develop and document specific Reportable Occurrences applicable to their operations. [DOE Order 5000.3B Attachment 1]*

YES If the release is an Emergency, proceed to Step 12 to determine if the release must be reported under the Emergency Management System (EMS).

NO If the release is not an Emergency, proceed to Step 11.

Step 11 In Step 8 it was determined that this release was exempt from DOE's Occurrence Reporting requirements. Since only releases categorized as Emergencies are subject to EMS reporting requirements, this release is not subject to either DOE's Occurrence Reporting or the EMS emergency reporting. **Stop.**

Step 12 The following exclusions from the EMS are provided by DOE Order 5500.1B:

- All DOE facilities **subject to Nuclear Regulatory Commission license requirements** are specifically exempted from the requirements of this Order.
- The **Navy Nuclear Propulsion Program** is exempt from the provisions of the DOE 5500 series Orders.
- The **Power Marketing Administrations** are exempt from DOE Order 5500.1B because they have submitted DOE Order 5400.PMA to S-1 for approval. This Order provides emergency management directives appropriate to their

Supplemental Information (continued)

specific regional power missions and is compatible with DOE's EMS and supplementary DOE EMS directives.

- An EMS exemption may be requested if a DOE Element or contractor can **demonstrate** that it is subject to emergency management program requirements under the authority of other Federal regulatory agencies that are **at least as stringent** as the requirements of DOE Order 5500.1B. Requests for exemptions from the requirements of this Order shall document the basis for each exemption and shall establish and justify alternatives equivalent to, or exceeding, this Order. **Requests for exemptions** shall be submitted for approval by the Under Secretary, with the concurrence of (1) the cognizant Program Secretarial Officers (PSO); (2) the Director of Emergency Operations (DEO); and if applicable, (3) the Assistant Secretary for Environment, Safety, and Health (EH-1). The Under Secretary shall resolve any differences among the PSO, DEO, and, if applicable, EH-1.

YES Since this facility is excluded from the EMS and it has been determined (in Step 8) that the release is not subject to DOE Occurrence Reporting, proceed to Step 13.

NO This release is subject to DOE's EMS requirements; proceed to Step 18.

Step 13 The remainder of this flowchart only applies to releases that are subject to either DOE's Occurrence Reporting or EMS emergency reporting requirements. **Stop.**

- Step 14**
- The facility staff and operators must identify and promptly notify the Facility Manager of abnormal events and conditions, and record and archive all information pertaining to such Occurrences. [DOE Order 5000.3B 8.a.(1)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)
 - The Facility Manager is responsible for the initial identification and categorization of the event. [DOE Order 5500.1B 9.c.(2)(a)1]

Categorization of Reportable Occurrences must be made as soon as is practicable and, in all cases, within 2 hours of identification. If categorization is not clear, then the Occurrence must be initially categorized at the higher level being considered. [DOE Order 5000.3B 7.a.] See Steps 15, 25, and 27 for guidance in classifying releases as Emergencies, Unusual Occurrences, or Off-Normal Occurrences.

Supplemental Information (continued)

- Appropriate immediate response(s) must be taken by contractor operations personnel to stabilize or return the facility/operation to a safe condition. [DOE Order 5000.3B 8.a.(2)]

Step 15 **Operational Emergencies** are the most serious events and consist of any unwanted operational, civil, natural-phenomenon, or security Occurrence that could endanger or adversely affect people, property, or the environment. [DOE Order 5500.1B Attachment 2 (17)] Emergencies require an increased alert status for on-site personnel and, in specified cases, for off-site authorities. Use **Attachment I in DOE Order 5000.3B or Table 1 (Categorization of Occurrences)** for assistance in determining if a release must be categorized as an Operational Emergency.

Note: *The lists in Table 1, as well as in Attachment I in DOE Order 5000.3B, are not intended to be all-inclusive. Their purpose is to categorize Occurrences so that DOE field and operating contractors understand the degree of significance that is associated with the emergency, unusual, and off-normal categories defined in DOE Order 5000.3B. They provide a minimum set of standards necessary to allow specific sites/facilities to develop and document specific Reportable Occurrences applicable to their operations. [DOE Order 5000.3B Attachment 1]*

YES If the release is an Operational Emergency, proceed to Step 16 for guidance on appropriate notification requirements.

NO If the release is not an Operational Emergency, proceed to Step 25 to determine if the release is an Unusual Occurrence.

- Step 16**
- Oral notification to DOE and off-site authorities of Emergencies must be made within 15 minutes or less of categorization. [DOE Order 5000.3B 7.b.(1)]
 - A Notification Report must be prepared and submitted as soon as is practicable, but, in all cases, before close of the next business day from the time of categorization (not to exceed 80 hours). [DOE Order 5000.3B 7.b.(1)]

The Facility Manager must prepare and submit the Notification Report (fields 1 through 18 of the Occurrence Report), and distribute it to the DOE Facility Representative and Program Manager. When an unclassified Notification Report is submitted using the computerized DOE Occurrence Reporting and Processing System (ORPS) data base, the distribution requirement is automatically satisfied. [DOE Order 5000.3B 8.a.(10)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power

Supplemental Information (continued)

Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)

Step 17 The following exclusions from the EMS are provided by DOE Order 5500.1B:

- All DOE facilities **subject to Nuclear Regulatory Commission license requirements** are specifically exempted from the requirements of this Order.
- The **Navy Nuclear Propulsion Program** is exempt from the provisions of the DOE 5500 series Orders.
- The **Power Marketing Administrations** are exempt from DOE Order 5500.1B because they have submitted DOE Order 5400.PMA to S-1 for approval. This Order provides emergency management directives appropriate to their specific regional power missions and is compatible with DOE's EMS and supplementary DOE EMS directives.
- An EMS exemption may be requested if a DOE Element or contractor can **demonstrate** that it is subject to emergency management program requirements under the authority of other Federal regulatory agencies that are **at least as stringent** as the requirements of DOE Order 5500.1B. Requests for exemptions from the requirements of this Order shall document the basis for each exemption and shall establish and justify alternatives equivalent to, or exceeding, this Order. **Requests for exemptions** shall be submitted for approval by the Under Secretary, with the concurrence of (1) the cognizant Program Secretarial Officers (PSO); (2) the Director of Emergency Operations (DEO); and if applicable, (3) the Assistant Secretary for Environment, Safety, and Health (EH-1). The Under Secretary shall resolve any differences among the PSO, DEO, and, if applicable, EH-1.

YES Since this facility program event or condition is excluded from the EMS proceed to Step 30.

NO This release is subject to DOE's EMS requirements; proceed to Step 18.

- Step 18**
- Take immediate mitigative and **corrective actions (see note)** to minimize the consequences to worker and public health and safety and the environment. Mitigative and corrective actions include recommending appropriate protective actions to local authorities.
[DOE Order 5500.1B 9.c.(2)(a)3]

These actions must continue until the Emergency is resolved.
[DOE Order 5500.1B 9.c.(2)(a)4]

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Note: *For the purposes of the EMS, **corrective actions** are defined as those measures taken to terminate or mitigate the consequence of an Emergency at or near the source of the Emergency. [DOE Order 5500.1B Attachment 2 (14)]*

- The manager of the facility (as defined in the DOE 5500 series Orders), whether a DOE or a DOE contractor employee, is responsible for informing DOE line management about all aspects of the response to the Emergency. [DOE Order 5500.1B 9.c.(2)(a)5] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)

DOE HQ and the cognizant DOE Facility Representative receive simultaneous notifications of Emergencies from the Facility Manager. The scope and extent of additional DOE response actions will be determined by the cognizant HQ Program Office in conjunction with the cognizant DOE Field Element. [DOE Order 5500.1B 9.c.(2)(d)]

The manager of the facility, whether a DOE or DOE contractor employee, is required to promptly **notify State, tribal, local, DOE, and other Federal agencies** of events categorized as Emergencies. The DOE Facility Representative shall oversee the contractor's or responsible DOE Element's notification process. The DOE Facility Representative shall make notifications of applicable DOE emergency events for situations not covered by a contractor's or other DOE Element's notification process. [DOE Order 5500.2B 9.a.]

The DOE Headquarters Emergency Operations Center (EOC) serves as the focal point for all emergency notifications and reports. The HQ EOC receives, coordinates, and disseminates emergency information to HQ Elements and Program Office emergency points of contact, Congressional offices, the White House Situation Room, and other Federal agencies. [DOE Order 5500.2B 9.c.]

Note: *All communications concerning an Emergency must be reviewed for classified information and unclassified controlled nuclear information prior to transmittal and must be protected accordingly. [DOE Order 5500.2B 12.]*

Note: *The **three classes of Operational Emergencies** are defined as follows, listed in order of decreasing severity: (1) **General Emergency**, (2) **Site-area Emergency**, and (3) **Alert**. Differentiation of these classes by severity is for the purpose of specifying appropriate emergency actions, including required response activities and notification,*

Supplemental Information (continued)

*commensurate with the degree of hazard presented by the event. [DOE Order 5500.2B 11.a.(2)] See **Table 2 (Classification of Emergencies)** and Steps 14, 16, and 18 for additional guidance on classifying emergency releases.*

Step 19 A **General Emergency** represents events that are in progress or have occurred that involve actual or imminent catastrophic failure of facility safety systems with potential for loss of confinement integrity, catastrophic degradation of facility protection systems, or catastrophic failure in safety or protection systems threatening the integrity of a weapon or test device that could lead to substantial off-site impacts. **Any environmental release of hazardous materials that can reasonably be expected to exceed the appropriate Protective Action Guide (PAG) or Emergency Response Planning Guide (ERPG) exposure levels off-site is classified as a General Emergency.** [DOE Order 5500.1B Attachment 2 (43)] See **Table 2 (Classification of Emergencies)** for more information on classifying an emergency release as a General Emergency.

YES If the release is a General Emergency; proceed to Step 20 for guidance on appropriate response requirements.

NO If the release is **not** a General Emergency; proceed to Step 21 to determine if the release is a Site-area Emergency.

Step 20 Declaration of a General Emergency requires notifying, mobilizing, and dispatching all appropriate emergency response personnel and equipment, including appropriate DOE national response assets to accomplish the following: [DOE Order 5500.2B 11.a.(2)(c)]

- Activate the response centers and other emergency assets to provide continuous assessment of information;
- Establish communications, consultation, and liaison with off-site authorities, and recommend predetermined protective actions for the public;
- Provide information to the public through off-site authorities and the media;
- Conduct or assist evacuations and sheltering;
- Conduct appropriate assessments, investigations, or sampling and monitoring;
- Mitigate the severity of the actual or potential consequences; and

Supplemental Information (continued)

- Mobilize and dispatch appropriate emergency response groups or security forces.

Proceed to Step 30.

Step 21 A **Site-area Emergency** represents events that are in progress or have occurred involving actual or likely major failure(s) of facility safety or safeguard systems needed for the protection of on-site personnel, public health and safety, the environment, or national security. **During a Site-area Emergency, any environmental releases of hazardous materials are not expected to exceed the appropriate PAG or ERPG exposure levels off-site.** [DOE Order 5500.1B Attachment 2 (69)] See **Table 2 (Classification of Emergencies)** for more information about classifying an emergency release as a Site-area Emergency.

YES If the release is a Site-area Emergency; proceed to Step 22 for guidance on appropriate response requirements.

NO If the release is **not** a Site-area Emergency, it must be an Alert; proceed to Step 23 for guidance on responding to Alerts.

Step 22 Declaration of a Site-area Emergency requires initiation of predetermined protective actions for on-site personnel and the notification and assembly of emergency response personnel and equipment to activate response centers to accomplish the following: [DOE Order 5500.2B 11.a.(2)(b)]

- Provide continuous assessment of pertinent information for DOE decision makers, off-site authorities, and other appropriate entities;
- Establish communications, consultation, and liaison with off-site authorities;
- Provide information to the public through off-site authorities and the media;
- Conduct or assist in any evacuations and sheltering;
- Conduct appropriate assessments, investigations, or sampling and monitoring;
- Mitigate the severity of the actual or potential consequences; and
- Mobilize appropriate emergency response groups or security forces for immediate dispatch should the situation become more serious.

Proceed to Step 30.

Supplemental Information (continued)

Step 23 An **Alert** represents events in progress or having occurred that involve an actual or potential substantial reduction for the level of facility safety and protection. **During an Alert, any environmental release of hazardous materials is expected to be limited to small fractions of the appropriate PAG or ERPG on-site.** [DOE Order 5500.1B Attachment 2 (6)] See **Table 2 (Classification of Emergencies)** for more information about classifying emergency releases as Alerts.

Step 24 Declaration of an Alert requires the availability of personnel and resources to accomplish the following: [DOE Order 5500.2B 11.a.(2)(a)]

- Provide continuous assessment of pertinent information for DOE decision makers, off-site authorities, the public, and other appropriate entities;
- Conduct appropriate assessments, investigations, or preliminary or confirmatory sampling and monitoring;
- Mitigate the severity of the Occurrence or its consequences; and
- Prepare for other response actions should the situation become more serious, requiring emergency response organizations to mobilize or activate resources.

Proceed to Step 30.

Step 25 An **Unusual Occurrence** is a non-emergency Occurrence that has significant impact or potential for impact on safety, environment, health, security, or operations. [DOE Order 5000.3B 7.a.(2)] **Table 1 (Categorization of Occurrences)** provides more information about the types of Occurrences that are to be categorized as Unusual Occurrences.

Note: *The lists in Table 1, as well as in Attachment I in DOE Order 5000.3B, are not intended to be all-inclusive. Their purpose is to categorize Occurrences so that DOE field and operating contractors understand the degree of significance that is associated with the emergency, unusual, and off-normal categories defined in DOE Order 5000.3B. They provide a minimum set of standards necessary to allow specific sites/facilities to develop and document specific Reportable Occurrences applicable to their operations. [DOE Order 5000.3B Attachment 1]*

YES If the release is an Unusual Occurrence; proceed to Step 26 for guidance on appropriate requirements.

NO If the release is **not** an Unusual Occurrence; proceed to Step 27 for guidance on determining if the release is an Off-Normal Occurrence.

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- Step 26** • Oral notification to DOE of Unusual Occurrences must be made as soon as sufficient information is obtained to indicate the general nature and extent of the Occurrence, but in all cases, within 2 hours of categorization. [DOE Order 5000.3B 7.b.(2)]

For oral notification, the Facility Manager must simultaneously contact (1) the DOE Facility Representative and (2) the HQ Emergency Operations Center (EOC), through which the DOE Program Manager and any other necessary program staff can be located and direct communication links with the Facility Manager be established. The Facility Manager may use the local Field/Site EOC to expedite establishing the direct communication link required above. [DOE Order 5000.3B 8.a.(5)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)

- A Notification Report must be prepared and submitted before the close of the next business day from the time of categorization (not to exceed 80 hours). [DOE Order 5000.3B 7.b.(2)] The Facility Manager must prepare and submit the Notification Report (fields 1 through 18 of the Occurrence Report), and distribute it to the DOE Facility Representative and Program Manager. When an unclassified Notification Report is submitted using the computerized DOE ORPS data base, the distribution requirement is automatically satisfied. [DOE Order 5000.3B 8.a.(10)]

Proceed to Step 30.

- Step 27** **Off-Normal Occurrences** are abnormal or unplanned events or conditions that adversely affect, potentially affect, or are indicative of degradation in, the safety, security, environmental or health protection performance or operation of a facility. [DOE Order 5500.1B Attachment 2 (52)] See **Table 1 (Categorization of Occurrences)** for more information about the types of Occurrences that are to be categorized as Off-Normal Occurrences.

Note: *The lists in Table 1, as well as in Attachment I in DOE Order 5000.3B, are not intended to be all-inclusive. Their purpose is to categorize Occurrences so that DOE field and operating contractors understand the degree of significance that is associated with the emergency, unusual, and off-normal categories defined in DOE Order 5000.3B. They provide a minimum set of standards necessary to allow specific sites/facilities to develop and document specific Reportable Occurrences applicable to their operations. [DOE Order 5000.3B Attachment 1]*

Supplemental Information (continued)

YES If the release is an Off-Normal Occurrence, proceed to Step 29 for guidance on appropriate reporting requirements.

NO If the release is **not** an Off-Normal Occurrence, proceed to Step 28.

Step 28 If the release does not meet the criteria for an Operational Emergency, an Unusual Occurrence, or an Off-Normal Occurrence, then it is not covered by DOE's Occurrence Reporting or Emergency Management System reporting requirements.

Note: *The guidance in Step 28 is based on the determination that the event or condition in question involves a release that is not an Operational Emergency, an Unusual Occurrence, or an Off-Normal Occurrence. However, if the event or condition is a Non-Operational Emergency (i.e., Energy and Continuity of Government Emergency) then it may be subject to the Occurrence Reporting or the EMS.*

Although an emergency release would be classified as "Operational" rather than "Energy" or "Continuity of Government", this flowchart should not be misinterpreted to imply that Energy or Continuity of Government Emergencies that happen to also involve releases are exempt from Occurrence Reporting or the EMS. See the DOE 5000 series Orders for more information on responding to this event or condition if it may be a Non-Operational Emergency. **Stop.**

Step 29 For Off-Normal Occurrences, oral notification to DOE is not mandatory; however, a Notification Report must be prepared and submitted before the close of the next business day from the time of categorization (not to exceed 80 hours). [DOE Order 5000.3B 7.b.(3)] The Facility Manager must prepare and submit the Notification Report (fields 1 through 18 of the Occurrence Report), and distribute it to the DOE Facility Representative and Program Manager. When an unclassified Notification Report is submitted using the computerized DOE ORPS data base, the distribution requirement is automatically satisfied. [DOE Order 5000.3B 8.a.(10)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)

Step 30 Occurrence Reports that are prepared in accordance with DOE Order 5000.3B at DOE facilities where classified operations are conducted or classified information may be generated must be reviewed by an authorized classifier (AC) prior to being distributed in hard copy or via the ORPS. At these facilities, a log or other equivalent record must be maintained of reports submitted to the AC, including the date and time of submission, the individual who proposed them, the date and time of AC review, and the AC's name and position. [DOE Order 5000.3B 7.e.(2)]

Supplemental Information (continued)

YES If classified operations are conducted at the facility, proceed to Step 32 for guidance on requirements for sanitizing the Occurrence Report.

NO If there are **no** classified operations conducted or classified information generated at the facility, proceed to Step 31.

Step 31 An Occurrence Report must be prepared for all Reportable Occurrences, according to the instructions provided in INSTRUCTIONS FOR COMPLETING AN OCCURRENCE REPORT. [DOE Order 5000.3B Attachment II]

The Facility Manager must determine and document in the Occurrence Report, as soon as is practicable, the following: [DOE Order 5000.3B 8.b.(1)]

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

Note: *The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.*

Proceed to Step 33.

Step 32 For Notification Reports, 10-Day Occurrence Reports, and Final Occurrence Reports that are determined by the AC to contain classified information, the complete reports must be distributed to the DOE Facility Representative and Program Manager in hard copy in accordance with DOE Order 5000.3B and DOE 5635 series Orders. The Facility Manager, after a review by an AC and removal of all classified material, must then enter the sanitized report into ORPS. [DOE Order 5000.3B 7.e.(3)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)

Step 33 Changes in an Occurrence may involve further degradation in the level of safety of the facility or other worsening conditions, any change from one Emergency class or category to another, or termination of an Emergency. [DOE Order 5000.3B 7.c.]

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YES If there has been a change in the condition of the Occurrence, proceed to Step 34 for guidance about procedures for responding to changes in conditions.

NO If there has not been a change in the condition of the Occurrence, proceed to Step 37.

- Step 34**
- In addition to the initial oral notifications, follow-up oral notification must be made to DOE for any of the following: [DOE Order 5000.3B 7.c.]
 - Any further degradation in the level of safety of the facility or other worsening conditions, including those that require the declaration of any of the Emergency action levels, if such a declaration has not been previously made;
 - Any change from one Emergency action level or category to another; or
 - Termination of an Emergency.
 - The 10-Day Occurrence Report must be updated when significant new information is available. [DOE Order 5000.3B 7.d.(3)]
 - For oral notification, the Facility Manager must simultaneously contact (1) the DOE Facility Representative and (2) the HQ Emergency Operations Center (EOC), through which the DOE Program Manager and any other necessary program staff can be located and direct communication links with the Facility Manager be established. The Facility Manager may use the local Field/Site EOC to expedite establishing the direct communication link. [DOE Order 5000.3B 8.a.(5)] (The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.)
 - If the original Occurrence was determined by an AC to be classified, the updated Occurrence Report may also be classified. Follow the same steps for updating the classified and sanitized reports as were followed in developing and distributing the original reports. See Step 30.

Step 35 Did the change in the Occurrence require the Occurrence to be re-categorized? (See Step 34)

YES If the release has been re-categorized, proceed to Step 36 for guidance on additional requirements applicable to re-categorized releases.

NO If the release has **not** been re-categorized, proceed to Step 37.

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Step 36 The Manager or Administrator of each DOE- or contractor-operated facility must accomplish the following:

- Concurrently notify the HQ EOC and the Field Element of all changes in the Emergency class within 15 minutes of the redesignation; [DOE Order 5500.2B 12.b.(2)(b)] and
- Follow the appropriate procedures for the new category or class of Occurrence.

Proceed to Step 2.

Step 37 • The Facility Manager must **prepare** and **distribute** the **10-day Occurrence Report** to the following:

- The Program Manager;
- The affected program self-assessment group;
- All Program Secretarial Officers (PSOs);
- The Heads of all Field Organizations;
- The DOE Facility Representative;
- The Office of Environmental Safety and Health (EH-1);
- All DOE Management and Operations (M&O) contractors; and
- The Office of Nuclear Safety Policy and Standards (EH-60).

Note: *The facility manager at DOE-owned, contractor-operated facilities will be a contractor. At Power Administrations, which are owned and operated by DOE employees, the facility manager will be a DOE employee.*

When unclassified Occurrence Reports (10-Day and Final) are entered onto the DOE ORPS data base by the Facility Manager, the distribution requirement is automatically satisfied. [DOE Order 5000.3B 8.b.(6)]

Note: *The **Facility Representative**, in consultation with the DOE Program Manager, should **provide** the Facility Manager his or her **assessment** of the Occurrence, initial and proposed corrective actions, follow-up of the contractor, and any other actions DOE has taken since the Occurrence, in a timely manner, for inclusion in the Occurrence*

Supplemental Information (continued)

Report. If the computerized DOE ORPS data base is being used, the Facility Representative's comments should be provided via the data base. [DOE Order 5000.3B 8.b.(3)]

Note: *The Office of Environment, Safety, and Health (EH-1) shall maintain an **unclassified** central DOE operational data base, the **Occurrence Reporting and Processing System (ORPS)**, to contain all unclassified Occurrence Reports to be entered by the Facility Manager. The Occurrence Report documentation and distribution requirements may be satisfied by utilization of the ORPS, **with the exception of those Occurrence Reports containing classified information.** The information in the data base is available to all Departmental Elements and DOE operating contractors. [DOE Order 5000.3B 8.c.(1)]*

Contractors must maintain the ORPS data base up-to-date on the status of Final Occurrence Report corrective actions. Status reports of all incomplete Occurrence Reports (not final) and incomplete corrective actions are available at any time from the ORPS data base. [DOE Order 5000.3B 8.b.(9)]

- The Facility Manager must submit an Occurrence Report within 10 working days of categorization. The 10-day report must include any updated information provided by the DOE Facility Representative. Complete information should be available at that time for the majority of Reportable Occurrences. [DOE Order 5000.3B 8.b.(2)]
- The Final Occurrence Report must be prepared by the Facility Manager and submitted when the analysis of the Occurrence has been completed, root cause(s) and contributing cause(s) finalized, corrective action(s) determined and scheduled, and lessons-learned identified. This report must be submitted to the DOE Facility Representative within 45 days of categorization of the Occurrence. [DOE Order 5000.3B 8.b.(4)]
- The **Final Occurrence Report** shall be **reviewed** and **approved** by the DOE Facility Representative within seven working days of receipt and forwarded to the Program Manager for approval, when the information required is provided. The Program Manager must review and approve the Final Occurrence Report with 14 days of receipt. The Program Manager should provide comments on the final report at this time. The Program Manager's comments are not mandatory. If the final Occurrence Report is not approved, then the report must be returned to the Facility Manager with an explanation. The revised Final Occurrence Report must be resubmitted within 21 days of disapproval. [DOE Order 5000.3B 8.b.(5)]

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- The Facility Manager must **distribute** the **Final Occurrence Report** to the following:
 - The Program Manager;
 - The affected program self-assessment group;
 - All PSOs;
 - The Heads of all Field Organizations;
 - The DOE Facility Representative;
 - The Office of Nuclear Safety (NS-1);
 - The Office of Environmental Safety and Health (EH-1);
 - All DOE Management and Operations (M&O) contractors; and
 - The Office of Nuclear Safety Policy and Standards (EH-60).²

When unclassified Occurrence Reports (10-day and final) are entered onto the DOE ORPS data base, the distribution requirement is automatically satisfied. [DOE Order 5000.3B 8.b.(6)]

² DOE Order 5000.3B 8.b.(6) specifically refers to NE-70; however, the Office of Nuclear Safety Policy and Standards has become EH-60.

Table 1: Categorization of Occurrences (DOE Order 5000.3B Attachment I) - Selected Examples

Occurrences Affecting:	Emergency	Unusual	Off-Normal
Nuclear Criticality Safety	Nuclear criticality achieved in a system not intended to reach criticality that results or could result in actual or potential facility damage or releases of radioactive material.	Any actuation of a Nuclear Incident Monitor (NIM) or Criticality Accident Alarm system not due to approved testing. Violation of the double contingency criticality specifications.	Any nuclear criticality safety violation or infraction of procedures not covered by other definitions (e.g., violation of one contingency).
Fires and Explosions	Any Occurrence that causes uncontrolled release of radioactive or hazardous material to the environment that could result in significant off-site consequences. Any Occurrence not under control causing more than minor damage to confinement systems, loss of building integrity, or multiple facilities.	Any Occurrence that threatens failure or degrades performance of Class A Equipment. Any Occurrence that activates a fire suppression system, except under approved testing. Any Occurrence within primary confinement or containment boundaries of a nuclear facility.	Any fire that threatens failure or degrades performance of Class B Equipment. Any unplanned fire within a facility that takes longer than 10 minutes to extinguish following the arrival of fire protection personnel.
Operations	Loss of any primary confinement/containment that results in uncontrolled hazardous material or energy release.	Any actuation of safety systems, automatic protection systems, emergency systems, or engineered safety features, except under approved testing.	Any actuation of systems designed, installed, and operated for the protection of facility or co-located facility workers (e.g., fire protection systems, radiation monitoring systems), except under approved testing.

Table 1: Categorization of Occurrences (Cont'd)

Occurrences Affecting:	Emergency	Unusual	Off-Normal
Radionuclide Releases	Any release of radionuclides in concentrations that, if averaged over 24 hours, would exceed five times the respective RQ.	<p>Release of a radionuclide that exceeds a federally permitted level by the amount of an RQ, or where no federally permitted release exists and the release exceeds the RQ.</p> <p>Release of radionuclide that violates environmental requirements in Federal permits, regulations, or DOE standards.</p> <p>Release below Emergency levels that requires immediate (<4 hours) reporting to Federal regulatory authorities or triggers specific action levels for an outside Federal agency.</p>	<p>Any radionuclide release that is not part of a normal monitored release and that exceeds 50 percent of a CERCLA RQ.</p> <p>Any controlled radionuclide release that occurs as a monitored part of normal operations and that exceeds what analysis of historical data show is expected during normal operations.</p> <p>Any detection of a radionuclide where such material is not expected.</p> <p>Any release that will be reported in writing to State and local agencies in a format other than routine monthly or quarterly reports.</p>

Table 1: Categorization of Occurrences (Cont'd)

Occurrences Affecting:	Emergency	Unusual	Off-Normal
<p>Release of Hazardous Substances, Regulated Pollutants, and Oil</p>	<p>Any actual or potential release to the environment that results in or could result in significant off-site consequences.</p> <p>Any release of hazardous substances or regulated pollutants in concentrations that exceed five times their RQ.</p>	<p>Any hazardous substance or regulated pollutant that exceeds an RQ, or exceeds a federally permitted release by the amount of an RQ.</p> <p>Release of a hazardous substance, regulated pollutant, or oil that violates environmental requirements in Federal permits or regulations, or DOE standards.</p> <p>Release below Emergency levels that requires immediate (<4 hours) reporting to Federal agencies or triggers specific action levels for an outside Federal agency.</p> <p>Any release of 100 gallons or more of oil.</p>	<p>Release of a hazardous substance or regulated pollutant that is not part of a normal, monitored release and that exceeds 50 percent of an RQ.</p> <p>Any release of oil less than 100 gallons but greater than 10 gallons.</p> <p>Any detection of a toxic or hazardous substance where such material is not expected.</p> <p>Any release that is an Unusual Occurrence, but will be reported in writing to State/local agencies in a format other than routine reports.</p> <p>Any controlled release that occurs as a monitored part of normal operations and that exceeds what analysis of historical data shows is expected.</p>
<p>Discovery of Radioactive or Hazardous Material Contamination Due to DOE Operations</p>	<p>Discovery of contamination that results or could result in significant consequences.</p> <p>Discovery of hazardous substance contamination in concentrations that exceed five times the RQ.</p>	<p>Discovery of contamination that does not represent an immediate threat to the public, but that exceeds an RQ.</p> <p>Any discovery of groundwater contamination that is not part of an existing plume previously identified in either an annual report or in any CERCLA or RCRA activity or report.</p>	<p>Discovery of on-site contamination that exceeds 50 percent of an RQ.</p>

Table 1: Categorization of Occurrences (Cont'd)

Occurrences Affecting:	Emergency	Unusual	Off-Normal
Ecological Resources		Any Occurrence causing significant impact to any ecological resource for which DOE is a trustee.	
Transportation	An off-site transportation event involving the release of an RQ of a hazardous substance that is transported in support of Departmental operations.	<p>Any on-site transportation event involving the release of an RQ of a hazardous substance.</p> <p>A transportation event involving the release of hazardous material, other than radionuclides, in an amount greater than a "limited quantity" (per 49 CFR 171.8).</p> <p>An off-site transportation event involving the release of radionuclides.</p> <p>An on-site transportation event involving the release of radionuclides greater than an "excepted quantity" (per 49 CFR 173).</p> <p>Any radioactive shipment transported off-site that arrives at its destination with radiation or contamination levels in excess of DOT allowable limits.</p> <p>Any shipment of radioactive material or hazardous waste that arrives at its destination with a non-reconcilable shipping paper discrepancy or with an unaccounted-for package.</p>	<p>A transportation event involving a release of hazardous material, other than radioactive material, not exceeding a limited quantity.</p> <p>Any other violation of regulatory requirements involving improper material descriptions, marking, labeling, placarding, routing, or separation/segregation of hazardous materials that could or does result in the following:</p> <ul style="list-style-type: none"> • Improper handling or storage, • Personnel exposures higher than permitted, or • Emergency response actions inconsistent with the actual hazard. <p>Any transportation event involving Departmental property resulting in vehicular or aircraft damage of more than \$5,000.</p>

Table 2: Classification of Operational Emergencies (DOE Order 5500.2B)

Emergencies Affecting:	General Emergency	Site-Area Emergency	Alert
Reactors	A General Emergency must be declared when events are in progress or have occurred that involve actual or imminent catastrophic core degradation or melting with potential for loss of containment or confinement integrity (e.g., release of large quantities of fission products to the environs) and/or release of radioactive material that can reasonably be expected to exceed PAG exposure levels off-site.	A Site-area Emergency must be declared when events are in progress or have occurred that involve actual or potential major failures of plant functions necessary for protection of workers and the public. Any release of radioactive materials expected to exceed PAG exposure levels on-site but not expected to exceed PAGs off-site is classified as a Site-area Emergency.	An Alert must be declared when events are in progress or have occurred that involve an actual or potential substantial degradation of the level of safety of the reactor. During an Alert, any release of radioactive materials to the environment is expected to be limited to small fractions of the PAG exposure levels.
Non-Reactor Facilities	A General Emergency must be declared when events are in progress or have occurred that involve actual or imminent catastrophic reduction of facility safety systems with potential for loss of containment or confinement integrity (e.g., release of large quantities of hazardous materials to the environs) and/or release of hazardous materials (radiological or non-radiological) that can reasonably be expected to exceed appropriate PAG or ERPG exposure levels off-site.	A Site-area Emergency must be declared when events are in progress or have occurred that involve actual or likely major failures of facility functions needed for protection of workers and the public. Any release of hazardous materials (radiological or non-radiological) expected to exceed appropriate PAG or ERPG exposure levels on-site but not expected to exceed the appropriate PAGs or ERPGs off-site is classified as a Site-area Emergency.	An Alert must be declared when events are in progress or have occurred that involve an actual or potential substantial degradation of the level of safety of the facility. During an Alert, any release of hazardous materials (radiological or non-radiological) is expected to be limited to small fractions of the appropriate PAG or ERPG exposure levels.

Table 2: Classification of Operational Emergencies (cont'd)

Emergencies Affecting:	General Emergency	Site-Area Emergency	Alert
<p>Nuclear Weapons, Components, or Test Devices</p>	<p>A General Emergency must be declared when events are in progress or have occurred that involve actual or likely catastrophic failures in safety or security systems threatening the integrity of the weapon, component, or test device or placing the general public at risk to releases of radiological materials that can reasonably be expected to exceed PAG exposure levels. (This class of Emergency is also applicable to DOE in the event of an accident or incident involving a DOD nuclear weapon component. Such events are categorized by DOD as a "Broken Arrow." Events categorized by DOD as a "Bent Spear" are typically similar to events categorized by DOE as an "Alert." Events categorized by DOD as a "Dull Sword" are categorized and handled by DOE according to the procedures established by DOE Order 5000.3A for an "Unusual Occurrence.")</p>	<p>A Site-area Emergency must be declared when events are in progress or have occurred that involve actual or potential safety or security system failures that threaten the integrity of the unit and may adversely impact the safety and health of the workers in the immediate area, but not personnel in a general public area.</p>	<p>An Alert must be declared when events are in progress or have occurred that involve an actual or potential substantial degradation of the level of safety of the weapon, component, or test device. The degradation would not involve an immediate threat to the facility or to the general public.</p>

Table 2: Classification of Operational Emergencies (cont'd)

Emergencies Affecting:	General Emergency	Site-Area Emergency	Alert
Safeguards and Security	A General Emergency must be declared when events are in progress or have occurred that involve malevolent action resulting in catastrophic degradation of protection systems that could lead to substantial off-site impacts.	A Site-area Emergency must be declared when events are in progress or have occurred that involve actual malevolent acts resulting in major failures of protective systems.	An Alert must be declared when events are in progress, have occurred, or are anticipated that could involve an actual or potential substantial degradation in the level of protection of the facility or the loss or possible loss of Special Nuclear Material (SNM). Pre-emergency conditions that warrant increased safeguards and security measures must be reported in accordance with DOE Order 5000.3A, Attachment 2, Group 5, Procedures for Non-emergency Occurrences.
Transportation	A General Emergency must be declared when events have occurred that involve an actual or imminent catastrophic reduction in the safety of the shipment. Any release of hazardous materials (radiological or non-radiological) expected to exceed appropriate PAG or ERPG exposure levels in a general public area, or if the event has occurred on a DOE site, the release is expected to exceed appropriate PAG or ERPG exposure levels off-site, is classified as a General Emergency.	A Site-area Emergency must be declared when events are in progress or have occurred that involve an actual or potential major reduction in the safety of the shipment. Any release of hazardous materials (radiological or non-radiological) expected to exceed appropriate PAG or ERPG exposure levels in the immediate vicinity of the accident or incident but not expected to exceed the appropriate PAGs or ERPGs in a general public area is classified as a Site-area Emergency.	An Alert must be declared when events are in progress or have occurred that involve an actual or potential substantial degradation of the safety of the shipment. During an Alert, any release of hazardous materials (radiological or non-radiological) is expected to be limited to small fractions of the appropriate PAG or ERPG exposure levels.

References

40 CFR 302.4 Table 302.4, "List of Hazardous Substances and Reportable Quantities"

40 CFR 302.4 Appendix B, "Radionuclides"

40 CFR 302.6, "Episode Release Reporting Requirements Under CERCLA"

40 CFR 302.8, "Continuous Release Reporting Requirements"

40 CFR 300.405, "National Contingency Plan"

40 CFR 355, "Emergency Release Notification"

40 CFR 355 Appendix A, "The List of Extremely Hazardous Substances and their Threshold Planning Quantities"

"Comprehensive Environmental Response, Compensation, and Liability Act" (CERCLA) as Amended by the "Superfund Amendments and Reauthorization Act" (SARA)

"Emergency Planning and Community Right-to-Know Act" (EPCRA)

S-3 (DP-9) Memorandum, July 19, 1990; "Emergency Management and Off-Site Notification."

DOE Order 5000.3B, "Occurrence Reporting and Processing of Operations Information," January 19, 1993

DOE Order 5500.1B, "Emergency Management System," May 30, 1991

DOE Order 5500.2B, "Emergency Categories, Classes, and Notification and Reporting Requirements," April 30, 1991

DOE Order 5500.3A, "Planning and Preparedness for Operational Emergencies," April 30, 1991

DOE Order 5500.10, "Emergency Readiness Assurance Program," April 30, 1991

USEPA Publication 560/4-91-011, "Title III List of Lists"

Acronym List

AC	Authorized Classifier
AEA	Atomic Energy Act of 1954
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWA	Clean Water Act
DEO	Director of Emergency Operations
DP-9	Office of Self-Assessment
EH-1	Assistant Secretary for Environment, Safety, and Health
EH-60	Office of Nuclear Safety Policy and Standards
EHS	Extremely Hazardous Substance
EMS	Emergency Management System
EOC	DOE Headquarters Emergency Operations Center
EPCRA	Emergency Planning and Community Right-to-Know Act
ERAP	Emergency Readiness Assurance Programs
ERPG	Emergency Response Planning Guide
FWPCA	Federal Water Pollution Control Act
HS	Hazardous Substance
LEPC	Local Emergency Planning Committee
M&O	Management and Operations
NIM	Nuclear Incident Monitor
NRC	Nuclear Regulatory Commission
NS-1	Office of Nuclear Safety
ORPS	Occurrence Reporting and Processing System
PAG	Protective Action Guide
PSO	Program Secretarial Officers
RQ	Reportable Quantity
SARA	Superfund Amendments and Reauthorization Act
SERC	State Emergency Response Commission
SNM	Special Nuclear Material