U.S. Department of Energy
Washington, D.C.

ORDER

NE O 232.2

Approved: August 2025
Chg 1 (MinChg): October 2025

SUBJECT: OFFICE OF NUCLEAR ENERGY OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS INFORMATION

1. OBJECTIVE. To notify Department of Energy (DOE) personnel about events under the responsibility of the Office of Nuclear Energy (NE) that could adversely affect the health and safety of the public or the workers, the environment, DOE missions, or the credibility of the Department.

2. CANCELS/SUPERSEDES.

   This Order applies in lieu of DOE O 232.2A (current version) with respect to the facilities and activities covered by Section 3 below. Cancellation of a directive does not, by itself, modify or otherwise affect any contractual or regulatory obligation to comply with the directive. Contractor Requirements Documents (CRDs) that have been incorporated into a contract remain in effect throughout the term of the contract unless and until the contract or regulatory commitment is modified to either eliminate requirements that are no longer applicable or substitute a new set of requirements.

3. APPLICABILITY.

   a. Departmental Elements. This Order applies to all Departmental Elements including NNSA, and their associated field elements,[1] to the extent they are involved with facilities and activities described in paragraph 3.b.

   b. NE Facilities and Activities. Except as stated in paragraph 3.d., this Order applies to all facilities and activities under the responsibility of NE, including nuclear facilities and nuclear activities authorized by NE. Such nuclear activities include the design, construction, management, operation, decontamination, decommissioning, or demolition of nuclear facilities.

   c. Contractors. Except as stated in paragraph 3.d., this Order sets forth conditions to be applied to contractors performing work that involves facilities and activities described in paragraph 3.b. The CRD must be included in contracts under which the contractor is involved with such facilities and activities.

   d. Equivalencies and Exemptions.

      1) Exemption. In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at 50 United States Code (U.S.C.) sections 2406 and 2511, and to ensure consistency throughout the joint Navy/DOE Naval Nuclear Propulsion Program, the Deputy Administrator

[1] Operations offices, service centers, site offices, area offices, field offices, government-owned government-operated facilities, and regional offices of federally-staffed laboratories that report directly to a DOE Headquarters office.

for Naval Reactors (Director) implements and oversees requirements and practices pertaining to this directive for activities under the Director's cognizance, as deemed appropriate.

2) Exemption. This Order does not apply to activities regulated by either the Nuclear Regulatory Commission (NRC) or the authorities of a State under an agreement with the NRC per the Atomic Energy Act of 1954, as amended (AEA).

3) Other Equivalencies/Exemptions. Any other equivalency or exemption to this Order requires the approval of NE's Safety Basis Approval Authority (SBAA). Requests for equivalencies/exemptions will be adjudicated by NE's SBAA within 14 calendar days of receipt of a substantially complete request.

4. REQUIREMENTS.

a. General.

Occurrences resulting from activities performed at facilities or in support of facility operations must be reported in accordance with the provisions of this Order. Local implementing procedures may specify additional learning and reporting requirements beyond those stated in this Order but must, at a minimum, include all of the requirements in this Order.

b. Event or Condition Identification and Response.

NE O 422.1, *Conduct of Operations*, current version, and NE O 151.1, *Comprehensive Emergency Management System*, current version, provide expectations for identifying and responding to abnormal events and emergencies. Locally approved processes and procedures must ensure that the requirements of this Order for reporting are initiated for events specified in the Occurrence Reporting Criteria (Attachment 2) of this Order. However, reporting must not interfere with operations personnel taking appropriate actions to stabilize and/or place the facility/operation in a safe condition upon discovery of an abnormal event or condition.

c. Event or Condition Categorization.

Events and conditions must be categorized in accordance with the Occurrence Reporting Criteria (Attachment 2) and within the timeframes specified in the Occurrence Reporting Model (Attachment 4), or as soon thereafter as reasonably possible.

d. Occurrence Report Processing. Occurrence reports must be processed in accordance with the requirements outlined in the attachments on Occurrence Report Preparation (Attachment 3) and Occurrence Reporting Model (Attachment 4).

e. Occurrence Investigation and Analysis. Reportable occurrences must be investigated and analyzed in accordance with local procedures,

5. RESPONSIBILITIES.

a. Heads of Field Elements (Field Element Manager [FEM]/Safety Basis Approval Authority [SBAA]).

(1) Designate and direct Facility Representatives or Designated DOE Representatives to fulfill the responsibilities required by this Order.

(2) Identify contracts to which the CRD should apply and notify the cognizant contracting officers.

(3) Ensure that contracts properly flow down the requirements of the CRD to subcontracts, as applicable.

(4) Ensure that operational information with potential for broader implications in DOE is identified and communicated to NE with timeliness commensurate with HQ's information needs.

(5) Consider whether Occurrence Reports and operations information from other organizations are disseminated to appropriate DOE and contractor activities within their cognizance, are reviewed for generic implications, and are used to improve operations.

b. Facility Representatives or Designated DOE Representatives (as defined in this Order; see definition in Attachment 5). In addition to other requirements prescribed in this Order, Facility Representatives or Designated DOE Representatives will:

(1) Evaluate facility implementation of the notification and reporting process to ensure that it is compatible with and meets the requirements of this Order and that facility personnel involved in these operations perform the related functions.

(2) Be readily available to operating contractor personnel to facilitate the notification and reporting of occurrences.

(3) Ensure that occurrences that may have generic or programmatic implications are identified and elevated for appropriate action.

(4) Review and assess reportable occurrence information from facilities under their cognizance, both to determine the acceptability of the evaluation of the significance and approach taken, and to evaluate that facility personnel involved in these operations perform the related functions.

(5) Elevate any unresolved issues regarding actions or determinations on a reportable occurrence for resolution and direction.

c. Contracting Officers. Incorporate the CRD into contracts in a timely fashion upon notification of its applicability and in accordance with instructions from Heads of Field Element instructions.

6. REFERENCES.

a. 10 CFR Part 830, Nuclear Safety Management.

b. 10 CFR Part 835, Occupational Radiation Protection.

c. 10 CFR Part 851, Worker Safety and Health Program.

d. 29 CFR Part 1904, Recording and Reporting Occupational Injuries and Illnesses.

e. 29 CFR Part 1910, Occupational Safety and Health Standards.

f. 40 CFR Part 302, Designation, Reportable Quantities, and Notification.

g. 40 CFR Part 355, Emergency Planning and Notification.

h. 49 CFR Parts 106-180 and 350-399, Transportation.

i. NE O 151.1, *Comprehensive Emergency Management System*, current version.

j. NE O 225.1, *Accident Investigations*, current version.

k. NE O 414.1, *Quality Assurance*, current version.

l. NE O 422.1, *Conduct of Operations*, current version.

m. DOE 440.1B, *Worker Protection Program for DOE (Including The National Nuclear Security Administration) Federal Employees*, current version.

n. NE O 458.1, *Radiation Protection of the Public and the Environment*, current version.

o. DOE O 460.1, *Packaging and Transportation Safety*, current version.

p. DOE O 461.1, *Packaging and Transportation for Offsite Shipment of Materials of National Security Interest*, current version.

q. NE O 470.1, *Safeguards and Security Program*, current version.

r. DOE STD-1066-2023, *Fire Protection.*

s. DOE STD-1098-2008, *Radiological Control*.

t. Executive Order 12344, Naval Nuclear Propulsion Program.

7. DEFINITIONS. See Attachment 5.

8. CONTACT. Questions concerning this order should be addressed to the Office of Nuclear Energy.

BY ORDER OF THE SECRETARY OF ENERGY:

JAMES P. DANLY
Deputy Secretary

CONTRACTOR REQUIREMENTS DOCUMENT

NE O 232.2, *Occurrence Reporting and Processing of Operations Information*

Regardless of the performer of the work, the contractor (including DOE direct contractors) is responsible for compliance with the requirements of this Contractor Requirements Document (CRD) and Attachments 2, 3, 4, and 5, and for flowing down these requirements to subcontractors at any tier to the extent necessary to ensure the contractor's compliance with the requirements. References to a DOE directive in this CRD or in its attachments refer to the CRD associated with the referenced DOE directive. The contractor must meet the following requirements.

1. GENERAL REQUIREMENTS.

   a. For reportable occurrences, contractors must categorize the occurrences, notify DOE as required, and prepare and submit Occurrence Reports. Local implementing procedures may specify additional learning and reporting requirements beyond those stated in this CRD, but must at a minimum include all requirements of this CRD.

2. SPECIFIC REQUIREMENTS.

   a. Event or Condition Identification and Response.

      Identify abnormal or emergency conditions based on local processes and procedures that implement requirements of NE 422.1, *Conduct of Operations*, current version, and NE 151.1, *Comprehensive Emergency Management System*, current version.

      Ensure that the requirements of this CRD for reporting are initiated for events specified in the Occurrence Reporting Criteria (Attachment 2).

      Ensure that reporting does not interfere with operations personnel taking appropriate actions to stabilize and/or place the facility/operation in a safe condition upon discovery of an abnormal event or condition.

   b. Event or Condition Categorization.

      Events and conditions must be categorized in accordance with the Occurrence Reporting Criteria (Attachment 2) and within the timeframes specified in the Occurrence Reporting Model (Attachment 4), or as soon thereafter as reasonably possible.

   c. Occurrence Report Processing.

      Occurrence reports must be processed in accordance with the requirements outlined in the Occurrence Report Preparation (Attachment 3) and Occurrence Reporting Model (Attachment 4).

   d. Occurrence Investigation and Analysis.

Reportable occurrences must be investigated and analyzed in accordance with local procedures, as indicated in the Occurrence Reporting Model (Attachment 4).

3. RESPONSIBILTIES.

Facility Managers (as defined in this Order; see definition in Attachment 5). In addition to other requirements prescribed in this Order, Facility Managers are responsible for the following:

a. Ensure that procedures implemented for notification and reporting meet the requirements of this Order.

b. Follow Contractor Assurance System processes for reportable occurrences.

c. Review and assess reportable occurrence information for their facilities to assess generic implications and corrective action implementation, closeout, and effectiveness, as required; and to ensure that facility personnel involved in these operations perform the related functions.

d. Prepare and transmit Occurrence Reports in accordance with this Order's requirements to the Field Element Manager or the Safety Basis Approval Authority as applicable.

4. DEFINITIONS. See Attachment 5.

OCCURRENCE REPORTING CRITERIA
NE O 232.2

[This Attachment provides information and requirements applicable to NE O 232.2 and contracts that include the associated CRD (Attachment 1 to NE O 232.2).]

The following are the Reporting Criteria, which are categorized into groups and appropriate subgroups related to DOE operations. The Reporting Criteria provide a set of requirements that must be used to identify reportable occurrences.

1. Reporting Criteria Groups. The seven groups of categorized occurrences are as follows.

   Group 1 - Operational Emergencies

   Group 2 - Personnel Safety and Health

   Group 3 - Nuclear Safety Basis

   Group 4 - Facility Status

   Group 5 - Environmental

   Group 6 - Contamination/Radiation Control

   Group 7 - Packaging and Transportation

2. Occurrence Reporting Criteria.

Group 1 - Operational Emergencies

#	Criterion
(1)	An Operational Emergency, Alert, Site Area Emergency, or General Emergency as defined in NE O 151.1.

Group 2 - Personnel Safety and Health

Subgroup A Occupational Injuries and Exposures.

[Note: See "Personnel Exposure" in Definitions in this Order. 29 CFR Sections 1904.7(b)(5)(i) and (ii) define "medical treatment" and "first aid." For reporting ionizing radiation exposures, see Group 6 Contamination/Radiation Control, Subgroup C Radiation Exposure.]

#	Criterion
(1)	Any occurrence due to DOE operations resulting in a fatality or terminal injury/illness.
(2)	Any single occurrence, injury, or exposure requiring in-patient hospitalization over 24 hours of three or more personnel.

(3) Any single occurrence, injury, or exposure resulting in an occupational injury that requires in-patient hospitalization for five or more days, commencing within seven days from the date the injury.

(4) Personnel exposure to chemical, biological, or physical hazards that exceed 10 times the limits established in 10 CFR Part 851, *Worker Safety and Health Program* (see 10 CFR Section 851.23 *Safety and Health Standards*) or exceed levels deemed Immediately Dangerous to Life and Health (IDLH).

(5) Any unexpected or unintended personal contact (burn, shock,injury, etc.) with a hazardous energy source (live electrical power circuit, mechanical hazards, steam, pressurized gas, etc.).

Subgroup B Fires.

Criterion

(1) Any fire within primary confinement/containment boundaries of a nuclear facility, -[Note: Facility specific documents need to define what constitutes the primary confinement/containment boundary.]

(2) Any fire in a nuclear facility, that has potential to challenge the Documented Safety Analysis.

Group 3 - Nuclear Safety Basis

Subgroup A Technical Safety Requirement and Other Hazard Control Violations (excluding nuclear criticality).

[Note: Report nuclear criticality events under Group 3, Subgroup C below.]

Criterion

(1) Any violation or noncompliance of a Technical Safety Requirement (or Operational Safety Requirement) Safety Limit, Hazard Category 1, 2, or 3 nuclear facility's Technical Safety Requirement (or Operational Safety Requirement) Limiting Control Setting, Limiting Condition for Operation, Specific Administrative Control, or Surveillance Requirement.

Exception: An event consisting solely of a surveillance test (to include any periodic activity explicitly captured in the Documented Safety Analysis that is used to ensure operability or viability of a structure, system, or component) performed after the prescribed surveillance period, and in which the structure, system, or component was found to be capable of performing its specified safety function. (See separate criterion for late surveillance tests below.)

(2) Violation of a DOE issued Safety Evaluation Report that are not addressed by Criterion 3A(1).

Subgroup B Documented Safety Analyses.

Criterion

(1) Identification of a radioactive material inventory that causes a nuclear facility to exceed its current approved/authorized Hazard Category.

Subgroup C Nuclear Criticality Safety Control Violations.

Criterion

(1) A criticality accident occurs.

Group 4 - Facility Status

[Note: The criteria below apply to both nuclear and non-nuclear facilities. However, criteria specific to Safety Class or Safety Significant Structures, Systems, or Components would apply only to nuclear facilities.]

Subgroup A Safety Structure/System/Component Degradation (Nuclear Facilities).

[Notes: Performance degradation includes the absence of or deficiency with Design Features for which credit has been taken in the Documented Safety Analysis. This subgroup applies even if all actions and completion times of the Limiting Condition for Operations are met, with no compromise to the authorization basis.]

Criterion

(1) Performance degradation of any Safety Class (SC) or Safety Significant (SS) Structure, System, or Component (SSC), or any support system that is required for safety operation of the SC or SS SSCs, which prevents satisfactory performance of its design function when it is required to be operable.

Subgroup B Operations.

Criterion

(1) A formal shutdown of an activity or operation for safety reasons, directed by the DOE Field Element Manager, Contracting Officer or senior contractor management requiring corrective actions prior to continuing operations (e.g., a Stop Work Order).

(2) Actuation of a SC or SS SSC, or its alarms as a result of an actual unsafe condition. Spurious alarms (e.g., due to electronic noise, radon/thoron decay) should not be reported.

Subgroup C Suspect/Counterfeit and Defective Items or Material.

[Notes: Include the detailed information identified in Attachment 3. Any suspect/counterfeit or defective item or material found in receipt inspection is exempt from this Subgroup.]

Criterion

(1) Discovery of any suspect or counterfeit item or material found in a SC or SS SSC.

Group 5 - Environmental

Subgroup A Ecological and Cultural Resources.

Criterion

(1) Any occurrence including releases causing significant impact to ecological or cultural resource for which DOE has responsibility under applicable laws, regulations, and Executive Orders. For example, extensive damage to, or destruction of:

(a) Ecologically preserved areas, or pristine or protected wetlands;

(b) Threatened or protected flora or fauna or critical habitats;

(c) Potable drinking water intake or well usage; or

(d) Historical/archeological sites.

(2) Any occurrence, including releases, resulting in extensive environmental degradation (e.g., fish kill; notable loss or relocation of native species; need for interdiction of crop sales; or restriction to human access).

Group 6 - Contamination/Radiation Control

Subgroup A Spread of Radioactive Contamination.

Criterion

(1) Identification of offsite radioactive material or contamination due to DOE operations/activities that exceeds applicable DOE approved authorized limits (pursuant to NE O 458.1, *Radiation Protection of the Public and the Environment*, current version) or, if there are none, the total contamination values in 10 CFR Part 835, Appendix D.

[Note: Release or clearance of property containing or potentially containing residual radioactive material is subject to requirements in NE O 458.1, current version. Compliance with 10 CFR Part 835, Appendix D values does not necessarily satisfy the requirements in NE O 458.1, current version]

Subgroup B Radiation Exposure.

[Note: For all of Subgroup B, reportability should be determined promptly following an event, using field indicators when dosimetry results are not available. Quantitative dose estimates should only be reported using the site's established dosimetry, dose assessment, and modeling processes. Resulting confirmed dose estimates may overturn initial reportability determinations.]

#	Criterion
(1)	Determination of a dose that exceeds the limits specified in 10 CFR Part 835, "*Occupational Radiation Protection*," Subpart C, "*Standards for Internal and External Exposure*," or in NE O 458.1, *Radiation Protection of the Public and the Environment*, current version.
(2)	Failure to provide the required monitoring for an exposure estimated to exceed the values for providing personnel dosimeters and bioassays as stated in 10 CFR Section 835.402(a) or 10 CFR Section 835.402(c).

Subgroup C Personnel Contamination.

#	Criterion
(1)	Any occurrence requiring offsite medical assistance for contaminated personnel, including transporting a person with personnel or clothing contamination due to DOE operations/activities that exceeds the total contamination values in 10 CFR Part 835, Appendix D to an offsite medical facility or bringing offsite medical personnel onsite to perform treatment or decontamination.
(2)	Identification of offsite personnel or clothing contamination due to DOE operations/activities that exceeds the total contamination values in 10 CFR Part 835, Appendix D. For tritium, the reporting threshold is 1 times the removable contamination value found in 10 CFR Part 835, Appendix D.

Group 7 – Packaging and Transportation

#	Criterion
(1)	Any offsite transportation incident involving hazardous materials that would require immediate notice pursuant to 49 CFR Section 171.15(b).

[Note: Any occurrence involving an offsite DOE/National Nuclear Security Administration (NNSA) shipment containing hazardous materials that causes the initial responders to initiate protective actions at locations beyond the immediate/affected area should also be reported as an Operational Emergency under Group 1. Group 8 will be a secondary reporting criterion.]

(2) Any deviation that would require a written report to the Nuclear Regulatory Commission (per 10 CFR Section 171.95) or to DOE HCO/NNSA CO (per DOE O 460.1C or DOE O 461.1C), namely:

(a) Instance in which there is a significant reduction in the effectiveness (as defined by the certificate holder) of any approved fissile or Type B packaging during use.

(b) Discovery of a defect with safety significance (as determined by the certificate holder) in a fissile or Type B packaging, after first use (by any shipper).

(c) Instance in which the conditions of approval in the Certificate of Compliance (or equivalent) were not performed in making a shipment.

(3) Any offsite "accident" (per 49 CFR Section 390.5) involving a motor vehicle carrying DOE hazardous materials operating on a highway in interstate or intrastate commerce.

(4) Any transportation activity for onsite transfer resulting in onsite release of radioactive materials, hazardous materials, hazardous substances, hazardous waste, or marine pollutants that is above permitted levels and exceeds the reportable quantities specified in 40 CFR Part 302 or 40 CFR Part 355.

OCCURRENCE REPORT PREPARATION

[This Attachment provides information and requirements applicable to NE O 232.2 and contracts that include the associated CRD (Attachment 1 to NE O 232.2).]

Occurrence Reports must be written clearly and concisely so the general reader can understand the basic "who, what, when, where, how" of the event and safety issues involved. The following instructions apply:

1. For Written Notifications , the Title of Occurrence and the first paragraph of the Description of Occurrence must relay the essential nature of the event.

2. Final Reports must also contain the following:

    a. The Description of Occurrence must contain the background and description of the event at a sufficient level of detail for the reader to understand what happened and the resulting consequences and actions.

    b. Identified causes and corrective actions must be included in the final report's "Description of Cause" and "Corrective Actions" fields or may be uploaded as an attachment.

    c. Any extent of condition (if performed) must be included in the "Description of Cause" field or uploaded as an attachment.

3. Reports on suspect/counterfeit and defective items or material, must provide the manufacturer/supplier/vendor (including a contact, phone number, and website); the model and part numbers; the quantity found; why the item/material is suspect/counterfeit or defective; and how the item/material is being used. Reports must also include the method of detection (i.e., craft inspection prior to installation, in-service inspection, or failure) and identify any resulting consequences, along with any photos via attachments, as appropriate. In some instances, the information may be considered sensitive (such as contact names and phone numbers). In those instances, the information need not be included in the occurrence report but may be obtained by contacting the Originator of the occurrence report.

4. Reports must quantify the level of contamination, dose, exposure, release, and damage (e.g., estimate the acres of wild land burned) when possible, instead of merely stating a reportable limit was exceeded.

5. Information in different formats (e.g., photos, sketches, drawings, and supporting documents) may be uploaded as attachments.

OCCURRENCE REPORTING MODEL

[This Attachment provides information and requirements applicable to NE O 232.2 and contracts that include the associated CRD (Attachment 1 to NE O 232.2).]

Timelines	Initial Notification	Final Report Approval	Causal Analysis and Corrective Actions
Categorize: 2 hours Initial Notification: 4 hours after Categorization Written Notification: COB 2 business days Update/Final Report: COB 90 calendar days	To Facility Representative or Designated DOE Representative	By Facility Representative or Designated DOE Representative	Per local procedures. Any identified causes and corrective actions must be included in the final report.

Notes:

- Categorization Time is no later than two hours from the Discovery Time.
- Initial Notification is from Categorization Date and Time.
- Written Notification (Occurrence Report) is from Categorization Date and Time.
- All time requirements are as listed or as soon thereafter as reasonably possible.

Reportable occurrences, as defined by the criteria in Attachment 2, must be processed according to the following requirements.

1. SECURITY REQUIREMENTS.

   a. Occurrence Reports containing any classified information or Controlled Unclassified Information (CUI) must not be entered in the Issues Management database. For occurrences with classified information, an unclassified version of the Occurrence Report that has been sanitized of all CUI must be submitted. Occurrence reports involving incidents of counterintelligence concern (e.g., foreign persons, governments, organizations, entities, or influence) must not be entered or referenced in the Issues Management database.

2. EVENT OR CONDITION CATEGORIZATION.

   Events or conditions must be initially categorized according to the Reporting Criteria in Attachment 2. The categorization for the incident must be reevaluated and changed as new information becomes available.

3. INITIAL NOTIFICATION.

a. Initial Notification to the Facility Representative or Designated DOE Representative must be in accordance with approved local site processes.

b. The Initial Notification must include information on the following items, as available:

(1) Categorization

(2) All of the applicable Reporting Criteria (i.e., including the Group, Subgroup and Sequence Numbers) associated with the occurrence

(3) Location and description of the event

(4) Date and time of discovery

(5) Impact of event on activities and operations

(6) Immediate actions taken

Follow-up notifications must be made for any occurrence that is re-categorized and/or upon further degradation in the level of safety or impact on the environment, health, or operations of the facility or other worsening conditions subsequent to the initial notification.

c. Written Notification Report. A Written Notification Report must be submitted within the timeframe specified in this Order, or as soon thereafter as reasonably possible (refer to the table above).

d. Updating Reports. If a change in categorization or correction of information is needed, information must be communicated to the Facility Representative or Designated DOE Representative and updated in the occurrence report.

4. FINALIZING REPORTS. Final Reports must be submitted within 60 calendar days after initial categorization of the occurrence. The Final Report must be prepared using the writing instructions provided in Occurrence Report Preparation (Attachment 3).

5. REPORT CLOSURE.

Within 14 calendar days after finalizing a report, the Facility Representative or Designated DOE Representative should review the report with regard to the requirements of this Order.

6. OCCURRENCE INVESTIGATION AND ANALYSIS.

a. Occurrences must be investigated and analyzed using a graded approach in accordance with locally approved quality and issues management procedures. Facility Managers must consider the significance or potential significance of the event when choosing the scope and tools to use in the investigation.

b. Identified causes, corrective actions, and any extent of condition (if performed) must be included in the Final Report. Alternatively, description of cause and corrective actions may be uploaded as an attachment.

c. For all reports, attachments may be included.

DEFINITIONS

[This Attachment provides information and requirements applicable to NE O 232.2 and contracts that include the associated CRD (Attachment 1 to NE O 232.2).]

1. BUSINESS DAY. The normal administrative day of the reporting organization (e.g., Monday through Friday, 0800 to 1700 local time) during which normal work activities are conducted. It is not meant to encompass the 24 hours in a day, even if the facility is operated or maintained on a 24 hour basis.

2. CONDITION. Any as -found state, whether or not resulting from an event, that may have adverse safety, health, quality assurance, operational, or environmental implications. A condition is usually programmatic in nature; for example, errors in analysis or calculation; anomalies associated with design or performance; or items indicating a weakness in the management process are all conditions.

3. CRITICALITY. Condition in which a nuclear fission chain reaction becomes self--sustaining.

4. DEFECTIVE ITEMS. Any item or material that does not meet the commercial standard or procurement requirements as defined in such sources as catalogues, proposals, procurement specifications, design specifications, testing requirements, or contracts. It does not include parts or services that fail or are otherwise found to be inadequate because of random failures or errors within the accepted reliability level.

5. DISCOVERY DATE AND TIME. The point at which facility staff discover or become aware of an event or condition. Discovery date is NOT the date and time when the event or condition is determined to be reportable. Note: Facility staff includes personnel assigned to a facility and cognizant of the area in which the event or condition is identified.

6. EQUIVALENT DOSE.

   a. Committed Effective Dose (E_{50}). Refer to 10 CFR Section 835.2 or to NE O 458.1, *Radiation Protection of the Public and the Environment*.

   b. Committed Equivalent Dose ($H_{T,50}$). Refer to 10 CFR Section 835.2 or to NE O 458.1, *Radiation Protection of the Public and the Environment*.

   c. Effective Dose (E). Refer to 10 CFR Section 835.2 or to NE O 458.1, *Radiation Protection of the Public and the Environment*.

   d. Total Effective Dose (TED). Refer to 10 CFR Section 835.2 or to NE O 458.1, *Radiation Protection of the Public and the Environment*.

7. EVENT. Something significant and real-time that happens (e.g., pipe break, valve failure, loss of power, environmental spill, earthquake, tornado, flood, injury).

8. FACILITY. Any equipment, structure, system, process, or activity that fulfills a specific

purpose. Examples include accelerators, storage areas, fusion research devices, nuclear reactors, production or processing plants, coal conversion plants, magnetohydrodynamic experiments, windmills, radioactive waste disposal systems and burial grounds, environmental restoration activities, testing laboratories, research laboratories, transportation activities, and accommodations for analytical examinations of irradiated and un-irradiated components.

9. FACILITY MANAGER. A federal (including government--owned, government--operated sites) or contractor individual, or designee, with direct line responsibility for operation of a facility or group of related facilities, including authority to direct physical changes to the facility. For purposes of this Order, a Facility Manager could also be responsible for a program or activity.

10. FACILITY REPRESENTATIVE or DESIGNATED DOE REPRESENTATIVE. For each major facility or group of lesser facilities, an individual or designee assigned responsibility by the Head of Field Element/Operations Organization (including NNSA) for monitoring the performance of the facility and its operations. This individual should be the primary point of contact with the facility operating personnel and will be responsible to the appropriate Secretarial Officer/Deputy Administrator (NNSA) and Head of Field Element/Operations Organization for implementing the requirements of this Order.

11. FIRE. As defined in DOE Standard 1066, Fire Protection (current version) - Unplanned destructive and uncontrolled burning, including detonation and deflagration, as manifested by any or all of the following: flame, heat, or smoke. Fire does not include the following unless they cause a fire or occur as a consequence of a fire: lightning or electrical discharge; rupture of a pressure vessel not caused by internal combustion; detonation of munitions; or overheat (without damage to initiating material)); or failure of electric motors and other electrical equipment through overheating or shorting where any visible sparks or flames self-extinguish after power is removed from the device.

12. FISH KILL. A localized die-off of fish populations which may also be associated with more generalized mortality of aquatic life.

13. HAZARDOUS ENERGY SOURCE. Any source that could cause harm to personnel or equipment by generating or transferring energy or potential (voltage); hydraulic, pneumatic, gas, or steam pressure; vacuum; high temperature; cryogenic temperature; potentially reactive chemicals; or stored mechanical energy.

14. HAZARDOUS SUBSTANCE OR MATERIAL.

    a. Department of Energy - Hazardous Material. Any solid, liquid, or gaseous material that is chemically toxic, flammable, radioactive, or unstable upon prolonged storage, and that exists in quantities that could pose a threat to life, property, or the environment.

    b. Department of Transportation - Hazardous Materials (see 49 CFR Sections 171.8 and 172.101). A substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an

unreasonable risk to health, safety, and property when transported in commerce and which has been so designated.

c. Comprehensive Environmental Response, Compensation and Liability Act Hazardous Substances (see 40 CFR Part 302).

d. Occupational Safety and Health Administration (OSHA) Hazardous Chemical (see 29 CFR Sections 1910.1000 and 1910.1200). Any chemical which is a physical or a health hazard.

e. Superfund Amendments and Reauthorization Act Title 3 Extremely Hazardous Substances (see 40 CFR Part 355). These are not defined but appear on lists in Appendix A and Appendix B of 40 CFR Part 355.

15. INITIAL NOTIFICATION. Timely reporting of the occurrence to the Facility Representative or Designate DOE Representative as required by the Report Level and the reporting criteria of the occurrence.

16. IN-PATIENT HOSPITALIZATION. Admission to a hospital requiring at least one overnight stay. This would include admission for purposes of observation only.

17. ITEM.

a. An all -inclusive term used in place of the following: appurtenance, sample, assembly, component, equipment, material, module, part, structure, subassembly, subsystem, system, unit, support systems, documented concepts, or data.
b. When used in reference to nuclear material, a visible, single piece or container of nuclear material with a unique identification and known nuclear material mass.

18. NUCLEAR FACILITY. A reactor or nonreactor nuclear facility where an activity is conducted for or on behalf of DOE and includes any related area, structure, facility, or activity to the extent necessary to ensure proper implementation of the requirements of 10 CFR Part 830.

19. OCCURRENCES. Events or conditions that adversely affect, or may adversely affect, DOE (including NNSA) or contractor personnel, the public, property, the environment, or the DOE mission.

20. OCCURRENCE REPORT. A documented evaluation of a reportable occurrence that is prepared in sufficient detail to enable the reader to assess its significance, consequences, or implications and to evaluate the actions being proposed or employed to correct the condition or to avoid recurrence.

21. OFFSITE. Property or location that is not DOE/NNSA or DOE/NNSA contractor-owned, leased, or otherwise directly controlled by DOE, including NNSA.

22. OFFSITE TRANSPORTATION INCIDENT. Involves movement of materials that are considered to be in commerce, thus requiring compliance with Department of Transportation Hazardous Materials Regulations (49 CFR Parts 171-180).

23. OIL. Oil of any kind or in any form, including but not limited to petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

24. ONSITE. Property or location that is DOE/NNSA or DOE/NNSA contractor-owned, leased, or otherwise directly controlled by DOE, including NNSA.

25. OPERATIONS. The general term to encompass the work activities accomplished by the facility or project. Examples include, but are not limited to, operating science and technology machines; operating equipment; construction, decontamination and decommissioning; dismantlement; environmental characterization and monitoring activities; waste handling; research and development; maintenance; and laboratory analysis activities.

26. PACKAGING AND TRANSPORTATION. Packaging and Transportation activities/functions include:

    a. Packaging -Activities related to the design, manufacture, and qualification of packaging represented as qualified for use in the transportation of hazardous materials;

    b. Pre--transportation functions;

    c. Transportation functions (movement of hazardous materials and loading, unloading, and storage incidental to the movement); and

    d. Shipping in accordance with applicable international, Federal, state, local, and tribal laws, rules, and regulations governing materials transportation that are consistent with Federal regulations (e.g., 10 CFR Parts 830, 835 and 49 CFR Parts 171-180) and DOE Packaging and Transportation Directives (e.g., DOE Order 460.1, *Hazardous Materials Packaging and Transportation Safety*, current version; DOE Order 460.2A, *Departmental Materials Transportation and Packaging Management*, current version; DOE Manual 460.2-1, *Radioactive material Transportation Practices Manual*, current version; DOE Order 461.1, *Packaging and Transportation for Offsite Shipment of Materials of National Security Interest*, current version; and 10 CFR Part 830, *Nuclear Safety Management*).

27. PERFORMANCE DEGRADATION. Failure or degradation of a facility, process, system, or component that reduces the reliability of critical components of the facility whose loss or degradation prevents the system from performing its intended function. Performance degradation includes the absence of or deficiency with Design Features for which credit has been taken in the Documented Safety Analysis. Performance degradation does not include:

    a. A burned out power indicator light on a piece of radiation monitoring equipment that does not prevent the equipment from detecting elevated radiation levels and alarming as designed;

b. A piece of equipment that is determined to be out of calibration on the conservative side (such as a low level alarm that alarms at a higher value than it should); or

c. The temporary loss of a component where redundant components are maintained operable or in operation and the authorization basis is not compromised.

28. PERSONNEL EXPOSURE. An incident of an individual's contact or encounter with a hazardous chemical, radiological, physical, biological, or energetic agent at one of the exchange boundaries of the individual (e.g., skin, respiratory system, eyes, ears, or digestive system). "Exposure" does not refer to a situation where personnel, protected by appropriate personal protective equipment, are subjected to an environment whose ambient conditions present a harmful level of any one, or combination of, the hazards.

29. POLLUTANT. Any material requiring a permit for release into the environment.

30. PRE-TRANSPORTATION FUNCTION. A function specified in the Hazardous Materials Regulations that is required to assure the safe transportation of a hazardous material in commerce, including: materials classification, packaging, marking, labeling, shipping paper preparation, loading, blocking, bracing, segregating, securing, and placarding (49 CFR Section 171.8).

31. PRIMARY CONFINEMENT. Provides confinement of hazardous material to the vicinity of its processing. This confinement is typically provided by piping, tanks, glove boxes, encapsulating material, and the like, along with any off gas systems that control effluent from within the primary confinement.

32. RELEASE. Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or otherwise disposing of substances into the environment. This includes abandoning/discarding any type of receptacle containing substances in an unenclosed containment structure, but does not include permitted containment structures.

33. SAFETY CLASS (SC) STRUCTURES, SYSTEMS, OR COMPONENTS (SAFETY CLASS SSCs). The structures, systems, or components, including portions of process systems, whose preventive or mitigative function is necessary to limit radioactive hazardous material exposure to the public, as determined from safety analyses. (10 CFR Section 830.3)

34. SAFETY SIGNIFICANT (SS) STRUCTURES, SYSTEMS, OR COMPONENTS (SAFETY SIGNIFICANT SSCs). The structures, systems, or components that are not designated as safety class structures, systems, or components, but whose preventive or mitigative function is a major contributor to defense in depth and/or worker safety as determined from safety analyses. (10 CFR Section 830.3)

35. SECRETARIAL OFFICER. Secretarial Officers are the Secretary, Deputy Secretary, and Under Secretaries; and the Assistant Secretaries and Staff Office Directors reporting to the Secretary either directly or through the Deputy Secretary or Under Secretary. The

following designations are also used to identify Secretarial Officers with specific responsibilities in various areas:

a. A Program Secretarial Officer (PSO) is an Assistant Secretary, Office Director, or NNSA Deputy Administrator. In the context of field operations, a PSO funds

b. work at a particular site, facility or laboratory and is a "customer" of the field office.

c. A Lead Program Secretarial Officer (LPSO) is a PSO to whom designated field offices directly report and who has overall landlord responsibilities for the assigned direct reporting elements.

d. A Cognizant Secretarial Officer is a term used in the context of field operations to designate a PSO, not the LPSO, who is responsible for a laboratory or bounded set of facilities within a field office's jurisdiction.

36. SUSPECT/COUNTERFEIT ITEMS (S/CIs). An item which is suspect when inspection or testing indicates that it may not conform to established Government or industry -accepted specifications or national consensus standards, or whose documentation, appearance, performance, material, or other characteristics may have been misrepresented by the vendor, supplier, distributor, or manufacturer. A counterfeit item is one that has been copied or substituted without legal right or authority or whose material, performance, or characteristics have been misrepresented by the vendor, supplier, distributor, or manufacturer.

37. TECHNICAL SAFETY REQUIREMENTS (TSRs). The limits, controls, and related actions that establish the specific parameters and requisite actions for the safe operation of a nuclear facility and include, as appropriate for the work and the hazards identified in the Documented Safety Analysis for the facility: safety limits, operating limits, surveillance requirements, administrative and management controls, use and application provisions, and design features, as well as a bases appendix. (10 CFR Section 830.3)

38. WRITTEN NOTIFICATION. The initial documented report to DOE of an event or condition that meets the reporting criteria defined in this Order.