

## QUALITY MANAGEMENT OFFICE PROCEDURE

Title <b>EVENT CATEGORIZER'S PROCEDURE</b>		Number QMO-ORPS-02 Rev. 4	Effective Date 1/03/12
Prime Responsibility Department  QUALITY MANAGEMENT OFFICE		Supersedes: QPSO-ORPS-02 Rev. 3 Date(s): 4/10/08	
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*(Signatures on file)*

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### Categories of Occurrences

**Note:** Asterisks (\*) next to the significance categories denote those occurrences requiring prompt notification (See [Occurrence Reporting Model](#)) to the DOE HQ OC.

**Note:** Significance Category SCBNL indicates events that are below thresholds for ORPS reporting but that are of sufficient concern to BNL management that they will be internally reported, analyzed, and addressed at BNL. Management determined that for those cases listed as “No SCBNL reportable events,” ORPS thresholds were appropriate indicators of the need for reporting to BNL management through ORPS reporting, i.e., reporting below this threshold would not add value for BNL management.

[1 - Operational Emergencies](#)

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## **RESPONSIBLE ORGANIZATION**

The Occurrence Reporting and Processing System (ORPS) Office located within the Quality Management Office (QMO) is responsible for developing and maintaining this procedure. This procedure will be reviewed annually and revised as required. Direct comments and questions to the ORPS Coordinator, Quality Management Office.

## **APPLICABILITY**

This procedure applies to the ORPS Office and to the BNL Event Categorizers.

## **AUTHORITY**

The ORPS Coordinator, QMO, is responsible for administering the Laboratory's Occurrence Reporting Program. The QMO has the authority to verify the effectiveness, efficiency, and adequacy of the Laboratory's Occurrence Reporting Program.

The Program implements the requirements of DOE Order 232.2, Occurrence Reporting and Processing of Operations Information.

## **REQUIREMENTS**

DOE Order 232.2, *Occurrence Reporting and Processing of Operations Information*

DOE Order 151.1C, Comprehensive Emergency Management System

BNL SBMS Occurrence Reporting Subject Area

BNL SBMS Occurrence Reporting Program Description

## **DEFINITIONS**

1. APPARENT CAUSE. The most probable cause(s) that explains why the event happened, that can reasonably be identified, that local or facility management has the control to fix, and for which effective recommendations for corrective action(s) to remedy the problem can be generated, if necessary.

2. 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.

3. 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.

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

5. DISCHARGE. Includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil, but excludes discharges in compliance with a permit under Chapter 402 of the Clean Water Act (CWA); discharges resulting from circumstances identified and reviewed and made a part of the public record with respect to a permit issued or modified under Chapter 402 of the CWA and subject to a condition in such permit; or continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under Chapter 402 of the CWA, that are caused by events occurring within the scope of relevant operating or treatment systems.

6. DISCOVERY DATE AND TIME. The discovery date and time is when the facility staff discovered or became aware of the event or condition. Discovery date is NOT the date and time when the event or condition is determined to be reportable. The facility staff is those personnel assigned to the facility and cognizant of the area in which the event or condition is identified.

7. ELECTRICALY SAFE WORK CONDITION. A state in which the conductor or circuit part to be worked on or near has been disconnected from energized parts, locked/tagged in accordance with established standards, tested to ensure the absence of voltage, and grounded if determined necessary.

#### 8. EQUIVALENT DOSE

a. Committed Effective Dose (E50) — Refer to 10 CFR 835.2 or to DOE O 458.1 Chg 2, *Radiation Protection of the Public and the Environment*, dated 6-6-11, Attachment 2 (Definitions).

b. Committed Equivalent Dose (HT,50) — Refer to 10 CFR 835.2 or to DOE O 458.1 Chg 2, *Radiation Protection of the Public and the Environment*, dated 6-6-11, Attachment 2 (Definitions).

c. Effective Dose (E) — Refer to 10 CFR 835.2 or to DOE O 458.1 Chg 2, *Radiation Protection of the Public and the Environment*, dated 6-6-11, Attachment 2 (Definitions).

d. Total Effective Dose (TED) — Refer to 10 CFR 835.2 or to DOE O 458.1 Chg 2, *Radiation Protection of the Public and the Environment*, dated 6-6-11, Attachment 2 (Definitions).

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

10. 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.

11. 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.

12. FACILITY 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.

13. HAZARDOUS ELECTRICAL ENERGY EXPOSURE. Within the Limited Approach Boundary (LAB) of an energized part not suitably guarded, isolated, or insulated. This includes de-energized parts for which a safe work condition has not been established, e.g. lockout/tagout.

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 Section 1910.1000 and 29 CFR Section 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. IN-PATIENT HOSPITALIZATION. Admission to a hospital requiring at least one overnight stay. This would include admission for purposes of observation only.

16. 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, or 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.

17. LESSONS LEARNED. A —good work practice|| or innovative approach that is identified and shared, or an adverse work practice or experience that is captured and shared to prevent recurrence.

18. NON-REPORTABLE EVENT. An event that falls within the ORPS Reporting Groups, does not meet any of the specific ORPS Reporting Criteria, and the reporting organization has determined to be included in the required ORPS Performance Analysis activity.

19. NOTIFICATION REPORT. The initial documented report to the Department of an event or condition that meets the reporting criteria defined in this Order.

20. 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 Section 830.

21. OCCURRENCE. One or more (i.e., recurring) 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. Events or conditions meeting the criteria thresholds identified in this Order or determined to be recurring through performance analysis are occurrences.

22. OCCURRENCE INVESTIGATION. An investigation conducted according to site-specific procedures and/or when determined by DOE procedures that an investigation by a Federal Accident Investigation Board is required.

23. 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.

24. OFFSITE. Property or location that is not DOE/NNSA or DOE/NNSA contractor owned, leased, or directly controlled.

25. OFFSITE TRANSPORTATION EVENT. Involves movement of materials that are considered to be in commerce, thus requiring compliance with Department of Transportation Hazardous Materials Regulations. (49 CFR Sections 171 – 180)

Transportation events with injuries or fatalities may also require reporting in accordance with Group 2 criteria.

26. 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.

27. ONSITE. Property or location that is DOE/NNSA or DOE/NNSA contractor owned, leased, or directly controlled.

28. ONSITE TRANSFER EVENT. Involves movement of material not in commerce and subject to regulations in 10 CFR Section 830 or DOE onsite procedures and safety requirements.

Onsite transfer events with injuries or fatalities may also require reporting in accordance with Group 2 criteria.

29. OPERATIONS. The act, process, or method of operating. This can apply to facilities regardless of mode (shutdown, standby, operational) or state (construction, operational, deactivated, decommissioning).

30. PACKAGING AND TRANSPORTATION. Packaging and Transportation activities/functions include: (1) Packaging - Activities related to the design, manufacture, and qualification of packaging represented as qualified for use in the transportation of hazardous materials; (2) Pre-transportation functions; (3) Transportation functions (movement of hazardous materials and loading, unloading, and storage incidental to the movement); and (4) 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 and 49 CFR) and DOE Packaging and Transportation Directives (e.g., DOE Order 460.1C, DOE Order 460.2A, DOE Manual 460.2-1A, DOE Order 461.1B, and 10 CFR Section 830, *Nuclear Safety Management*).

31. 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 does not include: (1) 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; (2) 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 (3) the temporary loss of a component where redundant components are maintained operable or in operation and the authorization basis is not compromised.

32. PERSONNEL EXPOSURE. An incident of contact or encounter with a hazardous chemical, radiological, physical, biological, or energetic agent at one of the exchange boundaries of the organism (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.

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

34. PRE-TRANSPORTATION FUNCTION. A function specified in the Hazardous Materials Regulations (HMR) 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).

35. 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.

36. PROGRAM MANAGER. The individual designated for this Order, by and under the direction of a Secretarial Officer/Deputy Administrator (NNSA), who is directly involved in the operation of facilities under his or her cognizance, and is authorized to provide technical direction through Heads of Field Elements/Operations Offices (including NNSA) to operating personnel for these facilities.

37. PROMPT NOTIFICATION. Timely reporting of the occurrence to the DOE Field Office and the DOE Headquarters Operations Center as required by the Significance Category and the reporting criteria of the occurrence.

38. 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.

39. REPORTABLE OCCURRENCE. Occurrence to be reported in accordance with the criteria defined in this Order.

40. ROOT CAUSE. The causal factor(s) that, if corrected, would prevent recurrence of the occurrence. It is the most basic cause that explains why the event happened, that can reasonably be identified, that senior management has the control to fix, and for which effective recommendations for corrective actions to remedy the problem, prevent specific recurrence of the problem, and preclude occurrence of similar problems can be generated, if necessary. This is typically one level further in analysis beyond the Apparent Cause(s) (i.e., one level beyond the Level C node of the CAT).

41. SAFETY CLASS 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)

42. SAFETY SIGNIFICANT 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)

43. 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. (1) A Program Secretarial Officer (PSO) is an Assistant Secretary, Office Director, or NNSA Deputy Administrator. In the context of field operations, a PSO funds work at a particular site, facility or laboratory and is a —customer|| of the field office. (2) 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. (3) A Cognizant Secretarial Officer (CSO) 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.

44. 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. Items that do not conform to established requirements are not normally considered S/CIs if non-conformity results from one or more of the following conditions (which must be controlled by site procedures as nonconforming items):

- a. defects resulting from inadequate design or production quality control;
- b. damage during shipping, handling, or storage;
- c. improper installation;
- d. deterioration during service;
- e. degradation during removal;
- f. failure resulting from aging or misapplication; or,
- g. other controllable causes. (IAEA-TECDOC-1169).

45. 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)

46. UNREVIEWED SAFETY QUESTION (USQ). A situation where (1) the probability of the occurrence or the consequences of an accident or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased, (2) the

possibility of an accident or malfunction of a different type than any evaluated previously in the documented safety analysis could be created, (3) a margin of safety could be reduced, or (4) the documented safety analysis may not be bounding or may be otherwise inadequate. (10 CFR Section 830.3)

## **BNL DEFINITIONS**

**EVENT.** Any unplanned and unwanted happening/outcome of work that resulted in a negative impact (or had potential for negative impact) to:

- The environment,
- The safety or health of personnel or
- The Lab's assets, mission or reputation.

**REPORTABLE FIRE.** A self sustained chemical oxidation process liberating heat and light (flames). If the source of energy ceases (i.e., the ignition source stops) and the heat and light subside, then the event was not a fire, rather it was overheating. Overheating could be electrical in nature or it could be mechanical friction.

## **SCOPE**

This procedure applies to the categorization of events and conditions discovered at the BNL site, including those caused by subcontractors, vendors, and visitors.

## **CATEGORIZERS and SCHEDULE**

The BNL Deputy Director for Operations has appointed specific individuals to be BNL Event Categorizers. A Call List maintained by the ORPS Office identifies the individuals, contact information, and a schedule. A Categorizer is on-call and available at all times (24 hrs/day). If the [Scheduled Categorizer](#) is or will be unavailable for any reason, it is his/her responsibility to notify the BNL ORPS Office. The BNL ORPS Coordinator is responsible for arranging a replacement on-call Categorizer for that period. The primary means of contacting the on-call Categorizer while on-site is via **ext. 1234** or call **631-433-0443** when off-site.

## **PROCEDURE**

- The on-call Categorizer will have a "Cat Bag" which includes the ORPS cell phone, Event Categorizer's Procedure, ORPS Orders and Reference Documents.
- The on-call Categorizer receives notification of a potentially reportable event or condition from a BNL Department Chair/Division Manager.

- Through discussion with the Department Chair/Division Manager, the Categorizer determines if the event or condition is reportable using the Occurrence Reporting Criteria in this procedure.
- The Categorizer will inform the Department Chair/Division Manager if prompt notification (see [Occurrence Reporting Model](#)) is required.
- Categorization of a reportable Occurrence is to be made within 2 hours of discovery.
- The Categorizer will inform the ORPS Coordinator of a reportable Occurrence within 1 hour of Categorization.
- The Categorizer documents and submits his/her reportability decision via the on-line [Event/Issue Summary Form](#) within 2 hours after categorization.
- If the event or condition is re-categorized, the Categorizer informs the ORPS Coordinator within 1 hour and resubmits the Event Categorization form within 2 hours after categorization.

**Note:** All BNL mission related events and conditions that are reported to the Event Categorizer, including those that are determined by the Categorizer to be below the SCBNL reporting threshold, shall be documented on the [Event/Issue Summary Form](#).

## RECORDS MANAGEMENT

Categorization Forms will be maintained by the ORPS Office in accordance with the [Records Management](#) Subject Area.

### Occurrence Reporting Criteria.

#### **Group 1 - Operational Emergencies**

- | <u>#</u> | <u>SC</u> | <u>Criterion</u>   |
|----------|-----------|--|
| (1)      | *OE       | An Operational Emergency not requiring classification, as defined in DOE O 151.1C, Chapter V, Paragraph 2. |
| (2)      | *OE       | An Alert, as defined in DOE O 151.1C, Chapter V, Paragraph 3a.   |
| (3)      | *OE       | A Site Area Emergency, as defined in DOE O 151.1C, Chapter V, Paragraph 3b.                                |
| (4)      | *OE       | A General Emergency, as defined in DOE O 151.1C, Chapter V, Paragraph 3c.                                  |

#### **Group 2 - Personnel Safety and Health**

- | <u>Subgroup A</u> |           | <u>Occupational Injuries.</u> |
|-------------------|-----------|-------------------------------|
| <u>#</u>          | <u>SC</u> | <u>Criterion</u>              |

- (1) \*1 Any occurrence due to DOE operations resulting in a fatality or terminal injury/illness. Report fatalities or terminal illnesses caused by overexposures under Subgroup B, Occupational Exposures.
- (2) \*1 Any single occurrence requiring in-patient hospitalization of three or more personnel.
- (3) 2 Any single occurrence resulting in an occupational injury that requires in-patient hospitalization for 5 days or more, commencing within 7 days from the date the injury was received.  
Note: This criterion is similar to one of the thresholds for initiating a Federal Accident Investigation Board. If such an investigation is begun, the event must be reported under Criterion 10(1), as well as under this criterion if the injury so warrants.
- (4) 2 Any single occurrence resulting in three or more personnel having Days Away, Restricted or Transferred (DART) cases per 29 CFR Section 1904.7, *Recordkeeping Forms and Recording Criteria*.
- (5) 3 Any single occurrence resulting in a serious occupational injury. A serious occupational injury is an occupational injury that:
- a) Requires in-patient hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received;  
**SCBNL: Requires hospitalization**
  - b) Results in a fracture of any bone (except bone chips, simple fractures of fingers, toes, or nose, or a minor chipped tooth);  
**SCBNL: Results in bone chips, or simple fractures of fingers, toes, or nose, or a minor chipped tooth**
  - c) Causes severe hemorrhages or severe damage to nerves, muscles, tendons, or ligaments. (Note: Severe damage is generally considered to have occurred if surgery is required to correct the damage.)  
**SCBNL: Causes damage to nerves, muscles, tendons, and/or ligaments as determined by a physician**
  - d) Damages any internal organ;

- e) Causes (1) a concussion or (2) loss of consciousness due to an impact to the head, or
- f) Causes second- or third-degree burns, affecting more than five percent of the body surface.

SCBNL: Causes third-degree burns

SCBNL: Causes second degree burns with the exception of burns to extremities

#### Subgroup B Occupational Exposure.

[**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.]

#	SC	Criterion
(1)	*1	Any acute exposure from a chemical, biological, or physical hazard due to DOE operations resulting in a fatality or terminal injury/illness or requiring in-patient hospitalization of three or more personnel.
(2)	2	Any acute exposure resulting in an occupational injury that requires in-patient hospitalization for 5 days or more, commencing within 7 days from the date the exposure was received or any exposure event resulting in three or more personnel having Days Away, Restricted or Transferred (DART) cases per 29 CFR Section 1904.7, <i>Recordkeeping Forms and Recording Criteria</i> .
(3)	*2	Personnel exposure to chemical, biological or physical hazards that exceeds 10 times the limits established in 10 CFR Part 851, <i>Worker Safety and Health Program</i> (see 10 CFR Section 851.23 <i>Safety and Health Standards</i> ) or exceeds levels deemed immediately dangerous to life and health (IDLH).
(4)	3	Personnel exposure to chemical, biological or physical hazards (e.g. noise, laser, ultraviolet light, heat, etc.) above limits established in 10 CFR Part 851, <i>Worker Safety and Health Program</i> (see 10 CFR Section 851.23, <i>Safety and Health Standards</i> ), but below levels deemed immediately dangerous to life and health (IDLH), and requires the administration of medical treatment beyond first aid on the same day as the exposure.
(5)	3	Any exposure including chronic resulting in a serious occupational injury. A serious occupational injury is an occupational injury that:

- a) Requires in-patient hospitalization for more than 48 hours, commencing within 7 days from the date the exposure was received;
  - b) Damages any internal organ;
  - c) Leads to diagnosis of a debilitating disease; or
  - d) Causes second- or third-degree burns, affecting more than five percent of the body surface.
- (6) 4 Personnel exposure to chemical, biological or physical hazards (e.g., noise, laser, ultraviolet light, heat, etc.) above limits established in 10 CFR Part 851, but below levels deemed immediately dangerous to life and health (IDLH).

Subgroup CFires.# SCCriterion

- (1) \*1 Any fire emergency or fire incident within primary confinement/containment boundaries of a nuclear facility, except a fire that self-extinguishes in 10 minutes or less.  
[Note: Facility specific documents need to define what constitutes the primary confinement/containment boundary.]
- (2) \*2 Any fire emergency or fire incident in a nuclear facility that:
- a) Activates a fixed automatic fire suppression system (clean agent or wet-pipe automatic sprinkler protection), or
  - b) Is extinguished manually by the emergency response organization, or
  - c) Disrupts normal operations in the facility, or
  - d) Is a fire within primary confinement/containment that self-extinguishes in 10 minutes or less.
- [Note: The activation or degradation of Safety Class and Safety Significant fire suppression systems are addressed by Group 4 Criteria.]
- (3) \*3 Any fire emergency or fire incident in a non-nuclear facility that
- a) Activates a fixed automatic fire suppression system, or
  - b) Takes longer than 10 minutes to extinguish following the arrival of the emergency response organization, or
  - c) Disrupts normal operations in the facility for more than eight hours.
- (4) 4 Any fire in a nuclear facility.

- (5) \*4 Any wild land fire (e.g., forest fire, grassland fire) or other fire outside of a DOE facility that has the potential to threaten the facility.

**SCBNL: Any Fire on the BNL site**

Subgroup D Explosions.

- | <u>#</u> | <u>SC</u> | <u>Criterion</u>  |
|----------|-----------|---|
| (1)      | *1        | Any unplanned explosion within primary confinement/containment boundaries of a nuclear facility.<br>[ <b>Note:</b> Facility specific documents need to define what constitutes the primary confinement/containment boundary.] |
| (2)      | *2        | Any unplanned explosion in a nuclear facility that disrupts normal operations in the facility.  |
| (3)      | *3        | Any unplanned explosion in a non-nuclear facility that disrupts normal operations in the facility.  |

Subgroup E Hazardous Electrical Energy Control.

- | <u>#</u> | <u>SC</u> | <u>Criterion</u>   |
|----------|-----------|--|
| (1)      | 2         | Any unexpected or unintended personal contact (burn, injury, etc.) with an electrical hazardous energy source (e.g., live electrical power circuit, etc.).   |
| (2)      | 3         | Any unexpected discovery of an uncontrolled electrical hazardous energy source (e.g., live electrical power circuit, etc.). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin. |
| (3)      | 4         | Any failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout, hazardous energy control program).  |

Subgroup F Hazardous Energy Control (Other than electrical).

- | <u>#</u> | <u>SC</u> | <u>Criterion</u>   |
|----------|-----------|--|
| (1)      | 2         | Any unexpected or unintended personal contact (burn, injury, etc.) with a hazardous energy source (e.g., powered mechanical hazards, steam, pressurized gas).  |
| (2)      | 3         | Any unexpected discovery of an uncontrolled hazardous energy source (e.g., powered mechanical hazards, steam, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin. |
| (3)      | 4         | Any failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout, hazardous energy control program).  |

**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]

- | #   | SC | Criterion  |
|-----|----|--|
| (1) | *1 | Any violation of a nuclear facility's Technical Safety Requirement (or Operational Safety Requirement) Safety Limit.   |
| (2) | 2  | Any violation or noncompliance of a 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.<br>Exception: An event consisting solely of a surveillance test (to include any periodic activity explicitly captured in the DSA 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.)  |
| (3) | 3  | Any violation or noncompliance of a credited hazard control specified in a Hazard Category 1, 2, or 3 nuclear facility's DOE approved Documented Safety Analysis [issued pursuant to 10 CFR Section 830.204, <i>Documented Safety Analysis</i> , and including Basis for Interim Operation (BIO), etc.], or DOE issued Safety Evaluation Report that are not addressed by Criteria 3A(1) and 3A(2).<br><b>Exceptions:</b><br>a) An event consisting solely of a violation of a safety management program (e.g., quality assurance, personnel training) cited in the Documented Safety Analysis.<br>b) An event consisting solely of a surveillance test (to include any periodic activity explicitly captured in the DSA 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.) |
| (4) | 4  | An event consisting solely of a surveillance test (to include any periodic activity explicitly captured in the DSA 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.

Subgroup B Documented Safety Analysis Inadequacies.

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Determination of a positive Unreviewed Safety Question (USQ) that reveals a currently existing inadequacy in the documented safety analysis.

(2)	3	Declaration of a potential inadequacy of the documented safety analysis (a potential positive USQ), per 10 CFR Section 830.203(g).
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[**Note:** When a potential inadequacy of a documented safety analysis is found, it would be initially reported under Criterion 3B(2). If further analysis results in a positive USQ determination, then the occurrence report should be updated to recategorize it under Criterion 3B(1). If the analysis results in a negative USQ determination, the occurrence report should be updated to recategorize it under Criterion 3B(3).]

(3)	4	Determination of a negative Unreviewed Safety Question (USQ).
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Subgroup C Nuclear Criticality Safety Control Violations.

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*OE	A criticality accident occurs.

(2)	*1	A condition in which no documented controls are available to prevent a criticality accident. An accident has not occurred due to other, non-documented barriers or controls.
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(3)	2	A loss of one or more nuclear criticality documented controls such that an accidental criticality is possible from the loss of one additional documented control.
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(4)	3	A deficiency in criticality safety analysis or degradation of a documented criticality control (or controls) such that adequate controls were not in place for a credible criticality accident scenario.
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## 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).

[**Note:** Performance degradation includes the absence of or deficiency with Design Features for which credit has been taken in the Documented Safety Analysis.]

- | <u>#</u> | <u>SC</u> | <u>Criterion</u>  |
|----------|-----------|---|
| (1)      | 3         | 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. |
| (2)      | 4         | Performance degradation of any Safety Class SSC when not required to be operable.   |

### Subgroup B Operations.

- | <u>#</u> | <u>SC</u> | <u>Criterion</u>  |
|----------|-----------|---|
| (1)      | *2        | A formal change of operational mode or curtailment of work or processes) directed by a DOE Field Element Manager or Contracting Officer for safety reasons (e.g., a Stop Work Order).<br><br><b>SCBNL: Any Stop Work issued for confirmed imminent danger</b>   |
| (2)      | 2         | Actuation of a Safety Class Structure, System, or Component (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.   |
| (3)      | 3         | Actuation of a Safety Significant Structure, System, or Component (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.   |
| (4)      | 3         | A facility evacuation, other than a precautionary evacuation or an evacuation due to false alarms or spurious alarms (e.g., due to electronic noise, radon/thoron decay). If the event fell under another reporting criterion, then evacuation should be reported as well by noting multiple reporting criteria for the single occurrence.<br><br><b>SCBNL: Any evacuation not due to false alarm or part of drill/exercise</b> |

- (5) 4 A facility operational event which resulted in an adverse effect on safety, such as, but not limited to:
- a) an inadvertent facility or operations shutdown (i.e., a change of operational mode or curtailment of work or processes),
  - b) a manual facility or operations shutdown due to alarm response procedures,
  - c) an inadvertent process liquid transfer, or
  - d) an inadvertent release of hazardous material from its engineered containment.
- (6) 4 A facility or operations shutdown (i.e., a change of operational mode or curtailment of work or processes), directed by senior contractor or senior DOE management for safety reasons, and requiring a corrective action(s) prior to continuing operations.
- (7) 4 Any event or condition that would prevent immediate facility or offsite emergency response capabilities.

Subgroup C      Suspect/Counterfeit and Defective Items or Material

[**Note:** Include the detailed information identified in Attachment 3.]

- | <u>#</u> | <u>SC</u> | <u>Criterion</u>  |
|----------|-----------|---|
| (1)      | 3         | Discovery of any suspect or counterfeit item or material found in a Safety Class or Safety Significant Structure, System, or Component (SSC).   |
| (2)      | 4         | Discovery of any other suspect or counterfeit item or material (i.e., not found in a Safety Class or Safety Significant Structure, System, or Component) that is found in any application whose failure could result in a loss of safety function, or present a hazard to public or worker health and safety. |
| (3)      | 4         | Discovery of any defective item or material, other than a suspect/counterfeit item or material, in any application whose failure could result in a loss of safety function, or present a hazard to public or worker health and safety.  |

**Group 5 - Environmental**

Subgroup A      Releases.

- | <u>#</u> | <u>SC</u> | <u>Criterion</u>  |
|----------|-----------|---|
| (1)      | *3        | Any release (onsite or offsite) of a hazardous or extremely hazardous substance, including radionuclides from a DOE facility above federally permitted releases in a quantity equal to or exceeding the federal reportable quantities specified (See specifications in 40 CFR Part 302, <i>Designation, Reportable Quantities, and Notification</i> , 40 CFR Part 355, <i>Emergency</i> |

*Planning and Notification, and CERCLA Section 101(10), Federally Permitted Releases.)*

[**Note:** See Group 1, Criterion 1, for situations under which releases of hazardous or extremely hazardous substances would be reported under “Operational Emergencies.”]

- (2) 4 Any release (onsite or offsite) of a pollutant from a DOE facility that is above levels or limits specified by outside agencies in a permit, license, or equivalent authorization, when reporting is required in a format other than routine periodic reports.  
[**Note:** See Group 1, Criterion 1, for situations under which releases of pollutants into the environment exceeding permit limits would be reported under “Operational Emergencies.”]
- (3) 4 Any release (onsite or offsite) that exceeds 100 gallons of oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil. For operations involving oil field crude or condensate, any discharge that must be reported to outside agencies in a format other than routine periodic reports is reportable under this criterion.  
[**Note:** See Group 1, Criterion 1, for situations under which releases of oil would be reported under “Operational Emergencies.”]
- (4) 4 Any discrete release of sulfur hexafluoride (SF<sub>6</sub>) due to an event or DOE operation equal to or exceeding 115 pounds (1,247 metric tons of CO<sub>2</sub>e according to 40 CFR Part 98, Subpart A, Table A-1, *Global Warming Potentials*) or 115 pounds more than the normal release quantity if the SF<sub>6</sub> release is a common byproduct of the operation.  
[**Note:** For this criterion, discrete means the event or operation has defined start and stop points less than seven full days apart.]

Subgroup B Ecological and Cultural Resources

# SC

Criterion

- (1) 2 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) \*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).  
 [Note: See Group 1, Criterion 1, for situations under which occurrences affecting ecological or cultural resources would be reported under “Operational Emergencies.”]

## Group 6 - Contamination/Radiation Control

### Subgroup A Loss of Control of Radioactive Materials

[Note: Subgroup 6A criteria apply to bulk radioactive materials, sealed sources, and property containing radioactive materials, including discovered legacy radioactive materials, but do not apply to surface radioactive contamination on property. Surface radioactive contamination is addressed in Subgroup 6B.]

#### # SC Criterion

- (1) \*2 Identification of radioactive material offsite due to DOE operations/activities that exceeds applicable DOE limits (pursuant to DOE O 458.1 Chg 2, *Radiation Protection of the Public and the Environment*, dated 6-6-11).
- (2) 2 Loss or unexpected discovery of radioactive material that exceeds 100 times the values in 10 CFR Part 835, *Occupational Radiation Protection*, Appendix E (excluding consumer products such as smoke detectors, if they are handled in accordance with manufacturer’s instructions), or loss of accountability of such material for more than 24 hours. The 24-hour time period begins when the loss of accountability is discovered and must include one business day.
- (3) 3 Loss or unexpected discovery of radioactive material which exceeds 1 times and no greater than 100 times the values in 10 CFR Part 835, Appendix E (excluding consumer products such as smoke detectors, if they are handled in accordance with manufacturer’s instructions) or loss of accountability of such material for more than 24 hours. The 24-hour time period begins when the loss of accountability is discovered and must include one business day.  
 [Note: Legacy radioactive material discovered through a routine radiological monitoring program, compliant with 10 CFR 835 may be summarized in a single short form report, for example, on a quarterly basis. Each instance of legacy radioactive material must be identified in the report and contain the details required for reporting in accordance with this Order.]

SCBNL: Loss of radioactive material which exceeds 50% of the quantities specified in 10 CFR Part 835, Appendix E,

or loss of accountability of such material for more than 24 hours.

Subgroup B      Spread of Radioactive Contamination

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*2	<p>Identification of offsite radioactive contamination due to DOE operations/activities that exceeds applicable DOE-approved authorized limits (pursuant to DOE O 458.1 Chg 2, <i>Radiation Protection of the Public and the Environment</i>, dated 6-6-11) or, if there are none, the total contamination values in 10 CFR Part 835, Appendix D.</p> <p><b>[Notes:</b></p> <p>a) Release or clearance of property containing or potentially containing residual radioactive material is subject to requirements in DOE O 458.1. Compliance with 10 CFR Part 835, Appendix D values does not necessarily satisfy the requirements in DOE O 458.1.</p> <p>b) The discovery of radioactive contamination from past DOE/NNSA operations that may have caused, is causing or may reasonably be expected to cause exposures exceeding protective action criteria may be reportable as an Operational Emergency under Group 1, Criterion 1.]</p>
(2)	2	<p>Identification of onsite radioactive contamination greater than 100 times the total contamination values in 10 CFR Part 835 Appendix D, exclusive of footnote 3 to Appendix D, and that is found outside of the following locations: areas routinely posted, controlled and monitored for contamination, areas controlled in accordance with 10 CFR Section 835.1102(c), and, per Section 835.604(a), any non-posted area that is under the continual observation and control of an individual knowledgeable of and empowered to implement required access and exposure control measures. For tritium, the reporting threshold is 100 times the removable contamination values in 10 CFR Part 835, Appendix D.</p> <p><b>[Notes:</b></p> <p>a) This does not apply to surface contamination from residual radioactive material meeting applicable DOE-approved authorized limits.</p> <p>b) This does not apply to legacy radioactive contamination, which is to be reported under a separate criterion below.</p> <p>c) The exclusion from reporting contamination in a Radiological Buffer Area applies only when the area has been established for a Contamination Area, High</p>

Contamination Area, or Airborne Radioactivity Area and its exit requirements have adopted guidance from Article 338.2 of DOE-STD-1098-2008.

- d) The discovery of radioactive contamination from past DOE/NNSA operations that may have caused, is causing, or may reasonably be expected to cause uncontrolled personnel exposures exceeding protective action criteria may be reportable as an Operational Emergency under Group 1, Criterion 1.]
- (3) 3 Identification of onsite radioactive contamination greater than 10 times and no greater than 100 times the total contamination values in 10 CFR Part 835, Appendix D, exclusive of footnote 3 to Appendix D, and that is found outside of the following locations: areas routinely posted, controlled and monitored for contamination, areas controlled in accordance with 10 CFR Section 835.1102(c), and, per Section 835.604(a), any non-posted area that is under the continual observation and control of an individual knowledgeable of and empowered to implement required access and exposure control measures. For tritium, the reporting threshold is 10 times the removable contamination values in 10 CFR Part 835, Appendix D.

**SCBNL: Identification of onsite radioactive contamination greater than 5 times the total contamination values in 10 CFR 835 Appendix D**

**[Notes:**

- a) This does not apply to contamination from residual radioactive material meeting applicable DOE-approved authorized limits.
- b) This does not apply to legacy radioactive contamination, which is to be reported under a separate criterion below.
- c) The exclusion from reporting contamination in a Radiological Buffer Area applies only when the area has been established for a Contamination Area, High Contamination Area or Airborne Radioactivity Area and its exit requirements have adopted guidance from Article 338.2 of DOE-STD-1098-2008.
- d) This reporting criterion does not apply to packages monitored in accordance with 10 CFR Section 835.405 that meet DOT contamination limits specified in 49 CFR Section 173.443(a).]

- (4) 4 Identification of onsite legacy radioactive contamination greater than 10 times the total contamination values in 10 CFR Part 835 Appendix D, exclusive of footnote 3 to Appendix D, and that is found outside of the following locations: areas routinely posted, controlled and monitored for contamination, and areas controlled in accordance with 10 CFR Section 835.1102(c), and, per Section 835.604(a), any non-posted area that is under the continual observation and control of an individual empowered to implement access and exposure control measures. For tritium, the reporting threshold is 10 times the removable contamination values in 10 CFR Part 835, Appendix D.

SCBNL: Identification of onsite legacy radioactive contamination greater than 5 times the total contamination values in 10 CFR 835 Appendix D

**[Notes:**

- a) Legacy radioactive contamination is radioactive contamination resulting from historical operations that are unrelated to current activities.
- b) This does not apply to contamination from residual radioactive material meeting applicable DOE-approved authorized limits.
- c) The exclusion from reporting contamination in a Radiological Buffer Area applies only when the area has been established for a Contamination Area, High Contamination Area or Airborne Radioactivity Area and its exit requirements have adopted guidance from Article 338.2 of DOE-STD-1098-2008.
- d) Legacy contamination identified through a routine radiological monitoring program, compliant with 10 CFR 835 may be summarized in a single short form report, for example, on a quarterly basis. Each instance of legacy contamination must be identified in the report and contain the details required for reporting in accordance with this Order.]

Subgroup C Radiation Exposure

**[Note:** For all of Subgroup C, 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.]

# SC Criterion

- (1) \*1 Determination of a dose that exceeds the limits specified in 10 CFR Part 835, Subpart C, "Occupational Radiation Protection" or in DOE O 458.1 Chg 2, *Radiation Protection of the Public and the Environment*, dated 6-6-11, paragraph 4.b(1)(a) [paragraph 2.b(1)(a) of the CRD], "Public Dose Limit."
- (2) 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).
- (3) 3 Determination of a single occupational dose, attributable to an identified event that exceeds an expected dose by: (1) 500 mrem Committed Effective Dose (CED), or (2) the greater of 10 percent or 100-mrem effective dose due to external exposure.
- SCBNL: Any single occupational exposure that exceeds an expected exposure or dosimetry result by: (1) 250 mrem Committed Effective Dose Equivalent (CEDE), or (2) the greater of 5% or 50-mrem effective dose equivalent due to external exposure.**
- (4) 3 A radiological release that exceeds any limit contained in paragraphs 4.f.(2), 4.f.(5), 4.g.(4), 4.g.(5)(a), 4.g.(7), 4.g.(8)(a)4 or 4.i.(1) of DOE O 458.1 Chg 2, *Radiation Protection of the Public and the Environment*, dated 6-6-11 or exceeds the 40 CFR Section 61.92 requirements.

Subgroup D Personnel Contamination

# SC Criterion

- (1) \*2 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 1 times the total contamination values in 10 CFR 835, Appendix D to an offsite medical facility or bringing offsite medical personnel onsite to perform treatment or decontamination.
- (2) 2 Identification of offsite personnel or clothing contamination due to DOE operations/activities that exceeds 1 times 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.
- (3) 4 Identification of onsite personnel or clothing contamination (excluding anti-contamination clothing provided by the site for radiological protection) that exceeds 10 times the total

contamination values identified in 10 CFR Part 835, Appendix D. The contamination level must be based on direct measurement and not averaged over any area. This criterion does not apply to tritium contamination.

**SCBNL: Any onsite contamination of personnel or clothing (excluding site-provided protective clothing) that exceeds 5 times the values for total contamination identified in 10 CFR Part 835, Appendix D. The contamination level must be based on direct measurement and not averaged over any area. This criterion does not apply to tritium contamination.**

### Group 7 - Nuclear Explosive Safety

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Damage to a nuclear explosive that results in a credible threat to nuclear explosive safety.
(2)	2	A near miss event during nuclear explosive operations where the potential for significant consequences was substantially increased, such as: <ol style="list-style-type: none"> <li>unauthorized introduction of electrical, mechanical, chemical, thermal, or electromagnetic energy into a nuclear explosive,</li> <li>unauthorized compromise of a nuclear explosive safety feature when installed on a nuclear explosive,</li> <li>inadvertent substitution of a nuclear explosive for a nuclear explosive-like assembly (NELA) or vice versa, or</li> <li>violation of a nuclear explosive safety rule (NESR).</li> </ol>
(3)	3	An event during nuclear explosive operations that resulted in an adverse effect on safety, such as: <ol style="list-style-type: none"> <li>use of uncertified personnel or unauthorized equipment/tooling, or</li> <li>violation of the two-person concept of operations.</li> </ol>

### Group 8 – Packaging and Transportation

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*2	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/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, Criterion 1; Group 8 will be a secondary reporting criterion.]

- (2) 3 Any deviation that would require a written report to the Nuclear Regulatory Commission (per 10 CFR Section 71.95) or to DOE HCO/NNSA CO (per DOE O 460.1C or DOE O 461.1B), 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) \*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.

[**Note:** Prompt notification is not required if the accident does not involve personnel injuries.]

- (4) 3 Any offsite transportation incident involving DOE hazardous materials that requires submission of a Hazardous Materials Incident Report on DOT Form F 5800.1 pursuant to 49 CFR Section 171.16.
- (5) 3 Any offsite transportation of hazardous material, including radioactive material, whose quantity or nature (e.g., physical or chemical composition) is such that it is noncompliant with the receiving facilities Waste Acceptance Criteria (WAC) or other receipt requirements and the receiving organization’s operations were significantly impacted or disrupted (e.g., material cannot be accepted, possessed, or stored at that facility; must be treated or repackaged to be accepted; or exceeds a license or permit limit).
- (6) 3 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 (RQ) specified in 40 CFR Section 302 or 40 CFR Section 355.
- [**Note:**
- a) This occurrence may be reportable under Group 1, Criteria 2, 3, or 4.

- b) Any release of a quantity of hazardous materials greater than five (5) times the Reportable Quantity (RQ) specified for such material in 40 CFR § 302; of greater than 1,000 gallons (24 barrels) of oil to inland waters; or greater than 10,000 gallons (238 barrels) of oil to coastal waters should also be reported as an Operational Emergency under Group 1, Criterion 1; Group 8 will be a secondary reporting criteria.]
- (7) 4 Violation of applicable Hazardous Materials Regulations requirements for activities listed in 49 CFR Section 171.1(b) performed during the preparation of offsite hazardous materials shipments and discovered during shipment in commerce or at the receiving site.
- (8) 4 Any onsite transfer of hazardous material, including radioactive material, whose quantity or nature (e.g., physical or chemical composition) is such that it is noncompliant with the receiving facilities Waste Acceptance Criteria (WAC) or other receipt requirements and the receiving organization's operations were significantly impacted or disrupted (e.g., material cannot be accepted, possessed, or stored at that facility; must be treated or repackaged to be accepted; or exceeds a license or permit limit).
- (9) 4 Unauthorized deviation from DOE instructions to commercial motor carriers for DOE hazardous materials shipments (e.g., designated route, prohibited route, designated time of the day).

### Group 9 - Noncompliance Notifications

- | <u>#</u> | <u>SC</u> | <u>Criterion</u>   |
|----------|-----------|--|
| (1)      | 4         | Any written notification from an outside regulatory agency that a site/facility is considered to be in noncompliance with a schedule or requirement (e.g., Notice of Violation, Notice of Intent to Sue, Notice of Noncompliance, Warning Letter, Finding of Violation, Finding of Alleged Violation, Administrative Order, or equivalent notification or enforcement action).<br>[ <b>Note:</b> This criterion is not applicable to DOE Office of Enforcement actions.] |
| (2)      | 4         | Any packaging or transportation violation of regulations discovered by DOT during onsite inspections or Compliance Reviews results in fines greater than \$5,000 or Unsatisfactory/Conditional Satisfactory ratings.<br>[ <b>Note:</b> Noncompliance occurrence reports are to be updated to reflect fines or penalties levied or corrective actions imposed by  |

the outside regulatory agency upon final settlement of any enforcement action undertaken.]

## Group 10 - Management Concerns and Issues

- | <u>#</u> | <u>SC</u>        | <u>Criterion</u>   |
|----------|------------------|--|
| (1)      | 2                | <p>Any event resulting in the initiation of a Federal Accident Investigation Board, as categorized by DOE O 225.1B, <i>Accident Investigation</i>.</p> <p>[<b>Note:</b> This reporting criterion may raise the significance category of an occurrence already reported under separate criteria. Multiple reporting criteria should be assigned, when appropriate.]</p>   |
| (2)      | 1-4 <sup>†</sup> | <p>An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manager or line management to be of safety significance or of concern for that facility or other facilities or activities in the DOE complex.</p> <p>The significance category assigned to the management concern should be based on an evaluation of the potential risks and impact on safe operations.</p> <p>[<sup>†</sup><b>Note:</b> Follow the Prompt Notification requirements identified in the Occurrence Reporting Model (Attachment 4).]</p> <p style="color: red; text-align: center;"><b>SCBNL: An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by line management to be of interest or of concern to operations at BNL. This criterion is intended to collect and disseminate information to BNL facilities to minimize the risk of recurrence.</b></p> |
| (3)      | 1-3 <sup>†</sup> | <p>A near miss to an otherwise ORPS reportable event, where something physically happened that was unexpected or unintended, or where no or only one barrier prevented an event from having a reportable consequence. .</p> <p>The significance category assigned to the near miss must be based on an evaluation of the potential risks and extent of personnel exposure to the hazard.</p> <p>[<sup>†</sup><b>Note:</b> Follow the Prompt Notification requirements identified in the Occurrence Reporting Model (Attachment 4).]</p>  |
| (4)      | *4               | <p>Any occurrence that may result in a significant concern by affected state, tribal, or local officials, press, or general population; that could damage the credibility of the Department; or that may result in inquiries to Headquarters.</p>  |

- (5) \*4 Any occurrence of such significant immediate interest to offsite personnel and organizations that it warrants prompt notification to the DOE HQ OC, and which is not already designated elsewhere in this set of reporting criteria to have prompt notification [denoted by having an asterisk (\*) next to the significance category].

### **Group 11 - Programmatic/Business Continuity Impact**

SCBNL: An event, condition, or series of similar events that does not meet any of the other reporting criteria, but is determined by the Event Categorizer or the Events Analysis Working Group to have an impact to the lab's reputation, the environment, the continuity of operations or a research program. The impact can be measured in terms of downtime of a facility, machine or equipment, loss of productivity or financial loss. Some guidelines include:

- $\geq \$10,000$  or  $\geq 2\%$  of item/material/program cost
- $\geq 2$  days program downtime or  $\geq 2\%$  of program schedule
- Loss of experimental data, research samples or any mission-critical equipment
- Involves an environmental aspect but does not meet significance criteria defined in Environmental Aspects and Impacts Subject Area
- An event(s) where previous corrective actions were not effective in preventing recurrence but did not meet the criteria for a "Recurrence" (R) ORPS report.

### Occurrence Reporting Model

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

Significance Category	Timelines*	Prompt Notification	Final Report Approval	Causal Analysis
<b>Operational Emergencies (defined by DOE O 151.1C)<sup>+</sup></b>	Categorize: ASAP Prompt Notification: 30 min (15 min if further classified) Written Notification: COB next business day not to exceed 90 hrs Final Report: 45 calendar days	To Facility Representative (FR) and DOE Headquarters Operations (HQ) Center	By Facility Representative and Program Manager	Root Cause or Locally Approved Procedure
<b>Significance Category 1</b>	Categorize: 2 hrs Prompt Notification: 2 hrs Written Notification: COB next business day not to exceed 90 hrs Final Report: 45 calendar days	To FR and DOE HQ Center	By Facility Representative and Program Manager	Root Cause or Locally Approved Procedure
<b>Significance Category R</b>	Categorize: Time of SC R determination Written Notification: COB 2 business days Final Report: 45 calendar days		By Facility Representative	Root Cause or Locally Approved Procedure
<b>Significance Category 2</b>	Categorize: 2 hrs Prompt Notification: 2 hrs Written Notification: COB next business day Final Report: 45 calendar days	To FR (When required, DOE HQ Center) <sup>†</sup>	By Facility Representative	Apparent Cause or Locally Approved Procedure
<b>Significance Category 3</b>	Categorize: 2 hrs Prompt Notification: 2 hrs Written Notification: COB 2 business days Final Report: 45 calendar days	To FR (When required, DOE HQ Center) <sup>†</sup>	By Facility Manager (local/program option for Facility Representative)	Apparent Cause or Locally Approved Procedure
<b>Significance Category 4</b>	Categorize: 2 hrs Prompt Notification: 2 hrs (as required) Short Form Report: COB 2 business days	When required, to FR and DOE HQ Center <sup>†</sup>	Per local procedures	Locally Approved Procedure

<sup>+</sup> Categorization and Prompt Notification requirements are in accordance with DOE O 151.1C, Emergency Management

<sup>\*</sup> Categorization Time is from Discovery Date and Time. Prompt Notification is from Categorization Date and Time. Written Notification is from Categorization Date and Time.

<sup>†</sup> Specific Significance Category 2, 3, and 4 occurrences (identified with an asterisk in Attachment 2, Reporting Criteria) also require Prompt Notification to the DOE HQ EOC.

## REFERENCES

- a. 10 CFR Sections 205.350-353, *Report of Major Electric Utility Systems Emergencies*.
- b. 10 CFR Part 830, *Nuclear Safety Management*.
- c. 10 CFR Part 835, *Occupational Radiation Protection*.
- d. 10 CFR Part 851, *Worker Safety and Health Program*.
- e. 29 CFR Part 1904, *Recording and Reporting Occupational Injuries and Illnesses*.
- f. 29 CFR Part 1910, *Occupational Safety and Health Standards*.
- g. 29 CFR Part 1960, *Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters*.
- h. 40 CFR Part 98, *Mandatory Greenhouse Gas Reporting*.
- i. 40 CFR Part 110, *Discharge of Oil*.
- j. 40 CFR Part 302, *Designation, Reportable Quantities, and Notification*.
- k. 40 CFR Part 355, *Emergency Planning and Notification*.
- l. 49 CFR Parts 106-180, 200-250, and 350-399, *Transportation*.
- m. [DOE O 151.1C, Comprehensive Emergency Management System, dated 11-2-05.](#)
- n. [DOE O 210.2A, DOE Corporate Operating Experience Program, dated 4-8-11.](#)
- o. [DOE O 225.1B, Accident Investigations, dated 3-4-11.](#)
- p. [DOE O 422.1, Conduct of Operations, dated 6-29-10.](#)
- q. [DOE O 458.1 Chg 2, Radiation Protection of the Public and the Environment, dated 6-6-11.](#)
- r. [DOE O 460.1C, Packaging and Transportation Safety, dated 4-14-10.](#)
- s. [DOE O 461.1B, Packaging and Transportation for Offsite Shipment of Materials of National Security Interest, dated 12-20-10.](#)
- t. [DOE/EFCOG Electrical Severity Measurement Tool.](#)
- u. DOE STD-1098-2008, *Radiological Control*.
- v. Executive Order 12333, *United States Intelligence Activities*. w. *National Defense Authorization Act for Fiscal Year 2000, Public Law 106-65*.
- w. Executive Order 12344, *Naval Nuclear Propulsion Program*.