FESHM 3010: OCCURRENCE REPORTING

Revision History

Author	Description of Change	Revision Date
Angela Aparicio	• Revised responsibilities to meet the current expectations of the various roles. • Updated 5A(5) reporting criteria to align with DOE's guidance on the Occurrence Reporting and Processing System webpage. • Added Occurrence Report security requirements related to classified information and controlled unclassified information (CUI)	November 2023
Angela Aparicio	Added references to QAM 12140 – Event Response Program (ERP), updated chapter to point to new roles in ERP. Added 5A(5) reporting criteria to Technical Appendix 7.2.	September 2022
Angela Aparicio Dave Baird	Updated FESHM Chapter to comply to the updated DOE O 232.2A that becomes effective on October 1, 2017, including new reporting threshold tables.	September 2017
Martha Michels Dave Baird	Reformatted chapter and removed requirements and text that is not relevant to our facility.	August 2013
W. James	Added FESHM Chapter formatting template. Updated to address changes in reporting criteria and time permitted by contractor to submit initial reports per DOE O 232.5 effective 1/1/12.	February 2012
W. James	Revision 0, Initial release Chapter 3010	December 2009

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1.0 INTRODUCTION

It is Laboratory policy that Laboratory management and the Department of Energy are appropriately notified of all events which could (1) affect the safety, security or health of the public or workers; (2) seriously impact the intended purpose of the Laboratory; (3) have an adverse effect on the environment; or (4) create publicity detrimental to the mission of the Laboratory.

This ES&H Manual chapter outlines the internal roles and responsibilities for notification and categorization of events, investigation of occurrence, and generating and submitting reports.

2.0 DEFINITIONS

Refer to Technical Appendix, Section 6.13 for definitions specific to occurrence reporting criteria.

3.0 RESPONSIBLILITIES

Chief Operating Officer (COO) or designee

- Acting as the Facility Manager for the Laboratory. This individual, with input from the Chief Safety Officer (CSO), will make the final decision as to whether an incident is a reportable occurrence.
- Notifying the DOE-Fermi Site Office (FSO) of reportable occurrences and ensuring the FSO Manager is provided a copy of the notification report.
- Coordinating activities when multiple directorates/divisions/projects are involved.
- Assuring the occurrence reports are placed into the DOE occurrence report database in a timely manner.
- Approving notification and final reports.
- Reviewing corrective actions as reports are submitted to DOE.
- Ensuring all corrective actions are tracked to closure.

Associate Lab Director (ALD)/Division Project Director (ALD/D/P)

- Providing timely identification, categorization and notification to the COO, CSO, and ERAPM of an event that represents a potential for being an event or condition requiring categorization.
- Providing for the timely submittal of the Occurrence Reporting and Processing System (ORPS) report to the Event Review & Analysis Program Manager.
    - Provide the appropriate notification information for the event (Instructions to complete ORPS Report Template included in Appendix 6.11) and submit to the Event Review & Analysis Program Manager or designee not to exceed time limits set in Technical Appendices 6.0.
    - Provide update information for ORPS when significant additional information is obtained or when events dictate change in classification and provide this information to the Event Review & Analysis Program Manager or designee.

  - Provide to the Event Review & Analysis Program Manager or designee all information in a written format in order for it to be processed and reviewed by DOE FSO and the COO prior to entry into the on-line DOE ORPS database.
- Ensure an event review is conducted following the requirements outlined in QAM 12140 – Event Review & Analysis Program.
- Assuring all corrective actions are placed into iTrack and coordinating the implementation of all corrective actions. *See Quality Assurance Manual (QAM) chapters 12030 and 12040 for additional information.* Track and ensure timely closure of corrective actions in iTrack. Provide to the Event Review & Analysis Program Manager or designee updates which include the corrective actions taken and the date the action was completed.
- Assuring lessons learned are developed and submitted to the Quality Assurance Office through iTrack. *See Quality Assurance Manual (QAM) chapter 12010 for additional information.*
- Assuring the requirement to report occurrences flows down to subcontractors through contract documents.
- Provide briefing to COO and CSO on occurrences, response actions, and current activity status.

Chief Safety Officer (CSO)/Environment, Safety and Health (ESH) Division Head

- Analyzing related occurrences to improve performance in environment, safety, health, quality, security, or Laboratory operations.
- Provide input to the COO and Event Review & Analysis Program Manager when determining whether events meet ORPS reporting criteria.
- Notifying external regulatory authorities as applicable (Note - the Illinois Department of Nuclear Safety must be notified of any radiological incident classified as unusual occurrence or emergency).

Event Review & Analysis Program Manager

- Act as the ORPS Manager for the Laboratory. Designate an alternate ORPS manager.
- Utilizing the on-line DOE ORPS occurrence report database that serves as the repository for all Laboratory occurrence reports.
- Disseminating "lessons learned" that are prepared by the affected directorate/division/project. See QAM 12010 for more details, including format of written lessons learned.
- Review events against ORPS reporting criteria.
- Track all events considered for ORPS reporting in the Fermilab ORPS/NTS database: https://www-esh.fnal.gov/pls/apex/f?p=160
- For those events that appear to meet ORPS reporting criteria, seek concurrence from the CSO and COO.
- Make notifications of all lab ORPS events to stakeholders.
- Prepare and submit ORPS reports within the timeframes outlined in the Order and Technical Appendix 6.1.

- Ensure draft ORPS reports are reviewed by the FSO Facility Representative and the COO for concurrence. Obtain signatures.
- Analyzing related occurrences from other DOE facilities to identify opportunities to improve performance in environment, safety, health, quality, security, or Laboratory operations.

Directorate Safety Officer (DSO)

- Providing input on lessons learned documents related to occurrences within their assigned Directorate/Division and ensuring they are submitted to the Quality Assurance Office (via iTrack) to share within the Laboratory.
- Reviewing draft ORPS reports before being sent for acceptance.
- Assuring consistency between the Occurrence Report and Computerized Accident/Injury Report (CAIRS), as necessary.
- As corrective actions are completed, notify the Event Review & Analysis Program Manager or ORPS Manager Designee of the corrective action taken and the date it was accomplished, in order for this to be entered into the ORPS database. This notification should take place when the action is closed.

4.0 PROCEDURES

Discovery of Occurrence

The individual making the discovery shall notify the supervisor and/or DSO upon recognizing or witnessing an abnormal event (make emergency notification first to x3131 when appropriate). Reporting requirements shall not take precedence over initial response and corrective actions. These are to be concurrent activities. The report of the event shall be made to supervisor/DSO within 2 hours of identification of occurrence.

Notifications

The supervisor or DSO, upon notification of an occurrence/event, are to notify their line management and the Event Review & Analysis Program Manager.

The Directorate/Division/Project Head shall notify the COO and CSO of any event that may meet the criteria Technical Appendices 6.0.

Once an event has been determined by the COO to meet ORPS reporting criteria, the Event Review & Analysis Program Manager or designee shall notify interested stakeholders via email message.

Report preparation

The Event Review & Analysis Program Manager (ERAPM) will prepare a draft occurrence report based upon the information provided by the D/D/P. The D/D/P will provide the necessary information for the event (instructions included in Appendix 6.11) to the Event Review & Analysis Program Manager within the time limits set in Technical Appendices 6.0.

The ERAPM will share the draft report with the FSO facility representative and COO for review and acceptance.

Report submittal

Once the report is accepted by FSO facility representative and COO, the report may be submitted in the DOE database (instructions included in Appendix 6.12).

Following submittal, the ERAPM will prepare the report document and post to the lab's ORPS/NTS webpage. The ERAPM will send notification of the report submittal to all interested stakeholders.

5.0 REFERENCES

- DOE O 232.2A, https://www.directives.doe.gov/directives-documents/200-series/0232.2-BOrder-a-chg1-minchg, October 2019
- DOE-STD-1197-2011, Occurrence Reporting Causal Analysis
- Quality Assurance Manual Chapter 12010 – Fermilab Lessons Learned Program and Procedures
- Quality Assurance Manual Chapter 12030 – Fermilab Quality Tool Suite Procedures and Risk Assignment
- Quality Assurance Manual Chapter 12040 – Corrective and Preventive Actions
- Quality Assurance Manual Chapter 12140 – Event Review & Analysis Program

6.0 TECHNICAL APPENDICES

6.1 Notification and Reporting Requirements

Report Level	Timelines	Initial Notification	Final Report Approval	Causal Analysis and Corrective Actions
High (H)	Categorize: 2 hours Initial Notification: 2 hours Written Notification: COB 2 business days Update/Final Report: COB 60 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.
Low (L)	Categorize: 2 hours Initial Notification: 2 hours Written Notification/Final Report: 10 business days	To Facility Representative or Designated DOE Representative	Per local procedures	Per local procedures
Informational (I)	Categorize: 2 hours Initial Notification: COB next business day Written Notification/Final Report: 10 business days	To Facility Representative or Designated DOE Representative	Per local procedures	Per local procedures

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.
- Informational Level Reporting can be tailored per Program Office direction to only be captured in local issues management systems. Program Offices have the authority to determine which Informational Level Reports will be submitted to the ORPS database.

Note: Group 3 – Nuclear Safety Basis and Group 7 – Nuclear Explosive Safety do not apply to Fermilab and therefore are not listed in the Tables below.

6.2 GROUP 1 OPERATIONAL EMERGENCIES

GROUP 1 OPERATIONAL EMERGENCIES		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
(1) An Operational Emergency, Alert, Site Area Emergency, or General Emergency as defined in DOE O 151.1D.		

6.3 GROUP 2 PERSONNEL SAFETY & HEALTH

GROUP 2 PERSONNEL SAFETY AND HEALTH		
6.3.1 Subgroup A – <u>Occupational Injuries and Exposures</u> [Note: See "Personnel Exposure" in Definitions. 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.]		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
(1) Any occurrence due to DOE operations resulting in a fatality or terminal injury/illness.	(4) Any single occurrence, injury or exposure, 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*.	
(2) Any single occurrence, injury or exposure, requiring in-patient hospitalization of three or more personnel	(5) Any single occurrence resulting in an occupational injury or exposure that: (a) Requires in-patient hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; (b) Results in a fracture of any bone (except bone chips, 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.) (d) Damages any internal organ; (e) Causes (1) a concussion or (2) loss of consciousness due to an impact to the head; (f) Causes second- or third-degree burns, affecting more than five percent of the body surface. [Notes: The intent of Group 2A(5) reporting criterion is to report injuries based on the initial or first-line diagnosis	

	and treatment. Events reported in this category are those for which the diagnosis was obtained within 21 calendar days after the event occurred. If changes occur from the initial diagnosis, resulting in revised treatment plans (i.e. misinterpretation of initial test results, additional evaluations performed), then reporting will need to be re-evaluated based on corrected diagnosis.]	
(3) Any single occurrence, injury or exposure, resulting in an occupational injury that requires in-patient hospitalization for five days or more, commencing within seven days from the date of injury.	(7) Personnel exposure to chemical, biological or physical hazards above limits established in 10 CFR 851, *Worker Safety and Health Program* (see 10 CFR Section 851.23, *Safety and Health Standards*), but below levels deemed IDLH.	
(6) Personnel exposure to chemical, biological or physical hazards that exceeds 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 exceeds levels deemed immediately dangerous to life and health (IDLH) without regard for the use of personal protective equipment.		

GROUP 2 PERSONNEL SAFETY AND HEALTH		
6.3.2 Subgroup B – Fires		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
(1) Any fire 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.]		(3) Any fire in a nuclear facility.
(2) Any fire that: (a) Activates a fixed automatic fire suppression system (e.g. clean agent or wet-pipe automatic sprinkler protection); (b) Takes longer than ten minutes to extinguish following the initiation of firefighting efforts by the emergency response organization, or (c) Disrupts normal operations in the facility for more than four hours. [Note: The activation or degradation of Safety Class and Safety Significant fire suppression systems should also be reported under Group 4 Criteria.]		(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.

GROUP 2 PERSONNEL SAFETY AND HEALTH		
6.3.3 Subgroup C – Explosions		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
(1) Any unplanned explosion that disrupts normal operations.		

GROUP 2 PERSONNEL SAFETY AND HEALTH		
6.3.4 Subgroup D – Hazardous Energy		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
(1) Any unexpected or unintended personal contact (burn, shock, injury, etc.) with a hazardous energy source (e.g., live electrical power circuit, mechanical hazards, steam, pressurized gas, etc.).	(2) Any failure to follow a prescribed hazardous energy control process that results in potential worker exposure to uncontrolled hazardous energy (e.g., live electrical power circuit, powered mechanical hazards, steam, pressurized gas, etc.); OR any discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, powered mechanical hazards, steam, pressurized gas, etc.). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.	

6.4 GROUP 4 FACILITY STATUS

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.]		
6.4.1 Subgroup A – Safety Structure/System/Component Degradation (Nuclear Facilities) [Notes: 1. Performance degradation includes the absence of or deficiency with Design Features for which credit has been taken in the Documented Safety Analysis. 2. 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.]		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
	(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.	(2) Performance degradation of any Safety Class SSC when not required to be operable.

GROUP 4 FACILITY STATUS		
6.4.2 Subgroup B – Operations		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
(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).	(3) Actuation of a Safety Significant (SS) 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.	(5) Any event or condition that would prevent immediate facility or offsite emergency response capabilities.
(2) 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) 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.	

GROUP 4 FACILITY STATUS		
6.4.3 Subgroup C – Suspect/Counterfeit and Defective Items or Material [Notes: 1. Include the detailed information identified in 7.10 "Occurrence Report Preparation." 2. Any suspect or counterfeit item or material found in receipt inspection is exempt from this subgroup.]		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
	(1) Discovery of any suspect or counterfeit item or material found in a Safety Class or Safety Significant Structure, System, or Component.	(2) 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) 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.

6.5 GROUP 5 ENVIRONMENTAL

GROUP 5 ENVIRONMENTAL

6.5.1 Subgroup A – Releases

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

Reporting Level - High	Reporting Level - Low	Reporting Level - Informational
	(1) 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, *Designation, Reportable Quantities, and Notification*, 40 CFR Part 355, *Emergency Planning and Notification, and CERCLA Section 101(10), Federally Permitted Releases*.)	(2) 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: This criterion does not apply to the following: • Discharges (including potable water) that do not result in leaching or erosion of contaminated material from a known or suspected boundary of a Potential Release Site. • Discharges (including potable water) capable of reaching surface or groundwater that do not require remediation/repair. (The contractor's environmental subject matter experts make the determination of environmental impact and the need for remediation/repair activities.)]
	(5) Any release or spill (onsite or offsite) of per- and polyfluoroalkyl substances (PFAS)-containing Aqueous Film Forming Foam [AFFF]). [Note: Any other release or spill of a known PFAS-containing substance that is not an AFFF shall be reported as a Management Concern.]	(3) 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.
		(4) Any discrete release of sulfur hexafluoride (SF6) due to an event or DOE operation equal to or exceeding 115 pounds (1,247 metric tons of CO2e 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 SF6 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.]

GROUP 5 ENVIRONMENTAL		
6.5.2 Subgroup B – Ecological and Cultural Resources		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
(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).		

6.6 GROUP 6 CONTAMINATION/RADIATION CONTROL

GROUP 6 CONTAMINATION/RADIATION CONTROL		
6.6.1 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.] *** Any event in this table requires notification to the Illinois Emergency Management Agency-Department of Nuclear Safety***		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
(1) Identification of radioactive material offsite due to DOE operations/activities that exceeds applicable DOE limits (pursuant to DOE O 458.1 Chg 3, *Radiation Protection of the Public and the Environment*, dated 1-15-13).	(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 occurrence 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.]	
(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.		

GROUP 6 CONTAMINATION/RADIATION CONTROL

6.6.2 Subgroup B – Spread of Radioactive Contamination

*** Any event in this table requires notification to the Illinois Emergency Management Agency-Department of Nuclear Safety***

Reporting Level - High	Reporting Level - Low	Reporting Level - Informational
(1) Identification of offsite radioactive contamination due to DOE operations/activities that exceeds applicable DOE-approved authorized limits (pursuant to DOE O 458.1 Chg 3, *Radiation Protection of the Public and the Environment*, dated 1-15-13) 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 DOE O 458.1 Chg 3. Compliance with 10 CFR Part 835, Appendix D values does not necessarily satisfy the requirements in DOE O 458.1 Chg 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 greater than 10 times the removable contamination values in 10 CFR Part 835, Appendix D. [Notes: • This does not apply to surface contamination from residual radioactive material meeting applicable DOE-approved authorized limits. • This does not apply to legacy contamination, that is to be reported	(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. [Notes: • Legacy radioactive contamination is radioactive contamination resulting from historical operations that are unrelated to current activities. • This does not apply to contamination from residual radioactive material meeting applicable DOE-approved authorized limits.

	under a separate criterion below. • 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).]	• Legacy contamination identified through a routine radiological monitoring program, compliant with 10 CFR 835 may be summarized in a single occurrence 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 DOE O 232.2.]
(2) Identification of onsite radioactive contamination greater than 100 times an applicable 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 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 greater than100 times the removable contamination values in 10 CFR Part 835, Appendix D. [Notes: • This does not apply to surface contamination from residual radioactive material meeting applicable DOE-approved authorized limits. • This does not apply to legacy contamination that is to be reported under a separate criterion below. • The discovery of radioactive contamination from a past DOE/NNSA operation that may have caused, is causing, or may reasonably be expected to cause an uncontrolled personnel exposure exceeding protective action criteria may be reportable as an Operational Emergency under Group 1, Criterion 1.]		

GROUP 6 CONTAMINATION/RADIATION CONTROL

6.6.3 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.]

*** Any event in this table requires notification to the Illinois Emergency Management Agency-Department of Nuclear Safety***

Reporting Level - High	Reporting Level - Low	Reporting Level - Informational
(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 DOE O 458.1 Chg 3, *Radiation Protection of the Public and the Environment*, dated 1-15-13, paragraph 4.b(1)(a) [paragraph 2.b(1)(a) of the CRD], "Public Dose Limit."	(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) 100-mrem effective dose due to external exposure.	
(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).	(4) 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 3, *Radiation Protection of the Public and the Environment*, dated 1-15-13 or exceeds the 40 CFR Section 61.92 requirements.	

GROUP 6 CONTAMINATION/RADIATION CONTROL

6.6.4 Subgroup D – Personnel Contamination

*** Any event in this table requires notification to the Illinois Emergency Management Agency-Department of Nuclear Safety***

Reporting Level - High	Reporting Level - Low	Reporting Level - Informational
(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 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.	(3) 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.	
(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.		

6.7 GROUP 8 PACKAGING & TRANSPORTATION

GROUP 8 PACKAGING & TRANSPORTATION		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
(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/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 71.95) 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.	(5) 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 [Note: For reporting under this criterion, the occurrence report belongs to the party that initiated the shipment (i.e., the occurrence report belongs to the shipper of record). Exemption from this criterion applies when the shipper is external to DOE.]
	(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.	(6) 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).
	(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 (RQ) specified in 40 CFR Section 302 or 40 CFR Section 355.	(7) 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) 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) 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).

6.8 GROUP 9 NONCOMPLIANCE NOTIFICATIONS

GROUP 9 NONCOMPLIANCE NOTIFICATIONS		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
		(1) Any written notification from an outside regulatory agency that a site/facility is considered to be in noncompliance with a schedule or requirement. [Note: This criterion is not applicable to DOE Office of Enforcement actions.]

6.9 GROUP 10 MANAGEMENT CONCERNS & ISSUES

GROUP 10 MANAGEMENT CONCERNS & ISSUES		
Reporting Level - High	**Reporting Level - Low**	**Reporting Level - Informational**
		(1) 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.
		(2) A near miss to an injury, where something physically happened that was unexpected or unintended AND where no barrier prevented an event from having a reportable consequence.
		(3) 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.

6.10 Occurrence Report Preparation

Security Requirements:

a. Occurrence Reports containing any classified information or Controlled Unclassified Information (CUI) must not be entered in the ORPS database. Final occurrence reports should be reviewed by the ORPS Manager for public release prior to final entry into the ORPS database.
b. For occurrences with classified information, an unclassified version of the Occurrence Report that has been sanitized of all classified information and/or CUI must be submitted to ORPS within the time frames specified in Section 6.1.
c. Occurrence reports involving incidents of counterintelligence concern (e.g. foreign persons, governments, organizations, entities, or influence) must not be entered or referenced in the ORPS database.

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 Notification Reports for all Report Levels, the Title of Occurrence and the first paragraph of the Description of Occurrence must relay the essential nature of the event, including the impact of the event on activities and operations. Describe the immediate actions taken and include in the Immediate Actions Taken and Results field.

2. Final High Reporting Level 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.
    c. Applicable causal codes must be selected; refer to DOE STD 1197-2011.
    d. Any extent of condition (if performed) must be included in the "Description of Cause" field or uploaded as an attachment.

3. Informational Level Reporting can be tailored per Program Office direction to only be captured in local issues management systems. Program Offices have the authority to determine which Information Level Reports will be submitted to the ORPS database.

4. Reports on suspect/counterfeit and defective items or material, must provide the vendor 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., receipt inspection, 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.

5. 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.

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

6.11 Instructions to Complete ORPS Report Template

INITIAL NOTIFICATION REPORT

To complete the Initial Notification Report, the Directorate/Division/Project is required to provide in writing, usually by email, the following pieces of information to the Event Review & Analysis Program Manager:

a. Directorate/Division/Project
b. System/Building/Equipment
c. Plant (Lab) Area
d. Discovered Date/Time
e. Description of Occurrence, including impact of event on activities and operations
f. Immediate Actions Taken

UPDATE AND FINAL REPORT

For Reporting Level – High Update and Final Reports, information on the Notification Report should be retained and updated as better and additional information becomes available. In addition, the D/D/P is required to provide in writing via Human Performance Improvement (HPI) report the following pieces of information to the Event Review & Analysis Program Manager. See QAM 12140 for full guidance.

a. Causes (Utilizing DOE's Causal Analysis Tree)
b. Description of Cause
c. Lessons Learned paragraph and/or report (if developed).
d. Corrective Actions with Target Dates

6.12 ORPS INFORMATION and APPROVAL ROUTING

Once the decision has been made to classify the event as ORPS reportable the following information flow and approval routing will be required.

Initial Report

Directorate/Division/Project provides to the Event Review & Analysis Program Manager or Designee a written input to convey the necessary information. This information should be shared with all affected parties, including the FSO facility rep as needed.

Event Review & Analysis Program Manager or designee inputs data into the online DOE ORPS database as a draft, then saves and prints document.

Event Review & Analysis Program Manager provides a copy to the DSO or designee for review and concurrence.

Event Review & Analysis Program Manager or designee will attach the FNAL/FSO signature sheet to the document.

Event Review & Analysis Program Manager or designee submits the draft report to the DOE-FSO facility representative that is the liaison to the directorate/division/project reporting the ORPS event for review. If the representative is not present, then the DOE-FSO Operations Manager will be solicited to review this document.

The DOE FSO facility representative will review the document and may provide comment. Revisions to the report are made in the ORPS database and the Event Review & Analysis Program Manager or designee reprints the document. DOE FSO facility representative will then sign the signature sheet.

The document will be submitted to the Chief Operating Officer for review. The COO will review the document and may provide comment. Any comments/changes will be placed into the database and the document is reprinted. The COO will then sign the signature sheet.

During this time period DOE-FSO will be preparing an advance memo for the Head of the Office of Science on the events of this ORPS. Only after receiving CONFIRMATION that this memo has been sent by FSO to the DOE HQ Science will any further action proceed.

Once it is confirmed that the memo has been sent by the FSO, the Event Review & Analysis Program Manager or designee will then access the ORPS database and select the validate report option, and Validate the Report. As necessary, rectify any issues, followed by submitting the report. Submission of the notification report to DOE has been completed.

FNAL Posting of ORPS

At this time the Event Review & Analysis Program Manager will access the ORPS database and online report. A copy will be printed to indicate the date, time and the formal submission of the document; it will then be attached to the signature page of the approved draft. An electronic copy shall be posted under the current calendar year ORPS list of the lab's NTS/ORPS webpage.

Update and Final Report

The process of updating or finalizing an initial report will follow the same process as in the initial submission. The D/D/P will provide updated information that will be placed into the online initial report by the Event Review & Analysis Program Manager or Designee. All edits will be retained using the "Save" function, placing everything into a draft format and not formally as part of the report. A copy of the updated report will be printed and as described in the Initial Report Section be walked through channels for approval. Only after the review and approval of both FSO and the COO will the update or final report be submitted to in the ORPS database. The FSO facility representative will need to login to the ORPS database to approve any final reports. Once the Event Review & Analysis Program Manager or designee has confirmation that the report has been approved by the facility representative, the report will be available for printing, and has been submitted to DOE HQ.

The final ORPS will be accessed by the Event Review & Analysis Program Manager or designee and will replace the initial ORPS that is currently posted on the lab's NTS/ORPS webpage.

Corrective Actions

It is possible that an ORPS report will be finalized in which the investigation and fact finding has been completed without having all the corrective actions closed. As corrective actions are completed, the Event Review & Analysis Program Manager or designee will enter the ORPS Database to close out the corrective actions. The DSO and/or D/D/P will need to provide to the Event Review & Analysis Program Manager, at a minimum in an email format, the following information: the corrective action title, the date the corrective action was completed, and what actions were taken as soon as the corrective action has occurred.

This is in order to close out open findings in the DOE ORPS database, which is screened on a regular basis for irregularities in reporting, past due corrective actions, delays in posting and other audit items.

Changes to the ORPS Order or Reporting Criteria

In the event of changes to the ORPS Order or reporting criteria, the Event Review & Analysis Program Manager or designee shall complete the following:

- Identify key stakeholders that are affected by the change.
- Communicate changes in the ORPS Order or reporting criteria to stakeholders.
- Determine with stakeholders if additional actions need to be taken to communicate changes to wider audience, update documentation, or update training to reflect changes.
- Update FESHM 3010.

6.13 Definitions

1. BARRIER. A physical or administrative control used to provide separation between a person and a hazard. Common types of barriers include equipment (including personal protective equipment), administrative procedures and processes, supervision/management, warning devices, and physical objects.

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

5. 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.

6. 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.

7. 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.

8. DISRUPTION OF NORMAL OPERATIONS. A disruption of normal operations is considered to have occurred when alarms, emergency response, evacuation, or shelter in place results in a suspension of an activity or activities for any length of time.

9. 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).

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

11. EXPLOSION. A sudden, rapid release of energy that produces potentially damaging pressures. Explosions can result from ignition events involving energetic materials, a pressurization event, or a chemical reaction.

12. 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.

13. 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.

14. 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.

15. FIRE. 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).

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

17. 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.

18. 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.

19. 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.

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

21. 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.

22. 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.

23. 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.

24. 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.

25. 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.

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

27. 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.

28. 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.

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

30. 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.

31. 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.

32. 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).

33. 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.

34. 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.

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

36. 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).

37. 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.

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. 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)

40. 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)

41. 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.

42. 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.

43. 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)

44. 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)

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