FESHM 3010: SIGNIFICANT AND REPORTABLE OCCURRENCES

Revision History

Author	Description of Change	Revision No. & Date
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 the policy of the Laboratory that Laboratory management and the Department of Energy are appropriately notified of all events which could (1) affect the safety and 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

See appendix 7.15 for definitions specific to occurrence reporting criteria.

3.0 RESPONSIBLILITIES

The **Chief Operating Officer** or designee is responsible for

- Acting as the Facility Manager for the Laboratory. This individual 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 providing the FSO Manager a copy of the notification report.
- Coordinating activities when multiple divisions/sections/centers are involved.
- Assuring the occurrence reports are placed into the DOE occurrence report database in a timely manner.
- Determining need for formal investigations and reports.
- Approving final investigation report.
- Reviewing corrective actions as reports are submitted to DOE.
- Ensuring all corrective actions are tracked to closure.

The **Division/Section/Center Head** or designee is responsible for

- Providing timely identification, categorization and notification to the Chief Operating Officer and ESH&Q Director of an event that represents a potential for being an event or condition requiring categorization. See the Incident Reporting Process Flowchart and Technical Appendix 6.0 for reference and guidance.
- Providing for the timely submittal of the Occurrence Reporting and Processing System (ORPS) report to the Facility Manager.
- Conducting investigation of the incident utilizing subject matter experts as appropriate and complete necessary reports. See FESHM 3020 for additional information.
- Assuring all corrective actions are placed into iTrack and coordinating the implementation of all corrective actions. See FESHM 1040.1 for additional information.
- Assuring lessons learned are developed and submitted to ESH&Q.
- Assuring the requirement to report occurrences flows down to subcontractors through contract documents.

The **ESH&Q Director** or designee is responsible for

- Maintaining and utilizing the on-line DOE ORPS central occurrence report database that serves as the repository for all Laboratory occurrence reports.
- Disseminating "lessons learned" that are prepared by the affected division/section/center. See FESHM 3020 and 3030 for more details, including format of written lessons learned.
- Analyzing related occurrences in order to improve performance in environment, safety, health, quality, security, or Laboratory operations.
- 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).

The **Division/Section/Center Senior Safety Officer (SSO)** is responsible for

- Developing lessons learned documents and submitting them to the ESH Section Head to share within the Laboratory.
- Assuring consistency between Occurrence Report and Computerized Accident/Injury Report (CAIRS), as necessary.

4.0 PROCEDURES

Person Discovering Occurrence

- Make notification for emergency assistance (dial 3131) if appropriate.

- Notify your supervisor upon recognizing or witnessing an event. 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 within 2 hours of identification of occurrence.

Supervisor

- Assess the event, using Technical Appendix 7.0 for reference and guidance, and notify division/section/center head.

Division/Section/Center Head or Designee

- Notify the Chief Operating Officer and ESH&Q Director of any event using Technical Appendix 7.0 for reference and guidance.

- Provide briefing to Chief Operating Officer and ESH&Q Director on occurrence, response actions, and current activity status.

- For those events requiring prompt notification to DOE HQ OC, complete the Notification Form (Appendix 7.13) and submit to ESH&Q ORPS Manager or designee.

- For events not requiring "prompt notification" complete the appropriate notification form for the event (Instructions to complete ORPS Report Template Appendix 7.11) and submit to the ESH&Q ORPS Manager or designee not to exceed time limits set in Technical Appendix 7.0.

- Conduct investigation, utilizing Subject Matter Experts as necessary, and determine corrective actions. Enter corrective actions into iTrack for tracking purposes. Level of investigation shall be as identified in Appendix 7.0.

- Prepare update reports for ORPS when significant additional information is obtained or when events dictate change in classification and provide this information to the ESH&Q ORPS Manager or designee.

- Implement, track and close corrective actions in iTrack. Provide to the ESH&Q ORPS Manager or designee in written format the text of the corrective actions taken and the date the action was completed, at the time the item was closed.

- Provide to the ESH&Q ORPS Manager or designee all information in a written format in order for it to be processed and reviewed by DOE FSO and the Director prior to entry into the on-line DOE ORPS database. In order for the final report to be filed with DOE no later than 45 days after the incident.

Facility Manager (Chief Operating Officer)

- Within 2 hours of occurrence classify occurrence according to Technical Appendix 7.0.

- Contact the DOE FSO and report occurrence. Reporting time frame depends on occurrence classification. See Appendix 7.0 for guidance.

- Submit Prompt Notification form to DOE HQ OC within stated time frames by email and provide follow-up telephone call.

- Notify Lab Director and others, as appropriate.

- Review Notification Report and enter into DOE ORPS system within timeframe in Technical Appendix 7.0 and 7.1.

- Direct the conduct of formal investigations and reports, as appropriate.

- Approve final investigation report.

- Review update and final reports as submitted and entered into DOE ORPS system.

- Ensure corrective actions are closed out in final/closed reports.

Division/Section/Center SSO

- Provide to the ESH&Q ORPS Manager the required and detailed information for each data set required by this chapter to complete the initial notification and within the timeframe permitted by the particular significance category determined for the particular incident.

- As corrective actions are completed, notify the ESH&Q ORPS Manger or Designee in writing of the corrective action taken and the date it was accomplished, in order for this to be entered into the ORPS database/file. This notification should take place when the action is closed.

- Prepare appropriate Lessons Learned document within 10 working days of submittal of final ORPS report and submit to the ESH&Q Section Head for distribution throughout the Laboratory.

ESH&Q Director or designee

- Distribute Lessons Learned throughout the Laboratory.

- Enter Lessons Learned into the DOE LL Database, as appropriate.

5.0 WRITTEN NOTIFICATION REPORT

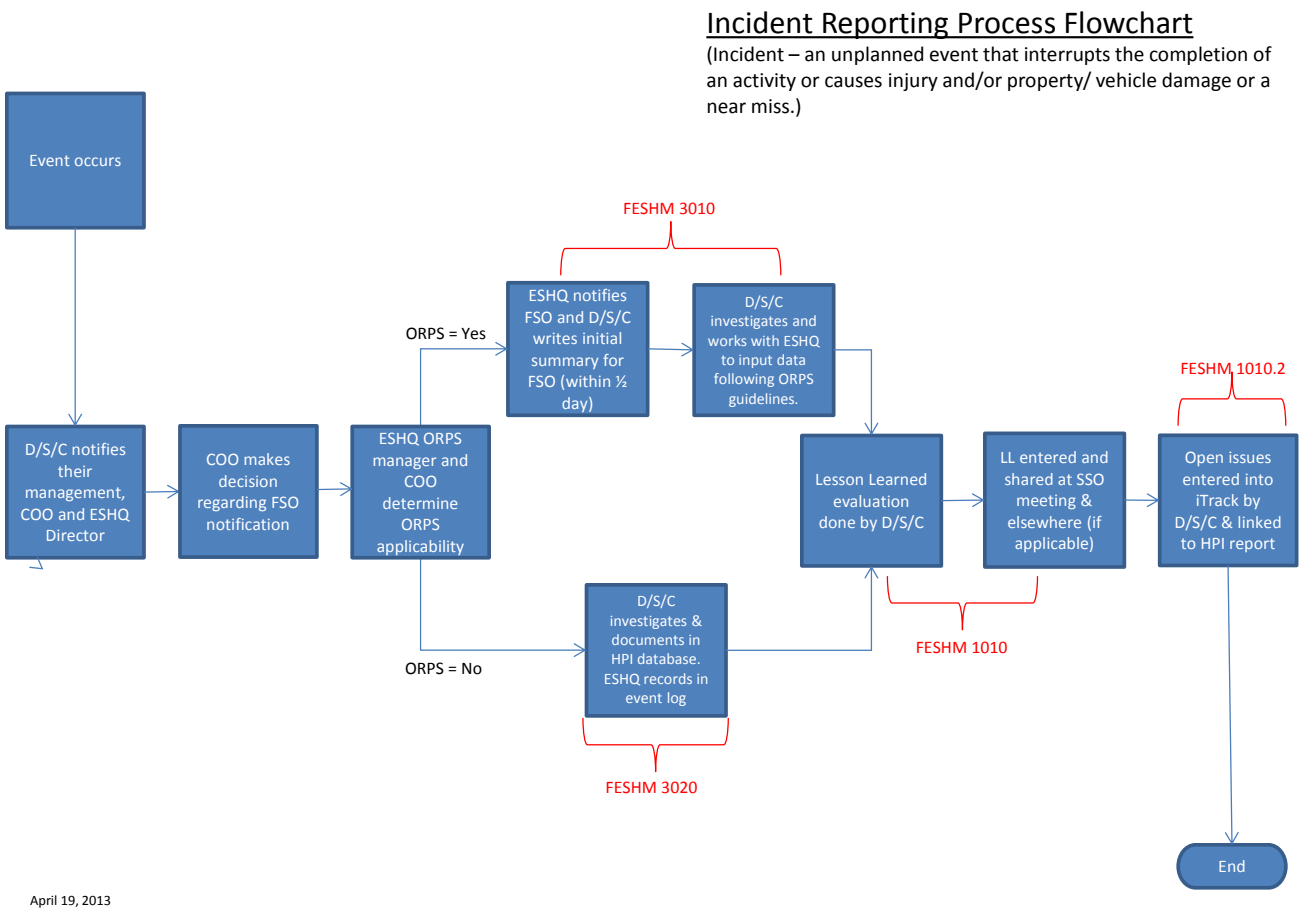
- Prompt Notification: those occurrences that are identified in Appendix 7.0 with an "*" require the completion and submission of the PROMPT NOTIFICATION FORM to the DOE HQ OC. This form is located at Appendix 7.13 and must be emailed to the DOE HQ OC at doehqeoc@oem.doe.gov (backup e-mail is: wtchofc2oem.doe.gov). The receipt of the email by DOE-EOC must be verified by calling (202)586-8100.

- Preparation of the Notification Report, Update and Final Report see Appendix 7.1 and 7.11.

- Occurrences involving foreign personnel, government organizations, entities of influence must be reported to the Office of Counter Intelligence.

6.0 REFERENCES

DOE O 232.2, Occurrence Reporting and Processing of Operations Information, August 2011
DOE-STD-1197-2011, Occurrence Reporting Causal Analysis



7.0 TECHNICAL APPENDICES

7.1 Notification and Reporting Requirements

Significance Category	Timelines*	Prompt Notification	Final Report Approval
Operational Emergencies (defined by DOE O 151.1C)+	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
Significance Category 1	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
Significance Category R	Categorize: Time of SC R determination Written Notification: COB 2 business days Final Report: 45 calendar days	By Facility Representative	By Facility Manager (local/program option for Facility Representative)
Significance Category 2	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)†	By Facility Representative
Significance Category 3	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)†	By Facility Manager (local/program option for Facility Representative)
Significance Category 4	Categorize: 2 hrs Prompt Notification: 2 hrs (as required) Short Form Report: COB 2 business days	When required, to FR and DOE HQ Center†	Per local procedures

+ Categorization and Prompt Notification requirements are in accordance with DOE O 151.1C, Emergency Management
* Categorization Time is from Discovery Date and Time. Prompt Notification is from Categorization Date and Time. Written Notification is from Categorization date and Time.
† 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.

7.2 Investigation Requirements

Significance Category 1	Significance Category R	Significance Category 2	Significance Category3	Significance Category 4
Investigator required Root Cause determined through formal RCA Corrective actions determined to address corrective actions Contractor independently verifies corrective action closure Must be entered into DOE LL database DOE FSO/HQ approves report FINAL REPORT APPROVAL By Facility Representative and Program Manager Root Cause or Locally Approved Procedure	Root Cause determined through formal RCA Corrective Actions developed to address RC DOE-FSO approves report Contractor independently verifies corrective action closure Contractor assesses effectiveness of corrective actions Must be entered into DOE LL database FINAL REPORT APPROVAL Root Cause or Locally Approved Procedure	Trained investigator Cause determined. DOE-FSO approves report Corrective Actions developed Contractor verifies corrective action closure by sampling. Must be entered into DOE LL database FINAL REPORT APPROVAL By Facility Representative Apparent Cause or Locally Approved Procedure	Cause determined Corrective Action determined Document completion of corrective actions FINAL REPORT APPROVAL By Facility Manager (local/program option for Facility Representative) Apparent Cause or Locally Approved Procedure	The reporting of causal analysis or lessons learned in ORPS is not required. The reporting of corrective actions is optional. FINAL REPORT APPROVAL Per local procedures Locally Approved Procedure

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.

7.3 GROUP 1 OPERATIONAL EMERGENCIES

GROUP 1 OPERATIONAL EMERGENCIES			
Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
(1) *Operational Emergency **NOT REQUIRING** further classification	(2) *Operational Emergency An **ALERT**	(3) *Operational Emergency A **SITE AREA EMERGENCY**	(4) *Operational Emergency A **GENERAL EMERGENCY**
*Prompt notification to the DOE HQ OC			

7.4 GROUP 2 PERSONNEL SAFETY & HEALTH

GROUP 2 PERSONNEL SAFETY AND HEALTH

7.4.1. Subgroup A Occupational Injuries.

[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.]

Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
(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.	(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.	(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; 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, or** f) Causes second- or third-degree burns, affecting more than five percent of the body surface.	
(2) *1 Any single occurrence requiring in-patient hospitalization of three or more personnel	(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.*		

GROUP 2 PERSONNEL SAFETY AND HEALTH

7.4.2. 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.]

Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
(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, *Recordkeeping Forms and Recording Criteria*.	(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, *Worker Safety and Health Program* (see 10 CFR Section 851.23, *Safety and Health Standards*), 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.	(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).
	(3) *2 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).	(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.	

GROUP 2 PERSONNEL SAFETY AND HEALTH			
7.4.3. Subgroup C Fires			
Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
(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 is 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.

GROUP 2 PERSONNEL SAFETY AND HEALTH			
7.4.4. Subgroup D Explosions.			
Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
(1) *1 Any unplanned explosion within primary confinement/containment boundaries of a nuclear facility. [Note: 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.	

GROUP 2 PERSONNEL SAFETY AND HEALTH			
7.4.5. Subgroup E Hazardous Electrical Energy Control.			
Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
	(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).

GROUP 2 PERSONNEL SAFETY AND HEALTH			
7.4.6. Subgroup F Hazardous Energy Control (Other than electrical).			
Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
	(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).

7.5 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.]

7.5.1. 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.]

Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
		(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.

GROUP 4 FACILITY STATUS			
7.5.2. Subgroup B Operations			
	(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).	(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.	(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.
	(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.	(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.	(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.

GROUP 4 FACILITY STATUS

7.5.3. Subgroup C Suspect/Counterfeit and Defective Items or Material

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

Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
		(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.

7.6 GROUP 5 ENVIRONMENTAL

GROUP 5 ENVIRONMENTAL			
7.6.1. Subgroup A Releases			
Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
		(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, *Designation, Reportable Quantities, and Notification*, 40 CFR Part 355, *Emergency 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 (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			
7.6.2. Subgroup B Ecological and Cultural Resources.			
Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
	(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.”]		

7.7 GROUP 6 CONTAMINATION/RADIATION CONTROL

GROUP 6 CONTAMINATION/RADIATION CONTROL

7.7.1. 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***

Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
	(1) *2 Identification of radioactive material offsite due to DOE operations/activities that exceeds applicable DOE limits DOE O 458.1 Chg 2, *Radiation Protection of the Public and the Environment*, dated 6-6-11).	(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.]	
	(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.		

GROUP 6 CONTAMINATION/RADIATION CONTROL

7.7.2. Subgroup B Spread of Radioactive Contamination.

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

Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
	(1) *2 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, *Radiation Protection of the Public and the Environment*, dated 6-6-11) or, if there are none, the total contamination values in 10 CFR Part 835, Appendix D. [Notes: 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. 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.]	(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. [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	(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. [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

		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).]	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.]
	(2) 2 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. [Notes: a) This does not apply to		

	surface 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) 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.]		

GROUP 6 CONTAMINATION/RADIATION CONTROL

7.7.3. 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***

Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
(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	
		(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.	

GROUP 6 CONTAMINATION/RADIATION CONTROL

7.7.4. Subgroup D Personnel Contamination

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

Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
	(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.		(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.
	(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.		

7.8 GROUP 8 PACKAGING & TRANSPORTATION

GROUP 8 PACKAGING & TRANSPORTATION			
Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
	(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.	(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.
		(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.]	(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).

		(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	(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).
		(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.]	

7.9 GROUP 9 NONCOMPLIANCE NOTIFICATIONS

GROUP 9 NONCOMPLIANCE NOTIFICATIONS			
Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
			(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). [Note: 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. [Note: 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.]

7.10 GROUP 10 MANAGEMENT CONCERNS & ISSUES

GROUP 10 MANAGEMENT CONCERNS & ISSUES			
Significance Category 1	Significance Category 2	Significance Category 3	Significance Category 4
	(1) 2 Any event resulting in the initiation of a Federal Accident Investigation Board, as categorized by DOE O 225.1B, *Accident Investigation*. [Note: This reporting criterion may raise the significance category of an occurrence already reported under separate criteria. Multiple reporting criteria should be assigned, when appropriate.]	(3) 1-3† 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. . 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. [† Note: Follow the Prompt Notification requirements identified in the Occurrence Reporting Model	(4) *4 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.
(2) 1-4† 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. The significance category assigned to the management concern should be based on an evaluation of the potential risks and impact on safe operations. [† Note: Follow the Prompt Notification requirements identified in the Occurrence Reporting Model			(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].

7.11 Occurrence Report Preparation

Notification, Update, and Final Reports must be written clearly and concisely so the general reader can understand the basic information.

1. Subject or Title of Occurrence and the first paragraph of the Description of Occurrence must relay the essential nature of the event (i.e., a summary of the occurrence in newspaper style). Subsequent paragraphs 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.

2. Final Reports must contain the significance, nature, and extent of the event or condition if this information is not already in the Notification or Update Report.

3. Final Reports must contain the causes of the event or condition (including the root cause, as required) using the codes provided in the Causal Analysis Tree.

4. Final reports must also include the immediate actions taken (if not already in the Notification Report), the corrective action(s) to be taken, and any lessons learned developed for the event, as required by the Occurrence Reporting Model.

5. Reports on suspect/counterfeit and defective items or material, must provide the manufacturer/supplier/vendor (including a contact, phone number, and website), the model and part numbers, the quantity found, why the item/material is suspect/counterfeit or defective, and how the item/material is being used. Reports must also include the method of detection (i.e., receipt inspection, craft inspection prior to installation, in-service inspection, or failure) and identify any resulting consequences, along with any photos via hyperlink, as appropriate.

6. 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.

7. Photos, sketches, drawings, and witness statement interview notes must be maintained with the occurrence report record when appropriate for clarification. In addition, sites are encouraged, but not required, to make photos, sketches, and drawings available via a Webpage, with the Webpage address included in the ORPS report.

7.12 Instructions to Complete ORPS Report Template

NOTIFICATION REPORT

To complete the Notification Report the Division/Section/Center is required to provide in writing, usually by email, the following pieces of information to the Fermilab ORPS Manger:

a. Division/Project
b. System/Building/Equipment
c. Plant (Lab) Area
d. Discovered Date/Time
e. Description of Occurrence
f. Immediate Actions Taken

UPDATE AND FINAL REPORT

For the Update and Final Reports, information on the Notification Report should be retained and updated as better and additional information becomes available. In addition, the Division/Section/Center is required to provide in writing via Human Performance Improvement (HPI) investigation Report the following pieces of information to the Fermilab ORPS Manager. See FESHM 3020 – Incident Investigation and Analysis for full guidance.

a. Causes (Utilizing the Causal Analysis Tree)
b. Description of Cause
c. Lessons/Learned (This field is required for all Significance Category OE, 1, and 2 Final reports, and optional for all Significance Category 3 and Short Form (Significance Category 4) Reports.
d. Corrective Actions with Target Dates

7.13 ORPS INFORMATION and APPROVAL ROUTING

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

Initial Report

Division/Section provides to the ESH&Q ORPS Manager or Designee a written input utilizing the PDF writable notification form to convey the necessary information. The information on this form should be shared with all affected parties, including the FSO facility rep as needed.

ESH&Q ORPS Manager or designee inputs data into the on-line DOE ORPS database saves and prints document.

ESH&Q ORPS Manager provides a copy to the ESH&Q Director or designee for review and concurrence.

ESH&Q ORPS Manager or designee will attach the FNAL/FSO signature sheet to the document.

ESH&Q ORPS Manager or designee hand carries the report to the DOE-FSO representative that is the liaison to the division/section reporting the ORPS event. If the representative is not present, then the most senior DOE-FSO person will be solicited to review this document.

The DOE FSO representative will review the document and may provide comment. Comments are placed into the database and the ESH&Q ORPS Manager or designee reprints the document. DOE FSO representative will then sign the signature sheet.

The document will be hand carried to the Chief Operating Officer. 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 Chief Operating Officer 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 ESH&Q ORPS Manager or designee will then access the ORPS database and select the validate report option, 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 ESH&Q ORPS Manager, accessing the ORPS database will access the on-line 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. Paper copy is to be made for the

ORPS Journal maintained by the EHS ORPS Manager and an electronic copy forwarded to the ESH&Q Admin staff for posting under the current year ORPS folder.

Update and Final Report

The process of updating or finalizing an initial report will follow the same process as in the initial submission. D/S/C will provide updated information that will be placed into the on-line initial report by the ESH&Q ORPS 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 Director will the update or final report be submitted to DOE HQ.

The final ORPS will be accessed by the ESH&Q ORPS Manager or designee and provided to the ESH&Q Admin staff to replace the initial ORPS that is currently posted on the ESH&Q website.

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 findings closed. As findings are completed, the ESH&Q ORPS Manager or designee will enter the ORPS Database through the Facility Manager portal to close out the findings. D/S SSO's will need to provide to the ESH&Q ORPS 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 screen on a regular basis for irregularities in reporting, past due corrective actions, delays in posting and other audit items.

7.14 Prompt Notification Report Form

For use by the ORPS Manager

1) The Facility Manager must e-mail the **prompt notification** of the reportable occurrence to the DOE **and** follow up transmission with a phone call to the DOE HQ OC to ensure receipt of the e-mail.

2) The Prompt Notification must clearly state/select the Significance Category (1, R, 2, 3, or 4) and identify the specific reporting criteria associated with the occurrence.

3) Prompt Notification to the DOE HQ OC must include all information listed on the attached 2-page form.

4) All information should be clear and succinct. Avoid jargon. Uncommon or site/facility-specific abbreviations and acronyms should be fully described.

5) DOE Notification E-mail address is: doehqeoc@oem.doe.gov (backup e-mail is: wtchofc2oem.doe.gov);

6) Phone number to verify receipt of e-mail notification is: (202)586-8100. HQ EOC FAX number is still: (202)586-8485;

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Name of Facility: ***FERMI NATIONAL ACCELERATOR LABORATORY***

Facility Manager or Designee
Title: ***Chief Operating Officer***
Telephone Number: ***(630) 840-3930***

Originator/Transmitter: (usually head of division/section issuing report)
Name:_____ Phone: *(630) 840-* _____
Title: _____

Significance Category: **1 ( ) R ( ) 2 ( ) 3 ( ) 4 ( )**

LOCATION and DESCRIPTION OF EVENT:

_____
_____
_____
_____

DISCOVERY DATE_____ _____TIME_____

DAMAGE and CASUALITIES:

_____
_____
_____

IMPACT of EVENT ON OTHER ACTIVITIES AND OPERATIONS:

_____
_____
_____

FERMI NATIONAL ACCELERATOR LABORATORY

PROTECTIVE ACTIONS TAKEN OR RECOMMENDED:

_____

_____

_____

WEATHER CONDITIONS AT THE SCENE:

_____

_____

_____

LEVEL OF MEDIA INTEREST AT SCENE/FACILITY/SITE:

_____

_____

_____

OTHER NOTIFICATIONS MADE:

Time	Number	Agency
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Signatures

Facility Manager/Designee

Signed by:_____ Date: _____

Typed Name:_____

DOE Facility Representative/Designee

Signed by:_____ Date: _____

Typed Name:_____

7.15 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. ELECRICALY 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. HAZARDOUUS 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.
c.

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)