

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

ORDER

DOE 5000.3B

1-19-93
Effective Date: 2-22-93

**SUBJECT: OCCURRENCE REPORTING AND PROCESSING
OF OPERATIONS INFORMATION**

1. PURPOSE. To establish a system for reporting of operations information related to DOE-owned or operated facilities and processing of that information to provide for appropriate corrective action in accordance with the policy set forth in Paragraph 6 of this Order.
2. CANCELLATIONS. DOE 5000.3A, OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS INFORMATION, of 5-30-90.
3. SCOPE. Except as noted below, the provisions of this Order apply to Departmental Elements and contractors performing work for the Department as provided by law and/or contract and as implemented by the appropriate contracting officer.

This Order describes the requirements for reporting and processing of occurrences related to the operation of those DOE-owned or operated facilities defined in Paragraph 5 including occurrences related to safety, health, security, property, operations, or environment up to and including emergencies. Specifically excluded from this Order are:

- a. Occurrence reporting and processing of operations information for activities that are regulated by the Nuclear Regulatory Commission (NRC) or a State under an agreement with the NRC.
 - b. Reporting by the Power Marketing Administrations of major electrical power outages, disturbances, and fuel shortages which are subject to the emergency power system reporting requirements prescribed in 10 CFR 205, 350 through 354, Report of Major Electric Utility Systems Emergencies;
 - c. The Naval Nuclear Propulsion Program; (Paragraph 9h) ;
 - d. Reporting required by other DOE Orders for normal record-keeping purposes (e.g. , DOE Order 5484.1); and
 - e. Additional reporting as required by external regulatory agencies.
4. REFERENCES.
 - a. DOE 1324.2A, RECORDS DISPOSITION, of 9-13-88, which assigns responsibilities and authorities and prescribes policies, procedures, standards, and guidelines for the orderly disposition of records of the DOE and its onsite service contractors.

DISTRIBUTION:

All Departmental Elements

INITIATED BY:

Office of Nuclear Energy

- b. DOE 1360.2B, UNCLASSIFIED COMPUTER SECURITY PROGRAM, of 5-18-92, which establishes Departmentwide policies and procedures for developing, implementing, and administering a program for safeguarding DOE computer systems and, in particular, DOE sensitive unclassified information in such systems.
- c. DOE 5400.5, RADIATION PROTECTION OF THE PUBLIC AND THE ENVIRONMENT, of 2-8-90, which establishes standards and requirements for operations of the DOE and DOE contractors with respect to protection of members of the public and the environment against undue risk from radiation.
- d. DOE 5480.11, RADIATION PROTECTION FOR OCCUPATIONAL WORKERS, of 12-21-88, which establishes occupational radiation standards for DOE and DOE contractor operations.
- e. DOE 5484.1, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION INFORMATION REPORTING REQUIREMENTS, of 2-24-81, which provides for reporting of information having environmental protection, safety, or health protection significance for Departmental operations; for Investigation of occurrences; and effluent and environmental monitoring program requirements.
- f. DOE 5500.2B, EMERGENCY CATEGORIES, CLASSES, AND NOTIFICATION AND REPORTING REQUIREMENTS of 4-30-91, which provides for an emergency notification and reporting system and establishes emergency response levels and associated response actions.
- g. DOE 5500.3A, PLANNING AND PREPAREDNESS FOR OPERATIONAL EMERGENCIES, of 4-30-91, which establishes requirements for site specific emergency plans and procedures for radiological emergencies in reactors and non-reactor nuclear facilities.
- h. DOE 5635.1A, CONTROL OF CLASSIFIED DOCUMENTS AND INFORMATION, of 2-12-88, which provides uniform standards and procedures for safeguarding and controlling classified documents and information.
- i. DOE 5635.2B, PROTECTION OF CLASSIFIED NATIONAL SECURITY COUNCIL INFORMATION, of 4-19-85, which establishes procedures to protect classified National Security Council Information.
- j. DOE 5635.3, HAND-CARRYING CLASSIFIED MATTER ON AIR CARRIERS, of 1-29-88, which provides guidance and procedures for hand-carrying classified matter on air carriers.
- k. DOE 5635.4, PROTECTION OF UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION, of 2-3-88, which establishes policy and procedures for the protection of Unclassified Controlled Nuclear Information (UCNI).

- l. DOE 5650.2B, IDENTIFICATION OF CLASSIFIED INFORMATION, of 12-31-91, which provides specific responsibilities, standards, and procedures for managing the DOE classification system.
 - m. DOE 5650.3A, IDENTIFICATION OF UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION, of 6-8-92, which establishes policy and procedures for identifying UCNI and for reviewing and marking documents and material containing UCNI.
5. DEFINITIONS.
- a. Event. A real-time occurrence (e.g., pipe break, valve failure, loss of power, environmental spills, etc.)
 - b. Condition. Any as-found state, whether or not resulting from an event, which may have adverse safety, health, quality assurance, security, operational or environmental implications. A condition is more programmatic in nature, for example, an error in analysis or calculation; an anomaly associated with design or performance; or an item indicating a weakness in the management process are all conditions.
 - c. 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, magnetohydrodynamics 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 unirradiated components.
 - d. DOE Facility Representative. For each major facility or group of lesser facilities, an individual or his or her designee assigned responsibility by the Head of the Field Organization for monitoring the performance of the facility and its operations. This individual shall be the primary point of contact with the contractor and will be responsible to the appropriate Program Secretarial Officer and Head of Field Organization for implementing the requirements of this Order.
 - e. Facility Manager. That individual, or his or her designee usually but not always a contractor, who has direct line responsibility for operation of a facility or group of related facilities including authority to direct physical changes to the facility. The facility manager designee is a person within the facility operations organization who has been delegated responsibility by the facility manager.
 - f. Notification Report. The initial documented report, to the Department, of an event or condition that meets the reporting criteria defined in this Order. The Notification Report shall consist of fields 1 through 18 of the Occurrence Report.

- g. Occurrence Report. A documented evaluation of an event or condition 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.
 - h. Program Manager. The DOE Headquarters (HQ) individual, or his or her designee designated by and under the direction of a Program Secretarial Officer, who is directly involved in the operation of facilities under his or her cognizance and with authority to provide technical direction through DOE Field Organizations to contractors for these facilities.
 - i. Program Secretarial Officer (PSO). Heads of DOE offices which have responsibility for specific facilities. These include: the Assistant Secretaries for Conservation and Renewable Energy; Nuclear Energy; Defense Programs; Fossil Energy; and the Directors of Energy Research; Civilian Radioactive Waste Management; New Production Reactors; and Environmental Restoration and Waste Management.
 - j. Reportable Occurrence. Events or conditions to be reported in accordance with the criteria defined in this Order.
6. POLICY. It is the policy of the Department to encourage a positive attitude toward reporting occurrences and that occurrences be consistently reported to assure that both DOE and DOE contractor line management, including the Office of the Secretary, are kept fully and currently informed of all events which could: (1) affect the health and safety of the public; (2) seriously impact the intended purpose of DOE facilities; (3) have a noticeable adverse effect on the environment; (4) endanger the health and safety of workers; or (5) adversely affect national security or the security interests of the DOE. It is also the policy of the Department that there be a system for determining appropriate corrective action and for ensuring that such action is effectively taken. Specifically, it is DOE policy to ensure:
- a. Timely identification, categorization, notification, and reporting to DOE management of all Reportable Occurrences at DOE-operated facilities or DOE-owned, contractor-operated facilities;
 - b. Timely evaluation of and implementation of appropriate corrective actions;
 - c. Maintenance of a central DOE Occurrence Reporting and Processing System (ORPS) data base containing all unclassified Occurrence Reports;
 - d. Review of Reportable Occurrences to assess significance, root causes, generic implications, and the need for corrective action; and
 - e. Dissemination of Occurrence Reports to DOE operations and facilities to prevent similar occurrences.

OCCURRENCE CATEGORIZATION, NOTIFICATION AND REPORTING REQUIREMENTS.

Throughout this section of the Order, use of the terms Facility Manager, DOE Facility Representative, or Program Manager include their designees. Also, references to time periods in days are to be interpreted as calendar days unless otherwise noted.

Reportable Occurrences shall be categorized and notifications made and reports prepared as described in this Order. Categorization of occurrences by their seriousness is required in order to ensure that the urgency of notification is readily identifiable and that the more serious occurrences are highlighted to management. Attachment I to this Order, CATEGORIZATION OF REPORTABLE OCCURRENCES, shall be used to establish facility specific reporting requirements, and their categorizations. Attachment I provides a minimum set of standards necessary to allow specific sites/facilities to develop and document (Paragraph 8d) specific Reportable Occurrences applicable to their operations which reflect the DOE-desired degree of significance in categorization.

Categorization, notification, and reporting of occurrences that involve classified subject matter shall also be performed in accordance with the requirements of this Order. However, under no circumstances shall classified information or Occurrence Reports be entered onto the ORPS data base. The requirements of DOE Order 1360.2A, DOE 5635 series Orders, DOE 5650.2A, and DOE Order 5650.3 relating to classification and handling of material must be followed at all times. In addition, oral notification which discusses classified material must be accomplished through secure lines. Recognizing that conference calls cannot be made over secure lines, for classified occurrences, the Facility Manager must contact the DOE Facility Representative and DOE Program Manager separately, rather than simultaneously, as provided in this Order. Also, since classified information cannot be entered onto the ORPS data base, the Notification and Occurrence Reports. (10-Day and Final) shall be prepared in written form, distributed to the DOE Facility Representative and the DOE Program Manager, and handled in accordance with the existing DOE Orders noted above regarding classified material. Unclassified versions, after review and removal of classified material/information by a classification official, shall be entered onto the ORPS data base by the Facility Manager. Further requirements regarding classification are provided in Paragraph 7e.

- a. Categorization. Categorization of Reportable Occurrences shall be made as soon as practical and, in all cases, within 2 hours of identification. If categorization is not clear, then the occurrence shall be initially categorized at the higher level being considered and DOE notified in accordance with this Order. The occurrence categorization shall either

be elevated, maintained, or lowered as information is made available. The categories of Reportable Occurrences are:

- (1) Emergencies. Emergencies are the most serious occurrences and require an increased alert status for onsite personnel and, in specified cases, for offsite authorities. The detailed definitions, criteria, and classifications of emergencies and appropriate emergency responses to be taken are provided in DOE 5000.2B. The types of occurrences that are to be categorized as emergencies are:
 - (a) Any unintentional nuclear criticality that results or could result in actual or potential facility damage or release of radioactive material to the environment;
 - (b) Any actual or potential release of material to the environment which results or could result in significant offsite consequences;
 - (c) Any natural or man-made event posing an actual or potential threat to the integrity of the facility that results or could result in significant offsite consequences;
 - (d) Any event in process or having occurred which involves an actual or potential substantial degradation of the level of safety of the facility that results or could result in significant offsite consequences;
 - (e) Any safeguards or security event which is an actual or potential threat to DOE operations, facilities, or personnel, and results or could result in significant effects on the public health and safety and/or on national security; or
 - (f) Any event which requires activation of the site emergency plan.
- (2) Unusual Occurrences. An unusual occurrence is a non-emergency occurrence that has significant impact or potential for impact on safety, environment, health, security, or operations. The types of occurrences that are to be categorized as unusual occurrences are those that:
 - (a) Result in the release of radioactive or hazardous materials above limits established in, or violation of, safety, environmental, or health requirements defined in Federal permits, Federal regulations, or DOE standards;
 - (b) Are significant internal or external threats to safety, environment, health protection, or the ability of a facility to operate;

- (c) Involve significant degradation of safety class equipment or environmental, safety, security, or health conditions;
 - (d) Result in fatalities, exposures to hazardous or radioactive materials or offsite or onsite contamination that do not meet emergency criteria defined in DOE 5500.2B, but are in excess of regulatory limits, failure of environmental monitoring equipment necessary to demonstrate compliance, failure of safety equipment or systems reducing the capability below a minimum required safety function, or significant delay or cost in operations;
 - (e) Result in the actuation of emergency systems or engineered safety features, except under approved testing;
 - (f) Violate 'Technical Safety Requirements, (technical specifications, operational safety requirements), or involve an unreviewed safety question;
 - (g) Violate DOE safety requirements, environmental requirements, or result in the loss of control or release of radioactive material above allowable limits;
 - (h) Result in the release of a hazardous substance or material that exceeds a reportable quantity and is not federally permitted as defined in Attachment I; or
 - (i) Result in failure or significant degradation of administrative controls which are required to ensure safety, security, or environmental protection.
- (3) Off-Normal Occurrences. Off-normal occurrences are abnormal or unplanned events or conditions that adversely affect, potentially affect, or are indicative of degradation in, the safety, security, environmental or health protection performance or operation of a facility. The types of occurrences that are to be categorized as off-normal occurrences are those that:
- (a) Result in the release of radioactive or hazardous materials below limits established by Federal permits, Federal regulations, or DOE standards but that must be reported in writing to State or local agencies in other than routine monthly/quarterly reports;
 - (b) Are internal or external threats to safety, security, environmental, or health protection or the ability of a facility to operate;
 - (c) Involve degradation of environmental, safety, security, or health conditions;

- (d) Result in serious personnel injury or significant lost workdays; personnel contamination, assimilation, exposure, or significant onsite or offsite contamination of hazardous or radioactive materials in excess of administrative limits but within regulatory limits; or degradation of environmental monitoring equipment necessary to demonstrate compliance;
- (e) Result in violation of safety, environmental, or health administrative limits;
- (f) Involve operational procedural violations, including maintenance and administrative procedures which have the potential to impact the safety, security, environmental or health performance, or operation of a facility; or
- (g) Involve discovery of a condition that could prevent the functioning of administrative controls necessary to ensure safety or environmental protection.

b. Notification. The emphasis for both oral and documented notifications is on providing clear and succinct descriptions of the occurrence, and brief, concise descriptions of both the operating conditions of the facility at the time of the occurrence and the immediate actions taken, including results, if known. Requirements for oral and documented notification of Reportable Occurrences are as follows:

- (1) Emergencies. Oral notification to DOE and offsite authorities of emergencies shall be made within 15 minutes or less of categorization. However, recognizing that the majority of, if not all, emergency occurrences will result in generating external interest, oral notification to DOE should be accomplished as soon as possible. Emergency criteria are defined by DOE Order 5500.2B. Facility implementation procedures for DOE Order 5500.2B should identify the specific criteria for emergencies. These should be included or referenced in the facility specific procedures developed as required by Paragraph 8d of this Order. If the requirements of DOE Order 5500.2B have been implemented, then all oral notification requirements shall be satisfied in accordance with DOE Order 5500.2B. A Notification Report shall be prepared and submitted as soon as practical but, in all cases, before the close of the next business day from the time of categorization (not to exceed 80 hours).
- (2) Unusual Occurrences. Oral notification to DOE of unusual occurrences shall be as soon as sufficient information is obtained to indicate the general nature and extent of the occurrence but, in all cases, within 2 hours of categorization. However, oral notification to DOE should be accomplished as soon as possible for those occurrences judiciously determined to likely generate external interest. A Notification Report shall be prepared and submitted

before the 'close of the next business day from the time of categorization (not to exceed 80 hours).

- (3) Off-Normal Occurrences. For off-normal occurrences, oral notification to DOE is not mandatory; however, a Notification Report shall be prepared and submitted before the close of the next business day" from the time of categorization (not to exceed 80 hours).
 - (4) Categorization Changes. Any changes in categorization shall be documented in a 10-Day Occurrence Report and submitted before the close of the next business day from the time of recategorization (not to exceed 80 hours). A justification for the new categorization shall be included in the report.
- c. Follow-up Notification. In addition to the initial oral notifications required in Paragraph 7b, follow-up oral notification shall also be made to DOE for any of the following:
- (1) Any further degradation in the level of safety of the facility or other worsening conditions, including those that require the declaration of any emergency class as defined by DOE Order 5500.2B, if such a declaration has not been previously made;
 - (2) Any change from one emergency class (as defined in DOE Order 5500.2B) or category (as defined by this Order) to another; or
 - (3) Termination of an emergency.
- d. Occurrence Report Preparation. An Occurrence Report shall be prepared for all Reportable Occurrences, according to the instructions provided in Attachment II, INSTRUCTIONS FOR COMPLETING AN OCCURRENCE REPORT. The submission of Occurrence Report information is required as follows:
- (1) The Notification Report shall be prepared as required in Paragraphs 7b and 8a(10) of this Order;
 - (2) Within 10 working days of categorization, the contractor shall submit a 10-Day Occurrence Report utilizing the information available at that time;
 - (3) The 10-Day Occurrence Report shall be updated when significant new information is available and submitted as a 10-Day Update Report; and
 - (4) The Final occurrence Report shall be prepared and distributed by the contractor in accordance with this Order when the cause of the occurrences has been analyzed, root cause and contributing causes determined, corrective actions determined and scheduled, and lessons learned identified.

e. Classification Requirements.

- (1) At facilities where classified operations are not conducted and classified information is not generated, authorized classifier (AC) reviews of Occurrence Reports are not required. Similarly, at facilities where UCNI operations are not conducted and UCNI is not generated, review of the Occurrence Reports by a Reviewing Official is not required.
- (2) Occurrence Reports that are prepared in accordance with DOE 5000.3B at DOE facilities where classified operations are conducted or classified information may be generated must be reviewed by an AC prior to being distributed either in hard copy or via the ORPS. Specifically, at these facilities, Notification Reports, 10-Day Occurrence Reports, and Final Occurrence Reports must be reviewed in draft by an AC. At these facilities, a log or other equivalent record will be maintained of reports submitted to the AC, including the date and time of submission, the individual who proposed them, the date and time of AC review, and the AC's name and position. Reports determined to be unclassified, that are distributed in hard copy or via ORPS, do not need to have the signature of the AC. In addition, at DOE facilities where UCNI operations are conducted or UCNI may be generated, Occurrence Reports determined to be unclassified shall be reviewed by a Reviewing Official in order to identify if UCNI is present.
- (3) For Notification Reports, 10-Day Occurrence Reports, and Final Occurrence Reports that are determined by the AC to contain classified information, the complete reports shall be distributed to the DOE Facility Representative and Program Manager in hard copy in accordance with DOE 5000.3B and the DOE 5635 series Orders. The Facility Manager, after a review by an AC and removal of all classified material, shall then enter the sanitized report onto ORPS. In addition, reports sanitized of classified information shall be reviewed by a Reviewing Official in order to identify if UCNI is present.
- (4) Hard copy Occurrence Reports, from facilities where classified or UCNI operations are conducted or classified or UCNI information may be generated, that are to be made available in a public hearing room or that are to be distributed to individuals other than properly cleared DOE or DOE contractor personnel, must first be reviewed by a DOE or DOE contractor classification office or the Office of Classification (SA-20) to ensure removal of all classified material (refer to DOE Order 5650.2B, Chapter V, Part G, Paragraph 2c). Then, a Reviewing Official designated under DOE Order 5650.3 shall review the report for removal of UCNI material.

8. IMPLEMENTATION REQUIREMENTS.

Throughout this section of the Order, use of the terms Facility Manager, DOE Facility Representative, or Program Manager includes their designees. Also, references to time periods in days are to be interpreted as calendar days unless otherwise noted.

a. Occurrence Categorization and Notification Process.

- (1) The facility staff and operators shall identify and promptly notify the Facility Manager of abnormal events and conditions and record and archive all information pertaining to such occurrences.
- (2) Appropriate immediate response(s) shall be taken by contractor operations personnel to stabilize or return the facility/operation to a safe condition,
- (3) The Facility Manager shall categorize the occurrence as required in Paragraph 7a of this Order utilizing the facility specific procedures developed in accordance with Paragraph 8d(2) of this Order. For occurrences resulting from and directly related to a previously identified cause which is currently documented in a non-finalized Occurrence Report, the Facility Manager, with concurrence from the Facility Representative and Program Manager, may submit a 10-Day Update Report in lieu of a new Occurrence Report.
- (4) The Facility Manager shall be available at all times to carry out the requirements of this Order.
- (5) For oral notification, the Facility Manager shall simultaneously contact the DOE Facility Representative and the Headquarters (HQ) Emergency Operations Center (EOC) through which the DOE Program Manager and any other necessary program staff can be located and direct communications links with the Facility Manager established. The HQ EOC function here is to facilitate communications within line organizations and to record and archive conversations. To facilitate this archival function, the oral notification shall include as many of the required report fields [see discussion in Attachment II, Section 1, regarding Fields 1-18 identified with an asterisk (*)] as known at the time of the oral notification with particular emphasis on clear and succinct descriptions of the occurrence (Field 15); brief, concise descriptions of the operating conditions of the facility at the time of the occurrence (Field 16); and immediate actions taken, including results, if known (Field 18). The Facility Manager may use the local Field/Site EOC to expedite establishing the direct communication link required above. To promote common understanding, the use of jargon should be avoided and uncommon or facility/site-specific abbreviations and acronyms should be fully described in oral notifications and spelled out in subsequent written reports.

- (6) The Program Manager shall notify his or her PSO of all emergency and unusual occurrences, and, for emergencies, the PSO shall notify the Secretary, the Office of Environment, Safety and Health, and, as appropriate, the Office of Nuclear Safety. For all other occurrences, the PSO shall use judgment as to notification of these Departmental elements.
- (7) The DOE Facility Representative shall be available at all times to carry out the requirements of this Order.
- (8) The DOE Facility Representative shall notify the appropriate Head of the Field Organization of Reportable Occurrences.
- (9) During the entire process of notification and reporting, as noted in this Order, the DOE Facility Representative and Program Manager should use the current management chain established for the line organization in providing program direction to the contractor.
- (10) The Facility Manager shall prepare and submit the Notification Report (fields 1 through 18 of the Occurrence Report), and distribute it to the DOE Facility Representative and Program Manager before the close of the next business day from the time of categorization (not to exceed 80 hours). When an unclassified Notification Report is submitted using the computerized DOE ORPS data base, Paragraph 8c(1) below, the distribution requirement is automatically satisfied.

b. Occurrence Report and Follow-up Process.

- (1) For every Reportable Occurrence, the Facility Manager shall determine and document in the Occurrence Report as soon as practical:
 - (a) The significance, nature and extent of the event or condition;
 - (b) The cause(s) of the event or condition, including the root cause, as appropriate; and
 - (c) The corrective actions to be taken to correct the condition and prevent recurrence.
- (2) Within 10 working days of categorization, the Facility Manager shall submit an Occurrence Report in accordance with subparagraph (6) below. The 10-Day report shall include any updated information provided by the DOE Facility Representative in accordance with subparagraph (3) below. Complete information required in subparagraph (1) above should be available at that time for the majority of Reportable Occurrences. For recurring occurrences identified in 8a (3) above (after receiving the required concurrences), a 10-Day Update Report shall be submitted with the

new information by the close of the next business day from the time of categorization (not to exceed 80 hours).

- (3) The DOE Facility Representative, in consultation with the DOE Program Manager, should provide the Facility Manager his or her assessment of the occurrence, initial and proposed corrective actions, follow-up by the contractor, and any other actions DOE has taken since the occurrence in a timely manner for inclusion in the Occurrence Report. If the computerized DOE ORPS data base is being used, the Facility Representative's comments should be provided via the data base. The Facility Representative's comments are not mandatory.
- (4) The Final Occurrence Report shall be prepared by the Facility Manager and submitted when the analysis of the occurrence has been completed, root cause(s) and contributing cause(s) finalized, corrective actions(s) determined and scheduled, and lessons-learned identified. This report shall be submitted to the DOE Facility Representative within 45 days of categorization of the occurrence. If the required analysis cannot be completed within 45 days, an update to the 10-Day Occurrence Report shall be submitted within the 45 days and shall include a detailed explanation of the delay and an estimated date for submittal of the Final Occurrence Report.
- (5) The Final Occurrence Report shall then be reviewed and approved by the DOE Facility Representative within 7 working days of receipt and forwarded to the Program Manager for approval when the information required in subparagraph (4) above is provided. The Program Manager shall review and approve the Occurrence Report within 14 days of receipt. The Program Manager should provide any comments on the final report at this time. If the computerized DOE ORPS data base is being used, the Program Manager's comments should be provided via the data base. The Program Manager's comments are not mandatory. If the Final Occurrence Report is not approved, then the report shall be returned to the Facility Manager with an explanation for the disapproval. The revised Final Occurrence Report shall be resubmitted within 21 days of disapproval. If it cannot be resubmitted within this time period, then an update to the 10-Day Occurrence Report shall be submitted within the 21 days and shall include a detailed explanation of the delay and an estimated date for resubmittal of the final report.
- (6) The Occurrence Reports (10-Day and Final) shall be prepared by the Facility Manager and distributed to the Program Manager, the affected program self-assessment group, PSOS, the Heads of all Field Organizations, the DOE Facility Representative, Office of Nuclear Safety (NS- 1), Office of Environment, Safety and Health (EH-1), all DOE Management and Operations (M&O) contractors, and the Office of Nuclear Safety Policy and Standards (NE-70). For those occurrences involving safeguards and security issues, copies of the Occurrence

Reports should be provided to the Office of Security Affairs (5A-1). When unclassified Occurrence Reports (10-Day and final) are entered onto the DOE ORPS data base, Paragraph 8c(1) below, by the Facility Manager, the distribution requirement is automatically satisfied. Distribution of written classified reports shall be defined by the cognizant PSO based on a "need to know."

- (7) During this entire process, the DOE Facility Representative and the Program Manager shall monitor the Facility Manager's evaluation of the occurrence to ensure acceptability of root cause determinations, generic implications, and corrective action(s) implementation and closeout. They shall also interact with the contractor and Field Organization oversight organizations as necessary and inform and advise their respective management of their findings.
- (8) If the DOE Facility Representative or Program Manager identify an unresolved issue regarding actions or determinations on a Reportable Occurrence, the Program Manager shall elevate the issue to the PSO and, if necessary, the Secretary for resolution and direction.
- (9) Contractors shall maintain the ORPS data base (Paragraph 8c(1) below) up-to-date on the status of Final Occurrence Report corrective actions. Status reports of all incomplete Occurrence Reports (not final) and incomplete corrective actions shall be available at any time from the ORPS data base.

c. Utilization of Reportable Occurrence Information.

- (1) Operational Data Base. The Office of Nuclear Energy (NE-1) has established and shall maintain an unclassified central DOE operational data base, ORPS, to contain all unclassified Occurrence Reports to be entered by the Facility Managers. The Occurrence Report documentation and distribution requirements of this Order shall be satisfied by utilization of ORPS, with the exception of those Occurrence Reports containing classified information. These classified Occurrence Reports will be prepared in written form, and only after removal of classified material (Paragraph 7e above), can the reports be entered into the ORPS data base. The information in the data base shall be available to all Departmental Elements and DOE operating contractors.
- (2) Utilization. Contractors for each facility or group of facilities shall collect and disseminate to their personnel the operations information obtained from their facilities, other similar DOE facilities, and the lessons to be learned from this information. Each Facility Manager should adopt the use of trending and analysis of this information for early indications of deteriorating conditions. Corrective actions should be taken for any identified deteriorating conditions. The Facility Manager, DOE Facility

Representative, and DOE Program Manager should review the DOE ORPS data base to identify good practices and lessons learned from other facilities that can be used in his/her facility.

Consistent with Paragraph 6e above, one of the major purposes of this reporting system is to provide feed-back of safety and operational information identified in the Occurrence Reports to other DOE nuclear facilities. In this regard, the benefit derived from this system is fully dependent on the quality of the information that is reported. Therefore, the Occurrence Reports submitted pursuant to this Order should contain sufficient information about the facility, operations, and the occurrence to facilitate action by other personnel that are not familiar with the details of the facility, equipment, process, or procedures. In addition to direct feedback from the Occurrence Reports, Headquarters oversight and self-assessment organizations should use the information available through the reporting system to prepare Safety Notices and other feedback documents to enhance safety.

Engineering judgment must be used to ensure that precursors to occurrences are identified and reported. An occurrence that is not serious given the conditions under which it occurred at one facility may be a precursor to a very serious event at different facilities or under different initial conditions at the same facility. Operations and engineering, as well as other support organizations, should be involved in the identification and assessment of reportable occurrences. Relevant information at the site, such as operations logs and engineering evaluations, should be used in this process.

d. Procedures.

PSOS shall take action to have procedures established for implementation of the requirements of this Order for facilities under their cognizance. These procedures shall be approved by the PSO and shall include:

- (1) Responsibilities of the contractor, field organization, Headquarters program office, and the HQ EOC.
- (2) Categorization, notification, and reporting requirements (based on Attachment I) for each facility.
- (3) A listing (by reference) of the devices/systems that are considered to be class A/B equipment and any other facility specific reporting requirements based on Attachment I of the Order.

e. Training.

PSOS shall take action to have training programs established for both DOE and contractor personnel in the requirements of this Order for facilities under their cognizance. These training programs shall include:

- (1) Indoctrination in the philosophy of occurrence reporting as outlined in Paragraph 6 of this Order.
- (2) Identification of Reportable Occurrences; their categorization, notification, and associated reporting requirements; analysis, determination of root causes and generic implications; and implementation, tracking and close-out of corrective actions.
- (3) Utilization of ORPS including input of Occurrence Reports and obtaining information from the data base.

f. Exemption.

After obtaining the concurrence of NS-1, EH-1, and NE-1, a PSO may formally request the Secretary of Energy to grant permanent exemptions to the reporting requirements of this Order. Temporary exemptions to the reporting requirements of this Order, up to 1 year in duration, may be granted by the responsible PSO. Prior to approval of the temporary exemptions by the PSO, NS-1 and EH-1 shall be notified in a timely manner in order to discharge their assigned responsibilities.

g. Documentation.

All supporting information pertaining to each Occurrence Report (e.g., graphs, analyses, etc.) shall be retained in accordance with DOE Order 1324.2A.

h. Implementation Schedule.

The requirements of this Order shall be implemented in accordance with this paragraph.

- (1) Within 1 month of the effective date of this Order, all the reporting requirements of this Order shall be implemented, with the exception of Paragraph 8d. Identification of the date on which reporting through ORPS will commence will be accomplished through the system message screen.
- (2) Within 6 months of the effective date of this Order, all the requirements of this Order shall be implemented including the requirement of Paragraph 8d.
- (3) Pending approval of new or modified implementing procedures required by Paragraph 8d, procedures approved and in effect as of the effective date of this Order may be used.

9. RESPONSIBILITIES AND AUTHORITIES.

Throughout this section of the Order, use of the terms Facility Manager, DOE Facility Representative, or Program Manager include their designees. Also, references to time periods in days are to be interpreted as calendar days unless otherwise noted.

- a. Assistant Secretary for Nuclear Energy (NE-1), in addition to the responsibilities prescribed in this Order and in Paragraph 9d below, has overall Departmental policy responsibility for occurrence reporting activities, develops reporting policies and procedures, and specifically shall:
 - (1) Develop, promulgate, and maintain policies necessary to implement and sustain an effective occurrence reporting system;
 - (2) Provide formal Departmental interpretation of the requirements of this Order;
 - (3) Develop, promulgate, and maintain guidance materials, and conduct workshops, as necessary, for implementing the requirements of this Order; and
 - (4) Monitor appraisal reports relative to reporting activities at DOE facilities to assess implementation of this Order to identify needed improvements,
- b. Director, Office of Nuclear Safety (NS-1), acting as the independent element responsible for nuclear safety oversight of line management for the Department, shall:
 - (1) Monitor and audit all aspects of the implementation of this Order related to nuclear safety including review of facility specific procedures; and
 - (2) Review Occurrence Reports and identify circumstances that are indicative of deterioration or poor program performance in nuclear safety which may warrant further action.
- c. Assistant Secretary for Environment, Safety and Health (EH-1), acting as the independent element responsible for environment, occupational safety, and health oversight of line management for the Department, shall:
 - (1) Monitor and audit all aspects of the implementation of this Order related to the EH functional areas of responsibility; and
 - (2) Review Occurrence Reports and identify circumstances that are indicative of deteriorating or poor program performance in the EH areas of responsibility which may warrant further actions.

- d. Program Secretarial Officers (PSOS), in addition to other responsibilities prescribed in this Order, shall carry out responsibilities which include but are not limited to:
- (1) Providing clear and explicit delegations of responsibilities and authority for implementing this Order;
 - (2) Establishing agreements with Heads of Field Organizations to ensure support to the DOE Facility Representative and DOE Program Manager(s) in accordance with this Order; and
 - (3) Appointing Headquarters investigation boards as required under DOE 5484.1.
- e. Director, Office of Emergency Planning and Operations (OE-1) acting as the independent element responsible for coordinating and overseeing emergency management activities for the Department, shall:
- (1) Monitor and audit all aspects of the implementation of this Order related to the OE functional areas of responsibilities; and
 - (2) Review oral notifications and Occurrence Reports and identify circumstances that are indicative of deteriorating or poor performance in the OE areas of responsibilities which may warrant further actions.
- f. Program Managers, in addition to other responsibilities prescribed in this Order, shall carry out responsibilities which include but are not limited to:
- (1) Overseeing activities relating to reportable occurrences including reporting and development of programs and procedures;
 - (2) Ensuring that a system for prompt notification and categorization of Reportable Occurrences has been established for their DOE programs and for facilities under their cognizance;
 - (3) Ensuring that the HQ EOC is informed of how they or their designees can be reached at all times;
 - (4) Ensuring that lessons-learned and generic or programmatic implications are identified and elevated to the PSO for appropriate action;
 - (5) Ensuring that actions are taken to minimize or prevent recurrence;

- (6) Reviewing and assessing Reportable Occurrences information from facilities under their cognizance, to assess significance, root causes, generic implications, and the need for corrective action; and ensuring that DOE and contractor staff involved in these operations perform these functions; and
 - (7) Ensuring that Occurrence Reports and operations information from other organizations are disseminated to appropriate DOE and contractor activities within their cognizance are reviewed for generic implications, and are used to improve operations.
- g. DOE Heads of Field Organizations, (including Energy Technology Centers or other DOE offices in the field reporting to the Office of Fossil Energy) cognizant of the reporting activity:
- (1) Shall ensure agreements are established with responsible PSOs on the working relationship between the PSO and the Field Organization for the purpose of carrying out the requirements of this Order;
 - (2) Shall ensure that the contractor's capability and performance in carrying out the requirements of this Order, in accordance with established agreements with the responsible PSOs, be appraised and audited;
 - (3) Shall ensure that technical support is provided as necessary to DOE Facility Representatives in responding to any Reportable Occurrence, in accordance with established agreements with the responsible PSOs;
 - (4) Shall ensure that DOE Facility Representatives are designated and assigned responsibilities as required by this Order; and
 - (5) May appoint field investigation boards as required under DOE 5484.1.
- h. DOE Facility Representatives, shall carry out their responsibilities as noted in this Order which include but are not limited to:
- (1) Ensuring that contractors under their cognizance prepare and promulgate procedures for notification and reporting that are compatible with and serve the policies of this Order;
 - (2) Concurring in the facility specific procedures and examples of reportable occurrences and categorizations to meet the requirements of this Order;
 - (3) Actively monitoring day-to-day operations and performance of facilities/activities under their cognizance;

- (4) Ensuring that lessons-learned and generic or programmatic implications are identified and elevated to the Head of the Field Organization for appropriate action;
 - (5) Ensuring that contractor actions are taken to minimize or prevent recurrence;
 - (6) Reviewing and assessing Reportable Occurrences information from facilities under their cognizance, to assess significance, root causes, generic implications, and the need for corrective action, and ensuring that contractor staff involved in these operations perform these functions; and
 - (7) Ensuring that Occurrence Reports and operations information from other organizations are disseminated to appropriate contractor activities within their cognizance, are reviewed for generic implications, and are used to improve operations.
- i. Director of Naval Nuclear Propulsion Program: Executive Order 12344, statutorily prescribed by P.L. 98-525 (42 U.S.C. 7158, Note) establishes the responsibilities and authorities of the Director of the Naval Nuclear Propulsion Program (who is also the Deputy Assistant Secretary for Naval Reactors within the Department) for all facilities and activities that comprise the Program, a joint Navy-DOE organization. These executive and legislative actions establish that the Director is responsible for all matters pertaining to naval nuclear propulsion, including direction and oversight of environment, safety, and health matters for all program facilities and activities. Accordingly, the provisions of this Order do not apply to the Naval Nuclear Propulsion Program.

BY ORDER OF THE SECRETARY OF ENERGY:



DOLORES L. ROZZI
Director of Administration
and Management

CATEGORIZATION OF REPORTABLE OCCURRENCES

The purpose of this attachment is to categorize a list of occurrences so that DOE field and operating contractors understand the degree of significance which is associated with the emergency, unusual, and off-normal categories defined in DOE 5000.3B. It provides a minimum set of standards necessary to allow specific sites/facilities to develop and document (Paragraph 8d of the Order) specific Reportable Occurrences applicable to their operations.

Occurrences have been arranged into nine groups which relate to DOE operations. These nine groupings are used solely for ease of reference and do not represent program requirements.

Definitions

The following is a list of definitions designed to avoid confusion in this attachment and to avoid repetition in the body of the document.

1. Safety Class Equipment - Systems, structures, or components including primary environmental monitors and portions of process systems, whose failure could adversely affect the environment or safety and health of the public,

For nuclear reactors and non-reactor nuclear facilities, Safety Class equipment includes those systems, structures, or components with the following characteristics:

- Those whose failure would produce exposure consequences that would exceed DOE established guidelines at the site boundary or nearest point of public access.
- Those required to maintain operating parameters within the safety limits specified in Technical Safety Requirements (Technical Specifications or Operational Safety Requirements) during normal operations and anticipated operational occurrences.
- Those required for nuclear criticality safety.
- Those required to monitor the release of radioactive materials to the environment during and after a design basis accident.
- Those required to monitor and maintain the facility in a safe shutdown condition.
- Those that control the safety class items described above.

For the purpose of this Order, this equipment is called Class A equipment.

2. Non-Safety Class Equipment - Systems, structures or components, including secondary environmental monitors, whose failure could result in a facility shutdown or degradation of operating parameters. Failure of Non-Safety Class Equipment shall not adversely affect the environment or the safety and health of the public. In addition, their failure shall not prevent Safety Class Equipment from performing their required function. For the purpose of this Order, this equipment is called Class B equipment.
3. Defective Item or Service - Any item or service found to be substandard during acceptance testing, pre-operational testing, operations, inspections, or audits. These consist of items or services that do not meet or that fall short of the commercial standard or procurement requirements as defined in catalogs, proposals, procurement specifications, design specifications, testing requirements, contracts, or the like. It includes those items or services found not to meet the quality or reliability requirements appropriate to the use or specificity of the item or service procured. It also includes misrepresentation of the specifications or trademarks associated with the parts/service marking, packaging, or certification identification/stamps. It does not include parts or services which fail or are otherwise found to be inadequate because of random failures or errors. The intent of reporting the discovery of defective items or services is to make all Departmental elements aware of and initiate actions to eliminate common mode failures due to substandard, counterfeit, misrepresentation, or fraudulent practices of suppliers.
4. Federally permitted release - Any release that satisfies the definition of "federally permitted release" in 40 CFR 302.3.
5. Hazardous substance or material:

DOT Hazardous Materials (see 49 CFR 171.8 and 172.101) - means 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.

EPA Hazardous Substances (see 40 CFR 302 and 40 CFR 117) - For purposes of transportation, see 49 CFR 171.8 and 172.101.

EPA Hazardous Wastes (see 40 CFR 261 and 40 CFR 262) - any material that is subject to the Hazardous Waste Manifest Requirements of EPA specified in 40 CFR 261. For purposes of transportation, see 49 CFR 171.8.

OSHA Hazardous Chemical (see 29 CFR 1900.1000 and 29 CFR 1910.1200) - any chemical which is a physical hazard or a health hazard.

SARA Extremely Hazardous Substances (see 40 CFR 355) - these are not defined but appear on a list in Appendix A and B of 40 CFR 355.

6. Item - An all inclusive term used in place of the following: appurtenance, sample, assembly, component, equipment, material, module, part, structure, subassembly, subsystem, system, unit, documented concepts, or data.
7. 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.
8. Primary environmental monitors - Monitoring equipment legally required to monitor ongoing discharges. In general, this term applies to monitors closest to the point of discharge which are used to determine if discharges are within specified limits. It also includes any equipment which actuates automatically in response to set level signals from such a monitor. It does not include equipment in general area, remediation, or compliance monitoring programs.
9. Program significant delay - Meets the criteria of Group 8, Facility Status.
10. Program significant cost - Meets the criteria of Group 7, Value Basis Reporting.
11. Reportable quantity (RQ) - For any CERCLA hazardous substance and radionuclide, the quantity established in 40 CFR Part 302, the release of which requires notification unless federally permitted.
12. Secondary environmental monitors - Environmental monitoring equipment or activities which, if degraded, will produce a more than minor disruption of a monitoring program. An example of a minor effect would be the failure of a unit whose place in the program is effectively duplicated by overlap between one or more other components. An example of a more than minor effect would be the failure of sufficient units to preclude continued coverage, or the failure of a unit which provides the only coverage for large areas, such as a groundwater monitoring well.
13. Service - The performance of work, such as design, construction, fabrication, inspection, nondestructive examination/testing, environmental qualification, equipment qualification, repair, installation, or the like.
14. Supplier - The organization which furnishes items or services. An all inclusive term used in place of any of the following: vendor, seller, contractor, subcontractor, fabricator, distributor, consultant, or sub-tier suppliers.

15. 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 structures.
16. Transportation Event - Any real-time occurrence involving any of the following transportation activities: material classification, packaging, marking, labeling, placarding, shipping paper preparation, loading/unloading, separation/segregation, blocking and bracing, routing, accident reporting, and movement of materials. Transportation events with injury(s) may also require reporting in accordance with Group 3 criteria.

Offsite Transportation Event - Involves movement of materials which are considered to be in commerce, thus requiring compliance with DOT Hazardous Materials Regulations.

Onsite Transportation Event - Involves movements of materials that are not in commerce, thus are transported in accordance with DOE onsite safety requirements.

Categorization Use

The nine groups of categorized occurrences are:

1. Facility Condition
2. Environmental
3. Personnel Safety
4. Personnel Radiation Protection
5. Safeguards and Security
6. Transportation
7. Value Basis Reporting
8. Facility Status
9. Cross-Category Items

Within each grouping is a list of occurrences derived from previous DOE Orders and actual operation occurrences, and categorized as emergency, unusual, or off-normal occurrences. The list is not intended to be all-inclusive; it presents a minimum set of standards necessary to allow specific sites/facilities to develop and document (Paragraph 8d of the Order) specific lists of Reportable Occurrences applicable to their operations which reflect the DOE-desired degree of significance in categorization.

It should be noted that the occurrences categorized are designed to be generic in nature, and occurrences may fit under more than one group. For example, the environmental section (Group 2) provides much less detail than would be found in a site-specific matrix of occurrences. The objective of this approach is to allow individual sites to fit their varying requirements to the categories on the basis of significance rather than specific regulatory

requirements. However, the categorization of an occurrence as off-normal does not absolve the cognizant parties from making required reports to other agencies.

Emergency criteria are defined by DOE Order 5500.2B. Facility implementation procedures for DOE Order 5500.2B should identify the specific criteria for emergencies in each of these groupings. These should be included or referenced in the facility specific procedures developed as required by Paragraph 8d of the Order.

Categorization of Occurrences by Group

Group 1. Facility Condition

A. Nuclear Criticality Safety

Emergency

Nuclear criticality achieved in a system not intended to reach criticality that results or could result in actual or potential facility damage or releases of radioactive material .

Unusual Occurrence

- (a) Any actuation of a Nuclear Incident Monitor (NIM) or Criticality Accident Alarm system not due to approved testing.
- (b) Violation of the double contingency criticality specifications.

Off-Normal

Any nuclear criticality safety violation or infraction of procedures not covered by other definitions. For example, violation of one contingency.

B. Fires/Explosions

Emergency

- (a) Any occurrence that causes uncontrolled release of radioactive or hazardous material to the environment that could result in significant offsite consequences
- (b) Any occurrence not under control causing more than minor damage to confinement systems, loss of building integrity, or multiple facilities.

Unusual Occurrence

- (a) Any occurrence that threatens failure or performance degradation of Class A Equipment.
- (b) Any occurrence that activates a fire suppression system, except under approved testing.
- (c) Any occurrence within primary confinement/containment boundaries of a nuclear facility.

Off-Normal

- (a) Any fire that threatens failure or performance degradation of Class B Equipment.
 - (b) Any unplanned fire, within a facility, that takes longer than 10 minutes to extinguish following the arrival of fire protection personnel.
- c. Any unplanned occurrence that results in the safety status or the analytical basis of a facility or process being seriously degraded.

Unusual Occurrence

- (a) Any violation of an approved Technical Safety Requirement (Technical Specification or Operational Safety Requirement) or other operational safety limit defined by the contractor/DOE.
- (b) Discovery of an incorrectly derived Technical Safety Requirement (Technical Specification or Operational Safety Requirement) or other operational safety limit defined by the contractor/DOE.
- (c) Any occurrence that is outside the design basis or the safety analysis of the facility/process.
- (d) Any occurrence that will prevent immediate facility or offsite emergency response capabilities.

Off-Normal

Any occurrence that leads the contractor to limit facility operations either self imposed or due to procedural requirements.

D. Loss of Control of Radioactive Material / Spread of Radioactive Contamination

Emergency

- (a) Identification of radioactive contamination offsite in excess of 100 times the surface radioactivity levels specified in DOE Order 5400.5, Figure IV-1, that has not been previously identified in a DOE annual report or in any CERCLA/RCRA activity/report.

Unusual Occurrence

- (a) Identification of removable or fixed radioactive contamination in excess of the appropriate limits specified in Table 2-4 of the DOE Radiological Control Manual in any area not appropriately posted in accordance with Articles 235 and 236 of the Manual. Reporting is not required for instances where contamination levels, as defined in Table 2-4 of the Manual, are identified in Contaminated Areas.
- (b) Any fissile material in a process or nonprocess system outside primary confinement boundaries not designed or expected to accommodate such material.
- (c) Identification of radioactive contamination off site in excess of the surface radioactivity levels specified in DOE Order 5400.5, Figure IV-1, that has not been previously identified in a DOE annual report or in any CERCLA/RCRA activity/report.

Off-Normal

- (a) Any unexpected accumulation of fissile material within primary confinement boundaries.
- (b) Any unplanned spill of liquids in excess of 1 gallon, contaminated with radioactive material in concentrations greater than the DCG values listed in DOE Order 5400.5, Figure III-1, not already classified and reported in conjunction with other requirements of this Order.

E. A deficiency such that a structure, system, or component vital to safety or program performance does not conform to stated criteria and cannot perform its intended function.

Unusual Occurrence

- (a) Failure or performance degradation of any Class A Equipment which prevents satisfactory performance of the design function when it is required.

- (b) Events or conditions indicative of failure or performance degradation of systems designed, installed, and operated for the protection of facility or co-located facility workers (e.g.; fire protection systems, excluding those in office spaces; radiation monitoring systems such as continuous air monitors; criticality alarm systems; shielding; etc.), which prevent satisfactory performance of their design function (e.g., to alarm, control spread of contamination, etc.) when it is required.
- (c) Discovery of a defective item or service involving Class A equipment.
- (d) A reportable occurrence caused by a defective item or service.

Off-Normal

- (a) Performance degradation of Class A equipment which does not prevent satisfactory performance of the design function or which occurs when the equipment is not required.
 - (b) Events or conditions indicative of performance degradation of systems designed, installed, and operated for the protection of facility or co-located facility workers (e.g.; fire protection systems, excluding those in office spaces; radiation monitoring systems such as continuous air monitors; criticality alarm systems; shielding; etc.), which do not prevent satisfactory performance of their design function (e.g., to alarm, control spread of contamination, etc.) or which occurs when the system is not required (e.g., discovered during testing or inspection).
 - (c) Failure or significant performance degradation of any Class B Equipment.
 - (d) Discovery of a defective item or service involving Class B equipment.
- F. Violation of procedures (include maintenance requirements and system lineups) or inadequate procedures either of which result in adverse effects on performance, safety, or reliability.

Unusual Occurrence

- (a) Any occurrence which violates technical safety requirements.
- (b) Maintenance performed on Class A equipment without meeting the required plant conditions for non-availability.
- (c) Incorrect maintenance (including calibration) on or unauthorized modifications to Class A equipment.

Off-Normal

- (a) Any violation resulting in actual equipment damage in excess of \$1000.
 - (b) Deviation from written procedures that result in adverse effects on performance, safety, or reliability.
 - (c) Incorrect maintenance (including calibration) on or unauthorized modifications to Class B equipment.
- G. Unsatisfactory Surveillance/Inspections

Unusual Occurrence

- (a) Any surveillance/inspection reporting unsatisfactory operation, testing, maintenance, or modification of any Class A Equipment.
- (b) Any surveillance/inspection reporting improper procedural compliance with or lack of operator understanding regarding Class A Equipment.
- (c) Inspection or appraisal findings indicating that major safety-related equipment required to be operational by Technical Safety Requirements (Technical Specifications or Operational Safety Requirements) is not operating within approved limitations specified therein;

Off-Normal

- (a) Any surveillance/inspection reporting unsatisfactory operation, testing, maintenance, or modification of any Class B Equipment.
 - (b) Any surveillance/inspection reporting improper procedural compliance with or lack of operator understanding regarding Class B Equipment.
- H. Any deficiency in a structure, system, component, or facility vital to program continuity which, to redesign or repair or otherwise establish the adequacy of the item, will result in a program significant delay or cost.
- I. Operations. Special attention should be paid to augmenting this section during the development of facility-specific procedures as required of Paragraph 8d of the Order.

Emergency

- (a) Loss of incoming AC power and a failure of all backup emergency power systems, supplying AC power to Class A systems, to operate for a Category A reactor.

- (b) Loss of any primary confinement/containment which results in uncontrolled hazardous material/energy release.
- (c) Dangerous weather conditions/natural phenomenon capable of breaching facility structures.
- (d) Any request to an off site authority for emergency assistance resulting from the activation of an emergency/contingency operation or plan.

Unusual Occurrence

- (a) Any actuation of safety systems, automatic protection systems, emergency systems or engineered safety features, except under approved testing.
- (b) Loss of incoming AC power and a failure of any backup emergency power system, supplying power to Class A systems, to operate for any reactor or nonreactor nuclear facility.
- (c) Weather conditions/natural phenomenon causing serious disruption of facility activities.
- (d) Any unplanned nuclear excursion in a nuclear reactor, whether or not terminated by protective actions, which is clearly outside the routinely accepted and experienced bounds for that reactor.
- (e) Loss of any process ventilation system used for confinement sufficient to invert pressure zones.
- (f) Any facility evacuation (excluding office space) in response to an actual occurrence.
- (g) Any occurrence that requires off site radiological assistance.

Off-Normal

- (a) Any unplanned and unexpected change in a process condition or variable sufficient to require termination of an operating procedure in a reactor or nonreactor nuclear facility.
- (b) Loss of incoming AC power and failure of any backup emergency power, system supplying power to Class A systems, to operate for any facility.
- (c) Any unplanned electrical outages or unexpected consequences from a planned outage which disrupt normal operations of a facility.

- (d) Any unplanned outages of service systems (i.e., cooling water, steam, phones, communication systems, etc.) or unexpected consequences from a planned outage which disrupt normal operations of a facility for more than 48 hours.
 - (e) Loss of any process ventilation system which serves a confinement function.
 - (f) Any facility evacuation (excluding office space) conducted as a precautionary measure, e.g. Fire, CAA, NIM, or CAM alarms.
 - (g) Any actuation of systems designed, installed, and operated for the protection of facility or co-located facility workers (e.g., fire protection systems, excluding those in office spaces; radiation monitoring systems such as continuous air monitors; criticality alarm systems; etc.) except under approved testing. Actuation of continuous air monitoring systems do not have to be reported if (a) their actuation was found to be due to radon-thoron effects on the system or (b) their actuation is expected due to maintenance tasks and other planned operations in the facility where the potential for release of radioactivity is anticipated to occur and the workers are appropriately protected.
- J. Inadequate experiment/test performance resulting in program significant delay or cost. Program significant delays should take into account the amount of time required to repeat the test to obtain any necessary data; while cost considerations should consider the cost of repeat testing, any damage, and cleanup.

Group 2. Environmental

A. Radionuclide Releases

Emergency

- (a) Any release of radionuclide material to controlled or uncontrolled areas in concentrations which, if averaged over a period of 24 hours, would exceed 5 times the respective reportable quantities (RQs) specified for such materials in 40 CFR 302.

Unusual Occurrence

- (a) Release of a radionuclide material that exceeds a Federally permitted release by the amount of a CERCLA RQ or, where no Federally permitted release exists, the release exceeds the RQ.
- (b) Release of radionuclide material that violates environmental requirements in Federal permits, Federal regulations, or DOE standards,

- (c) Release below Emergency Levels which requires immediate (<4 hours) reporting to Federal regulatory authorities or triggers specific action levels for an outside Federal agency.

Off-Normal

- (a) Any release of radionuclide material to controlled or uncontrolled areas that is not part of a normal monitored release and exceeds 50 percent of a CERCLA RQ specified for such material per 40 CFR 302.
 - (b) Any controlled release of radionuclide material that occurs as a monitored part of normal operations which exceeds what historical data and/or analysis show is expected as a result of normal operations.
 - (c) Any monitored facility or site boundary where exposure or concentrations exceed what historical data and/or analysis show is expected as a result of normal operations.
 - (d) Any detection of a radionuclide in a sanitary or storm sewer, waste or process stream, or any holding points where such a material is not expected.
 - (e) Any controlled, uncontrolled, or accidental release which is not classified as an Unusual Occurrence but which will be reported in writing to State/local agencies in a format other than routine monthly or quarterly reports.
- B. Release of Hazardous Substances/Regulated Pollutants/Oil

Throughout this Order and particularly within this sub-Group, reporting of spills or releases of ethylene glycol and glycol ethers shall be limited only to those spills or release; in excess of 100 pounds.

Emergency

- (a) Any actual or potential release of material to the environment that results in or could result in significant offsite consequences (e.g., need to relocate people, major wildlife kills, major wetland degradation, major aquifer contamination, need to secure downstream water supply intakes, etc.).
- (b) Any release of hazardous substances or regulated pollutants in concentrations which exceed five times the respective RQs specified for such materials in 40 CFR 302.

Unusual Occurrence

- (a) Release of a hazardous substance or regulated pollutant that exceeds a CERCLA RQ per 40 CFR 302 or exceeds a federally permitted release by an RQ,
- (b) Release of a hazardous substance, regulated pollutant, or oil that violates environmental requirements in Federal permits, Federal regulations, or DOE standards.
- (c) Release below Emergency Levels that requires immediate (<4 hours) reporting to Federal regulatory agencies or triggers specific action levels for an outside Federal agency.
- (d) Any release of 100 gallons or more of oil.

Off-Normal

- (a) Release of a hazardous substance or regulated pollutant to controlled or uncontrolled areas that is not part of a normal, monitored release and exceeds 50 percent of a CERCLA RQ as specified for such material per 40 CFR 302.
- (b) Any release of Oil less than the Unusual Occurrence level but >10 gallons,
- (c) Any detection of a toxic or hazardous substance in a sanitary or storm sewer, waste or process stream, or any holding points where such a material is not expected.
- (d) Any controlled, uncontrolled, or accidental release which is not classified as an Unusual Occurrence but which will be reported in writing to State/Local agencies in a format other than routine monthly or quarterly reports.
- (e) Any controlled release of hazardous/regulated material that occurs as a monitored part of normal operations which exceeds what historical data and/or analysis shows is expected as a result of normal operations.
- (f) Any general environmental monitoring where concentration increases to a level which exceeds what historical data and/or analysis shows is expected as a result of normal operations.

C. Discovery of hazardous material contamination due to DOE operations.

Emergency

- (a) Discovery of contamination that results or could result in significant consequences (i.e. exceeding safe exposure limits to workers or public).
- (b) Discovery of onsite or off site hazardous material contaminations in concentrations that exceed 5 times the respective RQs specified for such materials in 40 CFR 302.

Unusual Occurrence

- (a) Discovery of onsite or off site contamination due to DOE operations which does not represent an immediate threat to the public, that exceeds a reportable quantity for such materials per 40 CFR 302.
- (b) Any discovery of groundwater contamination that is not part of an existing plume previously identified in either an annual report or in any CERCLA/RCRA activity or report.

Off-Normal

Discovery of onsite contamination attributable to DOE operations that exceeds 50 percent of a reportable quantity for such material per 40 CFR 302.

D. Ecological Resources

Unusual Occurrence

Any occurrence causing significant impact to any ecological resource for which the DOE is a trustee (i.e., destruction of a critical habitat, damage to a historic/archeological site, damage to wetlands, etc.).

E. Agreement/Compliance Activities

Unusual Occurrence

- (a) Any agreement, compliance, remediation, or permit-mandated activity for which formal notification has been received from the relevant regulatory agency that a site plan is not satisfactory or that a site is considered to be in noncompliance with schedules or requirements.

- (b) Any occurrence under any agreement or compliance area that requires notification of an outside regulatory agency within 4 hours or less, or triggers an outside regulatory agency action level, or otherwise indicates specific interest/concern from such agencies.

Off-Normal

Any occurrence under any agreement or compliance area that will be reported in writing to outside agencies in a format other than routine monthly or quarterly reports.

Group 3. Personnel Safety

A. Occupational Illness/Injuries

Unusual Occurrence

- (a) Any occurrence due to DOE operations resulting in a fatality or terminal injury or illness.
- (b) Any one occurrence resulting in five or more lost workday cases as defined by 29 CFR 1904.

Off-Normal

Any occupational illness or injury that results in inpatient hospitalization.

B. Vehicular Incidents

This section covers vehicular transportation incidents, including DOE or DOE contractor operated aircraft. Group 6 should also be considered in categorization for reporting. Transportation incidents without injury (e.g., those involving hazardous or radioactive material or financial loss) must be reported per the requirements of Group 6.

Emergency

- (a) Inflight aircraft occurrence involving a high jacking or bomb threat that poses a threat to the health and safety of the aircraft, its occupants, or the general public,

Unusual Occurrence

- (a) Any vehicular incident resulting in fatality(ies), injury(s), or illness classified under Group 3, Section A - Unusual Occurrence requirements,

- (b) Any vehicle incident involving Departmental property with a fatality(ies) to a person(s) other than DOE personnel or DOE contractor personnel.

Off-Normal

- (a) Any vehicular incident with injury(s) involving departmental property resulting in a lost workday case.
- (b) Any vehicular incident involving Departmental property with injury(s) to a person(s) other than DOE personnel or DOE contractor personnel.

c. Miscellaneous

Special attention should be paid to augmenting this section during the development of site-specific procedures as required by Paragraph 8d of the Order.

Unusual Occurrence

Personnel exposures to hazardous chemicals in excess of appropriate occupational safety limits.

Off-Normal

- (a) Unauthorized use of flammable, toxic, explosive, corrosive, or other unsafe or dangerous process, chemicals, materials, or methods previously prohibited.
- (b) Any shutdown of a work activity taken as a result of an OSHA violation involving a condition or practice of imminent danger as defined in the OSHA Act of 1970 (e.g., trenching without adequate shoring or working at levels without fall protection).

Group 4. Personnel Radiation Protection

A. External Radiation Exposure

Unless specified otherwise, all doses specified in the following requirements are calculated as the sum of the committed effective dose equivalent due to radionuclides taken into the body (internal exposure) and the dose equivalent due to external exposure.

Emergency

- (a) Exposure of any occupational worker to external radiation fields which, in conjunction with any internal exposures, results in a dose in excess of five times the annual limits specified in Table 2-1 of the DOE Radiological Control Manual.

- (b) Exposure of any minor or student, onsite, to external radiation fields which, in conjunction with any internal exposures, results in a dose in excess of five times the annual limit given in Table 2-1 of the DOE Radiological Control Manual.
- (c) Exposure of any member of the public to external radiation fields which, in conjunction with any internal exposures, results in a dose in excess of five times the annual limit given in Table 2-1 of the DOE Radiological Control Manual (for onsite exposures) or DOE Order 5400.5, Chapter II, Paragraph 1 (for offsite exposures).

Unusual Occurrence

- (a) Exposure of any occupational worker to external radiation fields which, in conjunction with any internal exposures, results in a dose in excess of the annual limits specified in Table 2-1 of the DOE Radiological Control Manual.
- (b) Exposure of any minor or student, onsite, to external radiation fields which, in conjunction with any internal exposures, results in a dose in excess of the annual limits given in Table 2-1 of the DOE Radiological Control Manual.
- (c) Exposure of any member of the public to external radiation fields which, in conjunction with any internal exposures, results in a dose in excess of the annual limits given in Table 2-1 of the DOE Radiological Control Manual (for onsite exposures) or DOE Order 5400.5, Chapter II, Paragraph 1 (for offsite exposures).

Off-Normal

- (a) Unplanned single exposure of any occupational worker to external radiation fields which, in conjunction with any internal exposures, results in a dose that exceeds an established facility administrative limit or is in excess of 10 percent of the annual limits specified in Table 2-1 of the DOE Radiological Control Manual, whichever is less.
- (b) Exposure of any minor or student, onsite, to external radiation fields which, in conjunction with any internal exposures, results in a dose that is greater than 25 percent of the annual limits given in Table 2-1 of the DOE Radiological Control Manual.
- (c) Exposure of any member of the public to external radiation fields which, in conjunction with any internal exposures, results in a dose that is greater than 25 percent of the annual limits given in Table 2-1 of the DOE Radiological Control Manual (for onsite exposures) or DOE Order 5400.5, Chapter II, Paragraph 1 (for offsite exposures).

B. Personnel Contamination

Unusual Occurrence

- (a) Any occurrence that results in five or more individual contamination cases.
- (b) Any occurrence requiring off site medical assistance for contaminated personnel.
- (c) Identification of radioactive contamination on personnel or clothing offsite.

Off-Normal

- (a) Identification of radioactive contamination on personnel or clothing outside a facility controlled area.
- (b) Any measurement of personnel or clothing (excluding protective clothing) contamination, measured in accordance with Article 338 of the DOE Radiological Control Manual (prior to washing or decontamination), in excess of 5000 dpm beta/gamma/100 cm² or 500 dpm alpha/100 cm².

c. Internal Exposure

Emergency

- (a) Any confirmed intake of radioactive material by a worker which, in conjunction with any external exposures, results in a dose in excess of five times the annual limit specified in Table 2-1 of the DOE Radiological Control Manual.
- (b) Any confirmed intake of radioactive material by a minor or student which, in conjunction with any external exposures, results in a dose in excess of five times the annual limit given in Table 2-1 of the DOE Radiological Control Manual.
- (c) Any confirmed intake of radioactive material by a member of the public which, in conjunction with any external exposures, results in a dose in excess of five times the annual limit given in Table 2-1 of the DOE Radiological Control Manual (for onsite exposures) or DOE Order 5400.5, Chapter II, Paragraph 1 (for offsite exposures).

Unusual Occurrence

- (a) Any confirmed intake of radioactive material by a worker which, in conjunction with any external exposures, results in a dose in excess of the annual limit specified in Table 2-1 of the DOE Radiological Control Manual.
- (b) Any confirmed intake of radioactive material by a minor or student which, in conjunction with any external exposures, results in a dose in excess of the annual limit given in Table 2-1 of the DOE Radiological Control Manual.
- (c) Any confirmed intake of radioactive material by a member of the public which, in conjunction with any external exposures, results in a dose in excess of the annual limit-given in Table 2-1 of the DOE Radiological Control Manual (for onsite exposures) or DOE Order 5400.5, Chapter II, Paragraph 1 (for offsite exposures).

Off-Normal

- (a) Any confirmed intake of radioactive material by a worker that would result in a committed effective dose equivalent from all intakes equal to or greater than 0.1 rem.
- (b) Any confirmed intake of radioactive material by a minor or student, onsite, that would result in a committed effective dose equivalent equal to or greater than 10 percent of the annual limit specified in Table 2-1 of the DOE Radiological Control Manual.
- (c) Any confirmed intake of radioactive material by a member of the public that would result in a committed effective dose equivalent equal to or greater than 10 percent of the annual limit specified in Table 2-1 of the DOE Radiological Control Manual.

Group 5 Safeguards and Security

Occurrences in this section will require consideration of classification in addition to careful review for privacy considerations. Classified information will only be transmitted through approved communications channels. The lack of detail which may be required in such reports is recognized by DOE management.

A. Criminal Acts

Emergency

- (a) Occurrences at any DOE facility regarding:
 - (1) Bomb related incidents: Detonation, location of actual device, or suspicious device resulting in a credible bomb threat;
 - (2) An actual sabotage event or credible sabotage threat; or
 - (3) An actual terrorist attack or credible terrorist threat,
- (b) Extortion/kidnapping of DOE or DOE contractor personnel.

Unusual Occurrence

- (a) Occurrences at DOE reactor or nonreactor nuclear facilities regarding:
 - (1) Bomb related incidents: location of a suspicious device or a noncredible bomb threat;
 - (2) A noncredible terrorist threat; or
 - (3) A noncredible sabotage threat or breach/attempted breach of a secure/classified facility.
- (b) Violent assault/battery, murder, or unjustified use of deadly force on DOE property.
- (c) Theft/diversion of Government property (for property valued greater than \$100,000).
- (d) Racketeering or other organized criminal activity onsite.

Off-Normal

- (a) Occurrences at DOE facilities other than reactors and nonreactor nuclear facilities regarding a:
 - (1) Location of a suspicious device or noncredible bomb threat;
 - (2) Noncredible terrorist threat; or
 - (3) Noncredible sabotage threat.
- (b) Theft/diversion of Government property (for property valued between \$10,000 and \$100,000).

(c) Onsite felony conspiracies (i. e., Blackmail, fraud, embezzlement, extortion and forgery) not involving classified information.

B. Loss of Control of Classified Matter

Unusual Occurrence

(a) Loss of matter classified as Top Secret or any Sensitive Compartmented Information (SCI).

(b) Known compromise of matter classified Top Secret, Secret, Confidential, or SCI.

Off Normal

Loss of matter classified as Secret or Confidential.

c. Substance Abuse

Unusual Occurrence

(a) Possession of controlled/illegal substance(s) with intent to distribute onsite.

(b) Any reportable occurrence onsite at least partially attributed to the use of illegal drugs or alcohol.

Off-Normal

Onsite discovery of the use, possession, or involvement of illegal drugs by DOE or DOE contractor personnel.

D. Foreign Intelligence Activities

Unusual Occurrence

(a) Extortion/blackmail directed at DOE or DOE contractor personnel with intent of obtaining classified information/systems, detailed information concerning plant processes/configurations, or aiding in sabotage or terrorist acts.

(b) Espionage, foreign intelligence activities, treason, or subversive activities by or directed at DOE or DOE contractor personnel.

(c) Activities by or directed at personnel occupying Personnel Security Assurance Program (PSAP) - designated positions.

Off Normal

- (a) When illegal or unauthorized access is sought to classified or sensitive information, technology, or special nuclear materials.
- (b) DOE or DOE contractor personnel believe that they may be the target of an attempted exploitation by a foreign entity.

E. Computer Equipment/Systems

Unusual Occurrence

- (a) Actual /attempted unauthorized access to classified data.
- (b) Discovery of a computer virus which caused the alteration of security features or disruption of facility operations.

Off-Normal

Discovery of a computer virus prior to resulting in the alteration of security features or disruption of facility operations.

F. Unplanned/Unscheduled Outage of Site Security System

Unusual Occurrence

Unplanned/unscheduled outage of any site security system, or major component of a site security system, that is not redundant and/or results in a potential vulnerability which would allow unauthorized or undetected access to Protected Areas, Exclusion Areas, Materials Access Areas, and Sensitive Compartmented Information Facilities (SCIFS).

off Normal

Unplanned/unscheduled outage of any site security system, or major component of a site security system, not encompassed by the Unusual Occurrence category, that is not redundant and not authorized by a facility shutdown plan or a special security plan approved by DOE, that requires the physical presence of the protective force as a compensatory measure to prevent unauthorized access.

G. Demonstrations/Protests

Unusual Occurrence

- (a) Disruptive activities impeding vehicular or employees access/egress.
- (b) Attempted or actual trespass.

(c) Malevolent activities causing property damage or bodily harm.

Off Normal

Lawful activities warranting deployment of additional protective measures.

H. Firearms

Unusual Occurrence

Unauthorized firearms discharge resulting in personnel injury.

Off Normal

(a) Unauthorized ^{firearms} discharge resulting in no personnel injury.

(b) Loss or theft of DOE firearms or munitions

I. Other Security Concerns

Emergency

Occurrence which depletes or overtaxes onsite response forces and requires off-site tactical response assistance.

Unusual Occurrence

(a) Discovery or possession of unauthorized wiretapping or eavesdropping

(b) Unauthorized use, alterations, possession, or theft of security badge, passes, credentials, or other forms of official identification (to include blank stock/forms) to gain access to a protected area or limited area.

Off Normal

(a) Discovery of prohibited items within a Protected Area which are suspected of being positioned for the purpose of aiding and abetting a malevolent act or are, of themselves, illegal.

(b) Onsite death of cleared DOE or DOE contractor personnel by unnatural causes (e.g., suicide, drug overdose).

(c) Loss of security badges in excess of 1 percent in a calendar year.

(d) Onsite malicious mischief, disorderly conduct, or vandalism which disrupts plant activity or causes damage between \$10,000 - \$100,000.

J. Material Control and Accountability

Emergency

- (a) Loss or apparent loss of one or more items for which the items total a Category II or greater quantity of special nuclear material (SNM) (includes item losses due to shipper-receiver differences).
- (b) Loss or apparent loss of a Category IV or greater quantity of SNM for which there is evidence that a malevolent act has occurred or is intended.

Unusual Occurrence

- (a) Loss or apparent loss of one or more items for which the items total a Category III or less quantity of nuclear material (includes item losses due to shipper-receiver differences).
- (b) An inventory difference (loss or gain) that exceeds alarm limits, does not involve the loss of an item, and is greater than a Category III quantity of material.
- (c) A shipper-receiver difference involving a gain in the number of items for which the items total to a Category II or greater quantity of SNM.
- (d) Evidence that nuclear material balance data has been manipulated or falsified to mask a diversion or theft or to alter loss detection sensitivity.
- (e) Alarms or other indicators excluding inventory differences or shipper-receiver differences from loss detection elements for Category I and II materials balance areas (MBAs) that cannot be proven to be false within 2 hours.
- (f) Loss or apparent loss whenever a State, local government, or other Federal agency must be notified.
- (g) Loss of accountability of a radioactive source which exceeds the lesser value of exempt quantities as specified in DOE Notice N5400.9 (Sealed Radioactive Source Accountability) or State standards/regulations.

Off Normal

- (a) Alarms or other indicators excluding inventory differences or shipper-receiver differences from loss detection elements for Category III and IV MBAs that cannot be proven to be false within 2 hours.

- (b) Inventory difference (loss or gain) that exceeds the warning limit but not the alarm limit and does not involve the loss of an item.
- (c) An inventory difference (loss or gain) that exceeds the alarm limits, does not involve the loss of an item, and is less than a Category II quantity of nuclear material.
- (d) A shipper-receiver difference that exceeds 50 grams of fissile material and the combined limit of error for the shipment.
- (e) A shipper-receiver difference involving a gain in the number of items for which the items total less than a Category II quantity of material.

Group 6. Transportation

Shippers are responsible for occurrences involving their shipments. DOE organizations receiving hazardous materials, which are not in compliance with appropriate requirements, from a DOE shipper must report the discrepancies to the DOE shipper who will prepare Notification and Occurrences Reports in accordance with this Order and implement suitable corrective actions. If an out-of compliance shipment is received from a non-DOE shipper, the DOE-recipient shall notify the non-DOE shipper of the discrepancy and shall prepare Notification and Occurrence Reports in accordance with this Order. These reports must contain a statement that the non-DOE shipper has been notified and identify any corrective actions taken or planned to eliminate the occurrence from being repeated.

The term "limited quantity" as used in this Group is defined 49 CFR 171.8.

A. Offsite Transportation (DOT jurisdiction) Occurrences.

Emergency

An offsite transportation event involving the release of a reportable quantity of a hazardous substance (per 49 CFR 171.8) which is transported in support of Departmental operations.

Unusual Occurrence

- (a) An off site transportation event involving the release of hazardous material (per 49 CFR 171.8), other than radioactive material, in an amount greater than a limited quantity (per 49 CFR 171.8) transported in support of Departmental operations.
- (b) An off site transportation event involving the release of radioactive material transported in support of departmental operations.

- (c) Any radioactive material shipment transported off site that arrives at its destination with radiation or contamination levels in excess of DOT allowable limits.
- (d) Any shipment of radioactive material or hazardous waste that arrives at its destination with a nonreconcilable shipping paper discrepancy or unaccounted for package (e.g., actual number of packages inconsistent with number indicated on shipping papers) related to material quantity.
- (e) Any violation of Department of Transportation (DOT) Federal Motor Carrier Safety Regulations or Federal Aviation Agency (FAA) Regulations contributing to a transportation event involving a release of hazardous material.

Off-Normal

- (a) An off site transportation event involving a release of hazardous material (per 49 CFR 171.8) other than radioactive material, not exceeding a limited quantity (per 49 CFR 171.8) transported in support of Departmental operations.
- (b) Any other violation of regulatory requirements involving improper material descriptions, marking, labeling, placarding, routing, or separation/segregation of hazardous materials that could or does result in:
 - (1) improper handling/storage;
 - (2) personnel exposures higher than permitted; or
 - (3) emergency response actions inconsistent with the actual hazard.
- (c) Any violation of DOT Federal Motor Carrier Safety Regulations or FAA Regulations.
- (d) Evidence of improper classification of hazardous materials transported offsite.
- (e) Evidence of improper selection or assembly of a hazardous material package transported offsite.
- (f) Evidence that cargo has shifted during transport off site.
- (g) Transportation activities that are performed by unqualified personnel.

- (h) Any transportation event involving Departmental property resulting in vehicular/aircraft damage of more than \$5000 or, for insurance purposes, considered a total loss.

B. Onsite Transportation (DOE jurisdiction) Occurrences.

Unusual Occurrence

- (a) An onsite transportation event involving the release of a reportable quantity of a hazardous substance (per 49 CFR 171.8) which is transported in support of Departmental operations.
- (b) An onsite transportation event involving the release of radioactive material greater than an excepted quantity [per 49 CFR 173.421-1(a)] transported in support of Departmental operations.
- (c) An onsite transportation event involving the release of hazardous material (per 49 CFR 171.8), other than radioactive material, greater than a limited quantity (per 49 CFR 171.8) transported in support of Departmental Operations.

Off Normal

- (a) An onsite transportation event involving a release of hazardous material (per 49 CFR 171.8), other than radioactive material, not exceeding a limited quantity (per 49 CFR 171.8) transported in support of Departmental operations.
- (b) An onsite transportation event involving the release of radioactive material not exceeding an excepted quantity [per 49 CFR 173.421-1(a)] transported in support of Departmental operations.
- (c) Any other violation of DOE requirements involving improper material descriptions, marking, labeling, placarding, routing, or separation/segregation of hazardous materials that could result in:
 - (1) improper handling/storage;
 - (2) personnel exposures higher than permitted; or,
 - (3) emergency response actions inconsistent with the actual hazard.
- (d) Any transportation event involving Departmental property resulting in vehicular/aircraft damage of more than \$5,000 or, for insurance purposes, considered a total loss.

Group 7. Value Basis Reporting

Any occurrence specifying cost as a basis for reporting, unless otherwise stated, will be classified by the following monetary values necessary to repair, replace, or otherwise restore a facility/system/component to acceptable operation. Costs used for reporting should be reasonable initial estimates.

Unusual Occurrence

Estimated loss or damage to Department of Energy or other property amounting to \$100,000 or more, or estimated costs of \$100,000 or more required for cleaning (including decontamination), renovating, replacing, or rehabilitating structures, equipment, or property.

Off-Normal

Estimated loss or damage to Department of Energy or other property amounting to between \$10,000 and \$100,000 (for vehicle/aircraft the lower limit is \$5000 or, for insurance purposes, considered a total loss) or estimated costs within these limits required for cleaning (including decontamination), renovating, replacing, or rehabilitating structures, equipment, or property.

Group 8. Facility Status

- A. Any unplanned occurrence in any portion of a program conducted in accordance with approved requirements and procedures which results in the facility, process, or activity being secured or operations significantly curtailed.

Unusual Occurrence

- (a) Any unscheduled shutdown of one week or greater.
- (b) The initiation of any unplanned nuclear facility shutdown or significantly curtailed operations either required by the plant's Technical Specifications or Operational Safety Requirements or taken as an independent initiative by the contractor or the DOE.

Off-Normal

Any unscheduled shutdown of a facility, process, or operation of greater than 2 days.

- B. Any unplanned occurrence in any portion of a program conducted in accordance with approved requirements and procedures which results in a current facility, process, or activity shutdown being extended.

Unusual Occurrence

Any increase in shutdown schedule that exceeds 50 percent of the planned schedule at the time of extension or 1 month.

- C. Any unplanned occurrence in any portion of a program conducted in accordance with approved requirements and procedures that results in a new facility, process, etc., startup being delayed.

Unusual Occurrence

Any delay in startup schedule of 12 weeks or greater.

Off-Normal

Any delay in startup schedule of 1 month or greater,

Group 9. Cross-Category Items

- A. A series of related occurrences which individually do not warrant reporting under preceding criteria, but which collectively are considered significant enough to warrant reporting.
- B. A near miss to one of the reporting classifications under preceding categories.

Unusual Occurrence

An occurrence where the conditions necessary to cause an Unusual occurrence existed (i.e., all barriers to event initiation were compromised) ,

Off-Normal

An occurrence where the conditions necessary to cause a reportable occurrence were prevented from existing by one remaining barrier after other barriers had been compromised (i.e., one additional independent failure/degradation was necessary for event initiation to be possible).

- c. Identification of potential concerns or issues, that are deemed to be worthy of reporting.

INSTRUCTIONS FOR COMPLETING AN OCCURRENCE REPORT

1. GENERAL.

The numbers on the specific report items correspond with the numbers used in the Occurrence Report format. Reports concerning certain sensitive facilities or activities may contain classified information and shall be reviewed for classification where appropriate. Items 1 through 18 of the Occurrence Report constitute the Notification Report. A Notification Report is to be completed for all reportable occurrences and submitted to DOE per this order before the close of the next business day from the time of categorization of the event/condition (not to exceed 80 hours). The DOE Facility Representative and Program Manager may provide comments in item 31 and 32, respectively, for all reports other than a Notification Report. For the 10-Day and Final Occurrence Reports, information on the Notification Report shall be retained and updated as better information becomes available.

The following instructions apply to the reporting of occurrences via hard copy or the electronic data base, the Occurrence Reporting and Processing System (ORPS). For those occurrences containing classified information, the reports shall be prepared by the Facility Manager, in accordance with the Order, in writing using a hard-copy of the Occurrence Report. The unclassified versions of these reports, after review and removal of all classified information by a classification official and review by a Reviewing Official to identify if UCNI is present, shall be entered onto the ORPS data base by the Facility Manager. The lack of detail in such reports is recognized by DOE Management. In addition, where required by Paragraph 7e(1) of the Order, unclassified reports shall be reviewed by a Reviewing Official to identify if UCNI is present prior to being entered onto the ORPS data base.

Please note that all fields with an asterisk (*) preceding it are required fields for all (notification, 10-Day, 10-Day Update, and Final) reports. Fields marked with a pound sign (#) are required under certain conditions, for example, depending on occurrence type, report type, or the answer to a previous question.

Occurrences reported per Attachment 1 under Groups 1 (Facility Condition) and 4 (Personnel Radiation Protection) are of special significance to nuclear safety. Therefore, Final Reports for occurrences at nuclear facilities within these groups should contain a thorough narrative discussion of all the items listed below and in particular, Item 26.

2. OCCURRENCE REPORT ITEMS.

A. Facility/Personnel Information.

1. *Name of Facility. Enter the name of the facility where the occurrence took place.

2. *Facility Function. Enter the type of facility or the activity/function performed by the facility. Only one function can be selected. Possible entries are:
 - A. Plutonium Processing and Handling
 - B. SNM Storage
 - C. Explosive
 - D. Uranium Enrichment
 - E. Uranium Conversion/Processing and Handling
 - F. Irradiated Fissile Material Storage
 - G. Reprocessing
 - H. Nuclear Waste Operations
 - I. Tritium Activities.
 - J. Fusion Activities
 - K. Environmental Restoration Operations
 - L. Category "A" Reactors
 - M. Category "B" Reactors
 - N. Solar Activities
 - O. Fossil and Petroleum Reserves
 - P. Accelerators
 - Q. Balance-of-Plant (e.g., offices, machine shops, site/outside utilities, safeguards/security, and transportation)
 3. *Name of Laboratory, Site, or Organization. Enter the name of the laboratory, site, or organization. If ORPS is being used, the laboratory, site, or organization and, in addition, the name of the DOE contractor for the facility will be automatically provided by the computer.
 4. *Facility Manager/Designee Enter the name, title, and telephone number of the Facility Manager or designee who has direct line responsibility for operation of the facility. If ORPS is being used, the Facility Manager's or designee's name will be automatically provided by the computer when he/she uploads the input to ORPS.
 5. *Originator. Enter the name, title, and telephone number of the person who originated this report. This person is the person who gathered the information and is most knowledgeable about the event.
- B. Specific Report Items.
1. *Occurrence Report Number Enter an alphanumeric designation that identifies the DOE Field Office, area office (if applicable), DOE contractor or laboratory involved, facility, the calendar year of the occurrence, and sequential number of the occurrence by facility. If ORPS is being used, the OR number will be

automatically generated by the computer. Examples are SR-WSRC-MED-1991-0005 and AL-AO-MHSM-PANTEX- 1991-0003.

2. *Report Type and Date. Check the block that identifies the type of Occurrence Report being submitted. Use a 10 Day/10 Day Update Report for recategorization of an occurrence. Check only one box unless you are submitting a 10-Day and a Final Report together, which is the only case where two boxes can be checked. Possible entries are:

Notification Report
10-Day Report
Latest 10-Day Update
Final Report

- A. Items 1 through 18 of the Occurrence Report constitute the Notification Report, which remains a part of subsequent Occurrence Reports.
- B. All dates and the time of the Notification Report submission are computer generated. The date that the report is entered into the ORPS data base is the Occurrence Report's submission date.
- C. For hard-copy reports, show all dates. That is, for a Final Report, this block must show the Final Report submission date and the dates of the Notification, 10-Day and Update Report submissions. If subsequent 10-day Update Occurrence Reports were submitted, only the latest date needs to be shown.
- D. To cancel an Occurrence Report, check the blocks under Report Type for 10-Day Report (if a 10-Day Report has not already been submitted) and Final Report, as well as the block for Cancelled under Occurrence Category (Item 3 below). If a 10-Day Report has already been submitted, check the block under Report Type for Final Report as well as the block for Cancelled under Occurrence Category (Item 3 below). Cancelled reports must be finalized and go through the same approval process as another Occurrence Reports; however, Items 19 through 32 are not required fields for cancelled reports and, upon signature of the DOE Facility Representative and Program Manager, the Occurrence Report will be removed from the active data base.
3. *Occurrence Category. Indicate which category has been determined for the occurrence. Only one category can be selected. Possible entries are:

Emergency Unusual Off-Normal Cancelled

4. *Division or Project. Identify in full the project or the contractor organizational unit responsible for the facility at which the occurrence took place.
5. *DOE Program Office. Identify the DOE Program Office to which this facility is operationally responsible. Only one Program Office can be selected. If the facility is operationally responsible to more than one Program Office, enter the Program Office that is most directly involved in the specific work activity during which the occurrence took place. Possible entries are:

CE - Conservation and Renewable Energy
ER - Energy Research
FE - Fossil Energy
EM - Environmental Restoration and Waste Management
DP - Defense Programs
NE - Nuclear Energy
RW - Civilian Radioactive Waste Management
EH - Environment, Safety, and Health
NP - New Production Reactor
AD - Administration and Management
EI - Energy Information Administration
RG - Economic Regulatory Administration
IN - Intelligence
SA - Security Affairs
6. *System, Building, or Equipment. Identify all systems, equipment, or structural items involved in the occurrence, as applicable. In addition, in the case of component failures, the component manufacturer, model number, size, etc., shall be provided. The most significant item(s) should be listed here. Additional information can be provided in the Description of Occurrence (Item 15).
7. *UCNI. When required by Paragraph 7e(1) of the Order and when appropriate UCNI guidance is available, a Reviewing Official shall make a Final Determination that the report contains (enter "Y" for Yes) or does not contain (enter "N" for No) UCNI. Where appropriate UCNI guidance is not available, a Reviewing Official shall make a Preliminary Review Determination that the report may contain UCNI (still enter "Y" for Yes) or does not contain (enter "N" for No) UCNI.
8. #Plant Area. Indicate the name of the site-specific plant area (e. g., F-Area, M-Area) where the occurrence took place.
9. *Date and Time Occurrence Was Discovered. Enter the date and time when the facility staff discovered the event or condition being reported.

10. *Date and Time Occurrence Was Categorized. Enter the date and time when the Facility Manager determined that the event or condition constituted a Reportable Occurrence and determined its category (Emergency, Unusual, or Off-Normal occurrence).
11. #DOE Notification. Enter the name and organization of the DOE Program Manager and the date and time when the DOE Program Manager was notified (via the simultaneous notification to the DOE Field Representative and DOE Program Manager). This field is not required for occurrences that are categorized as Off-Normal.
12. #Other Notifications. Enter the name(s), organization(s), date(s), and time(s) of notification of State and local officials or other agencies. Additional information can be provided in the Immediate Action field (Item 18).
13. *Subject or Title of Occurrence. Enter a brief title or description (20 words or less) that best details the nature, cause, and result of the occurrence.
14. *Nature of Occurrence. Enter the nature of the occurrence as given in Attachment 1 of DOE Order 5000.3B. Up to three selections can be made. Possible entries are:

Facility Condition

- A. Nuclear Criticality Safety
- B. Fires/Explosions
- C. Safety Status Degradation
- D. Loss of Control of Radioactive Material /Spread Contamination
- E. Vital System/Component Degradation
- F. Violation/Inadequate Procedures
- G. Unsatisfactory Surveillance/Inspections
- H. Costly Vital Structure/System/Component/Facility Deficiency
- I. Operational Occurrence
- J. Inadequate Experiment/Test Performance

Environmental

- A. Radioisotope Releases
- B. Hazardous Substances/Regulated Pollutants/Oil Releases
- C. Hazardous Material Contamination
- D. Ecological Resources
- E. Agreement/Compliance Activities

Personnel Safety

- A. Occupational Illness/Injuries
- B. Vehicular Incidents
- C. Miscellaneous

Personal Radiation Protection

- A. External Radiation Exposure
- B. Personnel Contamination
- C. Internal Exposure

Safeguards/Security

- A. Criminal Acts
- B. Loss of Control of Classified Matter
- C. Substance Abuse
- D. Foreign Intelligence Activities
- E. Computer Equipment/Systems
- F. Unplanned/Unscheduled Outage of Site Security System
- G. Demonstrations/Protests
- H. Firearms
- I. Other Security Concerns
- J. Material Control and Accountability

Transportation

- A. Offsite Transportation (DOT jurisdiction) Occurrences.
- B. Onsite Transportation (DOE jurisdiction) Occurrences.

Value Basis Reporting

Facility Status

- A. Facility/Process Securing/Curtailing Operations
- B. Facility/Process Shutdown Extension
- C. New Facility/Process Startup Delay

Cross-Category Items

- A. Collectively Significant Related Occurrences
- B. Near Miss Occurrences
- C. Potential Concerns/Issues

15. *Description of Occurrence. Enter a clear, concise, objective description of what happened and what was observed. To the maximum extent possible, a sequence of events shall be provided. The type of information to be provided in the description includes all of, but is not limited to, the following:

The method of discovery;
Any component failures and the failure modes;
Any personnel errors involved, including the type and result of the error;
Any procedure problem encountered;

The response of any automatic or manual safety systems and the signals which initiated and terminated their operation;
The duration of any failures; Operator actions that affected the course of events; and the loss of any safety equipment.

When appropriate for clarification, photos, sketches, or drawings shall be attached. If ORPS is being used, all photos, sketches, or drawings shall be referenced as attachments to the Occurrence Report, with specifics as to where or from whom they can be obtained. The contractor should, to the extent possible, avoid the use of plant-specific terms and acronyms.

16. *Operating Conditions of Facility at Time of Occurrence. Describe the operational status of the facility or equipment at the time of the occurrence including, for example, pertinent temperatures, pressures, or other parameters necessary for evaluation of the occurrence and its consequences. If said information is not applicable, enter "Does not apply."

17. *Activity Category. Enter one of the following activities that best describes the ongoing activity at the time of the occurrence:

Constructi on
Mai ntenance
Normal Operations
Startup
Shutdown
Facili ty/System/Equipment Testi ng
Trai ni ng
Transportati on
Emergency Response
Inspecti on/Moni tori ng
Facili ty Decontami nati on/Decommi ssi oni ng

18. *Immediate Actions Taken and Results. Describe the immediate or remedial actions taken to return the facility, system, or equipment item to service; to correct or alleviate the anomalous condition; and to record the results of those actions. These may include temporary measures to keep the facility in a safe standby condition or to permit continued operation of the facility without compromising safety until a more thorough investigation or permanent solution can be effected.

- 19-21. #Cause. This must be thoroughly addressed as the information becomes available. Enter the cause(s) that best describes the apparent direct and contributing cause. Only one direct cause may be entered, but up to three contributing causes may be entered. In the final evaluation of a Reportable Occurrence, there must be complete consideration of the cause, including contributory factors, with analysis to show what cause was root to the

occurrence and what causes were only contributory. The root cause (only one allowed) is that fundamental cause that, if corrected, will prevent recurrence of this or similar events. The possible entries are the same for all three cause fields. The direct, contributing, and root causes of reportable occurrences are classified into seven broad categories and various subcategories.

The seven categories of causes and their associated subcategories are as follows:

EQUIPMENT/MATERIAL PROBLEM. An event resulting from the failure, malfunction, or deterioration of equipment or parts, including instruments or material.

- A. Defective or Failed Part. A part/instrument that lacks something essential to perform its intended function.
- B. Defective or Failed Material. A material defect or failure.
- C. Defective Weld, Braze, or Soldered Joint. A specific weld/joint defect or failure.
- D. Error by Manufacturer in Shipping or Marking. An error by the manufacturer or supplier in the shipping or marking of equipment.
- E. Electrical or Instrument Noise. An unwanted signal or disturbance that interferes with the operation of equipment.
- F. Contamination. Contamination due to radiation damage or foreign material such as dirt, crud, or impurities.

PROCEDURE PROBLEM. An event that can be traced to the lack of a procedure, an error in a procedure, or a procedural deficiency or inadequacy.

- A. Defective or Inadequate Procedure. A procedure that either contains an error or lacks something essential to the successful performance of the activity.
- B. Lack of Procedure. No written procedure was in place to perform the activity.

PERSONNEL ERROR. An event due to an error, mistake, or oversight.

- A. Inadequate Work Environment. A deficiency or fault in the physical conditions of the work area.
- B. Inattention to Detail. Inadequate attention to the specific details of the task.

- c. Violation of Requirement or Procedure. The inappropriate use or violation of written instructions, procedures, or other documentation.
- D. Verbal Communication Problem. Inadequate spoken presentation or exchange of information.
- E. Other Human Error. Human error other than those described above,

DESIGN PROBLEM. An event that can be traced to a defect in design or other factors related to configuration, engineering, layout, tolerances, calculations, etc.

- A. Adequate Man-Machine Interface. Inadequate design of equipment used to communicate information from the facility to a person (displays, labels, etc.).
- B. Adequate or Defective Design. A design in which something essential was lacking (defective) or when a detail was included but was not adequate for the requirement (inadequate).
- C. Error in Equipment or Material Selection. A mistake in the equipment or material selection only, not to include a procurement error (see 3E) or a specification error (see 4D).
- D. Drawing, Specification, or Data Errors. An error in the calculation, information, or specification of a design.

TRAINING DEFICIENCY. An event that can be traced to a lack of training or insufficient training to enable a person to perform a desired task adequately.

- A. No Training Provided. A lack of appropriate training,
- B. Insufficient practice or Hands-On Experience. An inadequate amount of preparation before performing the activity.
- C. Inadequate Content. The knowledge and skills required to perform the task or job were not identified,
- D. Insufficient Refresher Training. The frequency of refresher training was not sufficient to maintain the required knowledge and skills.
- E. Inadequate presentation or Materials. The training presentation or materials were insufficient to provide adequate instruction.

MANAGEMENT PROBLEM. An event that can be directly traced to managerial actions or methods.

- A. Inadequate Administrative Control. A deficiency in the controls in place to administer and direct activities.
- B. Work Organization/Planning Deficiency. A deficiency in the planning, scoping, assignment, or scheduling of work.
- C. Inadequate Supervision. Inadequate techniques used to direct workers in the accomplishment of tasks.
- D. Improper Resource Allocation. Improper personnel or material allocation resulting in the inability to successfully perform assigned tasks.
- E. Policy Not Adequately Defined, Disseminated, or Enforced. Inadequate description, distribution, or enforcement of policies and expectations.
- F. Other Management Problem. A management problem other than those defined above.

EXTERNAL PHENOMENA. An event caused by factors that are not under the control of the reporting organization or the suppliers of the failed equipment or service.

- A. Weather or Ambient Condition. Unusual weather or ambient conditions, including hurricanes, tornadoes, flooding, earthquake, and lightning.
- B. Power Failure or Transient. Special cases of power loss that are attributable to outside supplied power.
- C. External Fire or Explosion. An external fire, explosion, or implosion.
- D. Theft, Tampering, Sabotage, or Vandalism. Theft, tampering, sabotage, or vandalism that could not have been prevented by the reporting organization.

Specific information pertaining to each cause field is as follows:

- 19. #Direct Cause. The cause that directly resulted in the occurrence. For example, in the case of a leak, the direct cause could have been the failure in the component or equipment that leaked. In the case of a system misalignment, the direct cause could have been operator error in the alignment. Enter only one direct cause for the occurrence. One subcategory for the direct cause selected must also be checked. The direct cause is not

required for 10-Day Reports or 10-Day Update Reports; however, it is required for Final Reports.

20. Contributing Causes. The cause that contributed to the occurrence but, by itself, would not have caused the occurrence. For example, in the case of a leak, the contributing cause could be lack of adequate operator training in leak detection and response resulting in a more severe event than would have otherwise occurred. In the case of a system misalignment, the contributing cause could be excessive distractions to the operators during shift, resulting in less than adequate attention to important details during system alignment. Enter up to three contributing causes for the occurrence. One subcategory for each of the contributing causes must also be checked. This is not a required field.
21. #Root Cause. The cause that, if corrected, would prevent recurrence of this and similar occurrences. The root cause does not apply to this occurrence only, but has generic implications to a broad group of possible occurrences, and it is the most fundamental aspect of the cause that can logically be identified and corrected. There may be a series of causes that can be identified, one leading to another. This series shall be pursued until the more fundamental, correctable cause has been identified.

For example, in the case of a leak, the root cause could be a failure of management to ensure that maintenance is effectively managed and controlled. This cause could have led to the use of improper seal material or missed preventive maintenance on a component, which ultimately led to the failure. In the case of a system misalignment, the root cause could be failure in the training program, leading to a situation in which operators are not fully familiar with control room procedures and are willing to accept excessive distractions. Enter only one root cause for the occurrence. One subcategory for the root cause selected must also be checked. The root cause is not required for 10-Day Reports or 10-Day Update Reports; however, it is required for Final Reports.

22. #Description of Cause. Discuss the cause of the occurrence to include root, direct, and contributing causes and the corrective actions identified. Do not repeat a description of the occurrence but discuss the results of the causal analysis. The Root Cause analysis methodology used should be identified. A detailed description of the corrective actions is required to demonstrate that the identified actions will adequately address the cause(s) of the problem. For example, if a procedural deficiency was identified, it would not be sufficient to state simply that the procedure was revised. An explanation is required regarding why the deficiency was not identified during the review and approval process (to the extent possible); how the procedure was

subsequently revised; and how the revision, in conjunction with any other corrective actions, addresses the cause of the problem. When appropriate, separate documentation for the root cause analysis may be attached. If ORPS is being used, the separate documentation should be referenced as attachments to the Occurrence Report, with specifics as to where or from whom they can be obtained. This field is not required for 10-Day Reports or 10-Day Update Reports; however, it is required for Final Reports.

23. #Evaluation by Facility Manager. With the information available, the Facility Manager shall provide his or her evaluation of the occurrence and its effect or possible effect on the plant, system, program, etc., in the 10-Day Occurrence Report. The Facility Manager may later supplement this evaluation with additional entries in updates to the 10-Day Report or in the Final Report.
24. #Is Further Evaluation Required? Check "Yes" or "No." This is a required field on all reports except the Notification Report. It is not expected that this response would be "Yes" in a Final Report since further evaluation could change the root cause or identify additional corrective actions.

If further evaluation is required, then "Yes" or "No" must be checked as to whether that evaluation is required before further operation.

If further evaluation is required before further operation (i.e., both "Yes" blocks checked), then who will take the action (a person's name, title, or a specific organizational unit) and a date when the action shall be taken must be provided.

25. #Corrective Actions. List all actions identified to correct the problem which, when completed, will prevent recurrence. The first two lines of each corrective action shall be a title or summary of the corrective action. In addition, provide actual or target completion dates for all of the corrective actions listed. This field is not required for 10-Day Reports or 10-Day Update Reports; however, it is required for Final Reports.
26. #Impact on Environment, Safety, and Health. Provide an assessment of the environment, safety, and health consequences and implications of the occurrence. Describe the impact of the occurrence on the environment, safety, and health of workers, the public, and onsite/offsite environs. This shall include amounts and types of hazardous or radioactive materials released, levels and types of contamination, exposure levels of workers and the public, and known or projected environmental, safety, and health impacts. This assessment may be based on the conditions existing at the time of the occurrence. The evaluation must be carried out

to the extent necessary to fully assess the safety consequences and safety margins associated with the occurrence.

For occurrence related to nuclear safety, an assessment of the occurrence under alternative conditions must also be included if the occurrence could have been more severe (e.g., the facility would have been in a condition not analyzed in the Safety Analysis Report) under reasonable and credible alternative conditions such as power level or operating mode. For example, if the occurrence happened while the facility was at 15 percent power and the same occurrence could have taken place while the facility was at 100 percent power, and, as a result, the environment, safety, or health consequences would have been considerably more serious, the assessment must describe those conditions and consequences. This field is not required for 10-Day Reports or 10-Day Update Reports; however, it is required for Final Reports.

27. #Programmatic Impact. Describe the impact of the occurrence on the program or project affected. This could be a loss of data, loss of plant availability for a specified period, additional costs, schedule delays, or other measurable consequences of the occurrence. This field is not required for 10-Day Reports or 10-Day Update Reports; however, it is required for Final Reports.
28. #Impact Upon Codes and Standards. If the occurrence affects the requirements of national codes and standards, program standards, or DOE Orders, a statement regarding the adequacy of the codes or standards shall be provided, along with any recommended changes. This field is not required for 10-Day Reports or 10-Day Update Reports; however, it is required for Final Reports.
29. #Final Evaluation and Lessons Learned. This item shall be completed only in the final Occurrence Report. The final evaluation shall include a discussion of cause if appropriate, to supplement Item 23, including an analysis of the root, direct, and contributing causes and contributory factors disclosed by investigation. Include any lessons that others might learn from the occurrence that could be of importance to other facility operators or that should be addressed in personnel training or facility procedures. Consequences of the occurrence and steps taken to alleviate those consequences should not be described here unless they contribute to an understanding of the occurrence. This field is not required for 10-Day Reports or 10-Day Update Reports; however, it is required for Final Reports.
30. #Similar Occurrence Report Numbers. Indicate by their report numbers any similar occurrence(s) of which you are aware for this or other facilities. Also, identify any known commercial reactor Licensee Event Reports (LERs) or other related documents that describe similar occurrences. The purpose of this item is to

identify, if recognized, occurrences that might suggest a generic problem. This field is not required for 10-Day Reports or 10-Day Update Reports, however, it is a required field for Final Reports.

31. DOE Facility Representative Input. The DOE Facility Representative or designee should provide his or her evaluation of the occurrence, including an evaluation of the initial and proposed corrective actions and all follow-up by the contractor, and should describe any other actions that DOE has taken since the occurrence. The Facility Representative may supplement such information with subsequent additional entries, as appropriate. After completing the input, enter the Facility Representative's name and the date. If ORPS is being used, the Facility Representative's name and the date will be automatically entered by the computer. This is not a required field on any report.
32. Program Manager Input. The DOE Program Manager or designee should provide his or her evaluation of the occurrence, including an evaluation of the initial and proposed corrective actions and all follow-up, and should describe any other actions that DOE has taken since the occurrence. The DOE Program Manager may supplement such information with subsequent additional entries, as appropriate. If a Final Occurrence Report is being rejected, the DOE Program Manager may use this space to indicate why. This is not a required field on any report.
33. #Signatures. For Final Occurrence Reports that are transmitted in hard-copy (i.e., classified reports), all three signatures shall be on the hard copy report prior to distribution. In addition to the written signatures, the typed names and titles of the signatories shall be provided. If ORPS is being used, the Facility Manager's or designee's name, after transmitting the Final Report to the mainframe computer, will automatically be provided with an indication of acceptance. The Final Report will then be available for the Facility Representative and Program Manager, or their designees, to review and accept. Once all three individuals have accepted the report, it will automatically be available to all DOE Elements for their use in analysis and trending. This field is required for Final Reports only.

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

PAGE CHANGE

DOE 5000.3B Chg 1
7-2-93

SUBJECT: OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS INFORMATION

1. PURPOSE. To transmit revised pages to Attachment I of DOE 5000.3B, OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS INFORMATION, of 1-19-93.
2. EXPLANATION OF CHANGE. To incorporate changes to a requirement in Attachment 1, page 7, paragraph D, that incorrectly referenced a table in the DOE Radiological Control Manual. This task was placed in the "unusual occurrence" category instead of the "off-normal" category; and, as written, would have resulted in a large number of unwarranted occurrence reports being prepared. Therefore, the requirement has been revised and moved from the unusual occurrence category to the off-normal category.
3. FILING INSTRUCTIONS.

<u>Remove Page</u>	<u>Dated</u>	<u>Insert Page</u>	<u>Dated</u>
Atch I, pages 7 and 8	1-19-93	Atch I, page 7 Atch I, page 8	7-2-93 1-19-93

- a.
- b. After filing the attached pages, this transmittal may be discarded.

BY ORDER OF THE SECRETARY OF ENERGY:



ARCHER L. DURHAM
Assistant Secretary for Human
Resources and Administration

DISTRIBUTION:
All Departmental Elements

INITIATED BY:
Office of Environment, Safety
and Health



D. Loss of Control of Radioactive Material / Spread of Radioactive Contamination

Emergency

- (a) Identification of radioactive contamination offsite in excess of 100 times the surface radioactivity levels specified in DOE Order 5400.5, Figure IV-1, that has not been previously identified in a DOE annual report or in any CERCLA/RCRA activity/report.

Unusual Occurrence

- (a) Any fissile material in a process or nonprocess system outside primary confinement boundaries not designed or expected to accommodate such material.
- (b) Identification of radioactive contamination offsite in excess of the surface radioactivity levels specified in DOE Order 5400.5, Figure IV-1, that has not been previously identified in a DOE annual report or in any CERCLA/RCRA activity/report.

Off-Normal

- (a) Any unexpected accumulation of fissile material within primary confinement boundaries.
- (b) Any unplanned spill of liquids in excess of 1 gallon, contaminated with radioactive material in concentrations greater than the DCG values listed in DOE Order 5400.5, Figure III-1, not already classified and reported in conjunction with other requirements of this Order.
- (c) Identification of removable or fixed contamination in excess of three times the appropriate limits specified in Table 2-2 of the DOE Radiological Control Manual in any area not posted for the control of radiological contamination. Posted areas for the control of radioactive contamination are:
- Radiological Buffer Areas established to control contamination;
 - Contamination or High Contamination Areas; or
 - Fixed Contamination Areas (for areas limited to fixed contamination only)

- E. A deficiency such that a structure, system, or component vital to safety or program performance does not conform to stated criteria and cannot perform its intended function.

Vertical line denotes change.

Unusual Occurrence

- (a) Failure or performance degradation of any Class A Equipment which prevents satisfactory performance of the design function when it is required.
- (b) Events or conditions indicative of failure or performance degradation of systems designed, installed, and operated for the protection of facility or co-located facility workers (e.g.; fire protection systems, excluding those in office spaces; radiation monitoring systems such as continuous air monitors; criticality alarm systems; shielding; etc.), which prevent satisfactory performance of their design function (e.g. to alarm, control spread of contamination, etc.) when it is required.
- (c) Discovery of a defective item or service involving Class A equipment.
- (d) A reportable occurrence caused by a defective item or service.

Off-Normal

- (a) Performance degradation of Class A equipment which does not prevent satisfactory performance of the design function or which occurs when the equipment is not required.
 - (b) Events or conditions indicative of performance degradation of systems designed, installed, and operated for the protection of facility or co-located facility workers (e.g.; fire protection systems, excluding those in office spaces; radiation monitoring systems such as continuous air monitors; criticality alarm systems; shielding; etc.), which do not prevent satisfactory performance of their design function (e.g., to alarm, control spread of contamination, etc.) or which occurs when the system is not required (e.g., discovered during testing or inspection).
 - (c) Failure or significant performance degradation of any Class B Equipment.
 - (d) Discovery of a defective item or service involving Class B equipment.
- F. Violation of procedures (include maintenance requirements and system lineups) or inadequate procedures either of which result in adverse effects on performance, safety, or reliability.

Unusual Occurrence

- (a) Any occurrence which violates technical safety requirements.
- (b) Maintenance performed on Class A equipment without meeting the required plant conditions for non-availability.
- (c) Incorrect maintenance (including calibration) on or unauthorized modifications to Class A equipment.