

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

ORDER

DOE 5000.3

SUBJECT: UNUSUAL OCCURRENCE REPORTING SYSTEM

11-7-84

1. PURPOSE. To set forth policy, assign responsibility, and provide criteria and instructions for reporting unusual occurrences that have programmatic significance at Department of Energy (DOE) operations, analyzing the information reported, and disseminating the analysis results.
2. CANCELLATION. DOE 5484.2, UNUSUAL OCCURRENCE REPORTING SYSTEM, of 8-13-81.
3. SCOPE. The provisions of this Order apply to all Departmental Elements and contractors performing work for the Department as provided by law and/or contract and as implemented by the appropriate contracting officer.
4. REFERENCES.
 - a. DOE 5480.1A, SAFETY REQUIREMENTS FOR PACKAGING OF FISSILE AND OTHER RADIOACTIVE MATERIALS, Chapter III, of 5-1-81, which establishes requirements for the packaging of fissile and other radioactive materials.
 - b. DOE 5484.1, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION INFORMATION REPORTING REQUIREMENTS, of 2-24-81, which establishes requirements and procedures for the reporting of information having environmental protection, safety, or health protection significance for DOE operations.
 - c. DOE 5500.2, EMERGENCY PLANNING, PREPAREDNESS, AND RESPONSE FOR OPERATIONS, of 8-13-81, which contains the emergency planning and preparedness needs within DOE and assigns such responsibilities to the appropriate organizations.
 - d. DOE 5500.3, REACTOR AND NONREACTOR NUCLEAR FACILITY EMERGENCY PLANNING, PREPAREDNESS, AND RESPONSE PROGRAM FOR DEPARTMENT OF ENERGY OPERATIONS, of 8-13-81, which establishes emergency plans and procedures for radiological emergencies occurring in existing or planned DOE reactor and nonreactor nuclear facilities.
 - e. DOE 5500.5, PUBLIC AFFAIRS POLICY AND PLANNING REQUIREMENTS FOR A FUEL SUPPLY DISTRIBUTION EMERGENCY, of 12-30-82, which establishes responsibilities and requirements for DOE public affairs actions in case of a fuel supply disruption emergency.

DISTRIBUTION:
All Departmental Elements

INITIATED BY:
Office of Deputy Assistant
Secretary for Environment,
Safety, and Health

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- f. DOE 5610.3, PROGRAM TO PREVENT ACCIDENTAL OR UNAUTHORIZED NUCLEAR EXPLOSIVE DETONATIONS, Chapter VIII, "Nuclear Explosive Occurrence Reporting, Analysis, and Information Dissemination Program," of 12-18-80, which establishes a program whereby operating experiences, unusual occurrences, incidents, or accidents occurring during operations with nuclear explosives, which have potential nuclear safety implications, are reported and analyzed.
- g. DOE 5633.1, VIOLATIONS OF LAWS, LOSSES, AND INCIDENTS OF SECURITY INTEREST, of 7-28-80, which establishes procedures to assure timely and effective investigation and other follow-up action relating to violations of Federal laws and to certain losses of security interest.

5. PROGRAMMATIC EXCLUSIONS.

- a. Activities under the cognizance of the Deputy Assistant Secretary for Naval Reactors and the Power Marketing Administrations are excluded from this Order.
- b. Incidents of safeguards and security interest are reported under DOE 5633.1.
- c. The nuclear explosive occurrence reporting, analysis, and information dissemination required by DOE 5610.3, chapter VIII, are not subject to this Order.
- d. Events involving emergency planning, preparedness and response and subject to DOE 5500.2, 5500.3, or 5500.5 are not reported under this Order.

6. DEFINITIONS.

- a. Facility. Equipment, systems, buildings, utilities, services, and related activities whose use is directed to a common purpose at a single location. Examples include accelerators, storage areas, test loops, nuclear reactors, coal conversion plants, magnetohydrodynamics (MHD) experiments, windmills, radioactive waste disposal systems and burial grounds, testing laboratories, research laboratories, and accommodations for analytical examinations of irradiated and unirradiated components.
- b. Unusual Occurrence. Any unusual or unplanned event having programmatic significance such that it adversely affects or potentially affects the performance, reliability, or safety of a facility.

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- c. Unusual Occurrence Report (UOR). A written evaluation of an unusual occurrence that is prepared in sufficient detail to enable the reviewer to assess its significance, consequences, or implications and to determine the means of avoiding a recurrence with minimal additional inquiry.
- d. Generic Significance. Those unusual occurrences which by their nature are capable of occurring at more than one specific DOE facility, location, or site.
- e. Program Secretarial Officer (PSO). Outlay program managers which include: the Assistant Secretaries for Conservation and Renewable Energy; Fossil Energy; Nuclear Energy; Policy, Safety, and Environment; Defense Programs; and the Directors of Energy Research and Civilian Radioactive Waste Management. For purposes of this Order, this definition also includes the Administrators of the Bonneville Power and Western Area Power Administrations.
- f. Program Significant or Programmatic Significance. Factors that relate to cost, delay, efficiency, maintainability, performance, reliability, and safety as developed by the PSO.

7. POLICY AND OBJECTIVE.

- a. It is the DOE policy that:
 - (1) Unusual occurrences be promptly reported to responsible authority and investigations documented;
 - (2) Unusual or unplanned events which meet minimum criteria established for programmatic significance be formally reported as unusual occurrences;
 - (3) Reports of unusual occurrences be critically reviewed by the originator, cognizant field and responsible DOE Headquarters organizations;
 - (4) Corrective action be taken to prevent or minimize the probability of recurrence of unusual occurrences; and
 - (5) Information of generic significance be disseminated to other interested DOE organizational elements.
- b. The principal objectives of this policy are to:
 - (1) Establish the UOR system as a management mechanism within the contractor organizations and DOE line organizations for achieving operational improvements;
 - (2) Enhance management awareness of significant technical and operational problems; and

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- (3) Identify responsibilities for implementation and overview of the UOR system.

8. RESPONSIBILITIES.

a. The Deputy Assistant Secretary for Environment, Safety and Health (PE-20), who reports to the Assistant Secretary for Policy, Safety, and Environment (PE-1), has overall responsibility for overview of unusual occurrence reporting activities, develops policies and procedures, interfaces with similar reporting systems and specifically shall:

- (1) Assemble UORs, Nuclear Regulatory Commission Inspection and Enforcement Bulletins, Circulars and Notices and other information derived from licensee event reports which may be of benefit to the safe and reliable operation of DOE facilities;
- (2) Review and evaluate all UORs and the information in 8a(1) above for multi-program generic quality assurance and safety significance;
- (3) Provide results of generic evaluations as Unusual Occurrence Information Notices to appropriate organizations;
- (4) Maintain a central UOR file of UORs and information from 8a(1) above;
- (5) Overview the implementation of the UOR system to appraise its effectiveness; and
- (6) Analyze UORs to determine generic trends and lessons-to-be-learned for dissemination, as appropriate.

b. Heads of Field Organizations shall:

- (1) Establish a system for prompt notification, evaluation, and reporting of unusual occurrences for DOE facilities and related activities under their cognizance;
- (2) Assure that contractor procedures for internal reporting of unusual or unplanned events are compatible with and serve the policies and objectives of this Order;
- (3) Assure that contractors prepare and promulgate formal procedures for implementing this Order. Such procedures shall define responsibility for preparation, review, distribution, and followup of UORs, and include provisions for extending UOR criteria to subcontractors;

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- (4) Assure that contractors exercise reasonable judgment in deciding what constitutes an unusual occurrence and that UORs are prepared for all unusual occurrences, are reviewed for classified information content as appropriate and are acted upon;
- (5) Assure that the originating organizations review individual UORs for clarity, completeness and accuracy prior to distribution, and perform periodic audits of their reporting system;
- (6) Review each UOR for the quality of the report and assure its timely closeout through the completion of corrective actions and issuance of a final report;
- (7) Verify that actions are taken by responsible organizations to minimize or prevent recurrence;
- (8) Assure that UORs and similar information received from other organizations are disseminated to appropriate organizational elements and reviewed for lessons-to-be-learned and possible adverse trends;
- (9) Perform independent management reviews and audits to verify UOR system effectiveness; and
- (10) Execute provisions contained in paragraph 9 of this Order.

c. Program Secretarial Officers (PSO) shall:

- (1) Perform the activities defined in paragraph 8b for DOE programs not assigned to a field organization or project office.
- (2) Review and evaluate UORs received from various sources for programmatic impact and trends;
- (3) When appropriate, provide results of UOR evaluations to PE-1 and other appropriate DOE organizations;
- (4) Verify that effective UOR activities are implemented by DOE organizations for programs under their cognizance; and
- (5) Take action to define those factors considered to be programmatically significant for programs under their cognizance.

d. All PSOs and Heads of Field Organizations shall assign a UOR coordinator responsible for maintaining awareness of DOE facilities and activities to which this Order applies, and serving as the focus for the UOR system for that organization. The UOR coordinator will receive copies of UORs,

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evaluations and other related information from the originating organization, and shall assure that this information is distributed to appropriate DOE and contractor personnel and reviewed for possible programmatic implications to their facilities and activities.

9. REPORTING CRITERIA.

- a. Events reported in accordance with the Orders referenced in paragraph 4 should not be reported as unusual occurrences unless otherwise directed by a PSO. Environment, safety and health events meeting DOE 5484.1, Type C, reporting requirements, as well as the criteria in paragraph 9b below, shall be reported also as UORs. Field organizations shall use Attachment 1 as guidance only, and to support their responsibilities in paragraph 8b establish listings of examples of events considered to be reportable for facilities or sites under their jurisdiction which shall be submitted for information to cognizant PSOs and PE-20.
- b. The following criteria shall be considered as the basis for reporting of an unplanned event as a UOR through the cognizant field organization. The criteria are applicable to the extent that reporting against the criteria is practical, and is consistent with the policy of this Order and the guidance of the cognizant PSO. Nothing in this Order shall preclude any field organization or PSO from establishing more detailed or extensive criteria than those reflected herein.
 - (1) Any violation of an approved technical specification or operating safety requirement or other safety limits prescribed by DOE.
 - (2) An unplanned event in any portion of a program conducted in accordance with approved requirements and procedures which results in a program significant delay.
 - (3) A deficiency such that a system or component vital to program performance does not conform to stated criteria and cannot perform its intended function.
 - (4) A deficiency in construction, manufacturing, operation, testing, maintenance, modification, or damage to a structure, system, component, or facility vital to program continuity which to redesign or repair or otherwise establish the adequacy of the item to perform its intended function will result in a program significant delay or cost.
 - (5) An unplanned event during field, laboratory, or facility testing which results in the loss of essential test data, or is due to a computer code or programming error that will result in a program

significant delay to evaluate, redesign, retest, or repair to meet stated design or test requirements or to otherwise establish the validity of the data.

- (6) A series of related events which individually do not warrant reporting under preceding criteria one through five, but which collectively are considered significant enough to warrant reporting.
- (7) A near miss which, defined as an event if coupled with another credible event or condition, could result in a Type A or Type B occurrence as defined in DOE 5484.1.

10. PROCEDURES.

- a. Immediate Notification. Each unusual occurrence shall be reported expeditiously to the cognizant DOE field organization as soon as conditions permit when the general nature and extent of the occurrence are known. Field organizations shall promptly report to the appropriate PSO those unusual occurrences of major significance.
- b. Investigation. Each unusual occurrence shall be investigated and evaluated to determine probable cause and programmatic impact. Remedial and corrective actions (e.g., design changes, personnel training, or procedure revision) shall be initiated to resolve immediate and long-term problems.
- c. Written Report. Each unusual occurrence shall be reported in writing. The UOR shall be written so that it can be readily understood by reviewers who may not be familiar with the circumstances, facilities, or activities involved. UORs may be of three types: initial, interim, and final. A combined initial-final report may be submitted for an unusual occurrence that can be quickly resolved. Classified information shall not be included in a UOR. Reports concerning certain sensitive facilities or activities shall be reviewed for classification where appropriate.
 - (1) Initial Report. An initial (or initial-final) UOR shall be issued within a period of time to be established by the field organization, not to exceed 10 working days.
 - (2) Interim Report. At the discretion of the field organization, an interim UOR may be required. An interim UOR will provide current status and progress achieved toward resolution as well as schedule for completion and issuance of a final UOR.
 - (3) Final Report. A final UOR shall be issued when corrective action has been completed. The final UOR shall retain the information provided in the initial and interim UORs as necessary to provide a complete

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description of the occurrence, an evaluation (including a determination of cause), and action taken to prevent recurrence. A final UOR shall be revised and reissued if it is determined to be incomplete or requires clarification.

- (4) Status Report. A contractor quarterly report of all UORs initiated or remaining open during the past quarter shall be submitted to the cognizant field organization by the 20th of the month immediately following the end of the quarter. At the discretion of the cognizant PSOs, the Field Organization shall submit status reports to Headquarters. The quarterly UOR status report shall include each UOR number, title, evaluation, current resolution status, and name of person directly responsible for resolution.
- d. UOR Format and Content. The specified UOR format and content is provided in Attachment 2.
- e. Review. Each UOR shall be reviewed and signed by management of the originating organization. Those responsible for review shall assure that:
- (1) Each unusual occurrence is clearly, completely, and accurately described (with drawings and sketches as needed);
 - (2) Evaluation of the occurrence includes a concise explanation of cause, immediate actions taken, and effect on the program or the facility; and
 - (3) Corrective actions are sufficient to treat the underlying causes and prevent recurrence.
- f. Distribution. Each UOR shall be distributed to appropriate PSOs, the Office of Quality Assurance and Standards (PE-23) and other organizations in accordance with distribution list(s) established by the Field Organizations in concert with the appropriate PSOs.

BY ORDER OF THE SECRETARY OF ENERGY:



WILLIAM S. HEFFELFINGER
Director of Administration

CATEGORIZED TYPICAL EXAMPLES OF EVENTS

The following examples are offered as guidance to assist field organizations in developing examples for their facilities or programs of reportable events subject to the criteria listed in paragraph 9b:

1. Loss of capability by a protective system (control, safety, shutdown) to perform its intended function.
 - a. Partial or total loss of the radiation shield on Type B packages (Ref. DOE 5480.1A, Chapter III).
 - b. Failure of the shipping cask external cooling system.
 - c. Failure of effluent monitors, high radiation alarms, and evacuation signals.
 - d. Failure of a safety channel to cause an emergency shutdown (for any reason) when conditions are more severe than those expected to produce a scram on an unscheduled shutdown.
 - e. Discovery of a shut valve controlling a sprinkler system when the reason for the closure is unknown.
 - f. Failure of a building or site alarm system where an emergency power supply was not adequate to supply backup power for the duration of the outage.
 - g. Failure of a primary supply system (water tank, reservoir water supply mains) due to freezing, mechanical damage, shut valves, earthquake, droughts, leakages, or other unplanned cause.
 - h. Failure of instrument systems designed to warn of airborne hazards, criticality, stack releases, etc.
2. Unplanned activation of an emergency system.
 - a. Transfer of electrical loads to emergency diesel or battery sources.
 - b. Activation of isolation valves.
 - c. Activation of poison injection systems.
 - d. Unscheduled shutdowns.
3. Violation of a DOE approved technical specification, or operating safety requirement or other safety limits prescribed by DOE.
 - a. Violation of critical mass limits.

- b. Violation of power, pressure, temperature or transient limits specified for safety purposes.
 - c. A reactivity transient which momentarily exceeds the established safety limit for reactor power (or neutron flux).
 - d. An increased fire loss potential beyond DOE limits where the increase is due to a failure of administrative controls to limit the values at risk.
 - e. An instrument found set to provide an emergency shutdown signal at a level less conservative than the actuation limit.
 - f. Failure to maintain required shutdown margins during refueling activities.
 - g. Deviations from designated operational limits of predicted critical control rod positions.
4. Degradation of a barrier designed to contain radiation or toxic material or unplanned release of radioactive or toxic material past this barrier.
- a. Leaks from pipes, valves, tanks, cells, or drums which could create onsite, offsite, or public concern.
 - b. Holding pond failure or overflow.
 - c. Failure of stack emission controls.
 - d. Failure or deterioration of radiation shields or engineer safety systems.
 - e. Breach in a glovebox operation.
 - f. Release of toxic materials which results or could result in exposures to personnel.
 - g. Failure of ventilation system, or fire doors and dampers in radioactive cells.
 - h. A crack detected in a reactor primary system pipe, or a reactor primary system leak.
 - i. Channeling in charcoal filters.
 - j. Unexpected fuel cladding breaches or melting of fuel or fuel cladding material.
 - k. Loss or dilution of nuclear poison in systems where it is used to protect against a nuclear criticality.
5. The loss of control of radioactive material or processes involving radioactive substances which indicates either operating or administrative control inadequacies.

- a. Release of radioactive material in excess of Release Guides or of unknown or unusual composition.
 - b. Personnel contamination.
 - c. Loss of accountability of a nuclear source in excess of exempt quantities as specified in 10 CFR 30, Appendix B and State Standards.
 - d. Loss of contamination control which results in spread of contamination outside established contamination/radiation zones.
 - e. Personnel exposure in excess of approved limits.
6. Unplanned accumulation of fissionable material in a process system.
- a. Condensation in a gaseous diffusion plant.
 - b. Precipitation in equipment designed for dilute solution.
 - c. Residue buildup in any process equipment.
 - d. Malfunctioning of a bypass cleanup system of a homogeneous reactor that leads to discovery that fuel has crystallized (solidified) in the process vessel.
7. Unplanned or unexpected change in a process condition or variable (temperature, pressure, pH, reactivity, flow, concentration, radiation level, etc.) of importance to performance, reliability or safety whether abrupt or long term.
- a. pH changes resulting in precipitation of fissile materials in equipment designed to be safe for dilute processes.
 - b. Unexpected radiation levels during radioactive liquid batch transfers which could cause excessive personnel exposure.
 - c. Significant changes in reactor coolant chemistry conditions.
 - d. Excessive increased or decreased temperatures in a gaseous diffusion stage.
 - e. (Abrupt) - On restarting the reactor, the critical rod positions indicate a core reactivity well outside the expected error of the predicted reactivity value.
 - f. (Long-term) - A fuel channel T (temperature) has increased over the past week of operation until it is now only 5 Celsius below the maximum acceptable, instead of the normal 20 Celsius.

- g. Unexplained or unexpected reactivity changes, whether transient or permanent.
8. Fire or explosion, which substantially affects or directly threatens safe or reliable operation of the facility.
- a. A glovebox fire, a transformer fire, a shield material fire, or any fire involving fissionable or other radioactive materials.
 - b. Explosions as applicable to above.
 - c. Explosions in process or storage equipment.
 - d. Fire in a reactor or process control room, including fire limited to within control panels.
 - e. A roof or lube oil fire at a gaseous diffusion plant.
 - f. Fire in electronic equipment, electrical power supply or switchgear supplying or controlling critical process or safety equipment.
 - g. Fire in electronic equipment such as tape drives and process control electronics.
 - h. Fire in electrical power supply or switchgear supplying or controlling critical process or safety equipment.
 - i. Detonation or fire occurring in chemical explosives intended for use in nuclear weapons or devices.
 - j. Fires and explosions in containment areas (hoods, gloveboxes, cells) that result in releases of hazardous materials.
9. Unauthorized use of flammable, toxic, explosive, corrosive, or other unsafe or dangerous processes, chemicals, materials, or methods previously prohibited.
10. Failure of a process controlling device of importance to safety and reliability to function as intended during operation, or periodic in-service testing.
- a. Failure of pressure or temperature controls in a gaseous diffusion plant.
 - b. Failure of pH control in a dissolving or precipitating operation.
 - c. Failure of gas release detectors and alarms.
 - d. Failure of control and isolation valves.

- e. Failure of a safety rod in a reactor to scram on demand during a pre-startup check.
 - f. Failure of oven, boiler, or furnace controls; especially flame-failure devices, fuel shutoff valves, and temperature limit switches.
 - g. Loss of pressure protection on pressure vessels.
 - h. Failure of circuits that signal unsafe/safe conditions when radiation producing machinery (X-ray, accelerators, etc.) is activated/deactivated.
11. Design deficiency, construction or fabrication error found subsequently during construction, testing, modification or operation which, had it remained undetected, could have had an adverse effect on the performance, reliability or safety of the facility at some point during its design lifetime.
- a. Discovery of a design deficiency, such as an overstress condition or errors in dimensions or tolerances, which requires extensive modification of fabricated components or systems.
 - b. Improper location of temperature sensing devices or high radiation detectors.
 - c. Insufficient fire protection devices.
 - d. Inadequate shielding for the projected operation.
 - e. Detected cracking of a reactor component. Breakage could potentially result in interference with safety devices or coolant flow.
 - f. Failure to install fire dampers or automatic door and damper releases, or improper installation of such devices preventing proper operation.
 - g. Omission of vents, drains, curbs, or other devices intended to limit flammable vapor or liquid accumulations.
 - h. Personnel barrier or guards missing or not correctly installed.
 - i. Inadequate or improperly located air sampling devices.
 - j. Inadequate insulation of heat transfer surfaces that would reduce design life of concrete containments.
 - k. Failure of a prototype component reactor powerplant system during testing or failure of an important test.
 - l. Use of improper welding electrodes or materials.

~~m. Latent defects or rejections of materials or equipment recognized subsequent to inspection.~~

12. Condition resulting from natural events or man-made activities which substantially affects or threatens performance, reliability or safe operation.
 - a. Disruption of water supply.
 - b. Personnel operations errors.
 - c. Nearby construction activity that results in an unplanned loss of all water to the complex containing a reactor using water for cooling purposes.
 - d. Any penetration of an existing fire/radiation barrier which temporarily diminishes its integrity and thereby increases the risk to people, property, or the environment.
 - e. Flood, rainstorms, or windstorm occurrences that damage stacks, ducts, filter banks, or power sources or cause soil stability problems threatening important buildings or facilities.
 - f. Soil stability problems affecting important utility lines or threatening the structural integrity of vital buildings.
 - g. Natural or man-made barriers that limit emergency access to, or egress from, important facilities.
13. Deviation from approved procedures that results in performance, reliability or safety degradations.
 - a. Operation of equipment or processes at temperatures and pressures above those specified.
 - b. Repeated or flagrant failure of workers to use protective equipment.
 - c. Deviation from a procedure that requires verbatim compliance.
 - d. Damage to systems/components attributable to failure to follow approved operating procedures.
 - e. Unauthorized bypassing of a safety system.
14. Foreign object or substance introduced or discovered in a facility which affects or could threaten the performance, reliability or safety of operation.
 - a. A foreign object recovered from the plenum of a heat exchanger.

- b. Radioactive contaminated material in a non-radioactive waste disposal system.
 - c. Valve internals discovered missing.
 - d. Foreign objects of significant size lost in a reactor coolant system.
 - e. Oil discovered in a sodium reactor coolant system.
 - f. Water in a system to be operated in the absence of moisture.
15. Structure, system, or component failure which directly affects or threatens performance, reliability or safe operation.
- a. Failure of structural timbers, girders, beams, prestressed concrete, and similar items.
 - b. Failure of fire fighting equipment.
 - c. Vibration resulting in a component in the reactor vessel being free of its normal constraints.
 - d. Failures that allow personnel to enter hazardous areas unknowingly. (Work spaces with high residual ozone, CO, CO₂, airborne radioactivity, high gamma levels, etc.)
 - e. Failure of ventilation/isolation systems to perform intended functions.
 - f. Unexpected leakage, rupture, or degradation of integrity (e.g., cracks, excessive corrosion) of equipment or systems.
16. Series of related events which individually do not warrant reporting, but which collectively reach a level of substantial concern related to the performance, reliability, or safety of the facility.
- a. Failure of a redundant circuit; e.g., a diode in a reactor scram circuit found shorted during a routine maintenance check. The scram function is not impaired because of a second good diode. Checks of other identical circuits reveal a number of similar failures.
 - b. Failures or impairments of individual fire detectors or sprinklers which do not prevent the overall system from functioning but which are occurring in increasing numbers or with increasing frequency.
 - c. Frequent tripping of circuit breakers, ground fault circuit interrupters, and similar protective devices of a common type or which service a common area.

- d. Numerous or increasingly frequent failures of one make or type of safety device, such as fire hose, extinguisher cylinders, or breathing air cylinders, during periodic pressure testing programs.
17. Performance, reliability or safety problems caused by inaccurate or inadequate information on design requirements, specifications, or procedures.
 - a. Lifting or handling damage of critical items.
 - b. Major insulation or air conditioning inadequacies.
 - c. Errors in engineering analytical codes.
 18. Unexpected failure of a system or component essential to facility operation to meet performance requirements during operations or in-service testing.
 - a. Containment failing to meet its leak-test requirements.
 - b. Cooling system failures that cause capacity to go below facility required minimums.
 19. Inadequate experimental test design, fabrication, or performance that jeopardizes a major test facility or major program objective.
 - a. Failure to obtain important temperature or flow information on an in-reactor experiment.
 - b. Unexpected in-reactor experiment meltdown.
 - c. Gross contamination of reactor coolant caused by experiment failure.
 - d. Components of an experiment in the reactor vessel are found to be missing when the experiment is removed.
 20. Operating problems or failures that detract from the safety or reliability of a test or experiment, reduce the amount of useful information to be obtained from the test activities, or result in significant delay of facility operations.
 21. Any event or occurrence defined by the DOE field organization to warrant a UOR.

UNUSUAL OCCURRENCE REPORT

NAME OF LABORATORY SITE OR CONTRACTOR

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1. UOR Number _____
2. Status and Date: Initial _____
 Interim _____
 Final _____

3. Division or Project: _____

4. Facility, System, or Equipment: 5. Date of Occurrence: 6. Time of Occurrence:

7. Subject of Occurrence: _____

8. Apparent Cause: Design _____ Material _____ Personnel _____
 Procedure _____ Other _____ (Explain in Item 14.)

9. Description of Occurrence: _____

10. Operating Conditions of Facility at Time of Occurrence: _____

11. Immediate Evaluation: _____

INSTRUCTIONS FOR COMPLETING AN UNUSUAL OCCURRENCE REPORT

The following item numbers correspond with the numbers used on the sample UOR. Efforts concerning certain sensitive facilities of activities may contain classified information and shall be reviewed for classification where appropriate. Spacing of items in the form may be altered as necessary to provide adequate space for full exposition of items. When there is insufficient space for providing complete information on pages 1 and 2, add a supplemental page for additional information referencing back to the appropriate text item(s) number and title.

1. UOR Number. Assign an alphanumeric designation consisting of the acronym of the contractor/laboratory, the last two digits of the year in which the incident occurred, and a sequential report identification number. This number shall be followed by a facility designation consisting of the acronym of the facility in which the event occurred followed by either: (1) a sequential number; or (2) the last two digits of the year followed by a sequential number; e.g., EG&G 81-21-ATR 81-8. The number assigned to an initial UOR shall be used to identify subsequent interim and final UORs for the same occurrence.
2. Status and Date. Show all dates. Dates of initial and interim reports should be shown on all subsequent issues of the same UOR.
3. Division or Project. Identify in full the organizational unit responsible for the facility in which the occurrence took place and the cognizant PSO.
4. Facility, System, or Equipment. Identify the facility in which the occurrence took place, and the system or equipment item involved as applicable.
5. Date of Occurrence. Enter the date of the occurrence, if known; otherwise enter the date on which the occurrence was identified and so state.
6. Time of Occurrence. Enter the exact time of the occurrence, or the best approximate time if the exact time is not known. This may be important in the case where a sequence of events may have occurred, and thus provide some clue as to what might have happened.
7. Subject of Occurrence. Enter a brief title or description (20 words or less) that best details the nature of the occurrence.
8. Apparent Cause. Check the box that best describes the apparent cause. If more than one cause, check all that apply and identify the primary cause with a "P." If the box "Other" is checked, it is to be explained under item 14.

9. Description of Occurrence. Enter a clear, concise, objective description of what happened and what was observed including, when applicable, the mode of failure and the effect of the failure. Do not include in this item an evaluation of the occurrence or corrective actions taken. Include, as attachments, copies of photos, sketches, or drawings, when appropriate, for clarification.
10. Operating Conditions of Facility at Time of Occurrence. Describe the operational status of the facility or equipment at the time of failure, including pertinent temperatures, pressures, or other parameters necessary for evaluation of the occurrence and its consequences. If this information is not applicable, enter "Does not apply."
11. Immediate Evaluation. With the information available, provide a description of the immediate evaluation as to the cause of the unusual occurrence and its effect or possible effect on the plant, system, program, etc.
12. Immediate Action Taken and Results. Describe the immediate or remedial actions taken to return the facility, system, or equipment item to service, or to correct or alleviate the anomalous condition, and the results of those actions. These may be 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.
14. Final Evaluation and Lessons Learned. This item should be completed only in the final UOR. The final evaluation should include a discussion of cause, if appropriate, to supplement item 8, including an analysis of the root 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 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 unless they contribute to an understanding of the occurrence.
15. Corrective Action. Check the appropriate box and describe the action taken to prevent recurrence. Corrective action which is identical to the immediate action identified in Item 12 need not be repeated; however, a reference to Item 12 should be entered. The UOR cannot be considered final until corrective action has been completed.
16. Programmatic Impact. Describe the impact on the program or project affected by the occurrence. This could be a loss of data, loss of plant availability for a specified period, additional costs, delay in schedule, or other measurable consequences of the occurrence.

17. Impact Upon Codes and Standards. If the unusual occurrence impacts upon the requirements of the national codes and standards, or program standards, the adequacy of the codes or standards to prevent recurrence should be stated.
 18. Similar Unusual Occurrence Report Numbers. Indicate any similar unusual occurrences for this facility or other facilities of which you are aware. Also enter any known commercial reactor License Event Report (LER) or other related documents that describes a similar occurrence. The purpose of this item is to identify, if recognized, occurrences that might suggest a generic problem.
 19. Signatures. Each UOR must be signed by, as a minimum, the individual originating the report, the cognizant supervisor, and the responsible line manager. In addition to the written signatures, the typed names and titles of the signers shall be provided.
- Note: Each page of the UOR shall be numbered (preferably at the top right) using the following format: Page _____ of _____. The total number of pages is to include any continuation pages or extra attachments.