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Event Reporting Program

The Event Reporting Program is designed to integrate the requirements applicable to the Ames Laboratory for Occurrence reporting, Price-Anderson Amendments Act (PAAA) Noncompliance reporting, and Incidents of Security Concern reporting into a unified process. It also provides assurance to management and the Department of Energy (DOE) that issues connected with events that do not meet the DOE threshold reporting requirements are addressed through appropriate corrective actions.

Comments and questions regarding this plan should be directed to the contact person listed below:

Name:	Tom E. Wessels	Mark L. Murphy
Title:	ESH&A Manager	Chief Operations Officer
Address:	G40 TASF	311 TASF
Phone:	515/294-4965	515/294-2618

Sign-off Record:

Approved by: _____ Date: _____
Manager, Environment, Safety, Health and Assurance
Program Director, Safeguards and Security

Approved by: _____ Date: _____
Manager, Facilities Services
Emergency Coordinator

Approved by: _____ Date: _____
Associate Director, Sponsored Research Administration

Approved by: _____ Date: _____
Chief Operations Officer
Facility Manager

Approved by: _____ Date: _____
Science and Technology Division Director

Approved by: _____ Date: _____
Deputy Director

Approved by: _____ Date: _____
Laboratory Director

Note: Original Sign-off Record with signatures is on file with ESH&A.

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1.0 Revision/Review Log

This plan shall be reviewed every three years at a minimum.

<u>Revision Number</u>	<u>Effective Date</u>	<u>Contact Person</u>	<u>Pages Affected</u>	<u>Description of Revision</u>
0	02/09/93	Struss		Initial Issue
1	09/30/94	Struss	All	Roles & Responsibilities
2	02/01/99	Murphy	All	Roles & Responsibilities
3	09/28/99	Murphy	All	Roles & Responsibilities, Title Change, PAAA and Security notations.
4	05/01/00	Murphy	All	Expansion of criteria to address DOE O 232.1A, section 8.c. and incidents of security concern.
5	05/01/04	Wessels	All	Complete Rewrite of Plan
6	08/01/07	Wessels	All	Doc&Rec\DCP\Revision Description\Plan 40000.001 rev 6 revdesc.doc
7	12/1/07	Wessels	4,6,16,19	Doc&Rec\DCP\Revision Description\Plan 40000.001 rev 7 revdesc.doc

2.0 Purpose and Scope

Ames Laboratory is a government owned, contractor-operated national research laboratory, which conducts basic and applied research for the U.S. Department of Energy. Ames Laboratory is located on the Iowa State University campus in Ames, Iowa. Government owned buildings are located on land leased from the State of Iowa under a long-term lease. Some space for Laboratory activities is rented from the University.

There are no major facilities at this site, such as a nuclear reactor or accelerator. Ames Laboratory purchases utility services from the City of Ames and the University, therefore no power plants, water-treatment, sewage, or solid-waste facilities are operated by the Laboratory. The City of Ames provides fire protection, under contract. Local Law Enforcement Agency assistance is provided by Iowa State University Department of Public Safety (ISU DPS) and the City of Ames Police Department.

Ames Laboratory conducts no classified research, has no classified documents and does not sponsor any security clearances. Ames Laboratory is required by contract to implement the requirements of DOE Manual 231.1-2, *Occurrence Reporting and Processing of Operations Information*, DOE Manual 470.4-1 Chg. 1 Section N - *Incidents of Security Concern, Price-Anderson Amendments Act (PAAA) of 1988*, 10 CFR Part 851 *Worker Safety and Health Program*, and the DOE Office of Enforcement's *Enforcement Process Overview*. This plan describes the internal practices utilized to implement these requirements.

3.0 Event Reporting Policy (40000.002)

It is the policy of Ames Laboratory to encourage a positive attitude toward reporting events to ensure that Ames Laboratory management and DOE officials are kept fully and currently informed of all events and conditions which could affect the health and safety of the public, seriously impact the intended purpose of Laboratory facilities, have a noticeable adverse effect on the environment, impact safeguards and security, or endanger the health and safety of workers.

It is also the policy of Ames Laboratory that the Event Reporting Program is established and shall include assignment of responsibilities and the establishment of processes in accordance with DOE requirements. The Event Reporting Program Plan and related documents shall address identification and categorization of events, notification of DOE, and preparation of reports, investigation and analysis, corrective action development, tracking, and

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verification, and distribution of lessons learned.

4.0 Roles and Responsibilities

The roles and responsibilities for activities related to Event Reporting are defined below.

4.1 Identification of Events

Events are discovered through a variety of methods including: observation by line management, internal and external reviews, and self-proclamations. Ames utilizes all of these methods and has designated an Event Screening Team to review information from a variety of sources for identification of potentially reportable events. Also, the Environment, Safety, Health and Assurance office (ESH&A) and the Event Categorization Team are involved with identification of potentially reportable events. The Event Screening Team consists of the following individuals:

- G.P. Jones (chair), ESH&A, Fire and Plant Protection Specialist
- Jim Withers, ESH&A, Assistant Manager and Industrial Hygiene Specialist
- Shawn Nelson, ESH&A, Industrial Safety Specialist
- Mike Vaclav, Facilities Services, Plant Engineer
- Mike McGuigan, ESH&A, Radiation Safety Officer
- Dan Kayser, ESH&A, Environmental Specialist
- Jim Brazelton, P&PS, Packaging and Transportation Specialist
- Bill Sears, Cyber Security

4.2 Categorization of Events

Upon notification of the Event Categorization Team by a member Event Screening Team or another individual that a potentially reportable event has occurred, an initial categorization shall be performed within two hours by at least two members of the Event Categorization Team. The Event Categorization Team consists of the following individuals:

- **Facility Manager:** Mark L. Murphy, Chief Operations Officer
Alternate = Tom E. Wessels, ESH&A Manager
- **Event Reporting Officer:** Tom E. Wessels, ESH&A Manager, also Facility Security Officer (FSO)
Alternate = James H. Withers, Assistant Manager of ESH&A
- **Emergency Coordinator:** Mark E. Grootveld, Facility Services Manager
Alternate = Mike Vaclav, Plant Engineer
- **Event Investigators and Reporters:** G. P. Jones, Fire and Plant Protection Specialist
Shawn Nelson, Industrial Safety Specialist

4.3 Prompt Notification

Upon categorization of an event, the Event Categorization Team is responsible for notification of the Ames Laboratory Facility Manager. Likewise, the Facility Manager is responsible for prompt notification of DOE officials and in some cases other regulatory entities. The Chief Operations Officer, Mark Murphy is the Ames Laboratory Facility Manager, Tom Wessels (ESH&A) is the Facility Manager Designee, and Mark Grootveld (FSG) is the Alternate Facility Manager Designee

4.4 Written Reports

G. P. Jones and Shawn Nelson, Event Investigators and Reporters, have responsibility for preparing written reports.

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4.5 Investigation and Analysis

G. P. Jones and Shawn Nelson, Event Investigators and Reporters, have responsibility for investigation of events and the analysis of information for determination of the causes of events.

4.6 Approval of Initial, Updates, and Final Written Reports

The ESH&A manager (Tom Wessels), the ESH&A assistant manager (Jim Withers), or the acting ESH&A manager has responsibility for the approval of the initial, updates, and final written reports.

4.7 Analyses and Identification of Recurring Events

The Event Screening Team and the Event Categorization Team have responsibilities for the periodic performance analysis of Ames Laboratory information and events for identification of recurring events. Also, an annual trend analysis is the responsibility of the Laboratory's Industrial Safety Specialist, Shawn Nelson, according to Procedure 10200.041, *Trend Analysis of ES&H Concerns*.

4.8 Corrective Action Development, Tracking and Verification

The responsibilities for development, tracking and verification of closure for corrective actions related to reportable events are outlined in Procedure 10200.039 *Corrective Action Development, Tracking, and Verification*. Line management has responsibility for the development of corrective actions, with consensus of the issue identifier and ESH&A. ESH&A's Industrial Safety Specialist, Shawn Nelson, has responsibility for tracking corrective actions. Line management and ESH&A have responsibility for verification of completion and effectiveness of corrective actions, when appropriate.

4.9 Lessons Learned

ESH&A's Fire and Plant Protection Specialist, G. P. Jones, is the Ames Laboratory operating experiences program coordinator and thereby has responsibility for issuance of lessons learned related to reportable events and Ames LOCAL events, according to Plan 10200.020, *Operating Experiences and Lessons Learned Program*. Shawn Nelson, Industrial Safety Specialist, has backup responsibility as operating experiences program coordinator.

5.0 Event Reporting Process

Definitions

Radiological Activities: The requirements in 10 CFR Part 835 are applicable to all DOE activities involving occupational exposure to ionizing radiation of DOE employees and DOE contractor and subcontractor employees, except for an activity specifically excluded under Part 835.1(b).

Nuclear Facility: As per 10 CFR 830.3, nuclear facility means reactor and nonreactor nuclear facilities.

PAAA Noncompliance: PAAA Noncompliance is a failure to comply with an applicable nuclear safety requirement. A noncompliance of requisite safety significance will be the subject of a Notice of Violation. Isolated minor noncompliances involving minimal or low safety significance will normally not be subject to enforcement action unless they are repetitive or multiple examples appear indicative of a larger programmatic breakdown.

WSH Noncompliance As per 10 CFR Part 851, a noncompliance of the Worker Safety and Health Program which meets or exceeds the thresholds established by the DOE Office of Enforcement criteria as described in its *Enforcement Process Overview*.

Violation: A violation is a noncompliance that DOE has evaluated and found to be a significant failure to comply with an applicable nuclear safety requirement. DOE identifies a violation through a Notice of Violation.

Enforcement Action: The issuance of an enforcement letter, Consent Order, or a Notice of Violation with or without a civil penalty.

Safety Significant SSC: Ames Laboratory has one system recognized as a Safety Significant SSC (Structures, Systems and Components). That is the system developed for the hydrogen fluoride operation in 147 Metals Development Building (Activity 30411.003, Hydrofluorination of Rare Earth Oxides). The hood exhaust, detectors and valves are interlocked to prevent employee exposure to HF gas should a leak develop. If a leak is detected in either the room or hood, the cylinder valve is automatically closed to stop the flow of HF into the sample furnace. Inadequate exhaust from the hood will close the valves, as well. Exposure to HF gas would pose an acute fatality risk. Performance degradation of these SSCs should be considered for reportability as a Group 4 - Facility Status, Subgroup A Safety Structure/System/Component Degradation.

The processes utilized to support the Event Reporting Program are described below.

5.1 Event Screening

Events are identified by direct observation of equipment or process malfunctions, log or record reviews, operator recognition of their own or others' errors, or other means. Employees must take appropriate immediate action to stabilize and/or place the facility/operation in a safe condition and ensure that any potential environmental effects are stabilized and workers are treated for injuries sustained. Also, the appropriate line management should record and/or archive all pertinent information, including details concerning the discovery of the event and actions taken to stabilize or place the facility/operation in a safe condition.

Events and conditions related to the Ames Laboratory, which may have an adverse effect on the safety, health, security, quality assurance, or have an operational or environmental implication are required to be reported to:

- Facility Manager (Mark L. Murphy, Chief Operations Officer, 515-294-2618),

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- Event Reporting Officer (Tom E. Wessels, 515-294-4965),
- Members of the Event Categorization Team
- ESH&A Office (515-294-2153),
- Facilities Services Office (515-294-7895), or
- Plant Protection Section (PPS) Office during non-work hours (515-294-2155).

A team of key Ames Laboratory personnel, the Event Screening Team, is responsible for determining if issues, concerns, findings, and other operational data are potential reportable events as per ORPS (DOE Order 231.1A *Environment, Safety and Health Reporting*), PAAA (10 CFR 820), and Incidents of Security Concern (DOE Order 471.4 *Incidents of Security Concerns*).

The following table includes the sources of information to be reviewed by members of the Event Screening Team and the primary and secondary responsible individuals for initial review and documentation of the sources of information.

Source of Information	Review Responsibility	
	Primary	Secondary
Independent Walk-Through findings	Shawn Nelson	G. P. Jones
Program/Department Walk-Through findings reported to ESH&A	Shawn Nelson	G. P. Jones
Safety/Security Concerns Program Issues	Shawn Nelson	G. P. Jones
External Reviews	Shawn Nelson	G. P. Jones
Internal Audit Issues	Mark Murphy	Shawn Nelson
Injury/Illness reports	G. P. Jones	Shawn Nelson
Plant Protection Section Tour Discrepancy Reports	G. P. Jones	Shawn Nelson
Issues from Topical Appraisals	Jim Withers	G. P. Jones
Radiological Survey Results	Mike McGuigan	Jim Withers
X-ray Inspections and Reviews	Mike McGuigan	Jim Withers
Readiness Reviews	Jim Withers	Shawn Nelson
Fume Hood Testing Results	Jim Withers	Shawn Nelson
Waste Management Pickup Observations	Dan Kayser	Shawn Nelson
FSG CAMs and Repair Tickets	Mike Vaclav	Shawn Nelson
ALARA Reports and Meeting Notes	Mike McGuigan	Jim Withers
IH Exposure Monitoring Reports	Jim Withers	Shawn Nelson
IH Chemical Management Laboratory Reviews	Jim Withers	Dan Kayser
Electrical Safety (Committee discussions and observations)	Shawn Nelson	Mike Vaclav
Safety Review Committee (SRC) discussions and minutes	Jim Withers	Mike Vaclav
Fire Safety Committee (FSC) discussions and minutes	G. P. Jones	Shawn Nelson
Building Key Management Issues	Mike Vaclav	G. P. Jones
Packaging and Transportation Issues	Jim Brazelton	Dan Kayser
Cyber Security Issue	Bill Sears	Chris Strasburg

Analysis of issues identified during internal and external assessments should be screened according to the following guidance.

- All issues identified as or equivalent to Level 1 Findings (e.g., deficiencies of major significance that warrant a high level of attention on the part of line management) shall be submitted for categorization.
- All issues identified as or equivalent to Level 2 or Level 3 Findings shall be screened.

The screening process consists of the following:

1. The primary and/or secondary responsible individual(s) review(s) the source of information when the information is developed. The review includes:
 - Analysis of the information relative to the review criteria for considerations of event categorization.

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- Initiation of Event Categorization Form (Form 10200.149) for each specific item presented to the Event Categorization Team.
 - Documentation that the review was performed (Memo or e-mail to file by Screening Team member).
2. The Event Screening Team will meet monthly, or as requested by its members, and discuss reviews of information sources performed by Screening Team members since the last meeting.

Issues are designated as potential reportable items according to the event screening criteria, which is based on the specific criteria and guidance presented in DOE requirements for Occurrence Reports, PAAA Noncompliances, and Incidents of Security Concern. The Laboratory's screening criteria is included as Attachment 1 of this plan.

5.2 Event Categorization

Upon notification of the Event Categorization Team by a member of the Event Screening Team or another individual that an occurrence or a potentially reportable event has occurred, the cognizant Event Categorization Team member shall notify the Event Reporting Officer or the Facility Manager. At least two members of the Event Categorization Team shall perform an initial categorization within two hours, except Operational Emergencies, which are categorized according to requirements of DOE Order 151.1C, *Comprehensive Emergency Management System*.

Ames LOCAL Events

Ames Laboratory maintains an internal tracking system onsite as a management tool for issues identified and schedules developed to correct those issues. Events that do not reach the thresholds defined below for Occurrence Report, NTS PAAA Noncompliances, or Incidents of Security Concern (IMI-1, IMI-2, IMI-3, IMI-4) can be classified as AMES LOCAL events and tracked on ALCATS (Ames Laboratory Corrective Action Tracking System). The AMES LOCAL events information must be readily accessible by DOE when they are onsite. The AMES LOCAL events must be distinguished as:

- AMES LOCAL – Occurrence
- AMES LOCAL – PAAA
- AMES LOCAL – Security Incident
- AMES LOCAL – CAIRS
- AMES LOCAL – WSH

For PAAA Noncompliances, should a non-NTS reportable noncompliance be reviewed by DOE and considered for enforcement action, the contractor's recording and tracking of the noncompliance would be considered contractor-identified and reported for purposes of mitigation under DOE's enforcement policy if the noncompliance is clearly below NTS reporting thresholds. However, a significant mischaracterization of the facts or safety significance of the circumstances of a noncompliance could negate any consideration of mitigation.

5.2.1 Occurrence Reports

Ames Laboratory must categorize events, except Operational Emergencies, within 2 hours of discovery. Events can be categorized as Occurrences, within the following significance categories, according to the criteria included in Attachment 2, Occurrence Reporting Criteria, or can be categorized as an AMES LOCAL - Occurrence event at the discretion of the Event Categorization Team.

- Operational Emergencies (OE): Operational Emergency Occurrences are the most serious occurrences. The prompt notification requirements, definitions, criteria, and classifications of operational emergencies and appropriate responses are provided in DOE O 151.1C, *Comprehensive Emergency Management System*. Occurrence Reports must be completed in the ORPS database.
- Significance Category (SC) 1: Not Operational Emergencies and have a *significant impact* on safe

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facility operations, worker or public safety and health, regulatory compliance, or public/business interests.

- Significance Category (SC) R: Identified as **recurring**, as determined from the periodic performance analysis of occurrences across a site.
- Significance Category (SC) 2: Not Operational Emergencies and have a **moderate impact** on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.
- Significance Category (SC) 3: Not Operational Emergencies and have a **minor impact** on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests.
- Significance Category (SC) 4: Not Operational Emergencies and have **some impact** on safe facility operations, worker or public safety and health, public/business interests.

If the consequences are not fully determined or the event exceeds the threshold of more than one criterion, then the event must be categorized at the higher criteria level being considered. The occurrence criterion must be elevated, maintained, or lowered, as information is made available.

Occurrence Report Categorizing Instructions

1. An event can meet multiple reporting criteria that establish it as an occurrence. **All of the specific reporting criteria applicable for an occurrence must be identified.** Some criteria are “secondary” in that they compliment other reporting criteria that require occurrence reporting. In these cases, all of the applicable criteria must be recorded. Each criterion is denoted by its Group, Subgroup (if applicable), and sequence number (#). Thus, for example, the violation of a safety limit is denoted as Group 3, Subgroup A, Sequence (1) or “3A(1).”
2. The attached Occurrence Reporting criteria lists a specific Significance Category (SC) for each criterion, between the sequence number (#) and the criterion text. Significance Categories are designated as “OE” for Operational Emergencies, “R” for recurring occurrences, or 1, 2, 3, or 4. Thus, for example, the Significance Category for a Stop Work Order issued by a DOE office, criterion 4B(1), is SC 2.
3. Operational Emergencies, Significance Category 1, and some other occurrences in lesser significance categories require prompt notification to the DOE HQ OC. **Asterisks (*) next to the significance categories denote occurrences requiring prompt notification to the DOE HQ OC.**
4. Initiating events that are considered Operational Emergencies (see DOE O 151.1C) must be reported in Group 1. In addition, Type A or B accident investigations (see DOE O 225.1A) must be reported. While some Operational Emergencies and some other ORPS occurrences involve conditions that would be sufficient to initiate accident investigations, criterion 10(1) is used to report the initiation of Type A or B accident investigations.

5.2.2 PAAA Noncompliances

The first criterion to be considered is whether the occurrence or condition involves a noncompliance with a nuclear safety requirement set forth in a PAAA Rule or Ames Laboratory Plan 10202.004, Radiation Protection Program (RPP), a Rule implementation plan. Once it is established that the occurrence or condition in question indeed involves a noncompliance with a nuclear safety requirement, the noncompliance should then be appropriately documented and corrected. Criteria for determining whether a noncompliance is reportable have been developed by DOE and are detailed in Table 3-1 and 3-2 (Attachment 3.) These threshold criteria aid in the identification of noncompliances that, because of their potential or actual adverse impact to the environment or the health and safety

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of workers or the public, merit additional management evaluation by both the contractor and DOE. PAAA noncompliances meeting or exceeding Table 3-1 or 3-2 reporting thresholds should be reported to the NTS. Noncompliances below the reporting thresholds (i.e., non-NTS reportable noncompliances) should be recorded in ALCATS as AMES LOCAL – PAAA. Reporting a noncompliance that is below an NTS reporting threshold as an AMES LOCAL - PAAA into ALCATS also constitutes formal reporting to DOE for PAAA enforcement purposes.

It is recognized that some judgment is required for Table 3-1 issues, such as to conclude that a series of noncompliances constitutes a programmatic problem. DOE recommends that where a condition indicates a sufficient concern to warrant some remedial action to correct a common underlying cause or weakness in controls, the condition be considered a programmatic noncompliance and reported to the NTS. Such reporting does not mean the issue is a serious safety noncompliance. However, DOE will expect some level of dialogue through the NTS to assure that proper steps are being taken to address the noncompliance and root causes.

Where there is legitimate disagreement between the contractor and DOE over whether a noncompliance should be reported to the NTS, it is recommended that the disagreement be addressed at the appropriate level between DOE and contractor management. If agreement cannot be reached, the contractor is encouraged to report the noncompliance. The contractor may note its disagreement with DOE in the NTS report.

DOE expects contractors to submit noncompliance reports to the NTS without contractors making a detailed evaluation of safety significance, or a prediction of whether DOE would pursue an investigation after receiving the report, as a precondition for reporting.

5.2.3 Worker Safety and Health (WSH) Violations

On February 9, 2006, DOE issued the Worker Safety and Health Program rule, 10 CFR Part 851, which includes in subpart E the enforcement process to be applied to worker safety violations, and, in Appendix B, the enforcement policy for such violations.

The Office of Enforcement issued an *Enforcement Process Overview*, which describes factors that the Office of Enforcement considers in judging positive steps taken by contractors, as well as the factors affecting the application of enforcement sanctions. If enforcement actions are considered necessary, they are applied in accordance with the provisions of the enforcement policies noted in the Overview. The goal of the Department of Energy’s enforcement policies is to improve occupational safety and health for workers at DOE facilities. This goal is the prime consideration in exercising enforcement discretion and in application of mitigation.

The simple occurrence of an event in any of the listed categories is not enough to warrant NTS reporting. Reportable noncompliances require the identification of a 10 CFR Part 851 noncompliance (e.g., 29 CFR Parts 1910 and 1926) in conjunction with the event. The Office of Enforcement is interested only in those portions of the criteria with direct worker safety and health implication. Contractors identifying a significant worker safety and health noncompliance in association with an event type of category not listed on the table should evaluate the event for NTS reportability.

There are three (3) primary conditions that warrant reporting in the Noncompliance Tracking System (NTS) for violations of worker safety requirements of 10 CFR Part 851 in accordance to the *General Statement of Enforcement Policy* in 10 CFR Part 851, Appendix B. These are:

1. Noncompliances Associated with Occurrences [ORPS] (as defined by DOE Manual 232.1-2)
2. Management Issues Noncompliances (as defined by the operational procedures of NTS)
3. Other Significant Conditions

The NTS reporting criterion for worker safety and health noncompliances associated with Occurrences is presented in Table 5-1 of Attachment 5. NTS reporting is not necessary if the event lacks an associated noncompliance.

Programmatic, repetitive, and intentional violations and misrepresentations of worker safety and health

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noncompliances are to be reported as noted in Table 5-2 of Attachment 5. A programmatic problem is typically discovered through a review of multiple events or conditions with a common cause, but may also be found through causal analysis of a single event. Repetitive problems are generally two or more events that involve substantially similar conditions, locations, equipment, or individuals. Repetitive issues tend to be narrower in scope than programmatic problems and it is reasonable to assume that they should have been prevented by a contractor's corrective actions from a previous noncompliance condition. They typically involve similar circumstances or root causes, separated by a period of time that suggests the possibility of a common solution. Intentional violations and misrepresentations may involve the intentional falsification of records. An NTS report is warranted, irrespective of the significance of the activity involving a false record because the act of falsifying the information is serious and warrants significant DOE and contractor management attention. Other significant conditions related to the worker safety and health program are reportable as noted in Table 5-2 of Attachment 5, when the conditions meet the criteria of Severity Level I (serious) violations and high relative risk.

Noncompliances that do not meet the NTS reporting criteria are to be reported in the Ames Laboratory Corrective Action Tracking System (ALCATS).

5.2.4 Incidents of Security Concern

Incidents of security concern are actions, inactions, or events that have occurred at a site that:

- Pose threats to national security interests and/or critical DOE assets,
- Create potentially serious or dangerous security situations,
- Potentially endanger the health and safety of the workforce or public (excluding safety related items),
- Degrade the effectiveness of the safeguards and security program, or
- Adversely impact the ability of organizations to protect DOE safeguards and security interests.

When an event is suspected to be an Incident of Security Concern, the Laboratory has 24 hours to examine and document all pertinent facts and circumstances and review the event according to the criteria included in Attachment 4, Incidents of Security Concern Criteria, to determine whether an Incident of Security Concern has occurred. During this period, the suspected incident must be categorized by an IMI number. The categorization can change based on information developed during the inquiry. Incidents of Security Concern are categorized by an Impact Measurement Index (IMI) number or can be categorized as an AMES LOCAL –Security Incident event at the discretion of the Event Categorization Team. If it is determined that an incident of security concern did not occur and the event is not categorized as an Ames Local event, no further action is required.

Four categories of security incidents have been established based on the relative severity of the incident. Each of the four categories is identified by an impact measurement index (IMI) number as follows (from most severe to least severe): IMI-1, IMI-2, IMI-3, and IMI-4. The basis for each IMI category is provided below:

- IMI-1** Actions, inactions, or events that pose the most serious threats to national security interests and/or critical DOE assets, create serious security situations, or could result in deaths in the workforce or general public.
- IMI-2** Actions, inactions, or events that pose threats to national security interests and/or critical DOE assets or that potentially create dangerous situations.
- IMI-3** Actions, inactions, or events that pose threats to DOE security interests or that potentially degrade the overall effectiveness of the Department's safeguards and security protection program.
- IMI-4** Actions, inactions, or events that could pose threats to DOE by adversely impacting the ability of organizations to protect DOE safeguards and security interests.

There may be instances where security incidents are required to be reported through other Department of Energy reporting systems (e.g., Computer Incident Advisory Capability, Occurrence Reporting and Processing System).

5.3 Prompt Notification

Prompt notification by the Facility Manager of DOE officials and in some cases other regulatory entities is detailed

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in the DOE requirements. The Chief Operations Officer, Mark Murphy is the Ames Laboratory Facility Manager, Tom Wessels (ESH&A) is the Facility Manager Designee, and Mark Grootveld (FSG) is the Alternate Facility Manager Designee. After categorization, the Facility Manager will proceed with oral and written notification reports according to the notification requirements for the specific Occurrence Category as described in DOE M 232.1-1A and the Ames Laboratory Emergency Plan.

Notification Phone Numbers

Ames Site Office Manager, Cynthia Baebler:

cynthia.baebler@ch.doe.gov

Office: 630-252-1563
Ames: 126 B HWH 515-294-6695
Home: 630-553-1328
Cell: 630-417-2825
FAX: 630-252-2412

Ames Facility Representative, Mike Saar:

Michael.saar@ch.doe.gov

Office: 630-252-2245
Ames: 126 B HWH 515-294-6695
Home: 630-553-9038
Cell: 630-234-0644
FAX: 630-252-2412

DOE Headquarters (HQ) Operations Center (OC):

doehqoc@oem.doe.gov

Non-emergency: 202-586-8100
Emergency: 202-586-8100
FAX: 202-586-8485

5.3.1 Occurrence Reports**ORPS Prompt Notification Report (via e-mail) Submittal Schedule** (NLT = Not Later Than)

OE	NLT 15 min. if further classified NLT 30 min. if not further classified	Facility Rep	DOE HQ OC
SC 1	NLT 2 hours after categorization	Facility Rep	DOE HQ OC
SC R	None Required		
SC 2	NLT 2 hours after categorization	Facility Rep	DOE HQ OC (if asterisk, or if directed by Facility Rep)
SC 3	NLT 2 hours after categorization	Facility Rep	DOE HQ OC (if asterisk)
SC 4	NLT 2 hours after categorization	Facility Rep	DOE HQ OC (if asterisk)

5.3.2 PAAA Noncompliances

DOE has not defined “prompt identification” or “prompt notification” for PAAA noncompliances, in terms of hours or days since the facts of a noncompliance will be evaluated on a case-by-case basis. For enforcement purposes, prompt reporting is generally covered by reporting to the NTS within 20 calendar days after determining a noncompliance condition exists.

5.3.3 Incidents of Security Concern

Incidents of security concern initial reports for IMI-1, IMI-2, and IMI-3 (as well as those for IMI-4 incidents involving foreign nationals) will be sent to the DOE Headquarters (HQ) Operations Center (OC) using DOE F 471.1, “Security Incident Notification Report.” Initial security incident reports will be forwarded on the following criteria.

IMI-1: Within 1 hour following categorization as IMI-1, the Laboratory will transmit a DOE F 471.1 to the DOE HQ OC. If a verbal notification of the incident is made to the DOE

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HQ OC, then a follow-up transmission of the DOE F 471.1 to the DOE HQ OC must be made.

IMI-2 and IMI-3: Within 8 hours following categorization as IMI-2 or IMI-3, the Laboratory site will transmit a DOE F 471.1 to the DOE HQ OC. If a verbal notification of the incident is made to the DOE HQ OC, then a follow-up transmission of the DOE F 471.1 to the DOE HQ OC must be made.

Reporting Incidents Receiving Media Attention: In addition to the IMI reporting time frames, the Office of Security must be notified within 8 hours of any security incidents that have been or will be reported in the media. The initial DOE F 471.1 and any subsequent updates must clearly identify the fact of media reporting.

Reporting Incidents Associated with Foreign Nationals: Security incidents having any association with foreign nationals will be clearly identified and reported on the initial DOE F 471.1 and in any related update or follow-on activity pertaining to the incident, including incidents categorized as an IMI-4. For security incidents involving any credible information that a foreign national or an agent of a foreign power is involved, the closest element of the Office of Counterintelligence (OCI)/Office of Defense Nuclear Counterintelligence (ODNCI) will be notified.

5.4 Written Reports

G. P. Jones and Shawn Nelson have responsibility for preparation of written reports based on the results of initial information and the investigation.

5.4.1 Occurrence Reports

Written Occurrence Reports shall be prepared as described in DOE G 231.1-1, *Occurrence Reporting and Performance Analysis Guide*, and directly entered into the computerized Occurrence Reporting and Processing System (ORPS). Occurrence Reports should document the significance, nature, cause, and the extent of the event or condition, as well as the immediate action taken, the corrective actions, and the lessons learned.

Occurrence reports containing classified information Unclassified Controlled Nuclear Information (UCNI), Official Use Only (OUO), or other controlled information, such as information of counterintelligence concern, must **not** be entered into the ORPS database, but a sanitized information version must be submitted to ORPS. Any information of a potentially controlled nature should be reported to either the Ames Laboratory Safeguards and Security (S&S) Program Director or the Ames Laboratory S&S Manager.

ORPS Written Notification Report Submittal Schedule (NLT = Not Later Than)

OE	COB next business day (NLT 80 hours)
SC 1	COB next business day (NLT 80 hours)
SC R or SC 2	COB next business day
SC 3	NLT 2 business day
SC 4	NLT 2 business day (Only a short form is required)

ORPS Update Report and Submittal Schedule

If the required analysis cannot be completed within 45 calendar days, an Update Report, with a detailed explanation of the delay and an estimated date for the Final Report, must be submitted within the 45 days.

OE, SC 1, SC R, SC 2, SC 3	As needed
SC 4	None needed

ORPS Final Report and Schedule

OE, SC 1, SC R, SC 2, SC 3	45 days
SC 4	None needed

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If the Final Report is not approved by the Facility Representative or the Program Manager as appropriate, a revised Final Report must be submitted within 21 calendar days of the disapproval.

The following writing instructions are to be utilized when preparing ORPS reports:

- The report should enable the general reader to understand the basic “what, who, when, where, how” of the event, the safety issues involved, and the actions taken.
- The Subject/Title and the first paragraph of the Occurrence Description should relay the essential nature of the event (i.e., a summary of the occurrence in newspaper style).
- All information should be clear and succinct. Avoid redundant and unnecessary text, and lengthy “log book” accounts, unless a discussion of the event in chronological order is considered essential to understanding the event.
- Complex and more significant occurrences should warrant a greater level of detail. Significance Category 4 occurrences would likely need only a short paragraph under Occurrence Description. However, all reports should present enough information so that the general reader understands why the event needs to be reported and what the effect is.
- Avoid jargon and uncommon or site/facility-specific abbreviations and acronyms. If used, acronyms should be initially spelled out.
- Unless necessary to record and explain the event (e.g., suspect/counterfeit items or material), use general descriptions of equipment, procedures, etc., rather than presenting lengthy detailed titles and the numbers and letters assigned to those items.
- Quantify the level of contamination, dose, release, and damage (e.g., estimate the acres of wild land burned) when possible, instead of merely stating a reportable limit was exceeded.
- Use active rather than passive voice whenever possible. For example, write, “*the electrician* severed the conduit” rather than “the conduit was severed.”
- When appropriate for clarification, photos, sketches, and drawings must be maintained with the ORPS occurrence report record. In addition, sites are encouraged but not required to make photos, sketches, and drawings available via a Web page, with the Web page address included as a hyperlink in the ORPS report.

5.4.2 PAAA Non Compliance Reports

Price-Anderson Amendments Act non-compliance will be reported through the Noncompliance Tracking System (NTS), a centralized database maintained by DOE. The NTS allows contractors to promptly report noncompliances and take advantage of the Enforcement Policy's mitigation provision. System requirements for accessing and use of the NTS are included in the Noncompliance Tracking System (NTS) Users Manual.

Contractors are expected to provide appropriate information in an NTS report such that DOE understands the circumstances of the noncompliance. The “Description of Noncompliance” field in NTS should contain a clear, concise, factual, and objective description of the noncompliance including any impact to the environment, safety, or health of workers or the public. If the information in this field is not clear or if more information is needed, a DOE representative may request additional information. DOE will not take enforcement action based solely on information in the NTS. Contractors may include their preliminary assessment of a noncompliance's safety significance in the noncompliance condition description portion of an NTS report.

The Office of Price-Anderson Enforcement, in coordination with appropriate DOE field elements, review noncompliances reported to the NTS. When appropriate, DOE staff will make an entry to an NTS report to indicate the report has been reviewed and is being closed without any further enforcement action. If enforcement action is to be taken, steps outlined in DOE's operational procedures described in Enforcement of DOE Nuclear Safety Requirements under Price-Anderson Amendments Act of 1988 will be pursued.

5.4.3 Incidents of Security Concern

Initial Incident Reporting

Incidents of security concern initial reports for IMI-1, IMI-2, and IMI-3 (as well as those for IMI-4 incidents involving foreign nationals) will be sent to the DOE Headquarters (HQ) Operations Center (OC) using DOE F 471.1, *Security Incident Notification Report* and including a Ames Laboratory tracking number.

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Each facility will maintain a compilation of IMI-4 incidents by month. These monthly summaries, which will contain the number of open and closed security incidents by IMI-4 subtopic, the total initiated for the calendar month, and a running total of open and closed incidents for the calendar year, will be provided to the Office of Security. If no reportable incidents occurred during the calendar month, a summary stating this will be forwarded to the Office of Security by the fifth working day of each month.

Initial security incident reports will be based on the following criteria.

IMI-1: Within 1 hour following categorization as IMI-1, the Laboratory will transmit a DOE F 471.1 to the DOE HQ OC. If a verbal notification of the incident is made to the DOE HQ OC, then a follow-up transmission of the DOE F 471.1 to the DOE HQ OC must be made.

IMI –2 or IMI-3: Within 8 hours following categorization as IMI-2 or IMI-3, the Laboratory will transmit a DOE F 471.1 to the DOE HQ OC. If a verbal notification of the incident is made to the DOE HQ OC, then a follow-up transmission of the DOE F 471.1 to the DOE HQ OC must be made.

Reporting Incidents Receiving Media Attention: In addition, the Office of Security must be notified within 8 hours of any security incidents that have been or will be reported in the media. The initial DOE F 471.1 and any subsequent updates must clearly identify the fact of media reporting.

Reporting Incidents Associated with Foreign Nationals: Security incidents having any association with foreign nationals will be clearly identified and reported on the initial DOE F 471.1 and in any related update or follow-on activity pertaining to the incident, including incidents categorized as an IMI-4. For security incidents involving any credible information that a foreign national or an agent of a foreign power is involved, the closest element of the Office of Counterintelligence (OCI)/Office of Defense Nuclear Counterintelligence (ODNCI) will be notified.

Reporting Incidents Associated with Sensitive Programs: Only the initial report, DOE F 471.1, is required for incidents involving activities associated with sensitive programs. These programs will include the Sensitive Compartmented Information (SCI) Program, Special Access Programs (SAPs), Technical Surveillance Countermeasures Program, Counterintelligence Program, or other programs identified by the Office of Security. All subsequent reporting will be handled “within channels” until such time as the inquiry report has been distributed. The date of the inquiry report will be transmitted to the Office of Security for database entry.

Incident/Inquiry Update Reporting

Only initial reports will be transmitted through the DOE HQ OC. All subsequent security incident reports will include the Ames Laboratory tracking number and are transmitted to the Office of Security. Changes in IMI categorizations require resubmission of DOE F 471.1.

IMI-1 or IMI-2: A monthly status report will be provided to the Office of Security and the cognizant Primary DOE Organization for IMI-1 or IMI-2 incidents that have not been closed within 60 working days of notification of the incident. Status reports will consist of the original DOE F 471.1, completed and planned actions, identification of issues precluding closure,

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and estimated date of closure. Status reports are due by the fifth working day of each month.

IMI-3: Status reports are not required for IMI-3 incidents.

IMI-4: Each facility will maintain a compilation of IMI-4 incidents by month. These monthly summaries, which will contain the number of open and closed security incidents by IMI-4 subtopic, the total initiated for the calendar month, and a running total of open and closed incidents for the calendar year, will be provided to the Office of Security. If no reportable incidents occurred during the calendar month, a summary stating this will be forwarded to the Office of Security by the fifth working day of each month.

Closing Inquiries

IMI-1 and IMI-2: Incidents are considered closed upon completion of the inquiry report. The inquiry report must be completed within 60 working days of the incident categorization or a status report must be provided.

IMI-3: Incidents are considered closed upon completion of DOE F 5639.3, "Report of Security Incident/Infraction" (except for completing the section on assignment and acceptance of the security infractions), transmission of the completed DOE F 5639.3 to the Office of Security, and completion of actions required in local procedures.

MI-4: Incidents are considered closed upon completion of the DOE F 5639.3 or associated local procedures.

A sanitized (unclassified) copy of the DOE F 5639.3 will be provided to the local personnel security office for placement in the appropriate personnel security file.

5.5 Investigation and Analysis

The Event Investigators and Reporters of the Event Categorization Team (G. P. Jones and Shawn Nelson) have responsibility for investigation of events and the analysis of information for the purpose of improving operations through determination of the causes of events and the appropriateness of corrective actions. A graded approach, based on the significance, severity, or risk associated with the event or condition is utilized when determining the level of effort required for the investigation and causal analysis of an event. Investigation and analysis of events reported as Occurrences, NTS PAAA Noncompliances, and Incidents of Security Concern is performed according to the following guidance. System Improvements' TapRooT® Causal Process is utilized. It is believed that most investigations and analyses should be completed within 45 days of determining that a noncompliance exists.

Inquiry officials for Incidents of Security Concern must be appointed in writing by the head of the field element, the head of the Office of Headquarters Security Operations, or the Office of Security. Inquiry officials may be either Federal or contractor employees but must have previous investigative experience or Departmental inquiry training and must be knowledgeable of appropriate laws, Executive orders, Departmental directives, and/or regulatory requirements.

- 1) Contractors may conduct inquiries into incidents of security concern; however, if a violation of law is determined or suspected, or the inquiry establishes information that a foreign power or an agent of a foreign power is involved, the contractor must stop further inquiry actions and notify the cognizant Departmental safeguards and security office, which will assume further notification and reporting responsibilities, to include coordination with OCI/ODNCI. In such instances, the contractor must document the known circumstances surrounding the incident of security concern and submit all accumulated data to the cognizant Departmental safeguards and security office.*

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- 2) *In all instances where the cognizant Departmental safeguards and security office disagrees with the contractor report, the cognizant Departmental safeguards and security office assumes supplemental inquiry responsibilities.*
- 3) *When the inquiry into an incident of security concern necessitates communication with Agencies/organizations external to the Department (e.g., the U.S. Postal Service, the FBI, or other Federal agencies), a Federal employee must be responsible for performing all such communication.*
- 4) *Contact with Federal, state, and local law enforcement officials may be made by contractors with the concurrence of the head of the field element.*

Reportable Event Investigation and Analysis Process

The following actions are performed as part of the Investigation and Analysis of Reportable Events:

1. Collect data as soon as possible following the event to ensure all relevant information associated with the event is identified. Investigators are not authorized to detain individuals for interviews or to obtain sworn statements; however, they may conduct consensual interviews and request employees to prepare summaries of their observations.
 - Collect all data/information relevant to the incident, such as operations logs, inventory reports, requisitions, receipts, photographs, signed statements, etc. The needed information includes conditions before, during, and after the event; personnel involvement; environmental factors and other information having relevance to the event. Conduct interviews to obtain additional information regarding the event. Collect physical evidence associated with the inquiry, if available. (Examples of physical evidence include, but are not limited to, recorder charts, computer hard drives, defective/failed equipment, procedures, readouts from monitoring equipment, etc.). Ensure physical evidence is protected and controlled and a chain-of-custody is maintained.
 - Reconstruct the event to the greatest extent possible using collected information and other evidence and develop a SnapCharT™, including a chronological sequence of events that describes the action preceding and following the event and the identification of persons associated with the event.
2. Analyze and evaluate the event information and reconstruction to determine which systems and functions performed correctly or failed to perform as intended. Make sure the information and chronology describe the incident completely and accurately. Collect additional data and reconstruct the incident if more information is required. Identify any collateral impact with other programs. Identify the factors that caused the event, define these as causal factors, and document potential causal factors.
3. Analyze each causal factor's root cause by application of TapRoot® Root Cause Tree®.
4. Analyze each root cause's generic cause by application of TapRoot® Root Cause Tree®.
5. Utilize the output of TapRoot® Root Cause Tree® and guidance (from Fluor Fernald *Guidance for Completing Cause Fields of Occurrence Reports.*) to cross code TapRoot® root causes to the apparent causes of the Causal Analysis Tree (DOE GUIDE 231.1-2, *Occurrence Reporting Causal Analysis Guide*). The Causal Analysis Tree will delineate specific designations of cause such as:
 1. Design/Engineering problem,
 2. Equipment/Materials problem,
 3. Human Performance LTA (less than adequate),
 4. Management Problem,
 5. Communications LTA (less than adequate),
 6. Training Deficiency.
 7. Other Problems
6. Develop a summary of output of the TapRoot® Causal Process and Apparent Causes from the DOE Causal Analysis Tree. A description should be included for each identified cause, including a brief discussion to clearly link the cause to the event. In addition to determining the causes of the occurrence,

any weaknesses in implementation of the facility's ISMS and ISSMS programs must be identified.

For Incidents of Security Concern, whenever possible, the responsibility for an incident must be assigned to an individual rather than to a position or office. When individual responsibility cannot be established and the facts show that a responsible official allowed conditions to exist that led to an incident of security concern, responsibility must be assigned to the official.

7. Evaluate proposed Corrective Actions and ensure appropriateness of proposed and additional corrective actions. Utilize *Procedure 10200.039, Corrective Action Development, Tracking, and Verification* for additional guidance related to corrective actions.
8. Ensure Lessons Learned are appropriate. Utilize *Plan 10201.020, Operating Experiences and Lessons Learned Program* for additional guidance related to corrective actions.
9. Prepare Event Investigation and Analysis Report. At a minimum the report must describe the conduct and results of the investigation and include the following information for the event to be closed.
 - **Executive Summary.**
 - **Narrative**, which must include the following.
 - **When:** The date and time of event discovery, any notifications, the investigation and analysis, and other time-related actions pertaining to the event.
 - **Where:** All data pertinent to the location of an event, including the facility name and the Safeguards and Security Information Management System facility code (0033), building/room numbers, and other identifying information as appropriate.
 - **What:** A complete discussion of the facts and circumstances surrounding the event, including a description of all supporting information, such as the following:
 - a) detailed description of the event;
 - b) identification of all personnel involved in the event and when they were notified, including those associated with the investigation and analysis process;
 - c) identification of the causes for the event (direct and contributing factors), descriptions of mitigating or aggravating factors that may reduce or increase the impact of the event;
 - d) descriptions of the actions that precipitated the event;
 - e) descriptions of all physical evidence, including all records/documents reviewed (e.g., training records, policy/procedures, personnel security files);
 - f) results of any interviews performed;
 - g) descriptions of actions taken to minimize vulnerabilities created by the event; and
 - An investigation's conclusion and the basis/facts that support the conclusion.
 - a) Given the facts determined through the investigation, the conclusion of the final report must address the potential risk to the event based upon a subjective analysis of the facts and circumstances surrounding the event.
 - b) The final report must also identify the management officials responsible for corrective actions.
 - **Attachments**
 - Pictures and copies of evidence,
 - Training records of individuals associated with the event,
 - Interview statements, etc.

The following must be included as attachments to the report of inquiry:

- *A copy of the documentation appointing the inquiry official;*
- *A copy of any signed statements of involved individuals;*
- *A description of the compromised or potentially compromised information (as appropriate);*
- *A copy of the DOE F 471.1 and any other documents obtained during the data collection phase of the inquiry;*
- *A copy of DOE F 5639.3, or a form comparable in content, issued as a result of the inquiry;*

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- *A copy of DOE F 5639.2, “Reporting Unaccounted for Documents,” or a form comparable in content, if applicable.*

AMES LOCAL Event Investigation and Analysis Process

AMES LOCAL events are investigated and analyzed according to a simplified process patterned after the Reportable Event Investigation and Analysis Process.

- Steps 1 and 2 will be performed.
- Basic cause categories will be determined by Form 10200.153, Basic Cause Category Determination.
- Steps 7, 8, and 9 will be performed.

5.6 Approval of Written Initial, Updates, and Final Reports

The ESH&A Manager (Tom Wessels), the ESH&A Assistant Manager (Jim Withers), or the acting ESH&A Manager has responsibility for the approval of the written initial, updates, and final reports based on the report content requirements and guidance of the specific reporting program.

5.7 Analyses and Identification of Recurring Events

The Event Screening Team has responsibility for quarterly performance analysis of Ames Laboratory information and events for identification of potential recurring events. The performance analysis includes review of events reported as Occurrences, PAAA Noncompliances, Incidents of Security Concern, and AMES LOCAL events, as well as information from a variety of sources such as the sources utilized for event screening. The Event Screening Team will meet monthly to discuss screening activities and potential recurring issues. The Event Investigators and Reporters, G. P. Jones and Shawn Nelson, will utilize information from screening activities to produce a Quarterly Performance Analysis Review Report with a list of potential recurring events. The Report will be approved by the Event Screening Team and will be shared with the Event Categorization Team and the Facility Manager. Events identified as potentially recurring are submitted to the Event Categorization Team for review and, if warranted, categorized as a recurring occurrence and submitted as a new Occurrence Report.

Also, an annual trend analysis is the responsibility of the Laboratory’s Industrial Safety Specialist, Shawn Nelson, according to Procedure 10200.041, *Trend Analysis of ES&H Concern*.

5.8 Corrective Action Development, Tracking and Verification

The responsibilities for development, tracking and verification of closure for corrective actions related to reportable events are outlined in Procedure 10200.039 *Corrective Action Development, Tracking, and Verification*. Line management has responsibility for the development of corrective actions, with consensus of the issue identifier and ESH&A. ESH&A’s Industrial Safety Specialist, Shawn Nelson, has responsibility for tracking corrective actions. Line management and ESH&A have responsibility for verification of completion and effectiveness of corrective actions.

5.8.1 Occurrences Reports

A complete description of the corrective actions and the target date when completion of the corrective action is anticipated should be entered into ORPS. A complete list of corrective actions should be included in the report to ensure it can stand on its own (readers do not have to search for other reports, etc.).

5.8.2 PAAA Noncompliances

The contractor is expected to take as many corrective actions as needed to resolve a noncompliance condition and to prevent the noncompliance from recurring. The contractor need not list every corrective action milestone, but should list those that are significant.

A noncompliance condition should be corrected for the nuclear facility or radiological activity where the

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noncompliance occurred, as well as for any other facility or activity under contractor management where Price-Anderson is applicable. Corrective actions are not required to be approved by DOE. DOE may, however, be involved in the selection of a corrective action and the timing of work activities if there will be a significant commitment of funds or a request for additional funds to correct the noncompliance. Under normal circumstances, DOE field elements will have this responsibility.

Once corrective actions have been completed and all completion dates entered into the NTS, the contractor then has the option of indicating completion of all corrective actions or leaving the report open for an additional 45 days. The NTS computer system will automatically recommend closure 45 days after the last corrective action has been completed. Thus corrective actions can be added, if appropriate, within the 45-day period. An NTS report will not be considered for closure until all reported corrective actions have been completed and verified by DOE.

Once the contractor has indicated all corrective actions have been completed, it is essential that the cognizant DOE field office conduct verification. The field office PAAA Coordinator would subsequently enter comments into the applicable NTS report indicating either the field office is satisfied all corrective actions have been completed, or the office believes a discrepancy exists and recommends further action to the OEI. Only after the field office indicates all corrective actions have been completed can closure of the NTS report be recommended to the OEI Director by Enforcement staff. The OEI has, however, occasionally observed NTS reports without field office comment concerning verification after all corrective action completion dates have been posted. In these circumstances, OEI staff will notify the respective field office of the need to comment in a timely manner. NTS reports that still have not received field office comment within 180 days after the latest corrective action completion date will have a statement entered by OEI staff indicating non-verification and will thus be recommended for closure to the Director. An NTS report is officially closed after the OEI Director concurs with staff's recommendation.

Corrective actions described in the NTS are primarily for tracking and closure purposes; it is not a forum to argue the comprehensiveness of corrective actions. If an enforcement action is contemplated, the contractor will have an opportunity to discuss corrective actions in more detail during the enforcement review process. As noted earlier, the contractor will have ample opportunity to update, provide additional detail, or add more corrective actions to a noncompliance report in the event the noncompliance is being considered for enforcement action.

5.8.3 Incidents of Security Concern

Corrective actions identified in response to an incident of security concern must be documented. For incidents categorized as IMI-1, IMI-2, or IMI-3, a copy of the documentation must be forwarded to the Office of Security if not included in the inquiry report. Documentation of corrective actions for IMI-4 incidents does not have to be forwarded to the Office of Security.

Whenever possible, the responsibility for an incident of security concern should be assigned to an individual rather than to a position or office. When individual responsibility cannot be established and the facts show that a responsible official allowed conditions to exist that led to an incident of security concern, responsibility could be assigned to the official. If administrative or disciplinary actions are appropriate to prevent recurrence of the incident, such actions will be taken in concurrence with the applicable Iowa State University policies and procedures.

5.9 Lessons Learned

Lessons Learned related to reportable events shall be developed and disseminated within the Laboratory and within DOE as appropriate by the operating experiences program coordinator, G. P. Jones, according to Plan 10200.020, *Operating Experiences and Lessons Learned Program*.

6.0 Additional Information

- DOE Order 151.1C, Comprehensive Emergency Management System.

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- DOE Manual 232.1-1A, Occurrence Reporting and Processing of Operations Information.
- DOE Manual 470.4-1 Chg. 1 Section N - Incidents of Security Concern
- 10 CFR Part 851, Worker Safety and Health Program
- DOE Office of Enforcement, *Enforcement Process Overview*

Attachment 1

Ames Laboratory Event Screening Criteria

Emergencies

- Any Operational Emergency, Alert, Site Area Emergency, or General Emergency.

Personnel Safety

- A serious occupational injury: hospitalization, bone fracture, severe hemorrhages, severe damage to nerves, muscles, or tendons, damages any internal organ, and second or third degree burns affecting more than five percent of the body surface.
- Physical violence or threat of retaliation against facility security personnel or employee(s).
- Any unplanned fire or explosion.
- Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or disturbance of a previously unknown or mislocated energy source (utility system), excluding precautionary investigations.

Facility Status

- Validated threat notifications, via any media or source.
- Performance degradation of Safety Class or Safety Significant Structure, System, or Component (SSC)
- A Stop Work Order, shutdown, stand-down, or curtailment of work or processes directed by management for safety reasons.
- Actuation of a Safety Class or Safety Significant Structure, System, or Component (SSC)
- Any facility evacuation, not including a precautionary evacuation, in response to an actual event.
- A operational event caused by deviating from a written procedures or using an inadequate procedure resulting in an adverse effect on safety, such as: an inadvertent facility or operation shutdown, facility or operations shutdown due to alarm response procedures, inadvertent process liquid transfer, or inadvertent release of hazardous material from its engineered containment.
- Any condition that would prevent immediate facility or offsite emergency response capabilities.
- Discovery of any suspect/counterfeit item or materials other than office supplies, office equipment, or household products.
- Discovery of any defective item or material in any application whose failure could result in a loss of safety function, or present a hazard to public or worker health and safety.
- Labor strikes that could degrade or interfere with required protection for the site's protection responsibilities.
- Confirmed or suspected acts or attempts of sabotage or terrorist-type actions.
- Demonstrations or protestors that cause site and facility damage. Peaceful demonstrations or protests that do not threaten facility or site security interests or activities.
- Discovery of malicious activities, disorderly conduct, or vandalism that disrupts facility activities or causes damage.
- Bomb-related incidents and Non-credible bomb threats.

Contamination, Radiation, and Radioactive Materials Control

- Identification of radioactive material offsite or loss of control of radioactive material or inventory differences.
- Identification or spread of radioactive material or contamination offsite or onsite.
- Any potential exposure greater than 50 mrem.
- Contamination of personnel or clothing on-site or offsite

Environmental

- Any release (onsite or offsite) of a hazardous substance, materials, waste, or radionuclide from a DOE facility that must be reported to outside agencies in a format other than routine periodic reports.

Information Disclosure or Loss

- Confirmed or suspected unauthorized disclosure, loss/potential losses of Export Control matter via any medium, method, or action.

Transportation

- Any offsite transportation incident involving hazardous or radioactive material, such as a fatality, injury, property damage, evacuation, closed routes, fire, breakage, or spillage.
- Any offsite or onsite transport of hazardous or radioactive material whose quantity or nature is different than intended, such that the receiving organization's operations were impacted or the originating organization initiated corrective actions.
- Any packaging or transportation activity involving the onsite release of radioactive or hazardous materials.

Attachment 1

Ames Laboratory Event Screening Criteria

Ames Laboratory Event Screening Criteria Continued

Security Interference

- Actions, electronic, physical, or by other methods, that interfere with any DOE safeguards and security practices.
- Unplanned/unscheduled power outages that cause a disruption/degradation of physical security systems and that would allow unauthorized or undetected access to access controlled areas or protected areas.
- Incidents involving the attempted or actual introduction of controlled and prohibited items (e.g., weapons, drugs, explosive devices, etc.).
- Lapses in administrative procedures contributing to the misuse, misprocessing, or maintenance of security badges, passes, or keys
- Loss of security badges in excess of 5 percent of total issued during 1 calendar year.
- Lapses in administrative procedures contributing to security problems with foreign visitors
- Inexplicably high rate/amount of loss or theft of Government property.

Noncompliance with Laws and Noncompliance Notifications

- Any written notification from an outside regulatory agency that the Laboratory is considered to be in noncompliance with a schedule or requirement (NOV, Warning Letter, etc.)
- Confirmed or alleged noncompliance with laws or Departmental standards that jeopardizes the protection of the facility or site security interests.

Managements Concerns/Issues

- Event of safety significance or concern to other facilities.
- A near miss, where no barrier or one barrier prevented a reportable consequence.
- Anything that may result in a significant concern by state or local officials, press, or general population; that could damage the credibility of DOE; or may result in inquiries to Headquarters.

Attachment 2 Occurrence Reporting Criteria

Group 1 - Operational Emergencies

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	* OE	An Operational Emergency not needing further classification. (Defined in DOE 151.1C, Chapter 5, Paragraph 2)
(2)	* OE	An Alert. (Defined in DOE 151.1C, Chapter 5, Paragraph 3a)
(3)	* OE	A Site Area Emergency. (Defined in DOE 151.1C, Chapter 5, Paragraph 3b)
(4)	* OE	A General Emergency. (Defined in DOE 151.1C, Chapter 5, Paragraph 3c)

Group 2 - Personnel Safety and Health

Subgroup A Occupational Illnesses/Injuries

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Any occurrence due to DOE operations resulting in a fatality or terminal injury/illness. For fatalities caused by overexposures, the intent of this criterion is to report those caused by acute rather than chronic effects.
(2)	*1	Any single occurrence requiring in-patient hospitalization of three or more personnel.
(3)	2	Any single occurrence resulting in three or more personnel having Days Away, Restricted or Transferred (DART) cases. (Per 29 CFR Part 1904.7)
(4)	*2	Personnel exposure to chemical, biological or physical hazards above limits established by the Occupational Safety and Health Administration (refer to 29 CFR Part 1910) or American Conference of Governmental Industrial Hygienists, whichever is lower, and that requires the administration of medical treatment beyond simple first aid on the same day as the exposure. [29 CFR 1904.7(b)(5)(i) and (ii) define "medical treatment" and "first aid."]
(5)	3	Personnel exposure to chemical, biological or physical hazards above limits established by the Occupational Safety and Health Administration (refer to 29 CFR Part 1910) or American Conference of Governmental Industrial Hygienists.
(6)	3	Any single occurrence resulting in a serious occupational injury. A serious occupational injury is an occupational injury that: <ul style="list-style-type: none"> (a) Requires hospitalization for more than 48 hours, commencing within 7 days from the date of the injury was received; (b) Results in a fracture of any bone (except simple fractures of fingers, toes, or nose, or a minor chipped tooth); (c) Causes severe hemorrhages or severe damage to nerves, muscles, or tendons; (d) Damages any internal organ; or (e) Causes second- or third-degree burns, affecting more than five percent of the body surface.

Subgroup B Fires/Explosions

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Any unplanned fire or explosion within primary confinement/containment boundaries for nuclear or hazardous material within a facility. [Note: Facility specific documents need to define what constitutes the primary confinement/containment boundary.]
(2)	*2	Any unplanned fire or explosion in a nuclear facility that activates a fire suppression system (e.g., halon discharge, sprinkler heads activating), is extinguished by a fire department, or disrupts normal facility operations. [Note: The activation or degradation of Safety Class and Safety Significant fire suppression systems are addressed by Group 4 Criteria.]
(3)	*3	Any unplanned fire or explosion in a non-nuclear facility that: <ul style="list-style-type: none"> a) Activates a fire suppression system, b) Takes longer than 10 minutes to extinguish following the arrival of fire protection personnel, or c) Disrupts normal operations in a high hazard facility.
(4)	*4	Any wild land fire (e.g., forest fire, grassland fire) or other fire outside of a DOE facility that has the potential to threaten the facility.

Subgroup C Hazardous Energy Control

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or disturbance of a previously unknown or mislocated hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas) resulting in a person contacting (burn, shock, etc.) hazardous energy.
(2)	3	Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, steam line, pressurized gas). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

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Group 3 - Nuclear Safety Basis

Subgroup A Technical Safety Requirement Violations

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Any violation of a Hazard Category 1, 2, or 3 nuclear facility's Technical Safety Requirement (or Operational Safety Requirement) Safety Limit. [Note: Safety Limits are high-level Technical Safety Requirement controls, used infrequently across the DOE Complex. A Safety Limit is a limit on process variables associated with those safety class physical barriers, generally passive, that are necessary for the intended facility function and that are required to guard against the uncontrolled release of radioactive materials. (Reference - 10 CFR 830.3)]
(2)	2	Any violation or noncompliance of a Hazard Category 1, 2, or 3 nuclear facility's Technical Safety Requirement (or Operational Safety Requirement) Limiting Control Setting, Limiting Condition for Operation, Administrative Control, or Surveillance Requirement. Exception: An event consisting solely of a surveillance test performed after the prescribed surveillance period, and in which the equipment was found to be capable of performing its specified safety function. (See separate criterion for late surveillance tests below.)
(3)	3	Any violation or noncompliance of a hazard control specified in a Hazard Category 1, 2, or 3 nuclear facility's DOE approved Documented Safety Analysis [issued pursuant to 10 CFR 830.204 and including Basis for Interim Operation (BIO), etc.], or DOE issued Safety Evaluation Report that are not addressed by Criteria 3A(1) and 3A(2). Exceptions: (a) An event consisting solely of a violation of a safety management program (e.g., quality assurance, personnel training) cited in the Documented Safety Analysis. (b) An event consisting solely of a surveillance test performed after the prescribed surveillance period, and in which the equipment was found to be capable of performing its specified safety function. (See separate criterion for late surveillance tests below.)
(4)	4	An event consisting solely of a surveillance test performed after the prescribed surveillance period, and in which the equipment was found to be capable of performing its specified safety function.

Subgroup B Documented Safety Analysis Inadequacies

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Determination of a positive Unreviewed Safety Question (USQ) that reveals a currently existing inadequacy in the documented safety analysis [e.g., Safety Analysis Report (SAR) or Basis for Interim Operation (BIO)].
(2)	3	Declaration of a potential inadequacy of the documented safety analysis (a potential positive USQ). [Per 10 CFR 830.203(g)]

Subgroup C Nuclear Criticality Safety

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	A loss of multiple nuclear criticality process-condition controls, where processes include operation, transport, and storage of fissionable materials, such that no valid controls are available to prevent a criticality accident.
(2)	2	A loss of one or more nuclear criticality process-condition controls such that an accidental criticality is possible from the loss of an additional process-condition control, where processes include operation, transport, and storage of fissionable materials.

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Group 4 - Facility Status [Note: The criteria below apply to both nuclear and non-nuclear facilities, where applicable.]

Subgroup A Safety Structure/System/Component Degradation

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	3	Performance degradation of any Safety Class or Safety Significant Structure, System, or Component (SSC) that prevents satisfactory performance of its design function when it is required to be operable.
2)	4	Performance degradation of any Safety Class SSC when not required to be operable.

Subgroup B Operations

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*2	A Stop Work Order issued by a DOE office.
(2)	2	Actuation of a Safety Class Structure, System, or Component (SSC), or its alarms, resulting from an actual unsafe condition. Spurious alarms (e.g., due to electronic noise, radon/thoron decay) should not be reported.
(3)	3	Actuation of a Safety Significant Structure, System, or Component (SSC), or its alarms, resulting from an actual unsafe condition. Spurious alarms (e.g., due to electronic noise, radon/thoron decay) should not be reported.
(4)	3	Any facility evacuation, not including a precautionary evacuation, in response to an actual event. If the event fell under another reporting criterion, then evacuation should be reported as well by noting multiple reporting criteria for the single occurrence.
(5)	4	A facility operational event caused by deviating from a written procedure or using an inadequate procedure resulting in an adverse effect on safety, such as: an inadvertent facility or operations shutdown (i.e., a change of operational mode or curtailment of work or processes), facility or operations shutdown due to alarm response procedures, inadvertent process liquid transfer, or inadvertent release of hazardous material from its engineered containment.
(6)	*4	A facility or operations shutdown (i.e., a change of operational mode or curtailment of work or processes) directed by management for safety reasons.
(7)	4	A facility or site stand-down resulting from safety reasons reportable as an occurrence or occurrences. [Note: This is a secondary reporting criterion and does not require a separate occurrence report.]
(8)	4	Any event or condition that would prevent immediate facility or offsite emergency response capabilities.

Subgroup C Suspect/Counterfeit and Defective Items or Material

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	3	Discovery of any suspect/counterfeit item or material found in a Safety Class or Safety Significant Structure, System, or Component (SSC). A suspect item or material is one whose documentation, appearance, performance, material, or other characteristics may have been misrepresented by the vendor, supplier, distributor, or manufacturer. A counterfeit item or material is one for which sufficient evidence exists that deliberate misrepresentation has occurred.
(2)	4	Discovery of any suspect/counterfeit item or material other than office supplies, office equipment, or household products.
(3)	4	Discovery of any defective item or material, other than a suspect/counterfeit item or material, in any application whose failure could result in a loss of safety function, or present a hazard to public or worker health and safety. A defective item or material is any item or material that does not meet the commercial standard or procurement requirements as defined by catalogues, proposals, procurement specifications, design specifications, testing requirements, contracts, or the like. It does not include parts or services that fail or are otherwise found to be

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inadequate because of random failures or errors within the accepted reliability level.

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Group 5 - Environmental

Subgroup A Releases

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*2	Any release (onsite or offsite) of a hazardous substance, material, waste, or radionuclide from a DOE facility, that is above permitted levels and exceeds the reportable quantities. (See specifications in 40 CFR 302 or 40 CFR 355.)
(2)	2	Any discharge that exceeds 100 gallons of oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil. For operations involving oil field crude or condensate, any discharge of 100 barrels or more is reportable under this criterion.
(3)	4	Any release (onsite or offsite) of a hazardous substance, material, waste, or radionuclide from a DOE facility that is above permitted levels and exceeds 50 percent of the reportable quantities. (See specifications in 40 CFR 302 or 40 CFR 355.)
(4)	4	Any release (onsite or offsite) of a hazardous substance, material, waste, or radionuclide from a DOE facility that must be reported to outside agencies in a format other than routine periodic reports. (However, oil spills of less than 10 gallons and with negligible environmental impact need not be reported in ORPS.)

Subgroup B Ecological and Cultural Resources

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Any occurrence causing significant impact to any ecological resource for which DOE is a trustee (e.g., destruction of a critical habitat, damage to an historic/archeological site, damage to wetlands).

Attachment 2 Occurrence Reporting Criteria

Group 6 - Contamination/Radiation Control

Subgroup A Loss of Control of Radioactive Materials

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Identification of radioactive material offsite due to DOE operations/activities that exceeds applicable DOE-approved authorized limits (see DOE O 5400.5). This applies to items/areas consisting of radioactive material. This does not apply to items with surface radioactive contamination. See Criterion 6B(1) below for criteria for identification of items with surface radioactive contamination.
(2)	2	Loss of radioactive material that exceeds 100 times the specified quantities [see specifications in 10 CFR Part 835, Appendix E] (excluding consumer products such as smoke detectors), or loss of accountability of such material for more than 24 hours. The 24-hour time period begins when the loss of accountability is discovered.
(3)	3	Loss of radioactive material which exceeds 1 times and no greater than 100 times the specified quantities [see specifications in 10 CFR Part 835, Appendix E] (excluding consumer products such as smoke detectors) or loss of accountability of such material for more than 24 hours. The 24- hour time period begins when the loss of accountability is discovered.

Subgroup B Spread of Radioactive Contamination

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Identification of radioactive contamination offsite due to DOE operations/activities that exceeds applicable DOE-approved authorized limits. (See DOE 5400.5 or, if there are none, the values found in 10 CFR Part 835, Appendix D) [Note: All releases of property containing or potentially containing residual radioactivity are subject to requirements in DOE 5400.5. Compliance with 10 CFR Part 835, Appendix D values does not necessarily satisfy the requirements in DOE 5400.5.]
(2)	2	Identification of onsite radioactive contamination greater than 100 times the total contamination values (see 10 CFR 835 Appendix D) and that is found outside of the following locations: Contamination Areas, High Contamination Areas, Airborne Radioactivity Areas, Radiological Buffer Areas, and certain areas that are controlled [defined in 10 CFR 835.1102(c)]. For tritium, the reporting threshold is 100 times the removable contamination values. (See 10 CFR Part 835, Appendix D)
		[Notes: (a) This does not apply to contamination from residual radioactive material meeting applicable DOE-approved authorized limits. (b) This also does not apply to legacy radioactive contamination, which will be reported under a separate criterion below. (c) The exclusion from reporting contamination in a Radiological Buffer Area applies only when the area has been established next to a Contamination Area, High Contamination Area or Airborne Radioactivity Area and its exit requirements have adopted guidance from Article 338.2 of DOE-STD-1098-99.]
(3)	3	Identification of onsite radioactive contamination greater than 10 times the total contamination values (see 10 CFR 835 Appendix D) and that is found outside of the following locations: Contamination Areas, High contamination Areas, Airborne Radioactivity Areas, Radiological Buffer Areas, and certain areas that are controlled [defined in 10 CFR 835.1102(c)]. For tritium, the reporting threshold is 10 times the removable contamination values. (See 10 CFR Part 835, Appendix D.)

[Notes:

- (a) This does not apply to contamination from residual radioactive material meeting applicable DOE-approved authorized limits.
- (b) This also does not apply to legacy radioactive contamination, which will be reported under a separate criterion below.
- (c) The exclusion from reporting contamination in a Radiological Buffer Area applies only when the area has been established next to a Contamination Area, High Contamination Area or Airborne Radioactivity Area and its exit requirements have adopted guidance from Article 338.2 of DOE-STD-1098-99.]

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- (4) 4 Identification of onsite legacy radioactive contamination greater than 10 times the total contamination values (see 10 CFR 835 Appendix D) and that is found outside of the following locations: Contamination Areas, High Contamination Areas, Airborne Radioactivity Areas, Radiological Buffer Areas, and certain areas that are controlled [defined in 10 CFR 835.1102(c)]. For tritium, the reporting threshold is 10 times the removable contamination values. (See 10 CFR Part 835, Appendix D.)

[Notes:

- (a) Legacy radioactive contamination is radioactive contamination resulting from historical operations that are unrelated to current activities.
- (b) This does not apply to contamination from residual radioactive material meeting applicable DOE-approved authorized limits.
- (c) The exclusion from reporting contamination in a Radiological Buffer Area applies only when the area has been established next to a Contamination Area, High Contamination Area or Airborne Radioactivity Area and its exit requirements have adopted guidance from Article 338.2 of DOE-STD-1098-99.

Subgroup C Radiation Exposure

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Determination of a dose that exceeds the specified limits. [See specifications in 10 CFR Part 835, Subpart C, Occupational Radiation Protection or DOE O 5400.5, Chapter II, Item 1 [i.e., 100 mrem Total Effective Dose Equivalent (TEDE) for offsite exposures to a member of the public].
(2)	2	Any unmonitored exposure that exceeds the values for providing personnel dosimeters and bioassays. [See 10 CFR 835.402(a) or 10 CFR 835.402(c)]
(3)	3	Any single occupational exposure that exceeds an expected exposure or dosimetry result by: (1) 500 mrem Committed Effective Dose Equivalent (CEDE), or (2) the greater of 10 percent or 100-mrem effective dose equivalent due to external exposure.
(4)	3	Determination of an estimated annual dose that exceeds 10 mrem Total Effective Dose Equivalent (TEDE) for offsite exposures to a member of the public from air pathways only.

Subgroup D Personnel Contamination

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*2	Any occurrence requiring offsite medical assistance for contaminated personnel, including transporting a person to an offsite medical facility or bringing offsite medical personnel onsite to perform treatment or decontamination.
(2)	2	Identification of personnel or clothing contamination offsite due to DOE operations that exceeds the values for total contamination. (See 10 CFR Part 835, Appendix D.) For tritium, use the values for removable contamination. (See 10 CFR Part 835, Appendix D.)
(3)	4	Any onsite contamination of personnel or clothing (excluding site provided protective clothing) that exceeds 10 times the values for total contamination (see 10 CFR Part 835, Appendix D). The contamination level must be based on direct measurement and not averaged over any area. This criterion does not apply to tritium contamination.

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Group 7 - Nuclear Explosive Safety

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Damage to a nuclear explosive that results in a credible threat to nuclear explosive safety.
(2)	2	The unauthorized introduction of electrical energy into a nuclear explosive.
(3)	2	The unauthorized compromise of a nuclear explosive safety feature when installed on a nuclear explosive.
(4)	2	Inadvertent substitution of a nuclear explosive for a nuclear explosive like assembly (NELA) or vice versa.
(5)	2	A violation of a nuclear explosive safety rule (NESR).
(6)	2	Damage to a training unit during training operations indicative of a hazard to a nuclear explosive.
(7)	3	The use of uncertified personnel or unauthorized equipment/tooling during a nuclear explosive operation.
(8)	3	A violation of the two-person concept of operations.
(9)	3	Revocation of the Personnel Assurance Program (PAP) certification of an individual (for cause).

Group 8 - Transportation

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	*1	Any offsite transportation incident involving hazardous materials that would require immediate notice (see 49 CFR Part 171.15), namely: <ol style="list-style-type: none"> (a) As a direct result of hazardous materials: <ol style="list-style-type: none"> (i) A person is killed, (ii) A person receives injuries requiring hospitalization, (iii) Estimated property damage exceeds \$50,000, (iv) An evacuation of the general public occurs lasting 1 hour or more, (v) One or more transportation arteries or facilities are closed or shut down for 1 hour or more, or (b) Fire, breakage, spillage, or suspected radioactive contamination occurs involving shipment of radioactive materials, or (c) Fire, breakage, spillage, or suspected contamination occurs involving shipment of infectious substances (etiologic agents), or (d) There has been a release of a marine pollutant in a quantity exceeding 450 liters (119 gallons) for liquids or 400 kilograms (882 pounds) for solids, or (e) The operational flight pattern or routine of an aircraft is altered.
(2)	3	Any offsite transport of hazardous material, including radioactive material, whose quantity or nature (e.g., physical or chemical composition) is different than intended, such that the receiving organization's operations were impacted/disrupted or the transport resulted in the initiation of corrective actions by the originating organization.
(3)	4	Any onsite transport of hazardous material, including radioactive material, whose quantity or nature (e.g., physical or chemical composition) is different than intended, such that the receiving organization's operations were impacted/disrupted or the transport resulted in the initiation of corrective actions by the originating organization.
(4)	4	Any packaging or transportation activity involving the onsite release of radioactive materials, etiologic agents, hazardous substances, hazardous waste, or marine pollutants.

Group 9 - Noncompliance Notifications

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	3	Any enforcement action (other than associated with the Price Anderson Amendment Act) involving 10 or more cited violations, and/or an assessed fine of \$10,000 or more. [Note: This criterion applies to the enforcement action as initially received from the regulator. Thus the enforcement action would still be reportable even if the fine is later reduced below \$10,000 or the number of violations reduced below 10.]
(2)	4	Any written notification from an outside regulatory agency that a site/facility is considered to be in noncompliance with a schedule or requirement (e.g., Notice of Violation, Notice of Intent to Sue, Notice of Noncompliance, Warning Letter, Finding of Violation, Finding of Alleged Violation, Administrative Order, or a similar type of notification or enforcement action).

Attachment 2 Occurrence Reporting Criteria

Group 10 - Management Concerns/Issues

<u>#</u>	<u>SC</u>	<u>Criterion</u>
(1)	2	Any event resulting in the initiation of a Type A or B accident investigation. (See DOE O 225.1A, <i>Accident Investigation</i> .) [Note: This reporting criterion may raise the significance category of an occurrence already reported under separate criteria. Multiple reporting criteria should be noted when appropriate.]
(2)	1-4†	An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manager or line management to be of safety significance or of concern to other facilities or activities in the DOE complex. One of the four significance categories should be assigned to the occurrence, based on an evaluation of the potential risks and the corrective actions taken. [† Note: An SC 1 occurrence report requires Prompt Notification.]
(3)	1-4†	A near miss, where no barrier or only one barrier prevented an event from having a reportable consequence. One of the four significance categories should be assigned to the near miss, based on an evaluation of the potential risks and the corrective actions taken. [† Note: An SC 1 occurrence report requires Prompt Notification.]
(4)	*4	Any occurrence that may result in a significant concern by affected state, tribal, or local officials, press, or general population; that could damage the credibility of the Department; or that may result in inquiries to Headquarters.
(5)	*4	Any occurrence of such significant immediate interest to offsite personnel and organizations that it warrants prompt notification to the DOE Headquarters Operations Center (DOE HQ OC), and which is not already designated elsewhere in this set of reporting criteria to have prompt notification [denoted by having an asterisk (*) next to the significance category].

Attachment 3 PAAA Reporting Criteria

Tables 3-1 and 3-2 are intended to assist the contractor in determining if a noncompliance is NTS reportable. Both sets of criteria should be reviewed in order to make this decision.

**PAAA Programmatic Deficiencies
(Table 3-1, Operational Procedures, June 1998)**

Repetitive Noncompliances
Programmatic Issue
Intentional Violation or Misrepresentation

The Programmatic Deficiencies described in the above table (Table 3-1) are noncompliances, which require greater judgment during evaluation than the application of Table 3-2 criteria and are indicative of programmatic, management, or conduct of operations deficiencies. These noncompliances might be identified while performing a self-assessment or through a root cause analysis of an otherwise non-NTS reportable noncompliance. Identification of this type of noncompliance should be reported to the NTS.

Repetitive or Recurring: The same non-NTS reportable noncompliance or a closely similar noncompliance continues to occur, indicating the corrective action, including root cause determination, has not been effective. DOE expects that non-NTS reportable noncompliances will be tracked in a contractor's self-tracking system (ALCATS for Ames Laboratory), and will be routinely reviewed by the contractor for potential trends and repeat occurrences. Such trends or repetitive occurrences should be reported to the NTS because of repetitive or recurring nature. Examples of Repetitive deficiencies at Ames Laboratory could be the lack of initial or current training for individuals working with radiological hazards or the failure of employees to utilize personal dosimeters.

Programmatic Breakdown: If several non-NTS reportable noncompliances have occurred that are related but not identical, indicating a common breakdown in a program or program area the noncompliances might have a common cause indicating a programmatic weakness. A programmatic breakdown generally involves some weakness in administrative or management controls, or their implementation, to such a degree that systematic problems occur. This weakness might be identified as part of the root cause determination for a single event. Examples of programmatic deficiencies at Ames Laboratory could be the failure to properly label areas of contamination or the lack of effective training modules for radiation safety.

DOE's experience since implementation of the PAAA suggests that a number of noncompliances with common root causes are occurring at sites across the complex. For example, refresher training for radiological workers at a number of sites frequently failed to occur on a timely schedule. This programmatic weakness was found only when reviewed on a site-wide basis. Similarly, work process compliance problems at several sites were found to be programmatic when individual incidents were evaluated on a broader, site-wide basis. Attention was focused on these events to correct the programmatic problem before it led to a personnel contamination incident or offsite release. However, DOE's experience is that, although some cases of programmatic deficiency are being found, contractors are not as likely to analyze data to identify common elements as would be appropriate for an effective nuclear safety program. It is DOE's intent that contractors should be diligent in analyzing data on a site wide basis to identify common elements that may be impairing effective nuclear safety.

Intentional Violation or Misrepresentation: Most intentional violations involve the failure to perform substantive activities required by nuclear safety requirements coupled with the alteration, concealment, or destruction of documents pertaining to those activities. As stated in 10 CFR 820.11:

- "(a) Any information pertaining to a nuclear activity provided to DOE by any person or maintained by any person for inspection by DOE shall be complete and accurate in all material aspects.
- (b) No person involved in a DOE activity shall conceal or destroy any information concerning a violation of a DOE Nuclear Safety Requirement, a Nuclear Statute, or the Act."

Early experience with PAAA enforcement suggests that intentional noncompliances seldom, if ever, involve a contractor's senior level of management, but may involve more than one worker or a worker's first line of management. Such activities could, for example, involve falsifying reports of a fire watch where such watches never took place, or changing records to wrongly claim that practical training took place in accordance with site requirements. Such activities should be met with the strongest possible response because the integrity of the reporting process goes to the heart of any nuclear safety program. Therefore, even individual instances of intentional noncompliance should be reported to the NTS. DOE will be the entity to decide whether intent to deceive existed in conjunction with a document falsification, not the contractor. Examples of Intentional or Misrepresentation deficiencies could be related to radiological survey reports, x-ray reviews, maintenance reviews, etc.

Attachment 3 Ames Laboratory PAAA Reporting Criteria

If a noncompliance does not meet Table 3-1 criteria, it should be reviewed against Table 3-2 criteria. DOE is interested in the reporting of nuclear safety noncompliances where those noncompliances are associated with an event or condition that meets any of the criteria listed in Table 3-2. The criteria are considered to be a guideline in defining or bracketing what could be considered as "significant nuclear safety events." These event criteria are not considered as all inclusive. The identification of a significant nuclear safety noncompliance in association with an event type or category not listed in the table should be evaluated for NTS reportability. The simple occurrence of an event in any of the categories listed in the following table is not enough to warrant NTS reporting - it is the identification of a nuclear safety noncompliance in association with the subject event that forms the basis for voluntary NTS reporting. "Associated with" means the noncompliance caused or contributed to an event or condition, or occurred concurrently with an event or condition. For example, the underlying or contributing cause of an event or condition could be inadequate work controls that directly led to safety system degradation beyond authorization basis limits. Inadequate work controls would represent a noncompliance with 10 CFR Part 830.120 requirements and the condition would meet the Table 3-2 criteria. It is unlikely that Ames Laboratory would have Occurrence associated PAAA issues except possibly a fire or explosion (Group 2) in B53 Spedding, or contamination or radiation control issues (Group 6).

**PAAA Noncompliances Associated with DOE Manual 231.1-2 Occurrences
(Table 3.2, Enforcement Guidance Supplement 03-02)**

REPORTING CRITERIA GROUP	SUBGROUP	OCCURRENCE CATEGORY AND SUMMARY DESCRIPTION ¹
1. Operational Emergencies ²	N/A	(1) Operational Emergency (2) Alert (3) Site Area Emergency (4) General Emergency
2. Personnel Safety and Health	B. Fires/Explosions	(1) Unplanned fire/explosion
3. Nuclear Safety Basis	A. TSR Violations	(1) Violation of TSR/OSR Safety Limit (2) Violation of other TSR/OSR reqmt (3) Violation of DSA hazard control
	B. DSA Inadequacies	(1) Positive USQ
	C. Nuclear Criticality Safety	(1) Loss of all valid criticality controls
4. Facility Status	A. Safety Structure/System/ Component Degradation	(1) SSC performance degradation ³
	B. Operations	(2) Actuation of Safety Class SSC (4) Facility evacuation
5. Environmental	A. Releases	(1) Radionuclide release
6. Contamination/ Radiation Control	A. Loss of Control of Radioactive Materials (RAM)	(1) Offsite RAM exceeding DOE limits (2) Loss of RAM (>100X 835 App. E)
	B. Spread of Radioactive Contamination	(1) Offsite radioactive contamination ⁴
	C. Radiation Exposure	(1) Exceedance of DOE dose limits (2) Unmonitored exposure (3) Single exposure > thresholds
	D. Personnel Contamination	(1) Offsite medical assistance (2) Offsite personnel/clothing contamination (3) Onsite personnel/clothing contamination ⁵
7. Nuclear Explosive Safety	N/A	(1) Damaged nuclear explosive (2) Introduction of electrical energy (3) Safety feature compromise (4) Inadvertent substitution (5) Violation of a safety rule (6) Damage to a training unit

- Notes**
1. These summary descriptions are a brief characterization of the related criteria. Use the full statement of the criteria contained in Manual 231.1-2 to establish NTS reportability of event-related nuclear safety noncompliances.
 2. Report nuclear safety noncompliances associated with any of the M 231.1-2 Operational Emergency categories (Operational Emergency, Alert, Site Area Emergency, General Emergency).
 3. Report noncompliances associated with a degradation of Safety Class Structure, System or Components preventing satisfactory performance of their design function when required to be operable or in operation.
 4. Report noncompliances associated with offsite spread of contamination events where contamination levels exceed 100 times the applicable values identified in 10 CFR 835, App. D.
 5. Report noncompliances associated with personnel/personal clothing contaminations where contamination levels exceed 100 times the applicable total contamination values identified in 10 CFR 835, App. D.

Attachment 4

Ames Laboratory Security Incidents Reporting Criteria

Shaded items are not applicable to Ames Laboratory.

Impact Measurement Index 1, IMI-1 Actions, inactions, or events that pose the most serious threats to national security interests and/or critical DOE assets, create serious security situations, or could result in deaths in the workforce or general public.

Report within 1 hour.

DOE O 151.1C, *Comprehensive Emergency Management System* and facility emergency management plans may require more stringent reporting times for IMI-1 type incidents than listed here. Shorter reporting times should be determined on an individual incident basis and applied accordingly.

1. Confirmed or suspected loss, theft, or diversion of a nuclear device or components.
2. Confirmed or suspected loss, theft, diversion, or unauthorized disclosure of weapon data.
3. Confirmed or suspected loss, theft, or diversion of Category I or II quantities of special nuclear material (SNM).
4. A shipper-receiver difference involving a loss in the number of items which total a Category I or II quantity of SNM.
5. Confirmed or suspected loss, theft, diversion, unauthorized disclosure of Top Secret information, Special Access Program (SAP) information, or Sensitive Compartmented Information (SCI), regardless of the medium, method, or action resulting in the incident.
6. Confirmed or suspected intrusions, hacking, or break-ins into DOE computer systems containing Top Secret information, SAP information, or SCI.
7. Confirmed or suspected physical intrusion attempts or attacks against DOE facilities containing nuclear devices and/or materials, classified information, or other national security related assets.
8. Confirmed or suspected attacks against DOE Federal and contractor employees that adversely impact a facility's or site's security posture.
9. Confirmed or suspected acts or attempts of terrorist-type actions.
10. Confirmed reports of DOE or DOE contractor employees making threats against Departmental facilities, employees, or the U.S. Government.
11. Confirmed threats that immediately endanger personnel health or safety and may require immediate protective force/law enforcement intervention.
12. Dangerous weapons and firearms-related incidents where an individual is killed, wounded, or an intentional discharge occurs.
13. Confirmed or suspected acts of sabotage, at any DOE facility, that places the safety or security of personnel, facilities, or the public at risk.
14. Confirmed compromise of root/administrator privileges in DOE unclassified computer systems that have a significant possibility of being contaminated with TS information, SAP information, or SCI.
15. Confirmed compromise of root/administrator privileges in DOE computer systems containing Secret or Confidential information.
16. Confirmed intrusions into information systems containing classified information.
17. Instances of malicious code that cause disruption, degradation, or compromise of information systems for an entire site/facility.

Attachment 4
Ames Laboratory Security Incidents Reporting Criteria

18. Instances of malicious code that allow unauthorized or undetected access to information systems containing classified information (Top Secret, Secret, Confidential, SAP information, or SCI).

Attachment 4

Ames Laboratory Security Incidents Reporting Criteria

Impact Measurement Index 2, IMI-2 Actions, inactions, or events that pose threats to national security interests and/or critical DOE assets or that potentially create dangerous situations. **Report within 8 hours.**

1. Suspected loss, theft, or diversion of any radioactive material not categorized as special nuclear materials (SNM), or dangerous materials that could pose a health threat or endanger security.
2. Confirmed or suspected intrusions, hacking, or break-ins into DOE computer systems containing Secret or Confidential classified information.
3. Any amount of SNM found in an exceptionally dangerous/hazardous unapproved storage environment, or unapproved mode of transportation/transfer.
4. Alarms or other loss detection indicators for security areas containing a Category I or II quantity of SNM that cannot be proven false within 24 hours.
5. Inventory differences exceeding alarm limits in Category I and II SNM material balance areas, where there is no indication or reason to believe the difference is created by loss, theft or diversion.
6. Confirmed or suspected unauthorized disclosure, loss, or potential loss of Secret matter regardless of the medium, method, or action resulting in the incident.
7. Actual or suspected technical interceptions of any level of classified information.
8. Actions, by electronic or physical means, that interfere with any DOE safeguards and security practices.
9. Notifications, by any media or source, of validated threats that do not appear to immediately threaten personal safety or health.
10. Loss of classified information that must be reported to other Government agencies or foreign organizations.
11. Unsecured classified repositories of any type, including safes, doors, or other protective encasements, that contain Top Secret information, Special Access Program information, or Sensitive Compartmented Information.
12. The loss of any DOE classified interest that requires state or local government or other Federal agency notification.
13. Confirmed compromise of root/administrator privileges in DOE unclassified computer systems.
14. Confirmed compromise of root/administrator privileges in DOE unclassified computer systems that have a significant possibility of being contaminated with Secret or Confidential information.
15. Potential compromise of root/administrator privileges in DOE computer systems containing classified information.
16. Instances of malicious code that cause disruption/degradation or compromise of information systems dedicated to safety, security, or critical operations.
17. Detection of activities involving individuals who have been confirmed as physically watching/casing/surveilling a site in an effort to gather information to aid in the conduct of a terrorist-type attack.

Attachment 4

Ames Laboratory Security Incidents Reporting Criteria

Impact Measurement Index 3, IMI-3 Actions, inactions, or events that pose threats to DOE security interests or that potentially degrade the overall effectiveness of the Department's safeguards and security protection program.

Report within 8 hours.

1. A shipper-receiver difference or inventory difference involving a gain in the number of items for which the additional items total a Category I or II quantity of special nuclear material (SNM).
2. Bomb-related incidents at any DOE facility, including location of a suspected device.
3. Confirmed or suspected unauthorized disclosure, loss, or potential loss of Confidential matter by any medium, method, or action.
4. Confirmed or alleged noncompliance with laws or DOE directives/standards that jeopardizes protection of the facility or site security interests.
5. Demonstrators or protestors that cause site and facility damage.
6. Labor strikes that could degrade or impede the required protection of the facility or site.
7. Physical violence or threat of retaliation against facility security personnel.
8. Dangerous weapons and firearms-related incidents involving protective force operations/personnel where an accidental weapon discharge occurs.
9. Loss or theft of DOE firearms or ammunition, per DOE M 470.4-3, *Protective Force*.
10. Unplanned/unscheduled power outages that cause a disruption/degradation of physical security systems and that would allow unauthorized or undetected entry to access controlled/protected areas.
11. Incidents involving the attempted or actual introduction of controlled and prohibited items into Limited, Exclusion, Protected, or Material Access Areas, excluding unauthorized cellular phones or personal digital assistants where there is no potential for compromise of classified or unclassified controlled information.
12. Confirmed or suspected malicious activities, including but not limited to stealing badges or vehicle licenses.
13. Discovery of malicious activities, disorderly conduct, or vandalism that disrupts facility activities or causes damage between \$10K and \$100K.
14. Circumvention of established access control procedures into a security area (excluding Property Protection Area).
15. Inventory differences exceeding alarm limits in Category III SNM material balance areas or inventory differences greater than 50 g of Tritium, where there is no indication or reason to believe the difference is created by loss, theft, or diversion.
16. A shipper-receiver difference involving a loss in the number of items which total a Category III or IV quantity of SNM.
17. Confirmed or suspected loss, theft, or diversion of Category III or IV quantities of SNM.
18. Intrusion attempts into information systems containing classified information.
19. Confirmed intrusions into unclassified information systems that are not publicly available (e.g., behind a firewall).
20. Confirmed instances of "denial of service" attacks on information systems that result in disruption of site/facility ability to access the Internet, disruption of site/facility information systems operations, or disruption of site/facility information system protection measures (e.g., firewall).
21. Unauthorized network scans/probes on information systems possessing classified information.
22. Incidents of apparent surveillance of facilities or operations (studying, photographing, low over-flights, outsiders questioning employees or protective force, unusual calls for information, etc.).

Attachment 4

Ames Laboratory Security Incidents Reporting Criteria

Impact Measurement Index 4 (IMI-4), IMI-4 Actions, inactions, or events that could pose threats to DOE by adversely impacting the ability of organizations to protect DOE safeguards and security interests. **Report monthly.**

1. Identified special nuclear materials (SNM) inventory differences beyond alarm limits in a Category IV SNM material balance area where there is no indication or reason to believe the difference is created by loss, theft, or diversion.
2. Significant shipper-receiver differences that exceed 200g of fissile material and the combined limit of error for the shipment.
3. Alarms or other loss detection indicators, excluding inventory differences and shipper-receiver differences, for a security area containing a Category III or IV quantity of SNM.
4. A shipper-receiver difference or inventory difference involving a gain in the number of items for which the additional items total to a Category III or IV quantity of SNM.
5. Confirmed or suspected unauthorized disclosure of Unclassified Controlled Nuclear Information, Export Control information, and unclassified Naval Nuclear Propulsion Information by any medium, method, or action.
6. Non-credible bomb threats at any DOE nuclear or non-nuclear facility.
7. Unsecured classified repositories of any type including safes, doors, or other protective encasements in which no likely classified disclosure occurred. If the repository contains Top Secret information, Special Access Program information, or Sensitive Compartmented Information, report under the IMI-1, IMI-2, or IMI-3 category, as appropriate.
8. Peaceful demonstrations or protests that do not threaten facility or site security interests or activities.
9. Failure to adhere to established procedures contributing to the misuse or misprocessing of or failure to maintain security badges and passes.
10. Loss of security badges in excess of 5 percent of total issued during 1 calendar year.
11. Failure to adhere to established procedures contributing to the mismanagement or faulty application of the DOE Human Reliability Program.
12. Failure to adhere to established administrative procedures contributing to problems with foreign visitors.
13. Classified information sent by e-mail that is contained within the firewall. All parties involved are cleared to the level of information transmitted, and the affected systems are identified, taken offline, and appropriately stored in approved areas pending sanitization. If more than 8 hours are required to isolate the affected systems, then such incidents will be handled as suspected compromises in accordance with their classification levels and categories.
14. Unauthorized cellular phones and personal digital assistants introduced into a Limited Area, Protected Area, or Material Access Area, where there is no potential for compromise of classified or unclassified controlled information.
15. Circumvent established access control procedures into a Property Protection Area.
16. High rate/amount of loss (excluding natural disasters) or theft of Government property.

Attachment 5
Ames Laboratory Worker Safety and Health NTS Thresholds

Table 5.1 Noncompliances Associated with Occurrences (DOE Manual 231.1-2)

<p>The simple occurrence of an event in any of the listed categories is not enough to warrant NTS reporting. Reportable noncompliances require the identification of a 10 CFR Part 851 noncompliance (e.g., 29 CFR Parts 1910 and 1926) in conjunction with the event. The Office of Enforcement is interested only in those portions of the criteria with direct worker safety and health implication. Contractors identifying a significant worker safety and health noncompliance in association with an event type of category not listed on the table should evaluate the event for NTS reportability.</p>	
ORPS-Related Event	Description (These descriptions are a brief characterization of the related criteria. Use the full explanation of the criteria contained in DOE Manual 231.1-2 to establish NTS reportability of event-related worker safety and health noncompliances.)
<p>Events that result in Occupational Injuries/Illnesses</p> <p><i>(Reporting Group 2. Personnel Safety, Subgroup A. Occupational Illnesses/Injuries)</i></p>	<ol style="list-style-type: none"> 1. Fatality/terminal illness (SC 1) 2. Inpatient hospitalization of ≥ 3 personnel (SC 1) 3. ≥ 3 personnel having DART cases (SC 2) 4. Personnel exposure > limits requiring medical treatment (SC 2) 5. Personnel exposure > limits (SC 3) 6. Serious occupational injury (SC 3)
<p>Fires/Explosions</p> <p><i>(Reporting Group 2. Personnel Safety, Subgroup B. Fires/Explosions)</i></p>	<ol style="list-style-type: none"> 1. Unplanned fire or related event (e.g., arc flash)/explosion within primary confinement/containment boundaries (SC 1) 2. Unplanned fire/explosion in a nuclear facility that activates a fire suppression system (SC 2) 3. Unplanned fire/explosion in a non-nuclear facility (SC 3)
<p>Failure of Hazardous Energy Controls</p> <p><i>(Reporting Group 2. Personnel Safety, Subgroup C. Hazardous Energy Control)</i></p>	<ol style="list-style-type: none"> 1. Process failure resulting in burn, shock (SC 2) 2. Process failure/discovery of uncontrolled energy source (SC 3)
Near Miss	ORPS Group 10; SC 1-4

Table 5.2 Other NTS Reportable Conditions

Management Issues Noncompliances
<p>(Refer to Operational Procedures (June 1998) document titled “Identifying, Reporting and Tracking Nuclear Safety Noncompliances” for a description of noncompliances in the category of “Management Issues”)</p>
Repetitive Noncompliances
Programmatic Issue
Intentional Violation or Misrepresentation
Other Significant Conditions
<p>Conditions meeting the criteria of Severity Level I (serious) violations and high relative risk.</p> <p>(Conditions of noncompliance identified by any method or means (e.g., contractor assessments, internal review processes, external assessments, employee concerns, event evaluation) that would not otherwise be reported into NTS as either a Management Issue or Occurrence, but that represent a condition of high relative risk. Conditions with an associated low or medium relative risk should not be reported. Guidance on risk assessment criteria can be found at http://www.hss.energy.gov/HealthSafety/WSHP/rule851/851final.html, clicking on the Implementation Guide link.</p>