Occurrence Report Writer's Guide

May 21, 2007

GENERAL INFORMATION

For the occurrence report to work effectively, all reports should be consistent in level of depth and definition of data fields. This guide provides an expansion of the requirements that are in the DOE Order and Manual 231.1 series. HNF-PRO-060, *Reporting Occurrences and Processing Operations Information*, is the PHMC procedure that implements the occurrence reporting Order and Manual and must also be reviewed for additional requirements, including the graded approach described in Appendix D, Occurrence Reporting Model. Facility management should consult with the cognizant DOE Facility Representative, as appropriate, for their assessment, if any, of the occurrence.

Occurrence reports should contain sufficient information about the facility/organization, its operation, the event or condition being reported, and its significance, to facilitate action by those personnel not familiar with the details of the facility, equipment, or procedures.

Operations and engineering units, as well as other support organizations, should be involved in the identification and assessment of reportable occurrences. Site information, such as operations logs and engineering evaluations, should be used in this process.

Engineering judgment should be used during the review of events and conditions to ensure that precursors to occurrences are identified and reported. An occurrence that is not serious, given the conditions under which it happened, might under different initial conditions be a precursor to a serious event at the same or other facilities.

This guide contains information on each data field in the occurrence report, including the kind of data that should be entered in the field to provide quality and consistency. Quality data makes it easier to retrieve and use statistics and lessons learned from the database.

NOTE: The Occurrence Notification Center (ONC) is available on a 24-hour basis to assist facilities with occurrence reporting, including categorization questions and general quality issues (376-3030).

Major facilities will generate occurrence reports on the ORPS Graphical User Interface (GUI); balance of plant facilities will use the Occurrence Report Form on the Hanford Intranet.

NOTE: For additional specific information on using the ORPS GUI, including Data Entry, go to the training documents at:

https://orps.tis.eh.doe.gov/Orps/Help/help/orps_h.htm.

NOTE: For a general description of occurrence reporting-related training courses, go to Appendix F of this guide.

The field descriptions given are the same regardless of whether the form is generated on the ORPS GUI or the Occurrence Report Form. The GUI has instructions on the right side of the screen by clicking on the blue title for each field, and also utilizes drop-down menus for selected fields. The Occurrence Report Form has comment fields with instructions for each field. The use of this guide is directed by HNF-PRO-060.

Occurrence Report Form users (balance-of-plant) should use the field descriptions and lists in this guide to fill out occurrence reports to ensure that the Occurrence Notification Center (ONC) can successfully transfer data from the Occurrence Report Form to the ORPS GUI. Occurrence report writers should avoid the use of plant specific terminology whenever possible. If an acronym is used, ensure it is spelled out when first used.

NOTE: Occurrence reports cannot be transmitted to ORPS if they contain blank fields unless the field is specified as optional.

Writing the Report to Accommodate Direct DTS Entry

FH management, at their discretion, may direct that additional information be included in Field 30, *Immediate Actions Taken and Results*, Field 32, *Description of Cause*, and Field 39, *Corrective Actions*. Use of the additional information will allow for direct DTS entry of the occurrence report, eliminate the use of some forms, and show increased efficiency in the process. Note that this will generally apply to Significance Category 3 and higher occurrences. Refer to HNF-PRO-052, *Corrective Action Management* for additional information.

The applicable fields below (30, 32, and 39) will include the additional information requested for direct entry into the Deficiency Tracking System (DTS).

Occurrence Reporting Definitions

For a listing of definitions relevant to the occurrence reporting process, see Appendix E.

Information Security Requirements

Occurrence Reports containing any classified information, Unclassified Controlled Nuclear Information (UCNI), Official Use Only (OUO), or other controlled information must not be entered into the ORPS database. Contractors must ensure that a review is performed prior to ORPS data entry to preclude contamination of the database with classified, UCNI, OUO, or other controlled information.

Also ensure that completed Prompt Notification forms are reviewed for controlled information before transmittal to the ONC.

Any ORPS report determined to be classified or controlled by current classification or control guidance must be submitted using the appropriate secure transmission means. However, with the exception of entry into the ORPS database, all other reporting requirements (HNF-PRO-060) must be met. In addition, an unclassified version of the Occurrence Report that has been sanitized of all controlled information must be submitted to ORPS within the required time frames.

NOTE: Occurrence reports involving incidents of counterintelligence concern (e.g., foreign persons, governments, organizations, entities or influence) will not be entered or referenced in the ORPS database.

Conventions for Entering Dates and Times

Throughout these reports, use the MM/DD/YYYY date format for both the Occurrence Report Form

and the ORPS GUI (i.e., 08/01/2003). Military time is used (8:00 a.m. would be 0800; 3:00 p.m. would be 1500).

Submittal Schedule for Occurrence Reports

For the required time frames for submitting occurrence reports, refer to the Occurrence Reporting Model (HNF-PRO-060, Appendix D).

Required Fields for Occurrence Reports

The Notification Report requires completion of fields 1-13, 16-22, 24, 25, 28-30 and 34 of the occurrence report. NOTE: All fields are available, and should be used if the applicable information is available.

The Short Form Report requires completion of fields 1-13, 16-22, 24, 25, 28-30, 34 and 35 of the occurrence report. The Short Form Report (Significance Category 4 occurrences) is final when submitted, and does not require DOE approval.

The Notification Report is retained and updated for use in filing an Update Report (if needed) and a Final Report.

The Update Report can utilize any field in the occurrence report. Update Reports are intended to include significant and new information about the occurrence (see HNF-PRO-060 for further information).

The Final Report requires completion of all fields in the occurrence report (i.e., fields cannot be blank) with the exception of those fields specified as optional below.

NOTE: It is expected that the analysis of most occurrences will be completed and the Final Report submitted within 45 calendar days. For certain occurrences (i.e., accident investigations) it is understood that the required information may not be available within this time frame. In these instances, submit an Update Report within 45 calendar days (see HNF-PRO-060 for further information.

Data Changes on ORPS

When you have identified the report to modify, choose either the **Editorial Change** or the **Back Stage a Report** command button in the Data Entry module of ORPS (Balance-of-plant personnel should call the ONC [**376-3030**] for assistance with data changes).

The following actions make an *Update/Final* or *Final Report* available for editing where, after making your changes, you can resubmit the report. To change an occurrence report number, send an e-mail to orpssupport@eh.doe.gov and copy the ONC (^Occurrence Notify Center).

- **Editorial Change**:
  Choose this action if you want to change wording in a text field, modify corrective action items, or make any other modification EXCEPT a change to the Significance Category. This will result in the submittal of either a revised Update/Final Report or a revision to a Final Report.

NOTE: If you are making a modification to the reporting criteria that **does not** affect the Significance Category, use the **Editorial Change** button.

NOTE: Any changes to corrective actions for Significance Category OE, 1, R, or 2 occurrences require approval of the cognizant DOE Facility Representative.

- **Back Stage a Report**:
  Choose this action if you want to change the Significance Category level or re-submit a rejected report. This will reopen the occurrence report as an Update Report in Data Entry and, if appropriate, will ultimately remove the existing Final Report from the ORPS Database.

NOTE: Reports should reflect only the reporting criteria that apply to the occurrence; delete previous criteria that no longer apply.

NOTE: If you are making a modification to the reporting criteria that **does** affect the Significance Category, use the **Back Stage a Report** button.

NOTE: Changes to the Significance Category may require additional notifications (DOE Facility Representative, Prompt Notification to DOE-HQ, etc.)

NOTE: Notify the ONC and the DOE-RL FR within 2 hours of making data changes to ORPS involving:

- Changes to reports already approved by DOE (i.e., SC-2 or higher);
- Changes to significance category or corrective a.
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Quarterly Reporting of Legacy Contamination Occurrences

Legacy contamination occurrences (Group 6.B[4] SC-4) are reported on a quarterly basis in a single Short Form report. This exception to reporting these occurrences within 2 business days has been approved by DOE-HQ and DOE-RL, and is documented in CRD M 231.1-2, Section B.B (2.3). All other requirements of HNF-PRO-060 apply to these occurrences. Key items for consideration:

- Each work order/job where radiological surveys exceed the reporting criteria for legacy contamination require oral notification to the ONC (**376-2900**) and the cognizant RL Facility Representative within 2 hours of categorization.

  NOTE: During off-shift hours, the RL Facility Representative notification can be delayed until the morning of the next business day; the ONC notification cannot be delayed.

NOTE: Copy the IBC Program Manager (AR Johnson) and back-up (TP Giltz) on e-mail notifications to the ONC.

- Based on recommendations from the FH Near Field Monitoring Team, the Facility Manager should make a clear, conscious decision that the event is 'legacy' versus contamination generated, or as a result of, current operations.

NOTE: The final decision on what constitutes a 'legacy' contamination occurrence, for the purposes of the quarterly report, rests with the IBC Program Manager, or delegate, who is the Facility Manager for this reporting process.

- The following 8 items are completed for each individual occurrence in the quarterly report, and should be included in the e-mail to the ONC:

  1. Date/Time of Discovery
  2. Date/Time of Categorization
  3. Date/Time of DOE-FR Notification
  4. Occurrence Description
  5. Immediate Actions Taken
  6. Site Area (i.e., 200-E, 200-W, 600)
  7. Division or Project
  8. Identifying Contractor (i.e., FH, CHG, WCH)

The ONC will maintain the quarterly report in draft form until it is submitted to ORPS at the end of each calendar quarter.

NOTE: The general concept is that each work order/job is reported as an occurrence on the quarterly Short Form report. Example: During radiological monitoring, FH Radiological Control or project/facility personnel identify contamination that is determined to be legacy and exceeds the criteria in HNF-PRO-60. If monitoring to fully define the involved area extends into another day, it would still be documented as one occurrence. Contact the ONC (**376-2900**) with questions on this process.

Field #1 – Occurrence Report Number

A unique designator assigned automatically by ORPS when the notification report is transmitted into the system. The ORPS GUI will show a temporary occurrence report number in this field until the report is transmitted. The report number for balance of plant reports will be recorded and provided to the facility by the ONC via standard notification report distribution.

Report Type and Date

For balance-of-plant facilities, select the appropriate report type and input the date and time the report was transmitted to the ONC using the table provided in the Occurrence Report Form. For ORPS GUI users, the report type is selected from "validate" and "submit" buttons at the bottom of the Data Entry page on ORPS; the report times are automatically entered when the report is submitted.

Field #2 - Facility Name

Enter facility acronym. Occurrence Report Form users enter this information manually, and should also enter the name of the facility where the occurrence took place; major facilities (ORPS GUI users) enter the facility acronym from a drop-down menu. Once the facility code is entered, the program automatically completes the Site Name, Originator/Transmitter, Job Title, and telephone information fields when the report is entered into the ORPS.

Field #3 - Facility Function Code

Enter the code for the type of facility or the activity/function performed by the facility. Only 1 function can be selected.

01 - Plutonium Processing and Handling
02 - SNM Storage
03 - Explosive
04 - Uranium Enrichment
05 - Uranium Conversion/Processing and Handling
06 - Irradiated Fissile Material Storage
07 - Reprocessing
08 - Nuclear Waste Operations/Disposal
09 - Tritium Activities
10 - Fusion Activities
11 - Environmental Restoration Operations
12 - Category "A" Reactors
13 -Category "B" Reactors
14 - Solar Activities
15 - Fossil and Petroleum Reserves
16 – Accelerators
17A - Laboratory - Biological
17B - Laboratory - Chemical
17C - Laboratory - Radiological
17D - Laboratory - Physics (Lasers, etc.)
17E – Laboratory – Material Science
17F – Laboratory - Robotics

99A - Balance-of-Plant - Offices
99B - Balance-of-Plant - Machine shops
99C - Balance-of-Plant - Site/outside utilities
99D - Balance-of-Plant - Safeguards/security
99E - Balance-of-Plant - Storage (except SNM)
99F - Balance-of-Plant - Laundries
99G – Balance of Plant – Infrastructure (Other functions not specifically listed in this category)

Field #4 - Site Name

The site name is automatically entered onto the report when it is transmitted, for ORPS GUI users. The Occurrence Report Form already includes this information.

Field #5 - Manager/Designee

Enter the name of the Facility Manager or designee who approved this report, either by transmittal onto ORPS or hardcopy signature. This individual is the person responsible for the contents of the occurrence report. Use the drop-down menu (for registered users) or input the name manually. Occurrence Report Form (balance-of-plant) users also need to enter the contractor name of the Facility Manager.

Field #6 - Manager Phone

Enter the telephone number of the Facility Manager or designee. Example: (509) 376-5530.

Field #7 - Job Title

Enter the job title of the Facility Manager or designee. Limited to 45 characters or spaces.

Field #8 - Originator/Transmitter

For ORPS GUI users, the name, title, and telephone number of the Originator/Transmitter will be automatically entered based on authority file information. Occurrence Report Form users enter the information manually and must also include the organization of the originator/transmitter. NOTE: This is typically the person who gathers the information for the report and is most knowledgeable about the event.

Field #9 - Originator Phone

This field is automatically generated by the system, and displays the telephone number of the logged-in user.

Field #10 - Originator/Title

This field is automatically generated by the system, and displays the title of the logged in user.

Field #11 – Division/Project

Identify the project or contractor organization responsible for the facility at which the occurrence took place. Do not use acronyms. Examples: Central Plateau Remediation Project, Spent Nuclear Fuel Project.

This field is required for all reports.

Field #12 – Secretarial Office

Select the DOE Secretarial Office to which this facility is operationally responsible from the drop-down menu, or use this list.

EE Energy Efficiency and Renewable Energy
EH Environment, Safety & Health
EI Energy Information Administration
EM Environmental Management
FE Fossil Energy
ME Management, Budget and Evaluation
NA National Nuclear Security Administration
NE Nuclear Energy, Science and Technology
NP New Production Reactor
RW Civilian Radioactive Waste Management
SC Science
SO Office of Security
UE Uranium Enrichment

Only one Secretarial Office may be selected. If the facility is operationally responsible to more than one Secretarial Office, enter the Secretarial Office that is most directly involved in the specific work activity during which the occurrence took place.

This field is required for all reports.

Field #13 – System/Building/Equipment

List the systems, equipment, or structural items involved in the occurrence. In addition, in the case of component failures or defective parts or materials, provide such information as the manufacturer, model number, size, etc. List the most significant item(s) here. Since this entry is limited to 1 line of text, additional items can be listed in field 25.

This field is required for all reports.

Field #14 - Authorized Classifier/Reviewing Official

Enter the name of the authorized classifier who reviewed the report and determined that it was unclassified, or the name of the reviewing official who determined that there was no Unclassified Controlled Nuclear Information (UCNI) or other controlled information included in the report. Classified, UCNI, and controlled information MUST NOT be transmitted to ORPS. For reports containing classified, UCNI, or controlled information, a sanitized version of the report must be submitted to ORPS. For facilities where classified operations are conducted, classified information is generated, or UCNI or other controlled information is available, this field is required for all reports.

Field #15 - Classification Date

Enter the date when the authorized classifier or reviewing official reviewed this report and determined that it was appropriate for entry into ORPS. Example: 11/03/2003

Field #16 – Unclassified Controlled Nuclear Information (UCNI)

When required and when appropriate UCNI guidance is available, a reviewing official will make a final determination that the report contains (enter "Y" for Yes) or does not contain (enter "N" for No) UCNI. Where appropriate guidance is not available, a reviewing official should make a preliminary review determination that the report may contain UCNI (enter "Y" for Yes) or does not contain UCNI (enter "N" for No). Classified and UCNI information is not allowed on the ORPS database. A sanitized version, however, must be submitted within the required time frames.

This field is required for all reports.

Field #17 – Plant Area

List the name of the site-specific plant area where the occurrence took place (i.e., 100, 200 East, 200 West, 300, 400, 600, RCHN, RCHC, etc.).

This field is required for all reports.

Field #18 – Discovered Date/Time

Enter the date and time that cognizant facility staff discovered the event or condition being reported.

NOTE: For questions on when discovery time should be reported, call the ONC on 376-3030.

Example: 02/01/2007 1500

This field is required for all reports.

Field #19 – Categorized Date/Time

Enter the date and time when the facility manager determined that the event/condition was a reportable occurrence and categorized it.

For SC-3 and higher occurrences that are upgraded or downgraded in category, the latest re-categorization time and date should be documented in field 25, "Description of Occurrence". The only other reason to change this field would be to correct typographical errors; otherwise, leave the initial categorization date/time in place.

For re-categorizations involving SC-4 occurrences:

- Final SC-4 occurrences upgraded to SC-3 or higher reset the 45-day clock in this field. Enter the new date/time of categorization. By the Order, SC-3 reports have a 45-day Final Report. (If an SC-4 is upgraded ***prior to*** ORPS entry, the original date/time of categorization still apply)

- SC-3 or higher occurrences downgraded to SC-4 reset the 45-day clock to the 2-day Final Report due date, per the Order. Enter the new date/time of categorization; the SC-4 Final Report should be submitted within 2 business days.

NOTE: All of the specific reporting criteria from HNF-PRO-060, Appendix D applicable to the

event or condition must be identified when categorizing occurrences.

NOTE: All reports, including re-categorized or back-staged reports, should reflect only the reporting criteria that apply to the occurrence; delete previous criteria that no longer apply.

Example: 02/01/2007 1700

This field is required for all reports.

Field #20 – Subject/Title of Occurrence

Enter a concise subject or title for this report (140 characters or less) that best details the nature, cause, and result of the occurrence. Examples:

- Government Vehicle Accident
- Suspect/Counterfeit Items
- Personnel Contamination

NOTE: If the occurrence involved an Unreviewed Safety Question, the acronym "USQ" should be placed in parenthesis at the end of the subject/title.

This field is required for all reports.

Field #21 – Reporting Criteria

Enter the reporting criterion code or codes (as many as apply) from DOE M 231.1-2, Section 6.3 (or contractor occurrence reporting procedure such as HNF-PRO-060, Appendix C). List all that are applicable and appropriate. Only one code is required. For ORPS GUI users, click on the "RC Lookup Table", scroll down to the appropriate criterion, and hit the "Select" button. For Occurrence Report Form users, type in the selected criterion code(s).

Example: 2.A(5)3. Note that in the example, "2" is the group number, "A" is the subgroup number, "5" is the sequence number, and "3" is the Significance Category number.

This field is required for all reports.

NOTE: The Significance Category field will contain the highest significance category associated with the selected reporting criteria. For example, if reporting criteria with significance categories 4, 3, and 1 were selected, then the significance category would be 1.

NOTE: Appendix A, "Summary of Surface Contamination Values", is provided as guidance for reporting contamination events (HNF-5173, *PHMC Radiological Control Manual*, Table 2-2).

NOTE: Appendix B, "Surface Activity Guidelines", is provided as guidance for reporting contamination events (DOE O 5400.5).

NOTE: Appendix C, "Reporting Enforcement Actions/Related Regulatory Activities" is provided as guidance when these types of events are being reported (from Group 9(2)4 of the criteria).

NOTE: Appendix D, "Recurring Event Criteria" is provided as guidance when an event is categorized as Significance Category R.

Field #22 - Significance Category

This field is automatically assigned by the system and is dependent on the Reporting Criteria. Significance Categories include OE (Hazardous Material Operational Emergencies and Base Program Operational Emergencies), 1, R, 2, 3, and 4, with OE being the most significant and 4 the least significant. The Significance Categories are defined as follows:

Significance Category OE: Operational Emergency occurrences are the most serious occurrences and require an increased alert status for onsite personnel and, on some cases, for offsite authorities.

Significance Category 1: Occurrences in this category are those that are not Operational Emergencies, and that have a *significant impact* on safe facility operations, worker or public safety and health, regulatory compliance, or public/business interests

Significance Category R: Occurrences in this category are those identified as recurring, as determined from the quarterly performance analysis of occurrences across the site (review-based), or as identified by an ongoing analysis of occurrences at projects or facilities (event-based).

Significance Category 2: Occurrences in this category are those that are not Operational Emergencies, and that have a *moderate impact* on safe facility operations, worker or public safety and health, regulatory compliance, or public business interests.

Significance Category 3: Occurrences in this category are those that are not Operational Emergencies, and that have a *minor impact* on safe facility operations, worker or public safety and health, regulatory compliance, or public business interests.

Significance Category 4: Occurrences in this category are those that are not Operational Emergencies, and that have *some impact* on safe facility operations, worker or public safety and health, public/business interests.

Cancel Report

If the report is being cancelled as non-reportable, check the "Cancel Report" box (to the right of the Significance Category, for ORPS GUI users). For Occurrence Report Form users, check the "Yes" where provided, otherwise check "No".

Fields 1-13, 16-22, 24, 25, and 28-30 and 34 are required for cancelled reports. NOTE: Does not apply to Short Form Reports (Significance Category 4).

Re-Categorizing Occurrences

All occurrences that are re-categorized must be re-evaluated for required prompt notifications (See DOE M 232.1-2 or HNF-PRO-060 for other requirements).

An Update or Update/Final Report (whichever applies) must be submitted, and an explanation of why the occurrence was upgraded or downgraded included in field 25. Do not change the original description, unless required by the occurrence investigation.

NOTE: Reports should reflect only the reporting criteria that apply to the occurrence; delete previous criteria that no longer apply.

Field #23 - Recurring Event

Fluor Hanford (FH) management believes that reporting occurrences, including recurring events, is viewed as a positive aspect of overall facility operations. Identification of a recurring event should be viewed as an opportunity for improvement. Categorization of a recurring event, in and of itself, should not have a negative impact on performance fees or ratings.

There are three potential sources of information that can lead to categorization of a recurring event. These sources can include information from occurrences of any significance category, including non-reportable (i.e., deficiency tracking system) data.

- **Operating Experience:** Facilities and projects should review their operating experience on an ongoing basis. A key activity in this area is identification and analysis of "similar occurrences" from the Occurrence Reporting and Processing System (ORPS) database. This activity can be supported by statistical analysis, as appropriate.

- **Individual Discovery:** Any individual, contractor or DOE-RL, can raise the hypothesis to FH management that a series of events should be reviewed as potentially "recurring". This should trigger, at a minimum, a statistical analysis and use of the criteria (HNF-PRO-060, Appendix C) to document the management decision.

- **Quarterly Data Analysis:** This analysis will detect trends and areas of stable performance in pre-determined categories of occurrence reports and deficiency tracking system data. Routine data analysis will include reporting criteria, causes, headquarters (HQ) keywords and word searches in key areas affecting safety and health.

If this is a recurring event, check the box (for Occurrence Report Form users, check "Yes" or "No"). Otherwise leave it blank. When this box is checked, the Significance Category will be set to R automatically regardless of what Significance Category derived from the Reporting Criteria is selected.

For events categorized as Significance Category R, the similar occurrences identified in the data analysis must be included in the Similar Occurrence Reports (field 37) of the occurrence report. If no specific significance category can be identified for the report, use Group 10(2) "Management Concerns/Issues" from DOE M 231.1-2, Section 6.3, or HNF-PRO-060, Appendix C.

Recurring occurrences must be categorized and reported collectively as a Significance Category R occurrence, even if each individual occurrence had been originally categorized at a higher or lower significance level (e.g., as Significance Category 1 or 4 or even as non-reportable occurrences). See the Occurrence Reporting Model, Section 11 of DOE M 231.1-2 or Appendix D of HNF-PRO-060, requirements for a Significance Category "R" occurrence. Recurring event criteria and more information on performance analysis guidance for occurrence reports are provided in Appendix D of this Guide.

NOTE: Contact the Interpretive Authority for HNF-PRO-24741 or the ONC (**376-2900**) for assistance (when appropriate) with categorization of a Significance Category R occurrence. Also ensure that the appropriate functional area organization is advised.

Refer to HNF-PRO-24741, *Performance Analysis Process*, for additional requirements.

This field is only required for occurrences designated as "recurring".

Field #24 - Subcontractor Involved

If a subcontractor is involved in this occurrence, choose *Yes*. Otherwise choose *No*. If *Yes* is selected, enter the name of the subcontractor or subcontractors (required).

For PHMC occurrence reporting purposes, a subcontractor is defined as a contractor doing a discrete scope of work under the direction and responsibility of the Prime Contractor (Fluor Hanford, Inc.). This does ***not*** include personnel filling a position with Fluor Hanford as augmented staff.

NOTE: The intent of this field is to list non-PHMC subcontractors ***involved*** in the occurrence. Subcontractor personnel directly involved in actions (or omissions of required actions) that subsequently result in a reportable occurrence should be listed in this field.

Example #1: A subcontractor (XYZ Company) is contracted to dig a trench for piping. During the work, the decision was made to use drilling machinery rather than hand digging in an area tagged as potentially containing underground wiring. A fiber-optic cable was severed, resulting in a loss of computer access to a site area for 8 hours. An 'SGB Company' supervisor, working as augmented staff for Fluor Hanford, was in charge of the job. ***In this example, the 'XYZ Company' should be listed in this field. They are directly involved in the event. The 'SGB Company' is not listed, since they are supervising as FH augmented staff.***

Example #2: A Fluor Hanford facility receives a high radiation alarm during routine work in a radiation area. The 'SGB Company' is doing work on a maintenance contract in the facility, separate from radiation areas. The FH facility manager makes the decision to evacuate the entire facility, including subcontractor employees. ***In this example, the 'SGB Company' would not be listed in this field. They were not directly involved in the cause of the event. Note that if 'SGB Company' personnel were working in the radiation area, and their actions resulted in the alarm, they would be listed in this field.***

This field is required for all Final Reports.

Field #25 – Description of Occurrence

Enter a clear, concise, objective description of what happened and was observed. To the maximum extent possible, provide a sequence of events. Do not include an evaluation of the occurrence, causes, or corrective actions taken in this field.

The following instructions are required (DOE M 231.1-2) when completing this field:

- 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."

Provide at least the following information, if applicable:

- The method of discovery

- Any component failures and failure modes

- Any personnel errors involved, including the type and result of the error

- Any procedure problem encountered

- The response of any automatic or manual safety systems and the signals that initiated and terminated their operation

- The duration of any failures

- Operator actions that affected the course of events

- The loss of any safety equipment

- For contamination events, see Appendices A and B for further guidance.

All photos, sketches, or drawings relative to the report should be referenced as attachments to the occurrence report, with specifics as to where or from whom they can be obtained. They can also be posted on the Internet, with a hyperlink to the documents included in this field.

For recurring events, include all pertinent information to describe how the event was determined to be recurring.

NOTE: See Appendix D, "Recurring Event Criteria", for additional information.

This field is required for all reports.

NOTES TO THE WRITER:

- The event description should begin with a concise, objective summary paragraph of what happened, and when and where it happened (chronological sequence of events). The writer should keep in mind that the occurrence reports are for the entire DOE community as well as the public.

- The description should contain some background information concerning the facility or equipment involved. A description of the function/purpose of the facility or equipment is helpful. All reports should be written so that individuals unfamiliar with facility operations can readily understand the occurrence and its consequences.

- Since the first ten lines of the description appear on the ORPS Summary Report, try to include the most significant information within these lines. This is helpful for those compiling lessons learned information.

- When an action is discussed, it should be clearly stated why that action occurred or was taken (i.e., required by procedure, personnel were trained to do it that way, or automatic/designed feature). If an action is mentioned but not explained, the result is an unanswered question in the reader's mind.

Field #26 – DOE-HQ OC Notification

Enter the date and time when the DOE HQ Operations Center was notified and the name and organization of the person notified. This field is required for all events requiring "prompt notification" to DOE-HQ, as noted below.

Example: 02/01/2007 1500 T. A. Smith DOE-HQ OC

This field is required for all reports that are categorized as Emergencies, Base Program Operational Emergencies, and Significance Category 1 occurrences.

This field is also required for Significance Category 2 occurrences as directed by the DOE-RL Facility Representative.

In addition, this field is required for all Significance Category 2, 3, and 4 occurrences identified with an asterisk (*) next to the reporting criteria.

Field #27 – Other Notifications

For reports that are categorized as Emergencies, Base Program Operational Emergencies, and Significance Category 1 occurrences, enter the date, time, name and organization of the DOE-RL

Facility Representative notified (required).

Example: 02/01/2007 1800 R. E. Johnson DOE-RL

For reports categorized as Significance Category 2 occurrences, if directed by the DOE Facility Representative to make a prompt notification to the DOE-HQ OC, enter the information for the person directing this action (required).

Additionally, use this field to record notifications to state or local officials and regulatory agencies, if applicable. Notification to the Occurrence Notification Center (ONC) can be included here, also.

Field #28 – Operating Conditions

Enter a brief (up to 2 lines of text) description of the operational status of the facility or equipment at the time of the occurrence. For example, this may include pertinent temperatures, pressures, or other parameters necessary for evaluation of the occurrence and its consequences.

If this information is not applicable (i.e., not involving an operational facility), enter "Does not apply".

This field is required for all reports.

Field #29 – Activity Category

Select the activity that best describes the ongoing activity at the time of the occurrence. ORPS GUI users use the drop-down menu. Occurrence Report Form users type in the applicable code number and title.

This field is required for all reports.

01 - Construction
02 - Maintenance
03 - Normal Operations (other than activities specifically listed in this category)
04 - Start-up
05 - Shutdown
06 - Facility/System/Equipment Testing
07 - Training
08A - Transportation Onsite
08B - Transportation Offsite
09 - Emergency Response
10 - Inspection/Monitoring
11 - Facility Decontamination/Decommissioning
12 - Research

Example: Maintenance work, even though performed during a shutdown of the facility, should be coded as "maintenance" not "shutdown". Item #3, "Normal Operations" should be used only in the event that none of the other selections fit the on-going activity at the time of the occurrence.

Field #30 – Immediate Actions Taken

Describe the immediate or remedial actions taken to return the facility, system, or equipment item to service, or to correct or alleviate the anomalous condition, and describe the results of those actions. The actions cited may be temporary measures necessary to keep the facility in safe standby condition or those used to permit continued operation of the facility without compromising safety until a more searching investigation or permanent solution can be effected.

Additional Information for Direct DTS Entry (at facility discretion):

NOTE: When including the information below for direct DTS entry, separate the items from the list of immediate actions, and identify them clearly to avoid confusion when the report is reviewed by other sites and/or DOE-HQ (i.e., "Internal Tracking Information:")

For each Immediate or Remedial action in this field, include:

- The name of the manager owning the action, and the Alert Group number (if different than the Facility Manager).
- The date that the action(s) were actually completed, when known.
- The action type (i.e., Remedial [REM] or Corrective Action [CA] (for occurrences identified as Significant Issues [SI] per HNF-PRO-052).
- The closure requirements and the supporting evidence required for closure of the action, per the HNF-PRO-52 process (for occurrences identified as SI, per HNF-PRO-052)
- All actions that will require entry into DTS (and are not already included elsewhere in the report)

List the actions taken in chronological order.

Also record the results of those actions. These should only include those actions taken in the short term (i.e., hours) to correct the condition. Other long term actions, such as ordering and installing a new valve, should be stated in field 39, "Corrective Actions".

This field is required for all reports.

Field #31 – Cause Codes

Select all codes from the Causal Analysis Tree (DOE M 231.1-2, Section 11 (or use a contractor procedure such as HNF-PRO-052), that best represent the causes of the occurrence. If you select A3 (Human Factors) as a cause code, select any associated causes (couplets) from the couplet selection list (or choose a better couplet for the occurrence). For ORPS GUI users, click on the Cause Code Lookup Table, scroll down to the applicable causes, and click on "Select".

NOTE: There may be rare instances where there is no valid couplet (i.e., A3B4C02, *Deliberate Violation*) for a Human Factors code. In these instances the "NA" option is available. Ensure management approves of this selection, and include an explanation for its use in the report.

For Occurrence Report Form users, type in the applicable codes and heading. Example: "A1B1C01 – Design input cannot be met".

This field is required for all Final Reports, and is optional for Short Form Reports.

NOTES TO THE WRITER:

- Significance Category OE, 1, R, and Near Miss occurrences require a Root Cause determination (and any other causal factors that may apply). Refer to the Occurrence Reporting Model (DOE M 231.1-2, Section 11 or HNF-PRO-060, Appendix D).

- Significance Categories 2 and 3 require Apparent Cause determination (and any other causal factors that may apply). Refer to the Occurrence Reporting Model (DOE M 231.1-2, Section 11 or HNF-PRO-060, Appendix D).

- Significance Category 4 occurrences (Short Form Reports) require no causal analysis, it is optional.

Field #32 – Description of Cause

Discuss the causes of the occurrence to include all causes (from field 31) and the corrective actions identified, including causal analysis contributing to a recurring event (if applicable). Do not repeat a description of the occurrence, but discuss the results of the causal analysis. A detailed description of the corrective actions is necessary to demonstrate that the identified actions will adequately address the cause(s) of the problem.

Additional Information for Direct DTS Entry (at facility discretion):

- If the issue is a Significant Issue (SI) or a root cause is required per HNF-PRO-060, identify which cause code is the root cause (i.e., for OE, Group 10(3), SC-R, SC-1 occurrences).

The methodology used for the causal analysis must be identified in this field. (i.e., Barrier Analysis, Event and Causal Factor Analysis).

This field is required for all Final Reports, except Short Form Reports.

NOTES TO THE WRITER:

- Each cause identified should be discussed in sufficient detail to enable the reader to understand the analysis process and how a particular cause was determined. A description of the corrective actions is necessary to demonstrate that the identified actions will adequately address the cause(s) of the problem (i.e., prevent recurrence). Corrective actions identified in this field are also included in field 39.

- Also include any corrective actions identified during analysis of similar occurrences (field 37). For example, if several previous events of a similar nature have corrective actions that did not prevent recurrence, additional corrective actions may be identified, such as the need for additional training or changes to procedures. These corrective actions must also be included in field 39.

- For readability, it is helpful to identify each cause by its code description (i.e., Apparent Cause: Inadequate Work Package Preparation) followed by the description and corrective actions to prevent recurrence.

- If separate documentation (i.e., root cause analysis) is appropriate, reference the document in this field of the report and include an explanation of how the document can be obtained.

Field #33 – Evaluation by Facility Manager

With the information available, the Facility Manager should provide his or her evaluation of the occurrence and its effect or possible effect on the plant, system, program, etc. The Facility Manager may later supplement this evaluation with additional entries in Update reports or in the Update/Final report.

This field is required for all Notification reports where "Further Evaluation Required" is "Yes" and "Before Further Operation" is "Yes". It is also required for all Update and Final reports, and is optional for Short Form Reports.

NOTES TO THE WRITER:

- This evaluation should include an explanation of whether similar occurrences, if applicable, (field 37) have been analyzed to ensure previous corrective actions have effectively prevented recurrence of causes (i.e., the correct root cause was identified).

- Additionally, an evaluation of similar occurrences should be done to determine if recurring events are isolated or programmatic in nature. It is important to place each occurrence in perspective and ensure programmatic issues are properly managed (causal analysis, corrective action management, lessons learned).

NOTE: If no similar occurrences are identified, provide a disclaimer stating a search was done, and a brief explanation of why no previous occurrences apply to the current report.

NOTE: Corrective actions that are identified as a result of the occurrence investigation or facility manager's evaluation that are not directly linked to a cause (field 31) can be identified in this field and also must be included in field 39.

NOTE: Ensure that DOE oversight/assessment activities are included, when appropriate, into the overall evaluation of the occurrence. These activities may also generate information for occurrence causes (field 31) or corrective actions (fields 32 and 39).

NOTE: This field is also used to extend Final Report due dates and justify why the report is being extended beyond its original target date.

Field #34 – Further Evaluation Required

If this occurrence will require further evaluation, choose *Yes*. Otherwise choose *No*. For Cancelled and Update/Final Reports, "Further Evaluation Required" should be "No".

This field is required for all reports.

If further evaluation is required, specify if this occurrence will require further evaluation before further operation. For Cancelled and Update/Final Reports, "Before Further Operation?" should be "No". This field is required for all reports where "Further Evaluation Required" is "Yes".

If further evaluation is required before further operation, enter the name of the person who will perform further evaluation on this occurrence and the date when the further evaluation will be completed. The name and date fields are required for all reports where "Further Evaluation Required" is "Yes" and "Before Further Operation" is "Yes".

Field #35 – ISM Code

Select one or more integrated safety management (ISM) codes from the following list to identify an observed weakness or weaknesses in the facility's implementation of the ISM program (e.g., failure to properly define the work scope, or failure to perform an adequate activity level hazards analysis).

Available ISM codes are:

1. **Define Scope of Work:** Missions are translated into work, expectations are set, tasks are identified and prioritized, and resources are allocated.

2. **Analyze the Hazards:** Hazards are associated with the work identified, analyzed, and categorized.

3. **Develop and Implement Hazard Controls:** Applicable standards and requirements are identified and agreed-upon, controls to prevent/mitigate hazards are identified, the safety envelope is established, and controls are implemented.

4. **Perform Work Within Controls:** Readiness is confirmed and work is performed safely.

5. **Provide Feedback and Continuous Improvement:** Feedback information on the adequacy of controls is gathered, opportunities for improving the definition and planning of work are identified and implemented, line and independent oversight is conducted, and, if necessary, regulatory enforcement actions occur.

6. **N/A (Not applicable to ISM Core Functions as determined by management review):** Items that do not fall into the realm of ISM Core Functions, e.g., natural phenomena, wild fires, counterfeit/suspect parts, notifications of non-compliance (Federal, State, Local), legacy issues that could not have been anticipated, end-of-life equipment failures where maintenance is not an issue, etc.

This field is required for all Final reports, including Short Form Reports.

Field #36 – Lessons Learned

Include any lessons that others might learn from the occurrence that could be of importance to other facility operators or that should be addressed in personnel training or facility procedures. Give enough detail so the lessons learned can be understood by all readers throughout the DOE complex.

Include analysis of similar occurrences, when appropriate. Avoid use of site-specific jargon and spell out all acronyms.

NOTE: *Lessons Learned are optional for SC-3 and SC-4 occurrences. SC-3 occurrences* ***require****, at a minimum, a lessons learned* <u>*statement*</u> *in the appropriate field in the occurrence report.*

This field is required for all Final Reports, and is optional for Short Form Reports.

Field #37 – Similar Occurrence Reports

Enter the report number(s) for any similar occurrence(s) for your facility (or other facilities), including similar occurrences contributing to a recurring event. A discussion describing the analysis of similar occurrence reports should be included in field 32 or 33, as appropriate. Also, identify any known commercial reactor Licensee Event Reports (LER) or other related documents that describe similar occurrences. The purpose of this item is to identify, if recognized, occurrences that might suggest a generic problem. It also serves to identify generic problems that may result in single or common lessons learned.

NOTES TO THE WRITER:

- An analysis of similar occurrences is important to ensure previous corrective actions were valid (i.e., the correct root cause was identified); and to determine if the event being reported is isolated or part of a larger problem (i.e., programmatic in nature).

- Based on the results of this analysis, information may be needed for field 33, Description of Cause (and possibly new corrective actions, which would also be documented in field 39, Corrective Actions), field 32, Evaluation by Facility Manager (evaluation of a programmatic problem OR a disclaimer that no issues exist with previous occurrences), or field 36, Lessons Learned.

- Take the time to ensure similar occurrences, when they apply, are adequately analyzed and documented on the occurrence report. If you need assistance to query ORPS for similar occurrences, you can call the ONC (376-3030).

This field is required for all Final Reports, and is optional for Short Form Reports.

Field #38 – User Defined Field #1

This optional field can be used by the facility manager to store facility-specific information (e.g., a cross-reference to performance indicator data). The use of keywords is suggested as a way to track significant data in occurrence reports. Maximum length of this field is 124 characters.

User Defined Field #2

This optional field can be used by the facility manager to store additional facility-specific information (e.g., a cross-reference to a site-specific number or name). Maximum length of this field is 124 characters.

Field #39 – Corrective Actions

PHMC facilities use a local deficiency tracking system (DTS) for tracking and closure of corrective actions. Enter the target completion date and the reference number of the CA stored in the local CA tracking system. For PHMC facilities, this is the Corrective Action Record File (CARF) number. All CA items entered in ORPS with the local CA reference number(s) are consider to be Closed in CA status. Also include a description that clearly states the actions to be taken and include all relevant details. The reader must be able to link a corrective action to a previously identified cause in the occurrence report.

The local CA tracking system includes management of SC-4 occurrences, which do not require entry into ORPS.

For Significance Category OE, 1 and R Final Reports **and** Group 10(3) Near Miss Final Reports, **and** Significance Category 2 Final Reports that are designated as a 'Significant Issue' per HNF-PRO-052: Include an action to perform an ***effectiveness review*** and an ***extent of condition review*** for all corrective actions in these reports, per HNF-PRO-052 (or applicable contractor corrective action management process).

NOTE: For facility or project-specific issues, an effectiveness review (e.g., management assessment, surveillance, independent assessment) is lead by an individual or individuals that are independent of responsibility for the corrective action(s). For programmatic or cross-cutting issues, a functional organization lead is assigned who is independent of responsibility for the corrective action.

NOTE: The effectiveness review process (per HNF-PRO-052) includes 'Independent Verification' and 'Assessment of Effectiveness to Prevent Recurrence', as described in Appendix D of HNF-PRO-060.

For corrective actions in Significance Category OE, 1, R and 2 Final Reports, include an action to ***transmit a Lessons Learned to the PHMC Lessons Learned Coordinator*** (for subsequent entry into the DOE-Complex Lessons Learned Database).

For corrective action status changes for Significance Category OE, 1, R, and 2 approved Final Reports, ensure the following items are completed:

- Obtain approval from the cognizant FR prior to making any changes to corrective actions in DTS (i.e., text changes, adding or deleting actions, date changes).

- Update ORPS when corrective actions in DTS are changed. Ensure that ORPS and DTS align, relative to addressing all key causal analysis issues.

NOTE: *Communicate with actionees, as appropriate, to ensure corrective action status changes meet the requirements in the two bullets above.*

A complete list of corrective actions should be included in the report to ensure it can stand on its own (i.e., reviewers do not have to search for other reports, etc).

NOTE: For occurrences resulting in an accident investigation, all causes (direct, contributing, and root) identified in the accident investigation report, as well as the corrective actions developed in response to the judgments of need, must be included in the Final Report.

NOTE: Corrective Actions are required for all Final Reports, and are optional for Short Form Reports.

NOTE: Although not required by occurrence reporting, corrective actions are tracked in DTS for all levels of occurrence reports, including SC-4 occurrences and non-reportable events or conditions that are screened as requiring action(s) in DTS.

NOTES TO THE WRITER:

- Enter a description of all the corrective actions from field 32 (and field 33, if applicable) taken to prevent recurrence. A title or summary of the corrective action should be included in the first two lines. Include any planned corrective actions, their actual or scheduled (target) completion dates, and the responsible individuals (names optional, titles are adequate) and organizations. Include enough information so the reader understands exactly what was done to complete the corrective action.

- The reader should be able to relate a corrective action to the cause(s) identified in field 32. For readability, list the corrective actions in the same order referenced in earlier fields. Corrective actions do not have to be complete in order to issue a Final Report, only identified and scheduled, i.e., a target completion date.

- This field will also include any other corrective actions identified during the event investigation, such as the analysis of similar occurrences (field 37). These corrective actions are valuable for lessons learned.

NOTE: A Final Report cannot be transmitted to ORPS if it does not contain a target completion date for corrective actions. To change a target completion date, written justification must be entered onto ORPS by the Facility Manager/Designee (the ONC provides this service for balance-of-plant facilities).

Additional Information for Direct DTS Entry (at facility discretion):

NOTE: When including the information below for direct DTS entry, separate the items from the list of immediate actions, and identify them clearly to avoid confusion when the report is reviewed by other sites and/or DOE-HQ (i.e., "Internal Tracking Information:")

For each corrective action on the occurrence report (OR), include:

- A description of the corrective action.
- The name of the manager owning the action and the DTS Alert Group number (if different than the Facility Manager).
- The name of the actionee (optional, the default is the manager owning the action)

If OR is a Significant Issue (SI) per HNF-PRO-052, for each corrective action in the OR, include:

- A description of the objective evidence that will be provided to demonstrate completion of the action.
  --Example of Objective Evidence: A completed training roster for Safety Class xxxx of all RCTs assigned to Project X.

- Include the action type, per HNF-PRO-052 (i.e., Remedial or Corrective Action)

If the action is complete, include statement indicating the action is complete and the completion date.
--Example of Completed Action: Procedure FH-XX--001, title, was revised on May 1, 2005 and published on PHMS.

If the issue is Non-Compliance Tracking System (NTS):

- The PAAA Compliance Officer (CO) will approve the OR to include the objective evidence and determine which actions are NTS actions.
- Include the abbreviation "[NTS]" in front of each of the actions that the PAAA CO designates as NTS, which denotes the PAAA CO must approve the OR.
- Add the following closure note for each NTS action: "NSRC concurrence required for closure/extension/revision/cancellation".

Field #40 – Facility Representative Comments

The DOE Facility Representative or designee can provide his or her evaluation of the occurrence, including an evaluation of the initial and proposed corrective actions and any follow-up by the facility personnel, and can describe any other actions that DOE has taken since the occurrence. The Facility Representative may supplement such information with subsequent additional entries, as appropriate. After completing the input, the Facility Representative's name and date will be automatically entered by ORPS.

If a Final Report is being rejected, the Facility Representative should use this space to indicate why. This field is required only on Final Reports rejected by the Facility Representative.

Field #41 – Program Manager Comments

The Program Manager or designee can provide his or her evaluation of the occurrence, including an evaluation of the initial and proposed corrective actions and any follow-up, and can describe any other actions that DOE has taken since the occurrence. The Program Manager may include additional information, as appropriate. After completing the input, the Program Manger's name and date will be automatically entered by ORPS.

If a Final Report is being rejected, the Facility Representative should use this space to indicate why. This field is required only on Final Reports rejected by the Program Manager.

Signatures

This space is used to document electronic signatures for the facility manager, facility representative,

and program manager. Obtain all three signatures on the hardcopy (classified) report before distributing final reports in hardcopy. Include the typed names and titles of the individuals by their signatures.

APPENDIX A: SUMMARY OF SURFACE CONTAMINATION VALUES

(PHMC Radiological Control Manual, Table 2-2)

Table 2-2 Summary of Surface Contamination Values[1] in dpm/100 cm^2

Radionuclide	Removable[2, 4]	Total (Fixed + Removable)[2, 3]
U-nat, U-235, U-238, and associated decay products	[7]1,000	[7]5,000
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	20	500
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	200	1,000
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above[5]	1,000	5,000
Tritium and tritiated compounds[6]	10,000	N/A

1 The values in this table, with the exception noted in footnote 6 below, apply to radioactive contamination deposited on, but not incorporated into the interior or matrix of, the contaminated item. Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides apply independently.

2 As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

3 The levels may be averaged over one square meter provided the maximum surface activity in any area of 100 cm^2 is less than three times the value specified. For purposes of averaging, any square meter of surface shall [835, App. D, Note 3] be considered to be above the surface contamination value if: (1) from measurements of a representative number of sections it is determined that the average contamination level exceeds the applicable value; or (2) it is determined that the sum of the activity of all isolated spots or particles in any 100 cm^2 area exceeds three times the applicable value.

4 The amount of removable radioactive material per 100 cm^2 of surface area should be determined by swiping the area with dry filter or soft absorbent paper, applying moderate pressure, and then assessing the amount of radioactive material on the swipe with an appropriate instrument of known efficiency. (Note - The use of dry material may not be appropriate for tritium.) When removable contamination on objects of surface area less than 100 cm^2 is determined, the activity per unit area shall [835, App. D, Note 4] be based on the actual area and the entire surface shall [835, App. D, Note 4] be wiped. It is not necessary to use swiping techniques to measure removable contamination levels if direct scan surveys indicate that the total residual surface contamination levels are within the limits for removable contamination.

5 This category of radionuclides includes mixed fission products, including the Sr-90, which is present in them. It does not apply to Sr-90 which has been separated from the other fission products or mixtures where the Sr-90 has been enriched.

6 Tritium contamination may diffuse into the volume or matrix of materials. Evaluation of surface contamination shall [835, App. D, Note 6] consider the extent to which such contamination may migrate to the surface in order to ensure the surface contamination value provided in this Table is not exceeded. Once this contamination migrates to the surface, it may be removable, not fixed; therefore, a "Total" value does not apply.

7 (alpha).

APPENDIX B: SURFACE ACTIVITY GUIDELINES

(DOE O 5400.5)

Allowable Total Residual Surface Activity (dpm/100 sq-cm)[1]

Radionuclides[2]	Average[3/4]	Maximum[4/5]	Removable[6]
Group 1 - Transuranics, I-125, I-129, Ac-227, Ra-226, Ra-228, Th-228, Th-230, Pa-231	100	300	20
Group 2 - Th-natural, Sr-90, I-126, I-131, I-133, Ra-223,Ra-224, U-232, Th-232	1000	3000	200
Group 3 - U-natural, U-235, U-238, and associated decay products, alpha emitters	5000	15000	1000
Group 4 - Beta-gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous[10] fission) except Sr-90 and others noted above[7]	5000	15000	1000
Tritium (applicable to surface and subsurface)[8]	N/A	N/A	1000

Excerpt from Response to Questions and Clarification of Requirements and Processes: DOE 5400.5, *Section II.5 and Chapter IV Implementation (Requirements Relating to Residual Radioactive Material)*, DOE Assistant Secretary for Environment, Safety and Health, Office of Environmental Policy and Assistance (EH-41), Nov. 17, 1995.

NOTES:

[1] As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by counts per minute measured by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[2] Where surface contamination by both alpha- and beta-gamma-emitting radionuclides exists, the limits established for alpha- and beta-gamma-emitting radionuclides should apply independently.

[3] Measurements of average contamination should not be averaged over an area of more than 1 sq-m. For objects of smaller surface area, the average should be derived for each such object.

[4] The average and maximum dose rates associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/h and 1.0 mrad/h, respectively, at 1 cm.

[5] The maximum contamination level applies to an area of not more than 100 sq-cm.

[6] The amount of removable material per 100 sq-cm of surface area should be determined by wiping an area of that size with dry filter or soft absorbent paper, applying moderate pressure, and measuring the amount of radioactive material on the wiping with an appropriate instrument of known efficiency. When removable contamination on objects of surface area less than 100 sq-cm is determined, the activity per unit area should be based on the actual area and the entire surface should be wiped. It is not necessary to use wiping techniques to measure removable contamination levels if direct scan surveys indicate that the total residual surface contamination levels are within the limits for removable contamination.

[7] This category of radionuclides includes mixed fission products, including the Sr-90 which is present in them. It does not apply to Sr-90 which has been separated from the other fission products or mixtures where the Sr-90 has been enriched.

[8] Property recently exposed or decontaminated should have measurements (smears) at regular time intervals to ensure that there is not a build-up of contamination over time. Because tritium typically penetrates material it contacts, the surface guidelines in Group 4 are not applicable to tritium. The Department has reviewed the analysis conducted by the DOE Tritium Surface Contamination Limits Committee ("Recommended Tritium Surface Contamination Release Guides," February 1991), and has assessed potential doses associated with the release of property containing residual tritium. The Department recommends the use of the stated guideline as an interim value for removable tritium. Measurements demonstrating compliance of the removable fraction of tritium on surfaces with this guideline are acceptable to ensure that non-removable fractions and residual tritium in mass will not cause exposures that exceed DOE dose limits and constraints.

APPENDIX C: REPORTING ENFORCEMENT ACTIONS

Note: The tables and information below provide direction for completing an occurrence report dealing with agreement/compliance activities. Appendix C of HNF-PRO-060, Occurrence Reporting Categories and Criteria, Group 9(2)4 (Group 9, Sequence Number 2, Significance Category 4) is the specific criterion to be used with this table. In addition, occurrence reports associated with enforcement actions that are addressed to DOE and/or multiple contractors are to use to following established hierarchy:

For cases in which DOE is the sole recipient of a regulator enforcement action,

- DOE may assign a contractor the action to prepare an occurrence report, or
- DOE may prepare the report itself.

For formal enforcement actions addressed to DOE and multiple contractors,

- Each named (or responsible) contractor will submit an initial 2-hour notification to ONC regarding the facilities or activities under their control, in accordance with HNF-PRO-060,
- If a lead contractor can not be agreed upon within the first 24 hours, each of the affected contractors is to develop an initial (draft) occurrence report, in accordance with HNF-PRO-060, then
- The initial reports will be consolidated into one report after DOE has established a lead contractor.

Group 9(2)4:
Formal actions will be reported as Significance Category 4 events:

Enforcement Actions	Informal	Formal
Washington Department of Health		
Notice of Correction	**X**	
Notice of Violation		**X**
Restraining Order		**X**
Criminal Penalty		**X**
Civil Penalty		**X**
Assurance of Discontinuance		**X**
Impoundment		**X**
Washington State Department of Ecology		
Compliance Checklist	**X**	
Notice of Correction	**X**	
Notice of Violation		**X**
Administrative Order		**X**
Consent Order		**X**
Civil Penalty		**X**
U. S. Environmental Protection Agency		
Administrative Actions (Notice of Violation and Notice of Noncompliance)	**X**	
Compliance Orders		**X**
Corrective Action Orders		**X**
3013 Orders		**X**
7003 Orders		**X**
Compliance Action		**X**
Corrective Action		**X**
Monitoring and Analysis		**X**
Imminent and Substantial Hazard		**X**
Criminal Action		**X**

State of Washington Department of Health (DOH):

Informal events under HNF-PRO-060:

1. **Notice of Correction - As defined in RCW 43.05.100, a notice of correction can be issued when the DOH becomes aware of conditions that are not in compliance with applicable laws and rules enforced by the department and are not subject to civil penalties. A notice of correction does not issue a civil penalty for the violations identified in the notice of correction unless the responsible party fails to comply with the notice.**

Formal events under HNF-PRO-060:

1. **Notice of Violation - Whenever the DOH has reason to believe that a provision of WAC-246-247 has been violated, it may cause written notice to be served on alleged violator or violators. The notice shall specify the provision of WAC-246-247 alleged to be violated and the facts alleged to constitute a violation thereof, and may include an order that necessary corrective actions be taken within a reasonable time.**

2. **Restraining Order – Notwithstanding the existence or use of any other remedy, whenever any person has engaged in, or is about to engage in, any acts or practices which constitute or will constitute a violation of any provision of this chapter, or any rule, regulation or order issued under WAC-246-247, or any rule or regulation or order issued under WAC-246-247, the DOH, after notice to such person and an opportunity to comply, may petition the superior court of the county wherein the violation is alleged to be occurring or to have occurred for a restraining order or a temporary or permanent injunction or another appropriate order.**

3. **Criminal Penalty – The DOH may issue a penalty if releases are made into the ambient air at levels above the terms of an applicable permit or emission limit; if the emission places another person in imminent danger of death or substantial bodily harm. If the violator negligently releases the emissions, upon conviction, the violator shall be punished by a fine of not more than $10,000.00/ day; or by imprisonment for not more than one year, or both. If the violator knowingly releases the emissions, upon conviction, the violator shall be punished by a fine of $50,000.00/ day; or by imprisonment for not more than five years, or both.**

4. **Civil Penalty – A monetary penalty may be assessed against any violator, whether public or private, as provided by law, up to a maximum level. From the date a violator receives a notice of penalty or the department's response to a request for relief, the violator has 30 days from the date of receipt to appeal.**

5. **Assurance of discontinuance – The DOH may accept an assurance of discontinuance of any act or practice deemed in violation of WAC-246-247. Any such assurance shall specify the time limit during which such discontinuance is to be accomplished. Failure to perform the terms of any such assurance shall constitute prima facie proof of violation of WAC-246-247 which make the alleged act or practice unlawful for the purpose of securing an injunction or other relief from superior court.**

6. **Impoundment – Sources of radiation may be subject to impoundment.**

State of Washington Department of Ecology (Ecology):

Informal events under HNF-PRO-060:

1. **Compliance checklist - A form completed by Ecology during certain types of inspections. Compliance checklists may list areas of concern, but are not a formal means of documenting violations.**

2. **Notice of Correction - As defined in RCW 43.05.060, a notice of correction can be issued when the Ecology becomes aware of conditions that are not in compliance with applicable laws and rules enforced by the department. A notice of correction does not issue a civil penalty for the violations identified in the notice of correction unless the responsible party fails to comply with the notice.**

Formal events under HNF-PRO-060:

1. **Notice of Violation (NOV) – An NOV is used to provide formal notice that a specific violation has occurred or is about to occur and requests a report from the violator (typically within 30 days) on the circumstances surrounding the violation and information on what steps are being taken to correct or prevent the violation.**

2. **Administrative Order – This is a unilateral order requiring a person or business to take steps to correct violations. Administrative orders are authorized by statue. Most orders are appealed. Generally orders can only be appealed directly to the Pollution Control Hearings Board, but there are important exceptions. For example, orders issued under the authority of the Model Toxics Control Act are not appealable, but the aggrieved party may petition the department for reimbursement of cost associated with compliance with the order. If Ecology refuses to reimburse the cost the aggrieved party may file a civil suit.**

3. **Consent Order – This is a negotiated agreement between the agency and regulated party. It may be entered into in lieu of or to replace an administrative order directing the party to take certain actions. It is in essence, a contract, enforceable as such in court. Internal provisions should, however, define any desired administrative remedies (e.g., dispute clause) or enforcement provisions, including stipulated penalties.**

4. **Civil Penalty – Civil penalties can be imposed only when specifically authorized by statue. Statues authorizing civil penalties set maximum amounts, usually on a per day, per violation basis. (Some statues also set minimum amounts). Failure to appeal means the penalty is due and owing. The purpose of a civil penalty is to 1) change the behavior of the specific violator, 2) penalize permit exceedances, and 3) act as a deterrent for the regulatory community in general.**

<u>U.S. Environmental Protection Agency:</u>

<u>Informal event</u> under HNF-PRO-060:

1. **Administrative Actions – Any communication from EPA that notifies the handler of a problem. It can take many forms, such as a letter or a phone call. An informal letter to the handler may be called a Notice of Violation or a Notice of Noncompliance. For this type of action, EPA notifies the handler that they are not in compliance with some provisions of the regulations.**

<u>Formal events</u> under HNF-PRO-060:

1. **Compliance Orders – Require any person who is not complying with a requirement to take steps to come into compliance. A compliance order may require immediate compliance or may set out a schedule for compliance. The order can contain a penalty of up to $27,500 per day for each day of noncompliance and can suspend or revoke the facility's permit or interim status.**

2. **Corrective Action Orders – Require corrective action at an interim status facility when there is evidence of a release of a hazardous waste or a hazardous constituent into the environment. These orders can be issued to require corrective action activities including investigations, repairing liners, or pumping to treat ground water contamination. In addition to requiring corrective action, these orders can suspend interim status and impose penalties of up to $27,500 for each day of noncompliance with the order.**

3. **Section 3013 Orders – If the EPA finds that a substantial hazard to human health and the environment exists, an administrative order can be issued under Section 3013. A 3013 is used to evaluate the nature and extent of the problem through monitoring, analysis, and testing. Violation of Section 3013 orders can result in penalties of up to $5,500 per day.**

4. **Section 7003 Orders – In any situation where an imminent and substantial endangerment to health or the environment is caused by the handling of solid or hazardous wastes, EPA can order any person contributing to the problem to take steps to clean it up. Violation of Section 7003 orders can result in penalties of up to $5,500 per day.**

5. **Compliance Action – A civil action where the EPA can file suit to force a person to comply with applicable regulations. Courts can also impose a penalty of up to $27,500 per day per violation for noncompliance.**

6. **Corrective Action – A civil action where a court order is used to force any person to correct a problem and take any necessary response measures. The court can also suspend or revoke a facility's interim status as part of its order.**

7. **Monitoring and Analysis – A civil action that is used in cases where a person who was issued a 3013 order has failed to comply. The court can assess a penalty of up to $5,500 per day of noncompliance with these orders.**

8. **Imminent and Substantial Hazard – A civil action that can be used any time a person has contributed or is contributing to an imminent and substantial endangerment to human health and the environment. The action will require the person to remove the hazard or remedy any problem. The court can assess a penalty of up to $5,500 per day of noncompliance with these orders.**

9. **Criminal Action – The EPA can issue criminal actions for serious and often repeated violations. Criminal actions can result in the imposition of either fines or imprisonment.**

APPENDIX D

RECURRING EVENT CRITERIA

Newly discovered increasing trends should be reviewed for potential categorization as a recurring event. Areas of stable performance should be reviewed on a one-time basis to determine if the current level represents an acceptable risk. The criteria (3a through 3d) below should be used to document what is considered "unacceptable".

Two or more events or conditions, as determined from any sources, should be categorized as a Significance Category R occurrence (recurring event), when they meet the following three criteria:

1. The set of events or conditions are similar in nature. This may be based on similar causes, reporting criteria, keyword, or word search.

   AND

2a. There is either a non-improving trend, OR
2b. The rate of occurrence is stable at an unacceptable level.

   AND

3a. The events or conditions themselves represent an unacceptable risk of a serious event (employee injury, environmental hazard, or equipment damage), OR
3b. The events or conditions are symptomatic of a larger company or programmatic issue, which if left unchecked, represents an unacceptable risk of a serious event, OR
3c. The events or conditions are minor in nature, but frequent enough to have a serious impact on facility operations, budget, or schedule, OR
3d. The events or conditions are indicative of a failure of corrective or compensatory actions from previous events that, if left uncorrected, could lead to a serious event.

NOTE: DOE G 231.1-1, *Occurrence Reporting and Performance Analysis Guide* provides guidance to facility/contractor management in the process of performance analysis, which will help determine "recurring" events. Recurring events, when categorized as Significance Category R occurrences, must meet all requirements of CRD M 231.1-2 and applicable implementation procedures such as HNF-PRO-24741, *Performance Analysis Process* and HNF-PRO-060, *Reporting Occurrences and Processing Information.*

APPENDIX E: OCCURRENCE REPORTING DEFINITIONS

1. ABNORMAL EVENT. An event that does not meet the alert, site area, or general emergency classification levels, but is significant enough to generate the immediate interest of offsite agencies, the media, or generate public concern. Abnormal Event is a Hanford term used to decide when timely notification of offsite agencies is required.

2. BASE PROGRAM OPERATIONAL EMERGENCIES. Unplanned, significant events or conditions that require time-urgent response from outside the immediate affected site or facility. Base Program Operational Emergencies may involve degradation of personnel health or safety, the environment, security and safeguards, or the release or loss of control of hazardous materials.

3. BUSINESS DAY. For PHMC occurrence reporting purposes, a 24-hour day. Example: A Notification Report for a Significance Category 1 occurrence must be submitted before 2400 hours (midnight) the next business weekday (not to exceed 80 hours) after the occurrence is categorized. Example: A Notification Report for a Significance Category 3 (SC-3) occurrence is due no later than 2 business days from event categorization; therefore an SC-3 occurrence categorized on Tuesday at 1400 hours would be due Thursday at 2400 hours (midnight).

4. CONDITION. Any as-found state, whether or not resulting from an event, that may have adverse safety, health, quality assurance, operational or environmental implications. A condition is usually programmatic in nature; for example, errors in analysis or calculation; anomalies associated with design or performance; or items indicating a weakness in the management process are all conditions.

5. DISCHARGE. Includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil, but excludes discharges in compliance with a permit under Chapter 402 of the Clean Water Act (CWA); discharges resulting from circumstances identified and reviewed and made a part of the public record with respect to a permit issued or modified under Chapter 402 of the CWA and subject to a condition in such permit; or continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under Chapter 402 of the CWA, that are caused by events occurring within the scope of relevant operating or treatment systems.

6. DISCOVERY DATE AND TIME. The discovery date and time is when the facility staff discovered or became aware of the event or condition. The facility staff is those personnel assigned to the facility and cognizant of the area in which the event or condition is identified.

7. DOSE EQUIVALENT

   - Committed Dose Equivalent. The predicted total dose equivalent to a tissue or organ over a 50-year period after a known intake of a radionuclide into the body. It does not include contributions from external dose. (See DOE O 5400.5 for further definitions.)

- Committed Effective Dose Equivalent (CEDE). The sum of the committed dose equivalents to various tissues in the body, each multiplied by the appropriate weighting factor. (See DOE O 5400.5 for further definitions.)

- Effective Dose Equivalent. The summation of the products of the dose equivalent received by specified tissues of the body and a tissue-specific weighting factor. (See DOE O 5400.5 for further definitions.)

- Total Effective Dose Equivalent (TEDE). The sum of the effective dose equivalent for external exposures and the committed dose equivalent for internal exposures.

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

9. FACILITY. Any equipment, structure, system, process, or activity that fulfills a specific purpose. Examples include accelerators, storage areas, fusion research devices, nuclear reactors, production or processing plants, coal conversion plants, magnetohydrodynamic experiments, windmills, radioactive waste disposal systems and burial grounds, environmental restoration activities, testing laboratories, research laboratories, transportation activities, and accommodations for analytical examinations of irradiated and unirradiated components.

10. FACILITY MANAGER. That individual, or designee, usually but not always a contractor, with direct line responsibility for operation of a facility or group of related facilities, including authority to direct physical changes to the facility. For purposes of occurrence reporting, a Facility Manager could also be responsible for a program or activity.

11. FACILITY REPRESENTATIVE. For each major facility or group of lesser facilities, an individual or designee assigned responsibility by the Head of Field Element/Operations Organization (including NNSA) for monitoring the performance of the facility and its operations. This individual should be the primary point of contact with the facility operating personnel and will be responsible to the appropriate Secretarial Officer/Deputy Administrator (NNSA) and Head of Field Element/Operations Organization for implementing the requirements of DOE M 231.1-2.

12. FEDERALLY PERMITTED RELEASE. Any release that satisfies the definition of "federally permitted release" in 40 CFR 302.3.

13. HAZARDOUS SUBSTANCE OR MATERIAL.

    - Department of Energy - Hazardous Material. Any solid, liquid, or gaseous material that is chemically toxic, flammable, radioactive, or unstable upon prolonged storage, and that exists in quantities that could pose a threat to life, property, or the environment.

    - Department of Transportation - Hazardous Materials (see 49 CFR 171.8 and 172.101). A substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and which has been so designated.

- Comprehensive Environmental Response, Compensation and Liability Act Hazardous Substances (see 40 CFR 302).

- Occupational Safety and Health Administration (OSHA) Hazardous Chemical (see 29 CFR 1910.1000 and 29 CFR 1910.1200). Any chemical which is a physical or a health hazard.

- Superfund Amendments and Reauthorization Act Title 3 Extremely Hazardous Substances (see 40 CFR 355). These are not defined but appear on lists in Appendix A and Appendix B of 40 CFR 355.

14. ITEM.

    - An all-inclusive term used in place of the following: appurtenance, sample, assembly, component, equipment, material, module, part, structure, subassembly, subsystem, system, unit, or support systems, documented concepts, or data.

    - When used in reference to nuclear material, a visible, single piece or container of nuclear material with a unique identification and known nuclear material mass.

15. LESSONS LEARNED. A "good work practice" or innovative approach that is identified and shared, or an adverse work practice or experience that is shared to avoid recurrence.

16. MEMBER OF THE PUBLIC. Persons who are not occupationally associated with DOE facilities or operations; (i.e., persons whose assigned occupational duties do not require them to enter the DOE site).

17. NON-REPORTABLE EVENT. An event that falls within the ORPS reporting groups, does not exceed any of the specific ORPS reporting criteria, and the reporting organization has determined to be included in the required ORPS Performance Analysis activity.

18. NOTIFICATION REPORT. The initial documented report, to DOE, of an event or condition that meets the reporting criteria defined in DOE M 231.1-2 (and HNF-PRO-060).

19. OCCURRENCE. One or more (i.e., recurring) events or conditions that adversely affect, or may adversely affect, DOE (including NNSA) or contractor personnel, the public, property, the environment, or the DOE mission. Events or conditions meeting the criteria thresholds identified in 231.1-2 (or HNF-PRO-060) or determined to be recurring through performance analysis are occurrences.

20. OCCURRENCE INVESTIGATION. An investigation conducted according to site-specific procedures and/or when determined by DOE procedures that a Type A or B investigation is required.

21. OCCURRENCE REPORT. A documented evaluation of an event or condition that is prepared in sufficient detail to enable the reader to assess its significance, consequences, or implications and to evaluate the actions being proposed or employed to correct the condition or to avoid

recurrence.

22. OFFSITE TRANSPORTATION EVENT. Involves movement of materials that are considered to be in commerce, thus requiring compliance with Department of Transportation Hazardous Materials Regulations.

23. OIL. Oil of any kind or in any form, including but not limited to petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

24. ONSITE TRANSPORTATION EVENT. Movement of materials not in commerce and subject to DOE onsite procedures and safety requirements.

25. PERFORMANCE DEGRADATION. Failure or degradation of a facility, process, system, or component that reduces the reliability of critical components of the facility whose loss or degradation prevents the system from performing its intended function. Performance degradation does not include: (1) a burned out power indicator light on a piece of radiation monitoring equipment which does not prevent the equipment from detecting elevated radiation levels and alarming as designed; (2) a piece of equipment that is determined to be out of calibration on the conservative side (such as a low level alarm that alarms at a higher value than it should); or (3) the temporary loss of a component where redundant components are maintained operable or in operation and the authorization basis is not compromised.

26. PERSONNEL EXPOSURE. An incident of contact or encounter with a hazardous chemical, physical, biological, or energetic agent at one of the exchange boundaries of the organism (e.g., skin, respiratory system, eyes, ears, or digestive system). "Exposure" does not refer to a situation where personnel, protected by appropriate personal protective equipment, are subjected to an environment whose ambient conditions present a harmful level of any one, or combination of, the hazards.

27. PRIMARY CONFINEMENT. Provides confinement of hazardous material to the vicinity of its processing. This confinement is typically provided by piping, tanks, glove boxes, encapsulating material, and the like, along with any off gas systems that control effluent from within the primary confinement.

28. PROGRAM MANAGER. The individual designated by and under the direction of a Secretarial Officer/Deputy Administrator (NNSA), who is directly involved in the operation of facilities under his or her cognizance, and holds signature authority to provide technical direction through Heads of Field Elements/Operations Offices (including NNSA) to operating personnel for these facilities.

29. PROMPT NOTIFICATION. Timely reporting of the occurrence to the DOE Field Office and the DOE Headquarters Operations Center as required by the Significance Category and the reporting criteria of the occurrence.

30. PROTECTIVE CLOTHING. Clothing identified for radiological use such as yellow coveralls, hoods, booties, rubber overshoes, and PC gloves. These are articles designed for radiological use and are removed at the exit of the radiological area. Company supplied coveralls, laboratory

coats, modesty clothing, street clothes, or other clothing not identified as anti-contamination clothing (anti Cs) are to be considered personal clothing for the purposes of ORPS reporting.

31. RELEASE. Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or otherwise disposing of substances into the environment. This includes abandoning/discarding any type of receptacle containing substances in an unenclosed containment structure but does not include permitted containment structures.

32. REPORTABLE OCCURRENCE. Occurrence to be reported in accordance with the criteria defined in DOE M 231.1-2 (or HNF-PRO-060).

33. REPORTABLE QUANTITY. For any Comprehensive Environmental Response, Compensation and Liability Act hazardous substance, including radionuclides and Superfund Amendments and Reauthorization Act Title 3 extremely hazardous substances, with quantities established in 40 CFR Part 302 and Part 355 respectively, release of which requires notification unless Federally permitted.

34. SAFETY CLASS STRUCTURES, SYSTEMS, OR COMPONENTS (SAFETY CLASS SSCs). The structures, systems, or components, including portions of process systems, whose preventive or mitigative function is necessary to limit radioactive hazardous material exposure to the public, as determined from safety analyses. (10 CFR 830.3)

35. SAFETY SIGNIFICANT STRUCTURES, SYSTEMS, OR COMPONENTS (SAFETY SIGNIFICANT SSCs). The structures, systems, or components that are not designated as safety class structures, systems, or components, but whose preventive or mitigative function is a major contributor to defense in depth and/or worker safety as determined from safety analyses. (10 CFR 830.3)

36. SECRETARIAL OFFICER. Secretarial Officers are: the Secretary, Deputy Secretary, and Under Secretaries; and the Assistant Secretaries and Staff Office Directors reporting to the Secretary either directly or through the Deputy Secretary or Under Secretary. The following designations are also used to identify Secretarial Officers with specific responsibilities in various areas. (1) A Program Secretarial Officer (PSO) is an Assistant Secretary, Office Director, or NNSA Deputy Administrator. In the context of field operations, a PSO funds work at a particular site, facility or laboratory and is a "customer" of the field office. (2) A Lead Program Secretarial Officer (LPSO) is a PSO to whom designated field offices directly report and who has overall landlord responsibilities for the assigned direct reporting elements. (3) A Cognizant Secretarial Officer (CSO) is a term used in the context of field operations to designate a PSO, not the LPSO, who is responsible for a laboratory or bounded set of facilities within a field office's jurisdiction.

37. SUBCONTRACTOR. For PHMC occurrence reporting purposes, a subcontractor is defined as a contractor doing a discrete scope of work under the direction and responsibility of the Prime Contractor (Fluor Hanford, Inc.). This does ***not*** include personnel filling a position with Fluor Hanford as augmented staff.

38. TECHNICAL SAFETY REQUIREMENTS (TSRS). The limits, controls, and related actions that establish the specific parameters and requisite actions for the safe operation of a nuclear facility and include, as appropriate for the work and the hazards identified in the documented safety analysis for the facility: safety limits, operating limits, surveillance requirements, administrative and management controls, use and application provisions, and design features, as well as a bases appendix. (10 CFR 830.3)

39. TRAINED INVESTIGATOR. An individual who has been qualified to perform causal analysis in response to a reportable occurrence. The individual is able to satisfactorily complete the identification of Apparent Causes associated with an occurrence using the Causal Analysis Tree. The individual may also be qualified by their company to perform formal Root Cause analysis. For events that trigger a Type A or Type B DOE Investigation, the requirements contained in DOE O 225.1A, *Accident Investigations,* take precedence relative to the minimum qualifications of individuals performing the investigation/causal analysis.

40. TRANSPORTATION EVENT. Any real-time occurrence involving any of the following transportation activities: materials classification, packaging, marking, labeling, placarding, temporary storage incident to transport, shipping paper preparation, loading/unloading, separation/segregation, securing, blocking and bracing, routing, accident reporting, driver and vehicle qualifications, movement of materials, communications and notifications.

    - Transportation events with injuries or fatalities may also require reporting in accordance with Group 2 criteria.

41. UNREVIEWED SAFETY QUESTION (USQ). A situation where (1) the probability of the occurrence or the consequences of an accident or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased, (2) the possibility of an accident or malfunction of a different type than any evaluated previously in the documented safety analysis could be created, (3) a margin of safety could be reduced, or (4) the documented safety analysis may not be bounding or may be otherwise inadequate. (10 CFR 830.3)

APPENDIX F: TRAINING INFORMATION AND SUPPORT

Facility management and designated staff that are tasked with event/condition recognition, categorization, notification, investigation, corrective action management and occurrence report writing/submittal should complete the applicable training course(s) below, per the appropriate FH procedure. These courses are designed to meet the requirements of CRD M 231.1-2, "Occurrence Reporting and Processing of Operations Information", Section 1.9, *Training*. The courses are available by calling FH Training on 376-7117.

Introduction to Occurrence Reporting Course #170640. This course provides students with all the necessary information to accomplish timely and accurate occurrence reporting. Included in the curriculum will be the identification of reportable events, exercises in the categorization of reportable occurrences, oral and written notification requirements, and a brief overview of the Occurrence Reporting Model and the Occurrence Reporting and Processing System (ORPS).
This course is for management or designated staff responsible for notification/categorization of adverse conditions or reportable occurrences, and is a prerequisite to #170642. (REFERENCE: HNF-PRO-060)

Occurrence Report Writing Course #176042. This course is designed to provide the student with the mechanics and materials to effectively complete occurrence reports. It is a hands-on course utilizing the ORPS database to input occurrence reports. The requirements for each field in the occurrence report will be discussed in detail, and each student will receive and utilize a copy of the Report Writer's Guide.
This course is for management or designated staff responsible for writing or submitting occurrence reports. (REFERENCE: HNF-PRO-060)

**** Critique Leader Training Course #004230**
Covers the required elements of the critique process and the appropriate methods of conducting and controlling a critique.
This course is a prerequisite to #004231. (REFERENCE: HNF-PRO-058)

Critique Leader Training Checklist Course #004231
Covers the required elements of leading a critique under instruction. Prior to leading a critique, both #004230 and #004231 are required.
These courses are for critique leaders at FH facilities. (REFERENCE: HNF-PRO-058)

For personnel facilitating all levels of causal analysis (i.e., Apparent/Root), the following four courses are required: (REFERENCE: HNF-PRO-052 and HNF-PRO-060)

**** Root Cause Analysis Basic/Root Cause Analysis Techniques Course #170015 and #170026**. These courses are designed to provide users with accepted root cause analysis methodology principles, and the information needed to successfully complete causal analysis for events and conditions at Hanford. Practical exercises are included in the training.
These courses are for personnel performing root causal analysis at FH facilities. (REFERENCE: HNF-PRO-052 and HNF-PRO-060)

****## Understanding Apparent Cause Analysis Course #004215**. A computer-based course covering the basic concepts of apparent cause analysis and utilization of the Causal Analysis Tree.

This course is for personnel performing apparent cause analysis at FH facilities, and is a prerequisite to Course #004216. (REFERENCE: HNF-PRO-052 and HNF-PRO-060)

Apparent Cause Implementation Course #004216. A hands-on course that utilizes numerous occurrence-based scenarios utilizing the Causal Analysis Tree to enable the student to perform a detailed and accurate apparent cause analysis.
This course is for personnel performing apparent cause analysis at FH facilities. (REFERENCE: HNF-PRO-052 and HNF-PRO-060)

**** Required courses for a Trained Investigator, per HNF-PRO-060, Section 4.0.14.e.**
Required courses for an ONC Duty Officer, per HNF-PRO-060, Section 4.0.14.d (also includes 020117, *EP Training for Transportation Incidents* and 038120, *National Incident Management System Introduction/Overview*).

ORPS Graphical User Interface (GUI) Training

Training materials, including use of the database (i.e., Search and Reports) are available at the following URL. ORPS access is required. Contact the ONC (376-3030) for further information.

https://orps.tis.eh.doe.gov/Orps/Help/help/orps_h.htm