
Handbook on Nuclear Material Event Reporting for the Agreement States

Revised Interim Procedure SA-300

November 28, 2022

**Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission**

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ML22266A093

AVAILABILITY OF REFERENCE MATERIAL

NRC documents: Event Notifications, Inspection Manuals and Procedures, NUREG Series technical reports, Regulatory Guides, etc. are available at the NRC Public website under NRC Library at: <http://www.nrc.gov/reading-rm/doc-collections/>.

The Office of Nuclear Material Safety and Safeguards (NMSS) State Agreement procedures are available at: <https://scp.nrc.gov/procedures.html>. This Handbook corresponds with NMSS Procedure SA-300, "Reporting Material Events."

This document can be obtained from the Agencywide Documents Access and Management System (ADAMS) using ADAMS Accession No. ML22266A093 at: <https://www.nrc.gov/reading-rm/adams.html>.

Paperwork Reduction Act Statement

The information collections contained in this handbook have been approved under Office of Management and Budget approval number 3150-0029, which expires July 31, 2023. The burden to the Agreement States for these mandatory information collections is estimated to average less than 8 hours per response, including the time for reviewing instructions, searching existing data sources, gathering, and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding the burden estimate to the Records and Information Services Branch (T-5F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by email to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0200), Office of Management and Budget, Washington, DC 20503.

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Abstract

The handbook describes the procedures for reporting material events to the NRC. The handbook includes what events are required to be reported, the level of detail, and how to report. A distinction is made between reporting events to the NRC Headquarters Operation Center (HOC) and written reports. Written reports are submitted to the Nuclear Material Event Database (NMED). Reporting of Agreement State nuclear material licensee events to the NRC is mandatory for purposes of compatibility.

The review and analysis of operational event information increases the effectiveness of the U.S. Nuclear Regulatory Commission (NRC) and Agreement State regulatory programs by identifying safety- and security-significant events, and their causes. The information from reports of medical events, overexposures, equipment failures, and other events that have occurred involving the use of nuclear materials licensed by either the NRC or the Agreement States is invaluable in assessing trends or patterns and identifying possible inadequacies or unreliability of specific equipment or procedures. The reported information will aid in understanding why the events occurred and identify any actions necessary to prevent recurrence, improve the effectiveness of the NRC and Agreement States' regulatory programs, and ensure public health and safety. The information is also used in preparation of the NRC's annual report to Congress on abnormal occurrences, and to support the United States' commitment to report to the International Atomic Energy Agency's international database of significant events. Information is also provided on obtaining Federal assistance for radiological emergencies.

This handbook has been revised to provide clear information and instruction to the staff of the Agreement States that are responsible for the preparation of reports for events involving the use of nuclear materials that occurred in their State. Based on the regulation associated with the type of event, Agreement States will need to notify the HOC of the event and/or submit a written report to NMED. Further direction will be provided in this handbook.

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1 INTRODUCTION

This handbook contains guidance for Agreement States on reporting nuclear material events that occurred in their State to the U. S. Nuclear Regulatory Commission (NRC). The objectives of this handbook are to improve technical information, standardize format, ensure consistency, and facilitate information retrieval.

The NRC collects information on events to:

- a. Assess the events against the Abnormal Occurrence (AO) criteria and report to the U.S. Congress as required by the Energy Reorganization Act of 1974.
- b. Assess the events (except medical events) against the International Atomic Energy Agency (IAEA) International Nuclear Event Scale (INES) to participate in international reporting.
- c. Perform operating experience assessments and evaluate for generic applicability, including generic issues, to ensure that any safety significant issues are shared with the National Materials Program.

2 BACKGROUND

2.1 Federal Statutes

The Atomic Energy Act of 1954 (Public Law (P.L.) 83–703) (AEA), Section 274, “Cooperation with States,” allows States to assume regulatory authority over byproduct, source and/or certain quantities of special nuclear materials. The AEA directs NRC to cooperate with the States in the formulation of standards to protect employees or the general public against hazards of radiation and to assure that State and Commission programs will be coordinated and compatible.

The Energy Reorganization Act of 1974 (P.L. 93–438) (ERA), Section 208, “Abnormal Occurrence Reports,” requires the NRC to provide information on events that meet the AO criteria to Congress on an annual basis.

Under the Government Performance and Results Act Modernization Act of 2010 (P.L. 111–352), federal agencies are required to compare actual performance achieved with the performance goals established in the agency strategic plan. The NRC maintains NUREG–1614, “Strategic Plan,” and NUREG–1100, “Performance Budget/ Congressional Budget Justification.” Event coordination is used to demonstrate the ability to ensure the safe and secure use of radioactive materials.

2.2 Commission Policy Statements

The Commission adopted the policy statement “Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption Thereof by States Through Agreement” (46 FR 7540, January 23, 1981; 48 FR 33376, July 21, 1983), which describes the specific requirements that a State must meet for the Commission to approve an Agreement. Specifically, Criterion 26, “Relations with Federal Government and Other States,” states that “there should be an interchange of Federal and State

information and assistance in connection with the issuance of regulations and licenses or authorizations, inspection of licensees, *reporting of incidents and violations*, and training and education problems.” Criteria 26 uses the same language as the original Criteria 26 adopted by the Atomic Energy Commission (AEC) in 1961.¹ The AEC was the predecessor to the NRC.

The Commission first directed NRC staff to make Agreement State reporting of events to NRC an item of compatibility in SRM-SECY-97-054, Final Recommendations on Policy Statements and Implementing Procedures For: "Statement of Principles and Policy for the Agreement State Program" and "Policy Statement on Adequacy and Compatibility of Agreement State Programs," dated June 30, 1997. On May 7, 1998, NRC's Office of State Programs transmitted the All-Agreement State Letter SP-98-040, Guidance for Reporting Material Events, which included the first final version of SA-300 and the Handbook. SP-98-040 also indicated that the reporting of incidents and events is now required for compatibility and would be evaluated under Integrated Materials Performance Evaluation Program (IMPEP).

The "Agreement State Programs Policy Statement" (82 FR 48535, Oct. 18, 2017)² also discusses the requirement for Agreement States programs to provide acceptable level of protection of public health and safety (adequacy) and ensure that its program supports an overall nationwide program in radiation protection (compatibility) by adopting program elements³ to ensure these goals.

2.3 Guidance Documents

Management Directive 5.9 "Adequacy and Compatibility of Program Elements for Agreement State Programs" describes the six compatibility categories (A, B, C, D, NRC, and health and safety (H&S)) for evaluating and classifying program elements. Program elements relating to reporting requirements are used as examples of compatibility category C.⁴

"A Program Element Table and Associated Compatibility Categories as Noted in SA-

¹ "Criteria for Guidance of States and AEC in Discontinuance of AEC Regulatory Authority and Assumption Thereof by States Through Agreement" 26 FR 2536; March 24, 1961.

² The "Agreement State Programs Policy Statement" consolidates and supersedes two previous policy statements "Statement of Principles and Policies for the Agreement State Program," and "Policy Statement on Adequacy and Compatibility of the Agreement State Programs," (62 FR 46517; September 3, 1997).

³ "Agreement State Programs Policy Statement" (82 FR 48535, 48538) Oct. 18, 2017). The policy statement defines "program element" to mean any component or function of a radiation control regulatory program, including regulations and other legally binding requirements imposed on regulated persons, which contributes to implementation of that program."

⁴ Management Directive 5.9 "Adequacy and Compatibility of Program Elements for Agreement State Programs" (April 26, 2018) at pg. 6-7. "To be included in Compatibility Category C, an NRC program element must relate to regulatory areas that could create conflicts, duplications, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis if not implemented by an Agreement State. Such Agreement State Program elements shall embody the essential objective of the corresponding NRC program element and, if not implemented, would result in an undesirable consequence."

200”⁵ lists the compatibility designation for regulatory⁶ and non-regulatory program elements that States must adopt. The program elements related to Event and Allegation Response Procedures, Event Reporting Procedures and Wrongdoing Investigation Procedures are designated compatibility category C.⁷ The program element “Event Reporting to the NRC” is designated compatibility category B.⁸

The Agreement States report nuclear material events to the NRC in accordance with interim SA-300 “Reporting Material Events” (ML21165A163) and SA-300 “Handbook on Nuclear Material Event Reporting in Agreement States (revised interim)” (ML22266A093) or equivalent procedures. The procedures in SA-300 are considered a program element and consequently, a matter of compatibility C. As an item of compatibility, the Agreement States must provide nuclear material event reports to the NRC.

The reporting of events to the NRC are evaluated during an IMPEP review under the performance indicator “Technical Quality of Incidents and Allegations Activities.” (See SA-105 “Reviewing the Common Performance Indicator, Technical Quality of Incident⁹ and Allegation Actions (ML20196L417) and MD 5.6 “Integrated Materials Performance Evaluation Program (IMPEP) (ML19213A024) for further information on these subjects.) The Agreement States will be evaluated against the ability to conduct the following:

3 REPORTING MATERIAL EVENTS

Agreement States shall report to the NRC all events reported to them in accordance with their State regulations that are compatible to NRC’s reporting requirements. The NRC evaluates material events reporting under IMPEP.

The NRC reporting regulations are provided in Title 10 of the *U.S. Code of Federal Regulations* (10 CFR) and Appendix A, “NRC Reporting Requirements.” Appendix A lists the reporting requirements for the nuclear material events and provides brief descriptions of the reporting requirements, the timeliness metric, and where to report.

This Handbook uses the term, “written report,” for consistency. Written reports are submitted to NMED. For the purposes of this handbook, the terms “written report” and “NMED report” may be used interchangeably.

⁵ The table can be found on the Regulation Toolbox of the state communications portal Web site at: <https://scp.nrc.gov/regtoolbox.html> for both regulation and non-regulation program elements

⁶ Id. Licensees are required to report nuclear material events in accordance with Title 10 of the U.S. Code of Federal Regulations (10 CFR) Parts 20, 30, 31, 34, 35, 36, 37, 39, 40, 70, and 71, specified in Appendix A below, or equivalent state regulations to their respective Agreement State regulatory agency.

⁷ Id. at pg. 5 and 6.

⁸ Id. at pg. 6. Program elements in Compatibility Category B are those that apply to activities that cross jurisdictional boundaries. These program elements have a particular impact on public health and safety and need to be adopted in an essentially identical manner in order to ensure uniformity of regulation on a nationwide basis.

⁹ The term "incident" means an event or condition that has the possibility of affecting public health and safety such as overexposure, damage to equipment or facility, release of radioactive material, equipment, or procedure failure, lost/stolen/abandoned radioactive material, leaking source, contamination event, transportation, loss of control, medical event, etc. If an Agreement State defines this term in a different fashion, this should be noted during the IMPEP review.

Agreement States shall report events to the NRC in the manner that is described in Appendix A. The icons in Appendix A indicate whether the reporting requirement specifies a report to the HOC or a written report. The Agreement States should consult with their Regional State Agreements Officer (RSAO) if they are unsure. A list of RSAOs is included on the NRC NMSS Office Directory at <https://scp.nrc.gov/stpdirectr.html>.

Appendix B, "Reporting Methods and Contact Information," contains a summary of the methods available for contacting the NRC, National Response Center, and other regulatory agencies.

3.1 Timeliness

Agreement States shall notify the NRC on the same timeframe that licensees notify the Agreement State. (See Appendix A for reporting timeframes.) For example, if the NRC reporting requirement specifies 24-hour notification, then the licensee shall notify the Agreement State in 24 hours, and the Agreement State shall notify the NRC within 24 hours of receiving the notification from the licensee. In instances where the NRC reporting requirement specifies "immediate" and "as soon as possible (ASAP)," the NRC accepts Agreement State reporting on that business day. In instances where the NRC reporting requirement specifies "on the next calendar day," the NRC accepts Agreement State reporting "on the next business day." This timeliness metric is reviewed during IMPEP reviews.

If the Agreement State receives an allegation that also meets the reporting requirements, the Agreement State shall not report it. The timeliness clock for event reporting does not start. The Agreement State should assess the concern in their allegation program. The Agreement State should assess the concern again after it was processed by the allegation program to determine if it meets the reporting requirements.

3.2 Event Report Identification Number

The Agreement State shall assign and reference an Event Report Identification Number for all reports made to the HOC and all written reports. The Event Report Identification Number shall consist of the two letter State agency ID, two-digit year corresponding to the reporting year, and a sequentially assigned four-digit ID number.

3.3 Reports to the HOC

For immediate reports and 24-hour reports, the Agreement States shall report events to the HOC. The Agreement States should email the reports to the HOC, however any of the following communication types are acceptable:

- Email: HOO.HOC@nrc.gov
- Telephone: (301)-816-5100
- Fax number: (301)-816-5151

When submitting an event report to the HOC, provide as much information as is known at the time the report is prepared. The HOC will request additional information, as needed, and will process any additional information as updates. Agreement States shall assign and provide an Event Report Identification Number for each reported event.

After the event report to the HOC is completed, the Agreement State shall determine whether a written report is also required and verify the associated timeframe in Appendix A.

The Agreement States may voluntarily report an occurrence to the HOC that they believe has safety significance, generic interest, or involves media interest. The Agreement State should describe the situation and provide any explanation of why they are reporting. The HOC shares the information with NMSS with a Logbook Entry.

3.4 Written Reports

The expectations are to ensure that the event is reported in a timely manner with as much information as possible. As new information is obtained, this information should be provided to NMED (preferred method) or to the NRC as soon as possible (See Section 3.4.3 below).

Agreement States shall submit written reports to NMED (preferred method) or to the NRC when specified in Appendix A. In some cases, the written report is required to be submitted within a timeframe after the report to the HOC is made. In other cases, the written report is the only reporting that is required by Appendix A.

The Agreement States shall provide as much information as is known at the time the written report is prepared. A written report should be comprehensive and easy to understand. Appendix C, "Minimum Required Event Information," provides a list of the minimum event information to be provided. Written reports may be incomplete if the investigation and/or follow-up actions are not completed within the timeframe provided in the reporting requirements. In those cases, Agreement States shall provide follow-up written reports later.

3.4.1 Sensitive Information

Personal or sensitive information should not be included in written reports (e.g., names, personal addresses, or social security-numbers). Do not include security-related sensitive unclassified non-safeguards information. If such information is required to describe the event, the Agreement State shall provide a bracketed copy of the information that identifies the information to be protected and a redacted copy of the information that deletes such information. Additional guidance is included in NRC Regulatory Issue Summary (RIS) 2005-031 Revision 1, "Control of Security-Related Sensitive Unclassified Non-safeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulation of the Use of Source, Byproduct, And Special Nuclear Material."

3.4.2 Units

All event reports should include the international system of units (SI system) as well as conventional units. Include the SI units first with the conventional unit equivalent following in parentheses (e.g., 730 megabecquerel (MBq) (20.4 mCi)).

Spell out the dose unit the first time it appears and then continue with an abbreviation.

For example, a dose should be described as 1,000 centiGray (cGy) (1,000 rad) the first time and continue with 1,000 cGy (1,000 rad).

3.4.3 Submission Methods for Written Reports

Based on the regulation associated with the type of event, Agreement States will need to submit a written report. Agreement States may submit a written report to NMED (preferred option) or to the NRC. Agreement States have the option of using NMED, email, or the mail to submit their written reports. Submitting written reports electronically is the most time-efficient option. When creating a written report, NMED allows users to create a file (report) to either upload or email.

- a. Submit the written reports electronically using the document "Upload" function in NMED;
- b. Email an attached file to NMED@inl.gov; or
- c. Submit through mail and include a cover page (see Table B.5 in Appendix B) to ensure that the written report is handled appropriately by the Document Control Desk staff. Written reports submitted through the mail shall be in an optical character recognition format.

Address the mail to:

Director
Division of Materials Safety, Security, State,
and Tribal Programs
Office of Nuclear Material Safety and
Safeguards
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852-2738
Attention: Chief, Medical Safety & Events Assessment Branch, Mail Stop T5B60

For this option, the NRC will send the written report to the NMED contractor and the NMED contractor will add the NMED report to NMED.

3.4.4 Follow-up Written Reports

After submitting the initial written report, the Agreement States shall determine if the NMED record includes the minimum required event information as detailed in Appendix C. If additional information is needed or becomes available after the initial notification, the Agreement States shall submit follow-up written reports. Follow-up written reports should include:

- a. The results of investigations as to what, where, when, and how the event or conditions occurred.
- b. The root cause(s) and/or the corrective actions made to prevent recurrence, if applicable.

- c. All investigative information obtained through closeout of the event.
- d. The document(s) or clear reference to documents on file that the Agreement State used to generate the NMED record (e.g., a licensee inspection report dated mm/dd/yy), if applicable and appropriate.
- e. Any follow-up information that revises earlier information or provides additional information on a given event to ensure a complete historical record.

4 REPORTING THEFT OR TERRORIST ACTIVITIES

10 CFR Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material," or equivalent Agreement State regulations, contains, in part, reporting requirements. Licensees are required to immediately notify their appropriate Local Law Enforcement Agency in cases involving actual or attempted theft, sabotage, or diversion of radioactive material containing quantities greater than or equal to the quantities of concern of radioactive material in accordance with 10 CFR 37.57, "Reporting of Events," or the equivalent Agreement State regulation. For the purposes of reporting events for these risk significant radioactive materials, the Agreement States should have compatible or more restrictive regulations (10 CFR 37.57 is a Compatibility Category C).

The Agreement State shall determine if their licensee reported to the Local Law Enforcement Agency. If the licensee did not report the quantity of concern, the Agreement State shall determine if the radioactive materials exceeds the threshold for quantities off concern. If the reporting threshold was met, the Agreement State shall report to law enforcement and the NRC. If their licensee already engaged law enforcement, then the Agreement States shall report only to the NRC. See Appendix A for more specific instructions. If it is not clear whether an event should be categorized as a possible theft or terrorist activity, the Agreement State should contact the HOC for assistance in determining if the event is required to be reported.

Agreement States should consider notifying their local law enforcement and/or the U.S. Federal Bureau of Investigation (FBI) in all cases of actual theft, sabotage, diversions, and possible terrorism of radioactive material, regardless of the quantity of radioactive material involved. Additionally, they should coordinate their communications with other local, Federal and State Agencies (including the HOC) to ensure that shared information is accurate and consistent. The Agreement State should consider issuance of a press release, based on the H&S significance of the event.

The U.S. Code assigns lead responsibility for material events involving theft or terrorist activities to the FBI. The All-Agreement State Letter SP-98-038, dated May 5, 1998, addressed the revision to the U.S. Code regarding the expansion of the FBI criminal investigative jurisdiction to include byproduct material.

5 NUCLEAR MATERIALS EVENTS DATABASE

NMED is a database that contains a historical collection of information on the occurrence, description, and resolution of events involving the use of nuclear material in the United States. The data includes information on material events from January 1990

through the present.

Agreement States should email the NRC NMED Project Manager at NMEDNRC@nrc.gov to gain access. Access to NMED is only provided to the NRC, Agreement States, other federal government agencies, and/or federal government contractors who have the need to use the information in NMED. NMED is not publicly available.

The NMED website is at <https://nmed.inl.gov/Home/frmLogin>. Approved users may download the software or use the web-based interface.

Section 3.4, "Written Reports," provides information on how to submit written reports. The following sections provides information on how to manage information within NMED.

5.1 Events Entered into NMED

Agreement States shall report events to the NRC in the manner that is described in Appendix A. The icons in Appendix A indicate whether the reporting requirement specifies a report to the HOC or a written report.

An NMED record is created after events are reported to the HOC. The NMED contractor uses the event information, as reported to the HOC, to establish a record in the NMED database. The Agreement State's Event Report Identification Number is included in the "Reference" field of the NMED record. This ensures that any subsequent updates are correctly associated with the initial event record.

Agreement States can submit written reports to NMED electronically (email or upload) and via mail. These reports are entered into NMED by the Agreement State but they are not shared with the HOC. The HOC staff does not review written reports.

5.2 Retracted Events

The Agreement State may retract an event if it does not meet the threshold of the reporting regulation. A retracted event will be marked as "not reportable" in NMED, which excludes it from most searches. The NMED record will remain. The NRC will not request an Agreement State to retract an event.

5.3 Records Completed in NMED

An NMED record is complete when the event information recorded within NMED meets the minimum set of information criteria established in Appendix C, "Minimum Required Event Information." This information may also be found on the NMED website under "Help." After the NMED contractor reviewed the event information and determined that it included the minimum set of information required for a complete event, the NMED contractor marks the NMED record as complete. In certain circumstances, some NMED records are unable to ever be marked as complete.

5.4 Records Closed in NMED

A complete record remains open in NMED until the Agreement State has indicated the

NMED record should be closed. Agreement States shall notify the NMED contractor when the NMED record can be officially closed (i.e., no further follow-up planned and/or no additional information expected). The regulatory agency should ensure that the NMED record contains all pertinent technical information, including follow-up information, before requesting the event be closed via email or by including it in their event report update. An NMED record can be closed but not complete when no further action is planned.

Agreement States shall follow-up and review nuclear material events through the closure of the event, which includes checking to see that the final report information was entered into NMED. Search for NMED records that have been closed by the applicable regulatory agency under the field, "Event Closed by Region/State."

5.5 NMED Annual Reports

An annual report presents the results of the statistical analysis of event data and any safety significant concerns. The NMED Annual Reports are available to authorized NMED users in electronic form on the NMED website (<https://nmed.inl.gov/>) under "Publications."

5.6 Voluntary Reports and Non-reportable Records

On April 1, 2019, NMED ceased capturing non-reportable events. Non-reportable records that were already in NMED will continue to be updated as new information is received. Reports where the reportability is currently unknown will continue to be added to NMED as they may develop into reportable events when further information is received.

New non-reportable events are no longer entered into NMED. NMED only captures reportable events and events where the reportability is currently unknown that may develop into reportable events when further information is received. Situations that cannot be tied to any reporting requirement (i.e., materials contaminated with radioactive material) are not tracked in NMED. Voluntary reporting to the HOC is still available as described in Section 3 of this Handbook.

5.6.1 Orphan Sources

For events where the owner of the radioactive source was not identified, the keyword, Orphan Source, is added to the NMED record. Orphan sources with quantities of licensed material *less than* the 10 CFR Part 20 Appendix C, "Quantities of Licensed Materials Requiring Labeling," are no longer tracked.

5.6.2 Found Source

A found source that is associated with a reporting requirement and a licensee is required to be reported in NMED. If the found source was not previously reported as lost, then it also needs to be reported. A found source with a quantity less than the reporting requirements (i.e., 10 CFR 20.2201, "Reports of theft or loss of material"), can be voluntarily reported but it will not be tracked in NMED.

5.6.3 Landfill Radiation Monitor Alarms

Records of landfill radiation monitor alarms are added into NMED, unless the calculated/estimated activity of the lost nuclear material provided supports the determination that it is below the reportable threshold. A record of the landfill radiation monitor alarms (with incomplete information) is marked as reportable or uncertain reportability in NMED, depending on the radionuclide and the NMED Coding Manual.

If the radionuclide that sets off landfill radiation monitor alarms is not provided, the reportability will be listed as uncertain. If the Agreement State assumes that a particular radionuclide was involved, that assumption will be listed in the NMED record.

A landfill radiation monitor alarm with incomplete information is treated as non-reportable if the waste came from a residence.

6 GOVERNMENT COLLABORATION

6.1 Assistance from the NRC

Agreement States perform the event follow-up and investigation for events within their jurisdiction. For events with significant safety or security concerns, the Agreement State may request assistance from the NRC. The Agreement State should contact the HOC if activation of the NRC Incident Response Program is likely. If the Agreement State needs assistance in assessing the scale and/or safety impact of an event or assistance in calculating the dose, the Agreement State should contact their RSAO.

See NRC Inspection Manual Chapter (IMC) 1330, "Response to Transportation Accidents Involving Radioactive Materials," and IMC 1360, "Use of Physicians and Scientific Consultants in the Medical Consultant Program."

6.2 Radiological Emergency Response Assistance Available to the States

Agreement States may request radiological emergency response assistance by contacting the HOC. The Federal government, upon request, has the capability to assist States in responding to radiological emergencies. Under the Nuclear Radiological Incident Annex to the Response and Recovery Federal Interagency Operational Plan, the NRC is the Lead Federal Agency (LFA) for domestic incident management for incidents involving radioactive materials or facilities licensed by the NRC or Agreement States. As LFA, the NRC may request assistance from other federal agencies (e.g., Department of Homeland Security, Federal Emergency Management Agency (FEMA), Department of Energy, etc.). .

See IMC 1303, "Requesting Emergency Acceptance of Radioactive Material by the U.S. Department of Energy (DOE)."

6.3 Congressional Inquiries

The NRC has the lead on responding to any inquiries from the U.S. Congress pertaining to events or other occurrences covered in this Handbook. The RSAO should contact the Agreement State to raise awareness of the inquiry and to obtain an answer ASAP, if

appropriate. If the congressional inquiry is in depth, NMSS and/or Office of Congressional Affairs staff will issue a letter to the Agreement State and include a due date for the response.

7 EVENT NOTIFICATIONS

7.1 NRC Publication of Event Notifications

Events reported to the HOC are entered into an Event Notification (EN) database and are shared with select NRC staff. The ENs are publicly available and published on the NRC public website (<https://www.nrc.gov/reading-rm/doc-collections/event-status/index.html>). These ENs are added after a 5-business day hold. This hold includes the day of notification. For example, a report to the HOC made on a Wednesday is released on the following Wednesday. As a result of public access to this information, Agreement States may be contacted by the public or media regarding events.

ENs retracted during the 5-business day hold are not entered into the EN database. After events are published on the EN database, retracted events are removed.

7.2 Evaluation of Event Notifications

RSAOs review the ENs to ensure that they are abreast of the issues impacting the Agreement States. The RSAOs are responsible for serving as a point of contact for NMSS staff and management, if any questions arise.

Select NMSS staff review all new and updated ENs. NMSS staff should notify the appropriate RSAO if an event is reportable to the INES, a potential AO, or if an event indicates the possible presence of a generic issue.

ENs identified as having a significant potential risk to public health and safety, security, and/or the environment may receive additional NRC management review.

7.3 Request for Additional Information

Additional information may be requested to help determine the safety significance and any possible generic implications (e.g., equipment malfunction or failure, significant exposures). For significant events (i.e., immediate or 24-hour reportable events) such requests, normally initiated by the RSAO or NRC's Operation Center staff, would occur on an as needed basis, possibly within hours to a few days of notification of the occurrence.

For events not considered to be significant (i.e., not required to be reported within 24 hours), the standard procedure is to allow at least 30 days before making such requests to provide reasonable time for Agreement State review and evaluation, and submission of follow-up information.

NMED sends a request for follow-up information via email when the NMED record is incomplete after 60 days from the date reported to the regulatory agency.

8 INTERNATIONAL NUCLEAR EVENT SCALE (INES) REPORTING

The IAEA maintains a scale used for rating the safety significance of events associated with the use of nuclear materials. Since 2004, the NRC has used the INES and shared event information with the international community for nuclear, transportation and radiation source events. INES events involve events occurring in areas regulated by the NRC or the Agreement States.

The NRC does not require the States to classify events or to provide direct notifications to IAEA using the INES scale. The NRC will use information provided by the States during their initial reporting and updates of the event for classifying the event and notifying IAEA. The NRC has committed to notifying the IAEA of any applicable event that is rated at an INES Level 2 or higher within two business days.

For events that occur in an Agreement State, the RSAO provides the Agreement State with the draft INES Event Rating Form within 24 hours of its generation. The Agreement States are asked to concur that the information in the report is factual. If the State cannot review the draft INES Event Rating Form in time to meet the two business days reporting deadline, the NRC provides the report to INES and mark the event as 'Provisional.'

A 'Provisional' rating is also recommended in situations where not all the details of the event are known. The rating is issued based on the information that is available and the judgement of those understanding the nature of the event. If a 'Provisional' rating is issued, a final rating needs to be issued with any differences explained.

For further information on INES reporting procedures and rating criteria, see MD 5.12, "International Nuclear Event Scale Participation."

9 ABNORMAL OCCURRENCE

As previously discussed in Section 2 Background, the NRC is responsible for determining if events reported by Agreement States meet the criteria of an AO. NMSS performs an initial screening of all-Agreement State events against the AO criteria in accordance with MD 8.1, "AO Reporting." The RSAO contacts the Agreement State if a potential AO is identified. The Agreement States shall support the NRC by providing information to the NRC on potential AOs that have occurred in their State.

The RSAO provides the Agreement State with a draft AO write-up. The Agreement State staff shall review the draft AO write-ups to verify that the details are correct and provide corrections to their assigned RSAO.

The NRC annually publishes NUREG-0090, "Report to Congress on Abnormal Occurrences." It is publicly available and can be accessed at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0090/>.

The AO Report to Congress is also used to provide information on significant materials issues and on adverse licensee performance. In accordance with SECY-02-216, "Proposed Process for Providing Information on Significant Nuclear Materials Issues and Adverse License Performance" and SECY-11-0132, "Revision of the Criteria for Identifying Nuclear Materials Licensees for Discussion at the Agency Action Review

Meeting,” Agreement State licensees will be considered, along with NRC nuclear material licensees, for discussion during the Annual Agency Action Review Meeting (AARM). The target audience for the AARM is the NRC Commission and it is open to the public.

NRC’s MD and Handbook 8.14, “Agency Action Review Meeting,” describes NMSS’s and the Region’s participation. The NRC has the lead for the discussion on Agreement State licensees, as necessary.

10 ASSESSMENT OF OPERATING EXPERIENCE

The NRC identifies events that may involve generic applicability¹⁰ or could have significant impact on public health and safety, security, and/or the environment. The NRC issues Generic Communications¹¹ in response to identified trends, safety significant issues, or concerns with generic applicability.

The NRC assessment of events identify deficiencies and ensure that corrective actions are taken to prevent recurrence. The assessment may result in the identification of actions that could lead to improvements in the effectiveness of the NRC and Agreement State regulatory programs.

The NRC evaluates issues using the criteria listed in MD 6.4, “Generic Issues,” to formally identify and process generic issues.

11 AGREEMENT STATE REVIEW OF NUCLEAR MATERIAL EVENTS FOR SAFETY SIGNIFICANCE AND GENERIC ASSESSMENT

Agreement States should assess events occurring within their jurisdiction or related to products registered or licensed in their jurisdiction to identify any events that may involve generic applicability¹² or could have significant impact on public health and safety, security, and/or the environment. In the instance that the Agreement State identified events with generic applicability and formalized it in an operating experience assessment or trending study, the Agreement State may submit the assessment to the NRC to facilitate distribution. The NRC can post assessments to the NMED website and could also distribute in a letter to all-Agreement States. Email NMEDNRC@nrc.gov to initiate distribution.

Agreement States may process generic issues under their jurisdiction through State processes or may request NRC assistance. The NRC evaluates issues using the criteria listed in MD 6.4, “Generic Issues,” to formally identify and process generic issues.

¹⁰ An event may have generic applicability if the condition could impact other licensees of the same type or is part of an ongoing safety concern with one or more licensees. The concern should be evaluated for safety significance and resolved, if appropriate. The concern should be managed within the generic issue program if it meets the generic issue criteria.

¹¹ Generic Communications are NRC documents to communicate with industry and the public regarding specific issues of generic nature. See the NRC public website, “Generic Communications” at: <https://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html>.

¹² See footnote 10 for a description of generic applicability.

12 REFERENCES

The following is a list of NRC documents, manuals and procedures that contain additional information on incident response and AOs.

12.1 NUREG Reports

NUREG Reports are available at: <https://www.nrc.gov/reading-rm/doc-collections/nuregs/index.html>.

NUREG–0090, “Report to Congress on Abnormal Occurrences.”

NUREG–1100, “Performance Budget/ Congressional Budget Justification.”

NUREG–1614, “Strategic Plan.”

12.2 NRC Management Directives (MD)

MDs are available at: https://scp.nrc.gov/ASDir_Program_Basis_Docs.html.

MD 5.6, “Integrated Material Performance Evaluation Program (IMPEP).”

MD 5.9, “Adequacy and Compatibility of Program Elements for Agreement State Programs”

MD 5.12, “International Nuclear and Radiological Event Scale (INES) Participation”

MD 6.4, “Generic Issues Program”

MD 8.1, “Abnormal Occurrence Reporting Procedure”

MD 8.10, “NRC Assessment Program for an Event Occurring at a Medical Facility”

MD 8.14, “Agency Action Review Meeting, AARM”

12.3 NRC Inspection Manual Chapters (IMC)

IMCs are available at: <https://www.nrc.gov/reading-rm/doc-collections/insp-manual/manual-chapter/index.html>.

IMC 1301, “Response to Radioactive Material Incidents That Do Not Require Activation of the NRC Incident Response Plan.”

IMC 1302, “Follow-up Actions and Action Levels for Radiation Exposures Associated with Material Incidents Involving Members of the Public.”

IMC 1303, “Requesting Emergency Acceptance of Radioactive Material by the U.S. Department of Energy (DOE).”

IMC 1330, “Response to Transportation Accidents Involving Radioactive Materials.”

IMC 1360, "Use of Physician and Scientific Consultants in the Medical Consultant Program."

IMC 2800, "Materials Inspection Program."

12.4 Commission Policy

SRM-SECY-97-054, *Final Recommendations on Policy Statements and Implementing Procedures For: "Statement of Principles and Policy for the Agreement State Program" and "Policy Statement on Adequacy and Compatibility of Agreement State Programs,"* dated June 30, 1997 (ADAMS Accession No. ML051610710).

Agreement State Program Policy Statement. October 19, 2017 (ADAMS Accession No. ML17262B205).

12.5 State and Tribal Communications Letters

State and Tribal Communications Letters are available at: <https://scp.nrc.gov/asletters/>.

All-Agreement State Letter SP-98-018, dated March 17, 1998, "Use of the Nuclear Material Events Database (NMED) as a Central Listing of Lost or Stolen Sealed Sources and Devices."

All-Agreement State Letter SP-98-038, dated May 5, 1998, "Expansion of Federal Bureau of Investigation (FBI) Criminal Investigative Jurisdiction to Include Byproduct Materials."

All-Agreement State Letter SP-98-040, dated May 7, 1998, "Guidance for Reporting Material Events."

All-Agreement State Letter STP-00-081, dated November 29, 2000, "Strategic Plan and Nuclear Material Safety Performance Plan Data Goals."

12.6 State Agreements (SA) Procedures

SA Procedures are available at: <https://scp.nrc.gov/procedures.html#stateagree>.

SA-100, "Implementation of the Integrated Materials Performance Evaluation Program."

SA-105, "Reviewing the Common Performance Indicator, Technical Quality of Incident and Allegation Activities."

SA-112, "Emergency Suspension of Section 274b. Agreement."

SA-200, "Compatibility Categories and Health and Safety Identification for NRC Regulations and Other Program Elements."

12.7 NRC Regulatory Issue Summary (RIS)

RIS are available at: <https://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/index.html>.

RIS 2005-031 Revision 1, "Control of Security-Related Sensitive Unclassified Non-safeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulation of the Use of Source, Byproduct, And Special Nuclear Material."

12.8 Event Notification (EN) Reports

EN Reports are available at: <https://www.nrc.gov/reading-rm/doc-collections/event-status/event/index.html>.

12.9 Regulations

Title 10, "Energy," regulations are available at: <https://www.nrc.gov/reading-rm/doc-collections/cfr/index.html>.

Title 49, "Transportation," Chapter 1, "Pipeline and Hazardous Materials Safety Administration, Department of Transportation," Part 171, "General Information, Regulations, and Definitions," are available at: <https://www.ecfr.gov/current/title-49/subtitle-B/chapter-I/subchapter-C/part-171?toc=1>.

12.10 NRC Policy

The *Federal Register* (FR) is available at: <https://www.federalregister.gov/documents/search#advanced>.

82 FR 45907, "Abnormal Occurrence Reports; Policy revision; issuance," dated October 2, 2017.

82 FR 46840, "Agreement State Program Policy Statement; Revision to policy statement," dated October 6, 2017.

82 FR 48535, "Agreement State Program Policy Statement; Correction," dated October 18, 2017.

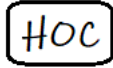
26 FR 2536, "Criteria for Guidance of States and AEC in Discontinuance of AEC Regulatory Authority and Assumption Thereof by States Through Agreement," dated March 24, 1961.

12.11 FEMA Publications

Nuclear Radiological Incident Annex to the Response and Recovery Federal Interagency Operational Plan; https://remm.hhs.gov/NRIA_intro.htm.

Appendix A. NRC Reporting Requirements

The following provides a list of the NRC reporting requirements for which Agreement States should have compatible regulations. These tables may not contain all the NRC's reporting requirements in [Title 10 Code of Federal Regulations \(10 CFR\)](#). The tables below are available for the Agreement States to reference when reporting events as required by this guidance document.

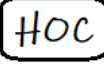
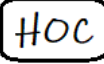
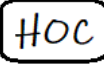

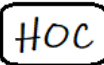

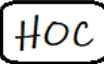

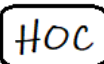













The HOC icon is included in the chart when an Agreement State is required to report to the HOC. Agreement States may choose to contact the HOC by telephone, email, and/or fax.



The keyboard icon is included in the chart when the Agreement State is required to submit a written report in NMED.

Table A.1. 10 CFR Part 20, “Standards for Protection Against Radiation,” applies to all NRC licensees.

Regulatory Requirement	Brief Summary of Reporting Requirement	Notification	Additional Reporting Requirements
10 CFR Part 20, “Standards for Protection Against Radiation.”			
20.1906(d)(1)	Receiving and Opening Packages: Removable radioactive surface contamination on package > limits in 10 CFR 71.87(i) .	Immediate 	
20.1906(d)(2)	Receiving and Opening Packages: External radiation levels from the package > limits in 10 CFR 71.47 .	Immediate 	
20.2201(a)(1)(i)	Lost, stolen or missing licensed material $\geq 1000 \times$ Appendix C value, when it appears to the licensee that individual(s) in unrestricted areas could receive an exposure.	Immediate 	30 days after initial notification  20.2201(b)
20.2201(a)(1)(ii)	Lost, stolen or missing licensed material > $10 \times$ Appendix C value and is still missing.	30 days 	30 days after initial notification  20.2201(b)
20.2202(a)(1)(i)	Overexposure. Event involving byproduct, source, or special nuclear material possessed by the licensee that may have caused or threatens to cause an individual to receive a total effective dose equivalent ≥ 25 rems (0.25 Sv).	Immediate 	30 days  20.2203(a)(1)
20.2202(a)(1)(ii)	Overexposure. Event involving byproduct, source, or special nuclear material possessed by the licensee that may have caused or threatens to cause an individual to receive a lens dose equivalent ≥ 75 rems (0.75 Sv).	Immediate 	30 days  20.2203(a)(1)
20.2202(a)(1)(iii)	Overexposure. Event involving byproduct, source, or special nuclear material	Immediate	30 days

	possessed by the licensee that may have caused or threatens to cause an individual to receive a shallow-dose equivalent to the skin or extremities ≥ 250 rads (2.5 Gy).	HOC	 20.2203(a)(1)
20.2202(a)(2)	Overexposure. The release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake ≥ 5 X ALI .	Immediate HOC	30 days  20.2203(a)(1)
20.2202(b)(1)	Overexposure. Event involving loss of control of licensed material that may have caused, or threatens to cause, an individual to receive, in a period of 24 hours— (i) A total effective dose equivalent > 5 rems (0.05 Sv); or (ii) A lens dose equivalent > 15 rems (0.15 Sv); or (iii) A shallow-dose equivalent to the skin or extremities > 50 rems (0.5 Sv).	24 hours HOC	30 days  20.2203(a)(1)
20.2202(b)(2)	Overexposure. Release where individual could have intake > 1 X ALI over 24 hours.	24 hours HOC	30 days  20.2203(a)(1)
20.2203(a)(2)(i)	Overexposure. Doses $>$ the occupational dose limits for adults in § 20.1201.	30 days 	
20.2203(a)(2)(ii)	Overexposure. Doses $>$ the occupational dose limits for a minor in § 20.1207.	30 days 	
20.2203(a)(2)(iii)	Doses $>$ the limits for an embryo/fetus of a declared pregnant woman in § 20.1208.	30 days 	
20.2203(a)(2)(iv)	Doses $>$ the limits for an individual member of the public in § 20.1301.	30 days 	
20.2203(a)(2)(v)	Doses $>$ any applicable limit in the license.	30 days 	
20.2203(a)(2)(vi)	Doses $>$ the As Low As Reasonably Achievable constraints for air emissions established under § 20.1101(d).	30 days 	



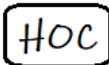

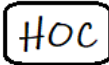

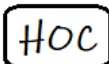





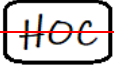

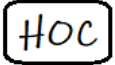
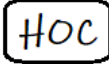

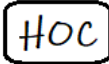


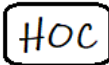

<p>20.2203(a)(3)</p>	<p>Levels of radiation or concentrations of radioactive material in—</p> <p>(i) A restricted area in excess of any applicable limit in the license; or</p> <p>(ii) An unrestricted area in excess of ten times any applicable limit set forth in this part or in the license (whether or not involving exposure of any individual in excess of the limits in § 20.1301).</p>	<p>30 days</p> 	
<p>20.2203(a)(4)</p>	<p>For licensees subject to the provisions of U.S. Environmental Protection Agency 's generally applicable environmental radiation standards in 40 CFR part 190, levels of radiation or releases of radioactive material in excess of those standards, or of license conditions related to those standards.</p>	<p>30 days</p> 	



Table A.2. Regulatory reporting requirements that may be applicable depending on the type of license and nuclear material.

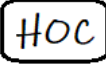
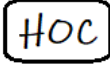

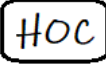

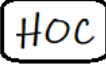

10 CFR Part 30, “Rules of General Applicability to Domestic Licensing of Byproduct Material.”			
30.50(a)	Events involving prevention of immediate protective actions, necessary to avoid exposures to radiation, radioactive materials or releases of radioactive material that could exceed regulatory limits.	ASAP but not later than 4 hours after the discovery of an event 	30 days  30.50(c)(2)
30.50(b)(1)	An unplanned contamination event that: (i) Requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area; (ii) Involves a quantity of material greater than five times the lowest annual limit on intake specified in Part 20 Appendix B for the material; and (iii) Has access to the area restricted for a reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.	24 hours 	30 days  30.50(c)(2)
30.50(b)(2)	An event in which equipment is disabled or fails to function as designed when: (i) The equipment is required by regulation or license	24 hours 	30 days  30.50(c)(2)

	<p>condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;</p> <p>(ii) The equipment is required to be available and operable when it is disabled or fails to function; and</p> <p>(iii) No redundant equipment is available and operable to perform the required safety function.</p>		
30.50(b)(3)	An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.	<p>24 hours</p> <p>HOC</p>	<p>30 days</p>  <p>30.50(c)(2)</p>
30.50(b)(4)	<p>An unplanned fire or explosion damaging any licensed material or any device, container, or equipment containing licensed material when:</p> <p>(i) The quantity of material involved is greater than five times the lowest annual limit on intake specified in Part 20 Appendix B for the material; and</p> <p>(ii) The damage affects the integrity of the licensed material or its container.</p>	<p>24 hours</p> <p>HOC</p>	<p>30 days</p>  <p>30.50(c)(2)</p>
<p>10 CFR Part 31, “General Domestic Licenses for Byproduct Material.”</p>			




<p>31.5(c)(5)</p>	<p>Shall immediately suspend operation of a device if there is a failure of or damage to the shielding or an indication of a failure of or damage to the shielding, or the on-off mechanism or indicator, or upon detection of 185 becquerel (0.005 microcurie) or more of removable radioactive material and submit a written report within 30 days. (See the rest of Paragraph (c)(5) for other conditions and restrictions that apply). (See also 10 CFR 30.50 requirements and other sections of the regulations (e.g., 10 CFR 21.21)).</p>	<p>30 days </p>	
<p align="center">10 CFR Part 34, "Licenses for Radiography and Radiation Safety Requirements for Radiographic Operations."</p>			
<p>34.27(d)</p>	<p>Reporting of leaking sources, leak test results ≥ 0.005 microcurie (185 Bq).</p>	<p>5 days </p>	
<p>34.101(a)</p>	<p>Incidents involving radiographic equipment:</p> <p>(1) Unintentional disconnection of the source assembly from the control cable;</p> <p>(2) Inability to retract the source assembly to its fully shielded position and secure it in this position; or</p> <p>(3) Failure of any component (critical to safe operation of the device) to properly perform its intended function.</p>	<p>24-hour  30.50(b)(2) also applies. 30 days </p>	<p>If 30.50(b)(2) also applies, then a 24 hour report to the HOC is required. </p>

10 CFR Part 35, “Medical Use of Byproduct Material.”			
35.3045	Notifications and reports of medical events involving administration and use of byproduct materials or radiation from byproduct material , with the exception of patient intervention events.	Next calendar day 	15 days  35.3045(d)
35.3047	Events involving an unauthorized dose of greater than 50 mSv (5 rem) to an embryo/fetus or a nursing child, or an unintended functional damage to an organ or a physiological system of the child.	Next calendar day 	15 days  35.3047(d)
35.3067	Reports of leak test results that demonstrate the presence of 185 becquerel (0.005 microcurie) or more of removable contamination.	5 days 	
10 CFR Part 36, “Licenses and Radiation Safety Requirements for Irradiators.”			
36.83	The following events are reportable under 36.83 if not reported under other NRC reporting requirements: stuck sources, fire/explosions, damage to source racks, cable or drive mechanism failure, access control system failure, detection of source by the product exit monitor, contamination from licensed material, etc. (See items (a)(1) through (10) under 36.83 for specific descriptions of reportable events.	24 hours 	30 days  36.83(b)
10 CFR Part 37, “Physical Protection of Category 1 and 2 Quantities of Radioactive Material.”			



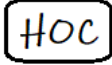

<p>37.57(a)</p>	<p>Notify the Local Law Enforcement Agency after determining that an unauthorized entry resulted in an actual or attempted theft, sabotage, or diversion of a category 1 or category 2 quantity of radioactive material.</p> <p>ASAP after initiating a response, but not at the expense of causing delay or interfering with the Local Law Enforcement Agency response to the event, the licensee shall notify the NRC. In no case shall the notification to the NRC be later than 4 hours after the discovery of any attempted or actual theft, sabotage, or diversion.</p> <p>See Table 1, "Category 1 and Category 2 Threshold," in Appendix A to Part 37.</p>	<p>Immediate or not later than 4 hours after discovery</p> <p>HOC</p>	<p>30 days</p>  <p>37.57(c)</p>
<p>37.57(b)</p>	<p>Notify the Local Law Enforcement Agency of any suspicious activity related to possible theft, sabotage, or diversion of category 1 or category 2 quantities of radioactive material.</p> <p>See Table 1, "Category 1 and Category 2 Threshold," in Appendix A to Part 37.</p>	<p>ASAP, but not later than 4 hours after notifying LLEA</p> <p>HOC</p>	
<p>37.81(a)</p>	<p>In transit: Notify the appropriate Local Law Enforcement Agency and the NRC's Operations Center that a shipment of category 1 quantities of radioactive material is lost or missing.</p>	<p>Within 1 hour</p> <p>HOC</p>	<p>Provide updates</p> <p>37.81(a)</p> <p>30 days</p>  <p>37.81(g)</p>




	See Table 1, "Category 1 and Category 2 Threshold," in Appendix A to Part 37.		
37.81(b)	In transit: A shipment of category 2 quantities of radioactive material is lost or missing. See Table 1, "Category 1 and Category 2 Threshold," in Appendix A to Part 37.	Within 4 hours 	After 24 hours  30 days  37.81(g)
37.81(c)	In transit: Notify the designated Local Law Enforcement Agency along the shipment route ASAP upon discovery of any actual or attempted theft or diversion of a shipment or suspicious activities related to the theft or diversion of a shipment of a category 1 quantity of radioactive material. ASAP after notifying the Local Law Enforcement Agency, the licensee shall notify the NRC upon discovery of any actual or attempted theft or diversion of a shipment, or any suspicious activity related to the shipment of category 1 radioactive material. See Table 1, "Category 1 and Category 2 Threshold," in Appendix A to Part 37.	ASAP 	30 days  37.81(g)
37.81(d)	In transit: Notify the NRC ASAP upon discovery of any actual or attempted theft or diversion of a shipment, or any suspicious activity related to the shipment, of a category 2 quantity of radioactive material.	ASAP 	30 days  37.81(g)



	See Table 1, "Category 1 and Category 2 Threshold," in Appendix A to Part 37.		
37.81(e) and (f)	<p>In transit: Notify the NRC and the Local Law Enforcement Agency ASAP upon recovery of any lost or missing category 1 or 2 quantities of radioactive material.</p> <p>See Table 1, "Category 1 and Category 2 Threshold," in Appendix A to Part 37.</p>	<p>ASAP</p> <p>HOC</p>	



10 CFR Part 39 , “Licenses & Radiation Safety Requirements for Well Logging.”			
39.35(d)(2)	Report of leak test results (of sources leak tested at intervals not greater than every 6 months) when the presence of 185 becquerel (0.005 microcurie) or more of contamination is detected. (See remaining paragraphs under 39.35 for other conditions, including exemptions, that apply.)	5 days HOC 	
39.77(a)	Well logging source rupture. <i>The licensee shall immediately notify the appropriate regulator by telephone and subsequently, within 30 days, by confirmation in writing,¹³ if the licensee knows or has reason to believe that a sealed source has been ruptured. The written confirmation must designate the well or other location, describe the magnitude and extent of the escape of licensed materials, assess the consequences of the rupture, and explain efforts planned or being taken to mitigate these consequences.</i>	Immediate HOC 30 days 	30 days 
39.77(b)	Theft or loss of radioactive materials, radiation overexposures, excessive levels and concentrations of radiation, and certain other accidents as required by §§ 20.2201 - 20.2202, § 20.2203 and § 30.50. <i>Note. An irretrievable source that received approval from the</i>	HOC See methods in referenced regulations.	



¹³ The Agreement State shall submit the 30 day report to NMED. The immediate notification to the regulator for well logging does NOT fall under event reporting and is therefore not captured in the Notification column in the chart. A notification to the HOC is not required for a well logging source rupture.

	regulator to implement abandonment procedures is not a lost source.		
39.77(c) and (d)	A sealed source has been classified as irretrievable. Classification that a source is irretrievable.	After it's determined the source is irretrievable HOC 30 days 	30 days 
10 CFR Part 40, "Domestic Licensing of Source Material."			
40.60(a)	Event that prevents immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits or releases of licensed material that could exceed regulatory limits.	ASAP and within 4 hours of discovery HOC	30 days  40.60(c)(2)
40.60(b)(1)	An unplanned contamination event that: (i) Requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area; (ii) Involves a quantity of material greater than five times the lowest annual limit on intake specified in Appendix B of §§ 20.1001-20.2401 of 10 CFR part 20 for the material; and (iii) Has access to the area restricted for a reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.	24 hours HOC	30 days  40.60(c)(2)

<p>40.60(b)(2)</p>	<p>An event in which equipment is disabled or fails to function as designed when:</p> <p>(i) The equipment is required by regulation or license condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;</p> <p>(ii) The equipment is required to be available and operable when it is disabled or fails to function; and</p> <p>(iii) No redundant equipment is available and operable to perform the required safety function.</p>	<p>24 hours</p> <p>HOC</p>	<p>30 days</p>  <p>40.60(c)(2)</p>
<p>40.60(b)(3)</p>	<p>An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.</p>	<p>24 hours</p> <p>HOC</p>	<p>30 days</p>  <p>40.60(c)(2)</p>
<p>40.60(b)(4)</p>	<p>An unplanned fire or explosion damaging any licensed material or any device, container, or equipment containing licensed material when:</p> <p>(i) The quantity of material involved is greater than five times the lowest annual limit on intake specified in Appendix B of §§ 20.1001-20.2401 of 10 CFR part 20 for the material; and</p>	<p>24 hours</p> <p>HOC</p>	<p>30 days</p>  <p>40.60(c)(2)</p>

	(ii) The damage affects the integrity of the licensed material or its container.		
10 CFR Part 70, "Domestic Licensing of Special Nuclear Material."			
70.50(a)	Event that prevents immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits or releases of licensed material that could exceed regulatory limits.	ASAP and within 4 hours of discovery HOC	
70.50(b)(1)	An unplanned contamination event that: (i) Requires access to the contaminated area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area; (ii) Involves a quantity of material greater than five times the lowest annual limit on intake specified in Appendix B of §§ 20.1001-20.2401 of 10 CFR part 20 for the material; and (iii) Has access to the area restricted for a reason other than to allow isotopes with a half-life of less than 24 hours to decay prior to decontamination.	24 hours HOC	30 days  70.50(c)(2)
70.50(b)(2)	An event in which equipment is disabled or fails to function as designed when: (i) The equipment is required by regulation or licensee condition	24 hours HOC	30 days  70.50(c)(2)

	<p>to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;</p> <p>(ii) The equipment is required to be available and operable when it is disabled or fails to function; and</p> <p>(iii) No redundant equipment is available and operable to perform the required safety function.</p>		
70.50(b)(3)	An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.	24 hours HOC	30 days  70.50(c)(2)
70.50(b)(4)	<p>An unplanned fire or explosion damaging any licensed material or any device, container, or equipment containing licensed material when:</p> <p>(i) The quantity of material involved is greater than five times the lowest annual limit on intake specified in Appendix B of §§ 20.1001-20.2401 of 10 CFR part 20 for the material; and</p> <p>(ii) The damage affects the integrity of the licensed material or its container.</p>	24 hours HOC	30 days  70.50(c)(2)
10 CFR Part 71, "Packaging and Transportation of Radioactive Material."			

<p>71.5</p>	<p>10 CFR 71.5 provides that licensees shall comply with the applicable requirements of the Department of Transportation regulations in 49 CFR parts 107, 171 through 180, and 390 through 397.</p>		
<p>49 CFR 171.15(b)(1)</p>	<p>Any of the following occurs during the course of transportation in commerce (including loading, unloading, and temporary storage) as a direct result of a hazardous material -</p> <ul style="list-style-type: none"> (i) A person is killed; (ii) A person receives an injury requiring admittance to a hospital; (iii) The general public is evacuated for one hour or more; (iv) A major transportation artery or facility is closed or shut down for one hour or more; or (v) The operational flight pattern or routine of an aircraft is altered. 	<p>ASAP but no later than 12 hours</p> <p>National Response Center</p>	<p>Within 30 days from discovery</p>  <p>49 CFR 171.16</p>
<p>49 CFR 171.15(b)(2)</p>	<p>Fire, breakage, spillage, or suspected radioactive contamination occurs involving the shipment of radioactive material.</p>	<p>ASAP but no later than 12 hours</p> <p>National Response Center</p>	<p>Within 30 days from discovery</p>  <p>49 CFR 171.16</p>

Appendix B. Reporting Methods and Contact Information

Table B.1. Reporting methods and contact information for the NRC.

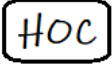

Report	Contact Information
 Report to the NRC Headquarters Operations Center using one of the following methods.	<p style="text-align: center;">NRC Headquarters Operations Center Email: HOO.HOC@nrc.gov Telephone: (301)-816-5100 Fax: (301)-816-5151</p>
 Submit a written report by using one of the following methods.	Upload to NMED
	Email: NMED@inl.gov
	By mail: Director Division of Materials Safety, Security, State, and Tribal Programs Office of Nuclear Material Safety and Safeguards U.S. Nuclear Regulatory Commission 11545 Rockville Pike Rockville, MD 20852-2738 Attention: Chief, Medical Safety & Events Assessment Branch, Mail Stop T5B60

Table B.2. Reporting to other entities as required by the NRC.

Reason to Report	Reporting Methods and Contact Information
<p>Report theft or terrorist activities to the local law enforcement or the Federal Bureau of Investigation (FBI) if it has not already been done by the licensee.</p> <p>Share a concurrent report with the NRC Headquarters Operations Center after the event has been reported to law enforcement.</p>	<p>Step 1: Local Law Enforcement 911 FBI Telephone (202)-324-3000</p> <p>Step 2: Concurrent Report NRC Headquarters Operations Center</p>
<p>Transportation events</p>	<p>National Response Center (800)-424-8802 (toll free) (202)-267-2675 (toll call) Online at http://www.nrc.uscg.mil The National Response Center subsequently contacts the HOC.</p>

Table B.3. Reporting Agreement States may choose to contact the HOC by email, telephone, and/or fax. The Agreement State is required to report but may chose the method of reporting.

Notification method	Reports to the HOC
<p>Email</p>	<p>To report to the HOC, the Agreement States should email the reports to the HOC using the email address, HOO.HOC@nrc.gov.</p>
<p>Telephone</p>	<p>To report to the HOC, the Agreement States should use the recorded telephone line to submit reports to the HOC at (301)-816-5100. The HOO may ask for Agreement States to follow-up with an email.</p>
<p>Facsimile</p>	<p>Agreement States should report to the HOC using the sample fax sheet in Table B.4 or by sending NRC Form 361A, "Fuel Cycle and Materials Event Notification Worksheet," through facsimile. The Fax Number is (301)-816-5151.</p>
<p>NRC Form 361A, "Fuel Cycle and Materials Event Notification Worksheet"</p>	<p>The NRC Form 361A, "Fuel Cycle and Materials Event Notification Worksheet," can be downloaded from the NRC Forms public website, https://www.nrc.gov/reading-rm/doc-collections/forms/index.html. This can be used to report to the HOC via facsimile or email. This form is not often used but is available.</p>

Table B.4. Sample Fax Sheet for reporting to the HOC.

FAX TO:	NRC HEADQUARTERS OPERATIONS CENTER (301)-816-5151
Agreement State Agency:	[State] Dept. of Health, Division of Radiation Protection
Event Report Identification No.:	State ID, YY, No., e.g., TN-20-0001
Licensee Name:	County Inspection Inc.
Licensee Number:	CL-Z00X-1
Event date and time:	Month XX, YYYY, between 4:00 and 5:00 am
Event location:	City, State
Event type:	Stolen Radiography Device
Event description:	[State] Dept. of Health was notified on [notification date], by a representative from [licensee], of the theft of a radiography exposure device [camera] from a locked equipment trailer on Thursday morning, April 6, 2006. The locked camera and the keys to the camera were stolen. The radiography camera is identified as XYZ Company, Model 160B, serial No. B-3333, containing [radionuclide] [activity, when known] 88.3 curies of iridium-192. The device cables were not stolen. The Agreement State has an inspector on site and will continue to keep the NRC informed of the status of our investigation.
Transport vehicle description:	N/A
Notifications:	[State] Dept. of Health has notified local law enforcement, and the FBI due to possibility of unlawful criminal activity. Press release has not been issued at this time. [State] Dept. of Health has received inquiries from the media regarding this incident.
Point of contact:	Minnie C. Gauges, (301)-415-0001

Table B.5. The written report cover page should be used when submitting a written report by mail. The NRC ensures that written reports submitted through the mail are added to NMED.

AGREEMENT STATE
EVENT REPORT ID NO. ___ - ___ - ___
(State\YY\No.)

DATE:

TO: Branch Chief
Medical Safety & Events Assessment Branch

SUBJECT:

STATE:

Signature and Title: _____

Public Availability of Event Information: Any event information that is considered preliminary pre-decisional information by the State should be clearly identified on the cover page as follows: **"Preliminary, Not for Public Disclosure."** For event information in the NRC's possession, the final determination on whether to withhold from public disclosure will be made by the NRC on a case-by-case basis in accordance with the requirements of 10 CFR Part 9.

Appendix C. Minimum Required Event Information

The event reports should include the minimum event information.

Essential Details

- Narrative event description (e.g., Event circumstances and details including source radionuclide and activity)
- Report identification number
- Event date and notification date
- Licensee/reporting party information (i.e., name license number, and address)
- Whether the event is NRC reportable and the applicable reporting requirement
- Cause and corrective actions (Agreement State and licensees' actions)
- Cause and corrective actions (Agreement State and licensees' actions)
- Notifications: local law enforcement, FBI, and other States, as needed
- Indicate if there are any generic implications (i.e., generic issues or concerns).

Source/Radioactive Material

- Isotope and activity
- Manufacturer
- Model and serial number
- Leak test results, if applicable

Device/Associate Equipment

- For equipment/device involved indicate the manufacturer, model, and serial number
- Provide clear description of any equipment problems.

Release of Licensed Material or Contamination

- Release type (air or water)
- contamination (person or surface)
- isotope and activity released

Medical Event

- Procedure administered, dose intended, and actual dose administered
- Isotope and activity administered, target organ
- Patient and Referring Physician notified?

Overexposure

- Radiation source and activity
- Exposure dose and exposure type (e.g., whole body, extremity, etc.)

Transportation

- Type of transport
- Identity of shipper
- Package type and ID number (if available)

Appendix D. Glossary

ADAMS	Agencywide Documents Access and Management System (ADAMS) is the NRC's official record electronic recordkeeping system.
AEA	The Atomic Energy Act of 1954 (AEA) is the fundamental U.S. law on both the civilian and the military uses of nuclear materials.
AEC	The U.S. Atomic Energy Commission (AEC) was the predecessor to the NRC.
AO	Section 208 of the Energy Reorganization Act of 1974 defines an Abnormal Occurrence (AO) as an unscheduled incident or event which the NRC determines to be significant from the standpoint of public health or safety.
Conventional Units	Conventional units include curie, rad, and rem.
CRCPD	The Conference of Radiation Control Program Directors (CRCPD) is a non-profit entity representing the radiation control programs of each State (not limited to Agreement States).
DOE	The U.S. Department of Energy
EN	The Event Notification (EN) database is an internal NRC automated event tracking system used by the HOC to track reports made to the HOC.
ERA	Section 208 of the Energy Reorganization Act of 1974 (ERA) (P.L. 93-438, 42 USC 5848) establishes the NRC's AO responsibilities.
Event Report	An event report refers to both events reported to the HOC and written reports.
FEMA	The Federal Emergency Management Agency (FEMA) is an agency of the Department of Homeland Security whose purpose is to coordinate the response to disasters in the United States that overwhelms the resources of local and state authorities.
FBI	The U.S. Federal Bureau of Investigation (FBI) is a federal law enforcement agency.
FR	The Federal Register (FR) is the official daily publication for rules, proposed rules, and notices of Federal agencies and organizations.
Gray	Gray (Gy) is the SI unit of absorbed dose. One Gray is equal to an absorbed dose of 1 joule/kilogram (100 rads).
Generic Applicability	A condition that could impact other licensees of the same type or an

ongoing safety concern with one or more licensees. The concern should be managed within the generic issue program if it meets the generic issue criteria. If not, the concern should be evaluated for safety significance and resolved, if appropriate.

Generic Issues	Generic issues are complex safety or security issues that require extensive NRC staff and industry involvement to resolve. The defined criteria in Management Directive 6.4, "Generic Issues Program," must be met for an event to be identified as a generic issue.
HOC	The Headquarters Operations Center (HOC) is in Rockville, MD and is staffed 24 hours a day by employees trained to receive and evaluate event reports and coordinate incident response activities.
HOO	The Headquarters Operations Officers (HOO) staff the HOC. The HOO are trained to receive, evaluate, and respond to events.
IAEA	The International Atomic Energy Agency (IAEA) is the world's center for cooperation in the nuclear field and seeks to promote the safe, secure, and peaceful use of nuclear technologies.
IMPEP	The NRC performs periodic evaluations of Agreement State programs as part of the Integrated Materials Performance Evaluation Program (IMPEP).
Incident	Incident means an event or condition that has the possibility of affecting public health and safety such as overexposure, damage to equipment or facility, release of radioactive material, equipment, or procedure failure, lost/stolen/abandoned radioactive material, leaking source, contamination event, transportation, loss of control, medical event, etc. The terms "incident" and "event" may be used interchangeably.
INES	The IAEA's International Nuclear Event Scale (INES) is a scale that is used for rating safety significance of events associated with the use of nuclear materials.
LFA	The Lead Federal Agency (LFA) is the agency assigned the lead in the Nuclear Radiological Incident Annex to the Response and Recovery Federal Interagency Operational Plan.
LLEA	A Local Law Enforcement Agency (LLEA) represents different law enforcement agencies operating in different layers of the government. The local police department is one example. The FBI represents federal law enforcement.
MAP-X	The MAP-X web portal allows the information contained in NRC Form 361A, "Fuel Cycle and Materials Event Notification Worksheet," to be submitted electronically to the HOC. This data automatically propagates the database used in the HOC.
MSEB	Medical Safety and Events Assessment Branch (MSEB) manages the

Events Coordination program for NMSS.

MSST	NMSS's Division of Material Safety, Security, State, and Tribal Programs (MSST) works with the Agreement States, non-Agreement States, NRC Regional Offices, NRC licensees, and the public to provide structure and implement the national materials program to enable the safe and secure use of radioactive materials in medical, industrial, and academic applications for beneficial civilian purposes.
National Response Center	The National Response Center is a part of the federally established National Response System and is staffed 24 hours a day by the U.S. Coast Guard. It is the designated federal point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment, anywhere in the United States and its territories.
NMED	The Nuclear Material Events Database (NMED), maintained by the NRC, is a historical collection of events that have occurred throughout the United States involving the use of nuclear material covered under the Atomic Energy Act. This excludes events occurring at nuclear power plants.
NMED Record	An entry in NMED.
NMED Report	A written report submitted to NMED by file upload, email, or submission through the mail. The NRC staff ensures that written reports submitted through the mail are added to NMED.
NMSS	The Office of Nuclear Material Safety and Safeguards (NMSS) is responsible for the licensing and regulation of facilities and materials associated with the processing, transport, and handling of nuclear materials, including uranium recovery activities and the fuel used in commercial nuclear reactors.
RSAO	The Regional State Agreements Officer (RSAO) is a designated staff member, in an NRC regional office, who serves as the point of contact for the region and NMSS regarding Agreement State radiation control programs, and who participates in technical reviews of Agreement State radiation control programs.
Rad	Rad is the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 ergs/gram or 0.01 joule/kilogram (0.01 gray).
Rem	Rem is the special unit of any of the quantities expressed as dose equivalent. (1 rem = 0.01 sievert).
SI Units	International System of Units (SI) include becquerel, gray, and sievert.
Sievert	Sievert (Sv) is the SI unit of dose equivalent. The dose equivalent (Sv) is equal to the absorbed dose (Gy) multiplied by the quality factor (1 Sv = 100 rem).