U.S. NUCLEAR REGULATORY COMMISSION MANAGEMENT DIRECTIVE (MD)

MD 8.1	ABNORMAL OCCURRENCE REPORTING PROCEDURE	DT-17-156
Volume 8:	Licensee Oversight Programs	
Approved By:	B. Sheron Director, Office of Nuclear Regulatory Research	
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EXECUTIVE SUMMARY

Directive and Handbook 8.1 have been updated to reflect the current process for reporting abnormal occurrences to Congress.

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I. POLICY

- It is the policy of the U.S. Nuclear Regulatory Commission to establish procedures to ensure that abnormal occurrences (AOs) are identified and reported to Congress in compliance with Section 208 of the Energy Reorganization Act of 1974 and the Federal Reports Elimination and Sunset Act of 1995.
- These procedures pertain to events that occur at facilities licensed or otherwise regulated by NRC and Agreement States (i.e., nuclear power plants, fuel cycle facilities, and material licensees). They do not affect the rules, regulations, or other requirements applicable to NRC or Agreement State licensees or certificate holders. These requirements are stated in the *Code of Federal Regulations*, the technical specifications, the license, or the certificate. The procedures within this directive and handbook do not impose additional requirements on licensees or certificate holders and they do not affect the Commission's agreements with the Agreement States, as authorized by Section 274 of the Atomic Energy Act of 1954, as amended.

– Agreement States provide information to NRC on all reportable material events as a matter of compatibility. Agreement States file reports for all reportable events following guidance contained in the Office of Federal and State Materials and Environmental Management Programs (FSME) Procedure SA-300, “Reporting Material Events.” Subsequently, following guidance in SA-300, the Agreement State staff voluntarily prepares and submits to the NRC potential AO event descriptions for the subset of those reportable events that were identified as potential AOs.

II. OBJECTIVES

– Establish procedures for the review, selection, and processing of reported events for submittal to the Commission as proposed AOs and other events of interest, for the annual publishing of NUREG-0090, “Report to Congress on Abnormal Occurrences,” and for making the information publicly available after NUREG-0090 is sent to Congress.

– Ensure that the reporting process is properly coordinated and in compliance with statutory requirements and the requirements of the Commission.

– Ensure that NUREG-0090 is prepared by the NRC staff, approved by the Commission, and submitted to Congress via forwarding letters signed by the Chairman.

III. ORGANIZATIONAL RESPONSIBILITIES AND DELEGATIONS OF AUTHORITY

A. Chairman

1. Approves the AO criteria proposed by the staff.
2. Submits the annual NUREG-0090 report to Congress via forwarding letters to the President of the Senate and the Speaker of the House.

B. The Commission

1. Approves the AO criteria proposed by the staff.
2. Reviews draft NUREG-0090 for determinations of proposed AOs and other events of interest.
3. Grants final approval of NUREG-0090 to Congress.

C. Executive Director for Operations (EDO)

1. Reviews the AO SECY paper and staff recommendations on proposed AOs and other events of interest, and forwards recommendations to the Commission for final determination.
2. Ensures that Commission comments on staff recommendations are resolved.

3. Ensures that arrangements are made for any required informal or formal Commission briefings regarding potential or proposed AO events.
4. Provides comments and concurrence to the Office of Nuclear Regulatory Research (RES) on the draft NUREG-0090.

D. Director, Office of Congressional Affairs (OCA)

1. Assigns an AO communicator to represent the office on matters pertaining to the AO reporting process. Identifies that individual to RES.
2. Coordinates with all program office and regional AO coordinators in order to receive information on potential AOs.
3. Coordinates with the program office and regional AO coordinators regarding incidents and events, identified as potential AOs, that are receiving congressional interest.
4. Notifies the program office and regional AO coordinators, via e-mail, of incidents and events, identified as potential AOs, that are receiving congressional interest.
5. Provides assistance to the program office and regional AO coordinators for Commission briefings and in preparing responses to Commission questions on congressional outreach.
6. Coordinates with the program office and regional AO coordinators for external outreach on potential AOs that are receiving congressional interest. Informs the RES AO coordinator, via e-mail, of such outreach.
7. Receives proposed AO event descriptions from the RES AO coordinator.
8. Provides comments and concurrence to RES on the draft NUREG-0090.
9. Provides copies of NUREG-0090 to the Speaker of the House; the President of the Senate; the Chairman and Ranking Members of the Senate Committee on the Environment and Public Works and its Subcommittee on Clean Air and Nuclear Safety; the House Committee on Energy and Commerce and its Subcommittee on Energy and Power; and the Energy and Water Development Subcommittees of the House and Senate Appropriations Committees.

E. General Counsel, Office of the General Counsel (OGC)

1. Provides assistance to the program office and regional AO coordinators on processing potential AOs or proposed AOs requiring interaction with Agreement State and/or licensee attorneys.
2. Provides legal review and comments to RES on the draft NUREG-0090.

F. Director, Office of Public Affairs (OPA)

1. Assigns an AO communicator to represent the office on matters pertaining to the AO reporting process. Identifies that individual to RES.
2. Responds to media inquiries about the annual AO report or individual events that may qualify as AOs; coordinates with relevant program office and regional AO coordinators as needed.
3. Provides assistance when requested to the program office and regional AO coordinators for Commission briefings and responses to Commission questions on media outreach.
4. Provides assistance to the program office and regional AO coordinators in developing, as needed, communication plans, talking points, or other public and media messaging.
5. Provides comments and concurrence to RES on the draft NUREG-0090.
6. Produces a press release on the annual report to Congress and coordinates issuance of the release with the RES AO program coordinator and OCA.

G. Office of the Secretary (SECY)

1. Receives and circulates Commissioner votes and comments on the SECY paper that forwards NUREG-0900; analyzes and synthesizes Commissioner comments and identifies substantive issues requiring resolution among Commissioners; proposes solutions and coordinates efforts to resolve differences with the objective of establishing a majority position; and prepares documentation [Staff Requirements Memoranda (SRM)] to implement Commission decisions and/or identify other requirements accruing from Commissioner voting on the AO SECY paper.
2. Holds meetings for Commissioner Assistants to review the status of the AO SECY paper, identifies problem areas, seeks resolution of pending issues, and establishes priorities for Commission action on the AO SECY paper.
3. Reviews, processes, and dispatches the agency's congressional correspondence on NUREG-0090, in conjunction with OCA.
4. Reviews and transmits the *Federal Register* notice of availability for NUREG-0090 (not including the appendices), that is issued at the Commission level.

H. Director, Office of Nuclear Regulatory Research (RES)

1. Implements this management directive (MD) to ensure expeditious processing of reportable events that meet the AO criteria (see Section III of this handbook for AO criteria and guidelines).
2. Assigns an AO coordinator to represent the office on matters pertaining to the AO reporting process.
3. Coordinates changes to the AO reporting criteria, reporting procedures, and guidelines for selecting other events of interest with the program office and regional AO coordinators. Provides changes to OGC to obtain no legal objection determination. Provides changes to the Commission for approval.
4. Coordinates with the program office and regional AO coordinators regarding incidents and events, identified as potential AOs, that are receiving interest from the EDO.
5. Coordinates with the program office and regional AO coordinators regarding other events of interest that warrant inclusion in NUREG-0090.
6. Coordinates with the AO communicators regarding potential AOs that are receiving congressional or media interest or require congressional or media outreach.
7. Receives potential AO event descriptions and other events of interest from the program office and regional AO coordinators.
8. Confirms potential AOs as proposed AOs by verifying that potential AOs meet the AO criteria and the event descriptions contain information specified in Section 208 of the Energy Reorganization Act of 1974.
9. Reviews proposed AO event descriptions and other events of interest to ensure that the document contains non-sensitive, unclassified, and non-safeguards information.
10. Provides proposed AO event descriptions to the AO communicators.
11. Prepares the draft NUREG-0090 using the proposed AO event descriptions and other events of interest received from the program office and regional AO coordinators, following the procedure described in Sections II.B and II.C of this handbook.
12. Provides a briefing to the EDO on the draft NUREG-0090 prior to submitting the report for office concurrence.
13. Receives comments and concurrence (or no legal objection) on the draft NUREG-0090 from the EDO, OCA, OGC, OPA, FSME, Office of Nuclear Material Safety and Safeguards (NMSS), Office of New Reactors (NRO), Office of Nuclear Reactor Regulation (NRR), Office of Nuclear Security and Incident Response (NSIR), and the regions.

14. Resolves comments on the draft NUREG-0090 received from the Commission, the EDO, OCA, OGC, OPA, FSME, NMSS, NRO, NRR, NSIR, and the regions.
15. Receives final Commission approval of the draft NUREG-0090.
16. Provides NUREG-0090 to the Office of Administration (ADM) for publishing and internal distribution.
17. Provides copies of NUREG-0090 to OCA for transmittal to Congress.
18. Includes updated information on open AOs in the next NUREG-0090.

I. Director, Office of Administration (ADM)

1. Provides comments and concurrence on the draft *Federal Register* notice that announces the availability of NUREG-0090.
2. Provides agencywide service for in-house reproduction and distribution of NUREG-0090.

J. Director, Office of Enforcement (OE)

1. Coordinates with the program office and regional AO coordinators on enforcement actions for potential and proposed AOs.
2. Provides comments and concurrence to RES on the draft NUREG-0090.

K. Director, Office of Federal and State Materials and Environmental Management Programs (FSME)

1. Establishes internal written procedures for the office for the expeditious review, identification, and processing of potential AOs and other events of interest for operating materials facilities and decommissioned facilities.
2. Assigns an AO coordinator to represent the office on matters pertaining to the AO reporting process. Identifies that individual to RES.
3. Coordinates with the Agreement States, through the Regional State Agreements Officer, and the regions regarding potential AO event descriptions and other events of interest.
4. Coordinates with the regions regarding incidents and events, identified as potential AOs, that are receiving interest from the EDO.
5. Coordinates with the AO communicators regarding external outreach for incidents and events, identified as potential AOs, that are receiving congressional and/or media interest.
6. Provides additional information on proposed AOs or other events of interest in response to Commission questions.

7. Provides comments and concurrence to RES on the draft NUREG-0090.

L. Director, Office of New Reactors (NRO)

1. Establishes internal written procedures for the expeditious review, identification, and processing of potential AOs and other events of interest for new nuclear power reactors that are being licensed and constructed under 10 CFR Part 52.
2. Assigns an AO coordinator to represent the office on matters pertaining to the AO reporting process. Identifies that individual to RES.
3. Submits to RES potential AO event descriptions and other events of interest.
4. Coordinates with RES and Region II regarding incidents and events involving design or construction of new reactors, identified as potential AOs, that are receiving interest from the EDO.
5. Coordinates with the AO communicators regarding external outreach for incidents and events, identified as potential AOs, that are receiving congressional or media interest.
6. Provides additional information to RES on proposed AOs or other events of interest in response to Commission questions.
7. Provides comments and concurrence to RES on the draft NUREG-0090.

M. Director, Office of Nuclear Material Safety and Safeguards (NMSS)

1. Establishes internal written procedures for the expeditious review, identification, and processing of potential AOs and other events of interest for operating fuel cycle facilities, facilities licensed to possess greater than critical mass of special nuclear material (SNM), transportation of radioactive materials and independent spent fuel storage installations (ISFSIs).
2. Assigns an AO coordinator to represent the office on matters pertaining to the AO reporting process. Identifies that individual to RES.
3. Submits to RES potential AO event descriptions and other events of interest.
4. Coordinates with RES and the regions regarding incidents and events, identified as potential AOs, that are receiving interest from the EDO.
5. Coordinates with the AO communicators regarding external outreach for incidents and events, identified as potential AOs, that are receiving congressional and/or media interest.
6. Provides additional information to RES on proposed AOs or other events of interest in response to Commission questions.
7. Provides comments and concurrence to RES on the draft NUREG-0090.

N. Director, Office of Nuclear Reactor Regulation (NRR)

1. Establishes internal written procedures for the expeditious review, identification, and processing of potential AOs and other events of interest for commercial nuclear power reactors and for test and research reactors.
2. Assigns an AO coordinator to represent the office on matters pertaining to the AO reporting process. Identifies that individual to RES.
3. Submits to RES potential AO event descriptions and other events of interest.
4. Communicates with the regions regarding incidents and events, identified as potential AOs, that are receiving interest from the EDO.
5. Communicates with the AO communicators regarding external outreach for incidents and events, identified as potential AOs, that are receiving congressional or media interest.
6. Provides additional information to RES on proposed AOs or other events of interest in response to Commission questions.
7. Provides comments and concurrence to RES on the draft NUREG-0090.

O. Director, Office of Nuclear Security and Incident Response (NSIR)

1. Establishes internal written procedures for the expeditious review, identification, and processing of potential AOs and other events of interest involving security-related matters.
2. Assigns an AO coordinator to represent the office on matters pertaining to the AO reporting process. Identifies that individual to RES.
3. Coordinates with the program office and regional AO coordinators regarding potential AO event descriptions and other events of interest involving security-related matters.
4. Submits to RES potential AO event descriptions and other events of interest involving security-related matters.
5. Coordinates with the program office and regional AO coordinators regarding security-related incidents and events, identified as potential AOs, that are receiving interest from the EDO.
6. Coordinates with RES, program offices, and regional coordinators regarding events transmitted to the International Atomic Energy Agency (IAEA), International Nuclear and Radiological Event Scale (INES) as potential Level 3 events (possibly serious incidents on the INES scale) and submits descriptions to the RES AO coordinator as other events of interest.

7. Coordinates with the AO communicators, program offices, and regional AO coordinators regarding external outreach, on security-related incidents and events, identified as potential AOs, that are receiving congressional or media interest.
8. Provides additional information to RES on proposed AOs or other events of interest involving security-related matters, in response to Commission questions.
9. Provides comments and concurrence to RES on the draft NUREG-0090.

P. Regional Administrators

1. Establish internal written procedures for the expeditious review, identification, and processing of potential AOs and other events of interest for operating materials facilities, facilities licensed to possess greater than critical mass of SNM, operating nuclear power reactors, and decommissioned facilities.
2. Assign an AO coordinator to represent their region on matters pertaining to the AO reporting process. Identify that individual to RES.
3. Submit to RES potential AO event descriptions and other events of interest.
4. Coordinate with the program office AO coordinators regarding incidents and events, identified as potential AOs, that are receiving interest from the EDO.
5. Communicate with the AO communicators regarding external outreach for incidents and events, identified as potential AOs, that are receiving congressional or media interest.
6. Provide additional information to RES on proposed AOs or other events of interest in response to Commission questions.
7. Provide comments and concurrence to RES on the draft NUREG-0090.

Q. Office Representatives of the Abnormal Occurrence (AO) Working Group

RES leads the working group, whose members comprise AO coordinators and communicators. FSME, NMSS, NRO, NRR, NSIR, RES, and the regions each designate an AO coordinator to represent their office or region on matters pertaining to the AO reporting process. OCA and OPA each designate an AO communicator to represent their office on matters pertaining to the AO reporting process. The AO working group conducts internal and external outreach to stakeholders on potential AOs.

1. RES AO Coordinator (Lead Coordinator)
   (a) Serves as lead coordinator for the working group.
   (b) Conducts quarterly AO working group meetings to discuss updates to the proposed AO event descriptions, updates to previously reported AOs, and other events of interest.

(c) Develops and coordinates the annual issuance of NUREG-0090.

(i) Receives *potential* AO event descriptions from the program office and regional AO coordinators.

(ii) Verifies (1) that the potential AO meets the AO criteria, and (2) that the potential AO event descriptions contain the information specified in Section 208 of the Energy Reorganization Act of 1974, such as the nature and probable consequences of the event. Upon verification, the potential AO is designated as a *proposed* AO event.

(iii) Provides a copy of the proposed AO event descriptions to the AO communicators. The proposed AO event descriptions form the draft NUREG-0090.

(iv) Submits the draft NUREG-0090 for office concurrence, EDO concurrence, and Commission approval of the proposed AO event descriptions as *final* AO events.

(v) Prepares and submits the draft *Federal Register* notice for ADM review and concurrence.

(d) May conduct additional meetings with the AO working group to discuss topics related to the AO reporting process, including revisions to the AO criteria.

2. AO Coordinators

(a) Determine whether events are potential AOs using the AO criteria.

(b) Communicate with internal stakeholders (such as the Commission, as necessary, the EDO, the DEDOs, office directors, division directors, and regional counterparts).

(c) Provide a potential AO event description to the RES AO coordinator.

3. AO Communicators

(a) Coordinate with the appropriate program office or regional AO coordinator in order to obtain any necessary additional information on potential AOs.

(b) Conduct early outreach, as needed, to Congress, the public, and the media, with assistance from the appropriate program or regional office.

(c) Coordinate with the appropriate program office or regional AO coordinator to develop communication tools to provide to external stakeholders on potential AOs or other events of interest.

IV. PROPOSING EVENTS FOR EVALUATION AS POTENTIAL ABNORMAL OCCURRENCES OR CHANGES TO THE ABNORMAL OCCURRENCE REPORTING PROCEDURE

A. Proposing Events

NRC program offices and regions may propose an event to any office or regional AO coordinator for evaluation as a potential AO. Any such event, together with the reasons why it does or does not appear to meet the AO criteria, should then be submitted to RES for review and processing.

B. Proposing Changes

NRC program offices and regions may contact the RES AO coordinator and recommend changes in the AO reporting program; the review, selection, and processing procedures; or the method of dissemination to the public or Congress. Proposed changes to the AO criteria and reporting procedures are forwarded to the Commission for review and approval.

V. APPLICABILITY

The policy and guidance in this directive and handbook apply to all NRC employees.

VI. DIRECTIVE HANDBOOK

Directive Handbook 8.1 contains information on the review, selection, and processing of potential AOs and the AO criteria and guidelines for other events of interest.

VII. DEFINITIONS

Potential Abnormal Occurrence

Event categorized as the result of an initial assessment of the event, by a program office or regional AO coordinator, using the AO criteria.

Proposed Abnormal Occurrence

Event categorized as the result of a second assessment of a potential AO, by the RES AO coordinator, using the AO criteria and Section 208 of the Energy Reorganization Act of 1974.

Final Abnormal Occurrence

Event categorized as the result of Commission approval of proposed AOs.

VIII. REFERENCES

Atomic Energy Act of 1954, Section 274, as amended (42 U.S.C. 2011 et seq.).

Code of Federal Regulations, Title 10, "Energy."

Energy Reorganization Act of 1974, Section 208, Pub. L. 93-438 (42 U.S.C. 5848).

Freedom of Information Act (5 U.S.C. 552, as amended).

Privacy Act of 1974 (5 U.S.C. 552a).

Federal Register, Vol. 62, No. 74, U.S. Government Printing Office, "Abnormal Occurrence Reports: Implementation of Section 208 Energy Reorganization Act of 1974; Revision to Policy Statement," April 17, 1997.

Federal Register, Vol. 71, No. 197, U.S. Government Printing Office, "Abnormal Occurrence Reports: Implementation of Section 208 Energy Reorganization Act of 1974; Revised to Policy Statement," October 12, 2006, available at http://edocket.access.gpo.gov/2006/pdf/E6-16871.pdf.

Federal Reports Elimination and Sunset Act of 1995 (Pub. L. 104-66).

Nuclear Regulatory Commission Documents

"Communication Plan Abnormal Occurrence Events Reporting," July 29, 2008, available at ADAMS Accession No. ML081210111.

Management Directive 9.10, "Organization and Functions, Office of the Secretary."

Management Directive 9.21, "Organization and Functions, Office of Administration."

NUREG-0090, Vol. 32, "Report to Congress on Abnormal Occurrences: Fiscal Year 2009," June 2010, available at ADAMS Accession No. ML102080078.

SECY-97-029, "Abnormal Occurrence Reports: Implementation of Section 208 Energy Reorganization Act of 1974; Revision to Policy Statement," February 5, 1997.

SECY-08-0028, "Report to Congress on Abnormal Occurrences: Fiscal Year 2007," February 28, 2008.

SECY-09-0029, "Report to Congress on Abnormal Occurrences: Fiscal Year 2008," February 20, 2009.

Staff Requirements Memorandum on SECY-96-193, "Abnormal Occurrence Reports: Implementation of Section 208 Energy Reorganization Act of 1974; Final Policy," November 7, 1996.

Staff Requirements Memorandum on SECY-98-175, “Proposed Guidelines for Appendix C, Other Events of Interest, to the Abnormal Occurrence Report to Congress,” September 4, 1998.

Staff Requirements Memorandum on SECY-08-0028, “Report to Congress on Abnormal Occurrences: Fiscal Year 2007,” April 17, 2008.

Staff Requirements Memorandum on SECY-09-0029, “Report to Congress on Abnormal Occurrences: Fiscal Year 2008,” March 30, 2009.

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Contact Name:	John Tomon 301-251-7904

EXECUTIVE SUMMARY

Directive and Handbook 8.1 have been updated to reflect the current process for reporting abnormal occurrences to Congress.

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EXHIBITS

I. ABNORMAL OCCURRENCE (AO) WORKING GROUP

A. Members

The agencywide working group is comprised of—

1. A coordinator from the Office of Nuclear Regulatory Research (RES) who will lead the working group;
2. AO coordinators from the Offices of Federal and State Materials and Environmental Management Programs (FSME), Nuclear Material Safety and Safeguards (NMSS), Nuclear Reactor Regulation (NRR), New Reactors (NRO), Nuclear Security and Incident Response (NSIR), and the regional offices; and
3. AO communicators from the Office of Congressional Affairs (OCA) and the Office of Public Affairs (OPA).

B. Responsibilities

1. Identify, propose, verify, and designate AO events.
2. Meet quarterly to discuss updates to the proposed AO event descriptions, updates to previously reported AOs, and other events of interest.
3. Prepare and issue NUREG-0090 annually.
4. Update the AO reporting process, including revisions to the AO criteria.
5. Support the lead program office in management briefings and public meetings regarding AO events.

II. REVIEW, SELECTION, AND PROCESSING OF POTENTIAL ABNORMAL OCCURRENCE (AO) EVENTS

A. Review of Reported Events

1. FSME, NMSS, NRR, NRO, NSIR, and the regional offices review reported events to identify potential AOs and other events of interest. These offices will—

   (a) Review licensee event reports submitted in accordance with 10 CFR 50.55, 10 CFR 50.73, event notifications submitted in accordance with 10 CFR 50.72, regional morning reports, regional preliminary notifications, NRC inspection reports, and Agreement State event reports.

   (b) Review nuclear materials licensee event reports submitted in accordance with 10 CFR Parts 20, 21, 30 through 36, 39, 40, 50, 55, 61, 70, 71, 72, or 76.

   (c) Monitor international events. Review and identify international events related to both nuclear power plants and radiological materials for possible applicability to U.S. regulated facilities.

   (d) Review the daily events notification document, which is distributed each day by the NRC Operations Center to the Commission, the Executive Director for Operations (EDO) and the Deputy Executive Directors for Operations (DEDOs), FSME, NMSS, NRO, NRR, NSIR, OCA, OPA, and the regions. The events notification document lists all events that have occurred, typically within a 24-hour period, at NRC- and Agreement State-licensed facilities.

      (i) The AO coordinators use the events notification document to follow-up on events that have occurred in their specific program area.

      (ii) The AO communicators use the events notification document to prepare for external outreach, as necessary, with Congress, the pubic, and the media.

2. Program Offices

   Each NRC office reviews event documents for its specific program area to identify events as potential AOs.

   (a) FSME has primary responsibility for the review of materials events reported by NRC licensees or Agreement State licensees; specifically focusing on industrial, commercial, academic, and medical uses of radioactive material, uranium recovery activities, and the decommissioning of previously operating nuclear facilities and power plants. FSME also has primary responsibility for the review of events reported by the Agreement States. In addition, FSME reviews all reportable material events in the nuclear material events database (NMED) that have been reported by NRC and Agreement State licensees.

(b) NMSS has primary responsibility for the review of materials events, specifically focusing on nuclear fuel used in commercial nuclear reactors, the safe storage, transportation, and disposal of high-level radioactive waste and spent nuclear fuel, and the transportation of radioactive materials regulated under the Atomic Energy Act.

(c) NRO has primary responsibility for the review of events that are related to new reactors being licensed and constructed pursuant to regulations in 10 CFR Part 52.

(d) NRR has primary responsibility for the review of nuclear reactor events.

(e) The regional offices review materials, uranium recovery, fuel cycle, and nuclear reactor events.

(f) NSIR coordinates with FSME, NMSS, NRO, NRR, and the regional offices for events, identified as potential AOs, involving security-related issues.

B. Identification of Potential Abnormal Occurrences

1. Criteria

Potential AOs are selected using the AO criteria published in the *Federal Register* on October 12, 2006 (71 FR 60198), available at http://edocket.access.gpo.gov/2006/pdf/E6-16871.pdf, and may involve either an event or a condition.

2. Assessment of NRC Licensee Event

(a) The program office or regional AO coordinators will assess an event to determine if it meets the AO criteria. If an event meets the AO criteria, the program office or regional AO coordinator will develop a potential AO event description. The potential AO event description will include the applicable AO criteria and contain the information specified in Section 208 of the Energy Reorganization Act of 1974, such as the nature and probable consequences of the event.

(b) The program office or regional AO coordinators coordinate with the AO communicators regarding incidents or events, identified as potential AOs. The AO communicators notify the program office or regional AO coordinators of incidents and events, identified as potential AOs, that are receiving congressional and/or media interest. The AO communicators will conduct external outreach, as necessary, with Congress, the public, and the media, on potential AOs.

(c) The RES AO coordinator coordinates with the program office and regional AO coordinators regarding incidents and events, identified as potential AOs, that are receiving interest from the EDO.

(d) NSIR can provide assistance to FSME, NMSS, NRO, NRR, and the regional offices in preparing potential AO event descriptions involving security-related matters.

3. Assessment of Agreement State Licensee Event

   Agreement States screen events in order to identify potential AOs and prepare potential AO event descriptions. The Regional State Agreement Officer will notify the Agreement States of any additional events identified as potential AOs as a result of NRC staff review of Event Notifications (EN) or NMED. After the Regional State Agreement Officer identifies Agreement State events as potential AOs, the Agreement States prepare potential AO event descriptions and submit them to the NRC via the Regional State Agreement Officer.

4. Lead Office for Potential AO Events

   (a) Either FSME, NSIR, NMSS, NRO, or NRR will coordinate with the region preparing the potential AO event description; the determination of lead office will depend on which program office is most knowledgeable of the event.

   (b) The regional offices will prepare the potential AO event descriptions within their respective regions for events identified as potential AOs.

5. Commission Direction

   The Commission provided direction in the staff requirements memorandum (SRM) on SECY-96-193, “Abnormal Occurrence Reports: Implementation of Section 208 Energy Reorganization Act of 1974; Final Policy Statement,” that stated the following: “The staff should file incident information on potential AOs in the public document rooms (PDRs) as soon as possible. In following this direction, the staff should place already existing documents on these incidents in the PDRs and identify the incident as [a] potential AO.” Thus, following the Commission's direction, the offices that prepare the potential AO event descriptions should make such documentation public.

C. Guidance for Preparing Potential AO Event Descriptions and Other Events of Interest

1. General

   (a) Each AO event description should be a clear, concise, and accurate report of what happened, as required by Section 208 of the Energy Reorganization Act of 1974. Also, AO descriptions must be consistent with the provisions of the Privacy Act and the Freedom of Information Act.

   (b) Do not cite references in the event descriptions.

2. Format for Event Descriptions

   (a) First Paragraph

   State the AO criteria for the event by citing the appropriate section of Appendix A of NUREG-0090, which contains all of the criteria.

   (b) Second Paragraph: “Date and Place”

   State the date and place, as required by Section 208 of the Energy Reorganization Act of 1974.

   (c) Third Paragraph: “Nature and Probable Consequences”

   Briefly explain what happened and what the consequences were, as required by Section 208 of the Energy Reorganization Act of 1974. A statement as to whether or not all regulatory requirements have been met should be included in the description. In addition, if the description is of a medical event, statements in the description should describe:

   (i) whether the patient and the referring physician were notified of the event, and

   (ii) the medical significance of the event to the patient.

   (d) Next Marked Paragraph: “Cause(s)”

   Briefly explain what caused the event, as required by Section 208 of the Energy Reorganization Act of 1974.

   (e) Stand-Alone Heading: “Actions Taken To Prevent Recurrence” (“Licensee”/“NRC”/“Agreement State”)

   Briefly explain what actions were taken to prevent recurrence, as required by Section 208 of the Energy Reorganization Act of 1974. For Agreement States, briefly explain what actions were taken to prevent recurrence by the Agreement State and the Agreement State licensee.

   (f) Last Paragraph

   If the reporting requirements of Section 208 of the Energy Reorganization Act of 1974 have been met for the AO event, then a statement such as “This event is closed for the purpose of this report” should be included in the last paragraph to indicate that the event has been closed. However, the AO will be kept open if there is a reasonable expectation that currently unavailable information will be obtained shortly. Also, if significant new information becomes available for a closed AO at a later date, the AO will be reopened, the new information will be reported under “Updates of Previously Reported Abnormal Occurrences” (NUREG-0090, Appendix B), and the AO will again be closed out.

3. Other Events of Interest (NUREG-0090, Appendix C)

   The guidelines for including events as "Other Events of Interest" were provided by the Commission in the SRM on SECY-98-175, "Proposed Guidelines for Appendix C, Other Events of Interest, to the Abnormal Occurrence Report to Congress," dated September 4, 1998, and state that—

   The Commission may determine that events other than AOs may be of interest to Congress and the public and should be included in an Appendix to NUREG-0090 as "Other Events of Interest." Guidelines for events to be included in NUREG-0090 for this purpose may include, but not necessarily be limited to, events that do not meet the AO criteria but that have been perceived by Congress or the public to be of high health and safety significance, have received significant media coverage, or have caused the NRC to increase its attention to or oversight of a program area, or a group of similar events that have resulted in licensed materials entering the public domain in an uncontrolled manner.

D. Processing of Potential Abnormal Occurrences as Proposed Abnormal Occurrences

1. RES sends quarterly requests for potential AO event descriptions and other events of interest to the AO working group. Requests for quarterly potential AO event descriptions and other events of interest may be combined (i.e., information may be requested for the first and second quarter in one request), depending on the frequency of incidents or events identified as potential AOs. After a program office or regional AO coordinator develops a potential AO or other event of interest description, it is submitted to the RES AO coordinator.

2. The RES AO coordinator receives potential AO event descriptions and other events of interest from the program office or regional AO coordinators, or from the Agreement States, submitted by either a regional AO coordinator or by a Regional State Agreements Officer. The RES AO coordinator will conduct a second assessment of the potential AO event description to ensure that it contains the applicable AO reporting criteria and satisfies the reporting requirements of Section 208 of the Energy Reorganization Act of 1974. The RES AO coordinator will confirm the potential AO as a proposed AO after completing this second assessment.

3. The RES AO coordinator provides a copy of the proposed AO event descriptions to the AO communicators. In addition, the RES AO coordinator uses the proposed AO event descriptions to develop the draft NUREG-0090 report. The RES AO coordinator submits the draft NUREG-0090 report to the AO working group and the Agreement States, for review and concurrence. The draft NUREG-0090 report includes—

   (a) descriptions of the proposed AO events,

   (b) AO criteria (Appendix A),

(c) updates of previously reported AOs (Appendix B), and

(d) other events of interest (Appendix C).

4. The RES AO coordinator coordinates resolution of comments received from the AO working group and the Agreement States, and submits the draft NUREG-0090 report to the EDO for review, concurrence, and submission to the Commission.

5. Formal disagreements about proposed AOs are resolved through the AO working group and, when necessary, by NRC managers. If an impasse occurs among NRC offices as to whether a proposed AO event or an event of interest should be included in NUREG-0090 or if other offices disagree with the final determination of RES, RES will submit supporting documentation and a RES recommendation to the EDO for resolution.

E. Commission Determination of Final AO Events

1. The EDO submits the draft NUREG-0090 report to the Commission, via the Secretary of the Commission (SECY), as a SECY-numbered document. Through an SRM, the Commission submits its comments to RES, along with its approval of the draft NUREG-0090 report as final AO events.

2. RES incorporates the Commission's comments as stated in the SRM, oversees the printing of the final NUREG-0090 report, prepares a *Federal Register* notice (FRN) announcing its publication, and prepares the Chairman's letters forwarding the final NUREG-0090 report to Congress. The Chairman sends a letter to the President of the Senate and another identical letter to the Speaker of the House, along with a copy of the final NUREG-0090 report. In addition to the President of the Senate and the Speaker of the House, OCA submits a copy of the final NUREG-0090 report to the Chairman and Ranking Members of the Senate Committee on the Environment and Public Works and its Subcommittee on Clean Air and Nuclear Safety; the House Committee on Energy and Commerce and its Subcommittee on Energy and Power; and the Energy and Water Development Subcommittees of the House and Senate Appropriations Committees.

F. Examples of Final AO Event Descriptions, Updates of Previously Reported Abnormal Occurrences, and Other Events of Interest

1. Examples of Final AO Event Reports

   Two examples are shown in Exhibit 1 of acceptable AO event descriptions meeting the AO criteria. These events were reported in NUREG-0090, Vol. 30, “Report to Congress on Abnormal Occurrences: Fiscal Year 2007.”

2. Example of NUREG-0090, Appendix B, “Updates of Previously Reported Abnormal Occurrences”

   One example of an acceptable NUREG-0090, Appendix B description is shown in Exhibit 2. This update was reported in NUREG-0090, Vol. 30, “Report to Congress on Abnormal Occurrences: Fiscal Year 2007.”

3. Example of NUREG-0090, Appendix C, “Other Events of Interest”

   One example of an acceptable NUREG-0090, Appendix C description is shown in Exhibit 3 using the guidelines that were provided by the Commission in the SRM on SECY-98-175. It should be noted that each NUREG-0090, Appendix C description should include a brief discussion of the merits of including it in the report. This event of interest was reported in NUREG-0090, Vol. 30, “Report to Congress on Abnormal Occurrences: Fiscal Year 2007.”

III. ABNORMAL OCCURRENCE CRITERIA

An accident or event will be considered an AO if it involves a major reduction in the degree of protection of public health or safety. This type of incident or event would have a moderate or more severe impact on public health or safety and could include, but need not be limited to, the following:

1. Moderate exposure to, or release of, radioactive material licensed by or otherwise regulated by the Commission;
2. Major degradation of essential safety-related equipment; or
3. Major deficiencies in design, construction, or use of management controls for facilities or radioactive material licensed by or otherwise regulated by the Commission.

EXHIBITS

Exhibit 1 Examples of Final Abnormal Occurrence Event Descriptions

- **NRC07-04 Medical Event at Kennedy Memorial Hospitals in Turnersville, New Jersey**

Criteria III.C.1.b and III.C.2.b(iii), "For Medical Licensees," of Appendix A to this report states, in part, that a medical event that results in a dose that is equal to or greater than 10 Gy (1,000 rad) to any organ or tissue (other than a major portion of the bone marrow, or the lens of the eye, or the gonads) and represents a prescribed dose or dosage that is delivered to the wrong treatment site shall be considered for reporting as an AO.

Date and Place – October 25, 2006 (identified on December 8, 2006), Turnersville, New Jersey

Nature and Probable Consequences – Kennedy Memorial Hospitals (the licensee) reported that a patient was prescribed a brachytherapy treatment of 145 Gy (14,500 rad) to the prostate gland for prostate cancer using 104 iodine-125 seeds, but instead received a dose of 145 Gy (14,500 rad) to an unintended treatment site. The brachytherapy seeds were implanted under ultrasound guidance; however, a post-treatment computed tomography scan showed that the implanted seeds were displaced inferior to the intended position, resulting in a dose of approximately 8 Gy (800 rad) delivered to the intended treatment site.

The patient and the referring physician were notified of this event, and additional external beam radiation treatment was recommended. The NRC staff conducted a reactive onsite inspection on December 12, 2006. The NRC-contracted medical consultant reviewed the case and agreed with the licensee's analysis and conclusions, stating that no significant adverse health effect to the patient is expected.

Cause(s) – The medical event was caused by the licensee's failure to accurately identify the position of the prostate during the intraoperative ultrasound guidance procedure.

Actions Taken To Prevent Recurrence

Licensee – The licensee revised its procedures, including the use of a contrast medium in the Foley catheter balloon to more clearly identify the bladder/prostate interface, and use of fluoroscopic imaging to confirm anatomical positioning and verify seed placement.

NRC – There were no violations identified by the NRC.

This event is closed for the purpose of this report.

- **AS07-05 Medical Event at University of Washington Harborview Gamma Knife of Seattle, Washington**

Criteria III.C.1.b and III.C.2.a, "For Medical Licensees," of Appendix A to this report states, in part, that a medical event that results in a dose that is equal to or greater than 10 Gy (1,000 rad) to any organ or tissue (other than a major portion of the bone marrow, or the lens of the eye, or the gonads) and represents a dose or dosage that is at least 50 percent greater than that prescribed, shall be considered for reporting as an AO.

Date and Place – November 16, 2006, Seattle, Washington

Nature and Probable Consequences – University of Washington Harborview Gamma Knife (the licensee) reported that a patient who was prescribed to receive 18 Gy (1,800 rad) during a gamma knife treatment actually received 28 Gy (2,800 rad). The gamma knife contained 267.7 Tbq (7,236 Ci) of cobalt-60. The patient and the referring physician were informed of this event. The licensee concluded that no significant adverse health effect to the patient is expected.

Cause(s) – The cause of the incident was determined to be human error. The prescribing physician prescribed 18 Gy (1,800 rad) and erroneously entered 28 Gy (2,800 rad). The physician entered the prescribed value into the computer treatment planning system, rather than having the medical physicist enter the value as is the usual procedure, resulting in a failure to follow an established procedure.

Actions Taken To Prevent Recurrence

Licensee – Corrective actions taken by the licensee included a verification process to ensure that the prescribed treatment value is transferred from the treatment planning computer to the gamma knife computer prior to patient therapy. Also, a treatment plan signed by the treating oncologist, physicist, and neurosurgeon is now required. In addition, the treating oncologist and physicist will verify and initial the prescribed dose and isodose treatment parameters prior to patient therapy.

State – The State reviewed the licensee's corrective actions and determined that the procedures were adequate to ensure that this type of event should not happen in the future.

This event is closed for the purpose of this report.

Exhibit 2 Example of Appendix B, "Updates of Previously Reported Abnormal Occurrences"

- **Spill of High-Enriched Uranium Solution at Fuel Fabrication Facility (previously reported as 06-01 in NUREG-0090, Volume 29)**

Date and Place – March 6, 2006, Nuclear Fuel Services, Erwin, Tennessee

Background – In a facility authorized to process high-enriched uranium (HEU), a transfer of HEU solution through a transfer line resulted in a portion of the HEU solution, approximately 35 liters, leaking through a glovebox where criticality was possible and subsequently to the floor where criticality was also possible because of the presence of an elevator pit. The full details of the event are discussed in the FY 2006 abnormal occurrence report as 06-01. At the time the report was issued, the event was listed as closed. However, this event has received public, media, and Congressional interest, and the NRC and the licensee have taken certain actions concerning this event.

Update on Actions Taken To Prevent Recurrence

Between March and October 2006, the NRC conducted five team inspections to verify the licensee's immediate corrective actions. On October 18, 2006, the NRC authorized the full restart of Nuclear Fuel Services' operations. This document is publicly available through the NRC's Agencywide Documents Access and Management System (ADAMS), under Accession No. ML062920143.

In September and November 2006, the NRC conducted Alternative Dispute Resolution negotiations with the licensee concerning the licensee's long-term actions. As a result, the NRC issued an Order (72 FR 41528) on February 21, 2007 to (1) amend the license to upgrade the licensee's configuration management program; and (2) conduct safety culture assessments using an independent third-party.

The licensee submitted the license amendment request on April 20, 2007. The NRC staff requested additional information concerning the new configuration management programs on October 17, 2007. The additional information was submitted on December 14, 2007 and the NRC staff review is ongoing.

The licensee submitted a safety culture assessment plan on May 22, 2007, and then revised it on September 24, 2007, in response to NRC comments. The independent third party provided its assessment results to the licensee on February 15, 2008.

The licensee is required to brief the NRC on the assessment results and its plan for implementing recommendations by May 15, 2008. On May 30, 2007, the licensee management briefed the Commission in a closed portion of an Agency Action Review Meeting on its actions to improve performance. The transcript of the closed

meeting has been released to the public. The document is publicly available through ADAMS, under Accession No. ML071930389.

The NRC also took additional actions regarding its policy for withholding sensitive information from the public, including: (1) during June through July 2007, the NRC staff briefed the House and Senate staffers concerning this event and the NRC's policy for withholding information from the public; (2) on August 31, 2007, the NRC issued a Staff Requirements Memorandum (SRM-SECY-07-0129) revising the policy for withholding information and directing the staff to review and release many of the documents that had been withheld.

This document is publicly available through ADAMS, under Accession No. ML072430701. The review and release of documents is still ongoing; and (3) on September 12, 2007, the NRC conducted public meetings in Erwin, Tennessee, to provide information and answer questions concerning this event and related issues. This document is publicly available through ADAMS, under Accession No. ML072700060.

Exhibit 3 Example of Appendix C, "Other Events of Interest"

- **EOI-02 Indian Point Nuclear Station: New Sirens**

The NRC issued a confirmatory order modifying the Indian Point license based on Congressional action directed by the Energy Policy Act of 2005. This order required that the sirens used to alert the public in the 10-mile emergency planning zone around sites with a specified high population density (for which the Indian Point nuclear station, located 24 miles north of New York City on the Hudson River, was the only affected site) be provided with backup power.

Entergy (the Indian Point licensee) decided to install a new siren system rather than retrofit the existing sirens.

The backup power supply was to be operable by January 30, 2007. However, Entergy requested, and the NRC granted, a relaxation of the order until April 15, 2007. On April 13, 2007, the NRC received an additional extension request from Entergy; however, the NRC denied the request because Entergy did not demonstrate good cause.

The NRC issued a violation of the siren order on April 23, 2007, and imposed a significant civil penalty of $130,000 for failing to have the new siren system fully operable in the time frames directed by the order and the allowed extension. On May 23, 2007, Entergy acknowledged the violation, paid the civil penalty, and committed to having the siren system fully operable by the August 24, 2007 commitment.

Entergy also failed to fully meet the terms of the second order since the Federal Emergency Management Agency (FEMA) had not performed its acceptance review by August 24, 2007. The NRC issued a violation of the second order to Entergy on August 30, 2007. On September 12, 2007, FEMA concluded that the new siren system was not adequate in that it did not meet several performance criteria set forth in FEMA guidance. On January 24, 2008, the NRC issued another notice of violation with a proposed civil penalty of $650,000. On February 22, 2008, Entergy responded to the notice of violation and paid the civil penalty. Entergy's response is publicly available through ADAMS, under Accession No. ML080560260.

FEMA has communicated to the NRC that "the old siren system still in place has been performing above the required thresholds for reliability during routine siren tests, and is acknowledged to be more than adequate in terms of audibility and coverage of the 10-mile emergency planning zone." This provides reasonable assurance that the existing system is adequate to protect the health and safety of the public while issues with the new system are being resolved.

FEMA has not yet approved the new siren system (with backup power capability) for use and has issues with the coverage, loudness, and reliability of the new system.

These technical issues are being addressed by Entergy (through testing and the addition of more new sirens) and will be fully reviewed by FEMA and resolved before the new system is placed in service. The licensee's failure to have the siren system in operation and approved by FEMA within the time frame directed by the order is still under further review by the NRC, but the delay has not endangered the public's health and safety.

Once the new siren system technical issues are resolved and the system is reviewed and approved for use by FEMA, the NRC will inform the appropriate Congressional representatives, State and local authorities, and the general public that the new Indian Point siren system is operational and in service. Entergy plans to have the service in place in August 2008. The NRC is monitoring their progress closely, and will take additional actions if needed to ensure that the new siren system is made operational.