

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

MD 8.3	NRC INCIDENT INVESTIGATION PROGRAM	DT-23-06
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<i>Volume 8:</i>	Licensee Oversight Programs
<i>Approved By:</i>	Scott Morris, Deputy Executive Director for Reactors and Preparedness Programs, Office of the Executive Director for Operations
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<i>Issuing Office:</i>	Office of Nuclear Security and Incident Response Division of Preparedness and Response
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EXECUTIVE SUMMARY

Management Directive (MD) 8.3, “NRC Incident Investigation Program,” is revised to—

- Clarify when the staff should recommend to the Commission that an accident investigation be considered under MD 8.9, “Accident Investigation,” in addition to, or instead of, an incident investigation under MD 8.3.
- Reflect the current U.S. Nuclear Regulatory Commission organization (i.e., the restructuring of the Office of Nuclear Material Safety and Safeguards and the Office of Nuclear Reactor Regulation).

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I. POLICY

It is the policy of the U.S. Nuclear Regulatory Commission (NRC) to ensure that significant events involving reactor and materials facilities licensed by the NRC are investigated in a timely, objective, systematic, and technically sound manner; that the factual information pertaining to each event is documented; and that the cause or causes of each event are ascertained. The events may involve reactive inspection responses by an incident investigation team (IIT), augmented inspection team (AIT), or special inspection (SI). (See Directive Handbook 8.3, Section I.D.1 for the definition of a significant event.¹)

II. OBJECTIVES

- Promote public health and safety, instill public confidence, and provide for the common defense and security by reducing the frequency of incidents and preventing accidents.
- Increase the efficiency and effectiveness of NRC regulatory programs and licensee operations by the prompt dissemination of the facts, conditions, circumstances, and causes of significant events and the identification of appropriate follow-up actions.

¹ A significant event is any radiological, safeguards, security, or other event at an NRC-licensed facility that poses an actual or potential hazard to public health and safety, common defense and security, property, or the environment.

- Improve regulatory oversight of licensee activities by uncovering facts that may indicate a need to reevaluate whether an aspect of the regulatory process before the event contributed directly to the cause or course of the event.
- Ensure that IIT, AIT, and SI findings are identified for proper disposition.

III. ORGANIZATIONAL RESPONSIBILITIES AND DELEGATIONS OF AUTHORITY

A. Commission

Approves the follow-up actions assigned as a result of IIT investigations.

B. Executive Director for Operations (EDO)

1. Approves an IIT investigation of a significant event and ensures that follow-up actions are taken, as defined in Sections II and III of the directive handbook.
2. Determines whether a potentially significant event is to be investigated by an IIT and when to recommend to the Commission that an event meets the criteria in Management Directive (MD) 8.9, "Accident Investigation," for the formation of an independent Accident Review Group (ARG) rather than, or in addition to, an IIT.
3. Selects the IIT leader and members, provides policy and technical direction, and ensures the independence of the IIT.
4. Concurs with the decision, made by the appropriate regional administrator (RA) and office director following an event that involves an IIT response that facility operations may resume.
5. Resolves conflicts between a regional office and/or one or more program offices regarding such matters as the need to initiate an SI, AIT, or IIT.
6. Ensures agency decision-making is appropriately risk-informed, as defined in NUREG-2122, "Glossary of Risk-Related Terms in Support of Risk-Informed Decisionmaking."
7. Assesses the effectiveness of an IIT investigation and whether it was consistent with the goals of the incident investigation program.
8. Monitors the closure of IIT findings (i.e., staff actions) of the assigned NRC office using the Executive Director for Operations (EDO) system of tracking and reporting and evaluates the staff's actions to confirm that pertinent aspects of each IIT finding are addressed in the implemented resolution.

C. Office of the General Counsel (OGC)

1. Provides legal assistance in implementing the NRC incident investigation program.
2. Provides legal staff to support IITs.

D. Office of the Inspector General (OIG)

Participates as an observer during IITs and AITs in coordination with the Director of the Office of Nuclear Security and Incident Response (NSIR).

E. Atomic Safety and Licensing Board Panel (ASLBP)

Provides professional stenographers to transcribe formal interviews conducted by the IIT.

F. Director, Office of Congressional Affairs (OCA)

Makes congressional notifications and arranges congressional briefings, as appropriate, to ensure Congress is informed of NRC responses to events.

G. Director, Office of Public Affairs (OPA)

1. Follows established NRC public affairs policies for keeping the media and the public informed of information related to NRC investigatory responses to events (see Section II of the directive handbook).
2. Supports IITs.
3. Reviews the scenario(s) to determine the importance of issuing news releases and social media communications announcing the formation of applicable AITs, IITs, and SIs on a case-by-case basis, as appropriate; and arranges for media briefings. Informs and, as applicable, educates the public of AIT exit meetings, IIT status briefings, and meetings regarding the final investigation results.

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

1. With the assistance of other NRC offices, and in consideration of the Office of Nuclear Security and Incident Response's (NSIR's) independent role as lead for the agency's Incident Response Program, administers the incident investigation program to meet the objectives set forth in this MD.
2. Establishes and maintains an NRC investigatory capability and identifies and coordinates training requirements for IIT candidates through the Technical Training Center (TTC).
3. Establishes and maintains rosters of potential IIT team leaders and team members who are certified through formal training in incident investigation.
4. Ensures that procedures governing IITs are developed, coordinated, approved, distributed, and maintained.
5. Ensures the agency decision-making regarding reactive inspections is appropriately risk-informed and provides independent review of the agency's incident investigation activities, as needed.

6. Provides administrative support staff to IITs (and, as requested, for AITs), as necessary, to achieve objectives defined in Section II of the directive handbook, with assistance from other NRC offices. This may include security experts in the case of security issues.
7. For events warranting consideration of an AIT or an IIT, consults with the appropriate RA and the Director of the Office of Nuclear Reactor Regulation (NRR) (power reactor or non-power utilization facilities (NPUF) events), or the Director of the Office of Nuclear Material Safety and Safeguards (NMSS) (fuel facility or materials events) on the decision. Identifies the potential security or safeguards issues and provides recommendations to the EDO on events warranting consideration of an IIT and on the composition of the IIT.
8. Assesses the effectiveness of incident investigation program activities and recommends action, as appropriate, to improve the program.
9. Provides advice and assistance on the conduct of the agency's incident investigation activities, including on the protection of classified or Controlled Unclassified Information (CUI) related to the incident.
10. Provides advice and consultation to the IIT leader on procedural matters and suggestions regarding completeness of the IIT report.
11. Coordinates with the Office of Administration (ADM) to provide support necessary to publish an IIT report as a NUREG document.

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

1. Ensures that event procedures governing AITs and SIs for power reactors, NPUF, and vendor facilities are defined, developed, coordinated, approved, distributed, and maintained.
2. Identifies and provides staff to be members and leaders of IITs, AITs, and SIs, as needed.
3. Provides assistance in implementing the incident investigation program.
4. For power reactor events warranting consideration of an IIT or AIT, consults with the appropriate RA and the Director of NSIR on the decision.
5. For NPUF and vendor facilities, coordinates with the appropriate RA and the Director of NSIR on events warranting consideration of an IIT or AIT. Determines whether an SI is warranted at NPUF and vendor facilities. Notifies the appropriate RA, the Director of NSIR, and the EDO when initiating an AIT or SI led out of NRR. When conflicts exist between a regional office and/or one or more program offices regarding the decision to initiate an SI, AIT, or IIT, the EDO shall make the decision.

6. Selects the SI and AIT leader and team members, as appropriate, and directs, coordinates, and monitors the performance of SIs and AITs led out of NRR.
7. Identifies the potential public health and safety or safeguards issues and provides recommendations to the EDO on events warranting consideration of an IIT and on the composition of the IIT.
8. Provides and coordinates risk analysis support to the regions for events that warrant an IIT or AIT consideration or when requested by the appropriate RA.
9. Discusses with the appropriate RA and the Director of NSIR the acceptability of the licensee's decision to resume facility operations following an IIT response and event-related shutdown. Obtains the EDO's concurrence for resumption of operations.
10. Ensures that office decision-making is appropriately risk-informed.

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

1. Provides staff as members and leaders of IITs, AITs, and SIs, as needed.
2. Provides assistance in implementing the NRC incident investigation program.
3. Provides risk analysis support (coordinated by NRR) to the regions for power reactor events that warrant an IIT or AIT consideration or when requested by the appropriate RA.
4. Assists in identifying potential nuclear material safety, health, or safeguards issues.

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

1. Ensures that procedures governing SIs and AITs for fuel cycle facility, waste disposal, spent nuclear fuel storage facility, nuclear and radioactive material, and material transportation events are defined, developed, coordinated, approved, distributed, and maintained.
2. Identifies and provides staff as members and leaders of IITs, AITs, and SIs, as needed.
3. Provides assistance in implementing the NRC incident investigation program.
4. For fuel cycle facility, waste disposal, spent nuclear fuel storage facility, nuclear and radioactive material, and material transportation events warranting consideration of an IIT or AIT, consults with the appropriate RA and the Director of NSIR on the decision.
5. Notifies the appropriate RA, the Director of NSIR, and the EDO when initiating an SI led out of NMSS. When conflicts exist between a regional office and/or one or more

program offices regarding the decision to initiate an SI or IIT, the EDO shall make the decision.

6. Selects the SI or AIT leader and members, as appropriate, and directs, coordinates, and monitors the performance of SIs or AITs led out of NMSS.
7. Identifies the potential public health and safety or safeguards issues and provides recommendations to the EDO and the Director of NSIR on events warranting consideration of an IIT, including the composition of the IIT.
8. Discusses with the appropriate RA and obtains the EDO's concurrence on the acceptability of the decision by the affected licensee to resume facility operations following an event that involves an IIT response where the facility has been shut down.
9. Ensures that office decision-making is appropriately risk-informed.

L. Director, Office of Investigations (OI)

1. Provides assistance in implementing the incident investigation program.
2. Provides staff members in support of IIT, AIT, and SI objectives.
3. Shares with the appropriate region and headquarters offices information obtained in connection with any parallel OI investigation that indicates significant increases in the health, safety, or security significance of the event.

M. Chief Human Capital Officer (CHCO)

1. Assists with IIT training on an as needed basis.
2. Coordinates and assists with IIT training development and delivery following established agency training policies and procedures.

N. Regional Administrators

1. Identify and provide staff to be members and leaders of IITs, AITs, and SIs as needed.
2. Provide assistance in implementing the NRC incident investigation program.
3. Coordinate with the Directors of NRR or NMSS, as appropriate, and the Director of NSIR on events that warrant consideration of an IIT or AIT.
4. For SIs and AITs led out of the region (e.g., power reactors, fuel cycle facilities), determine whether an SI or AIT is warranted. Notify the appropriate Director of NRR or NMSS, the Director of NSIR, and the EDO when initiating an SI or AIT led out of the region. When conflicts exist between a regional office and/or one or more program offices regarding the decision to initiate an SI, AIT, or IIT, the EDO shall make the decision.

5. Select the SI or AIT leader and members, as appropriate and direct, coordinate, and monitor the performance of SIs or AITs led out of the region.
6. Identify potential health and safety or safeguards issues and provide recommendations to the EDO on events warranting consideration of an IIT.
7. Make appropriate notifications to Federally recognized Tribes and States(s) of NRC responses to events.
8. Issue a confirmatory action letter when significant concerns about health and safety, safeguards, or the environment exist to establish commitments to ensure the facility is maintained in a safe condition and to preclude event-related resumptions of operations without NRC concurrence when appropriate. The confirmatory action letter may also need to address failed equipment, quarantined areas, agreed-upon controls for troubleshooting, and data preservation and retrieval to ensure a complete understanding of the event's causes and timeline.
9. Consult with the appropriate office director(s) and the Director of NSIR on the acceptability of the licensee's decision to resume facility operations following an IIT response and event-related shut down. Obtain the EDO's concurrence for resumption of operations.
10. Ensure that regional decision-making is appropriately risk-informed.
11. Provide assistance in briefing and supplying background information to the IIT when it arrives on site. Provide onsite support for the IIT during its investigation.
12. Identify and provide staff to monitor licensee troubleshooting activities to assess equipment performance.

O. Office Directors

Participate in the incident investigation program as defined in this MD.

IV. APPLICABILITY

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

V. DIRECTIVE HANDBOOK

Directive Handbook 8.3 discusses the major components of the NRC's response to significant events (i.e., IIT, AIT, and SI).

VI. REFERENCES

Code of Federal Regulations

10 CFR Part 20, Appendix B, Table 2, "Effluent Concentrations."

10 CFR 71.87, "Routine Determinations."

Nuclear Regulatory Commission Documents

Incident Response Manual Chapter 300, "Incident Investigation" ([ML14113A013](#)).

Inspection Manual Chapters (<https://www.nrc.gov/reading-rm/doc-collections/insp-manual/manual-chapter/index.html>):

0609, "Significance Determination Process."

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

1302, "Follow-up Actions and Action Levels for Radiation Exposures Associated with Materials Incidents Involving Members of the Public."

Inspection Procedures (<https://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>):

71153, "Follow up of Events and Notices of Enforcement Discretion."

93800, "Augmented Inspection Team."

93812, "Special Inspection."

Management Directives (<https://www.nrc.gov/reading-rm/doc-collections/management-directives/index.html>):

8.2, "NRC Incident Response Program."

8.9, "Accident Investigation."

8.10, "NRC Assessment Program for a Medical Event or an Incident Occurring at a Medical Facility."

NUREG-2122, "Glossary of Risk-Related Terms in Support of Risk-Informed Decisionmaking" (<https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr2122/index.html>).

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I. MAJOR COMPONENTS AND RESPONSIBILITIES OF THE PROGRAM

A. Coverage

“Incident investigation” is a formal process conducted for the purpose of accident prevention. The process includes gathering and analyzing information; determining findings and conclusions, including the cause(s) of a significant event; and disseminating the investigation results for the U.S. Nuclear Regulatory Commission (NRC), industry, and public review. The components of the process follow.

B. Incident Investigation Team (IIT)

An Incident Investigation Team (IIT) consists of technical experts who, to the extent possible, do not have, and have not had, previous significant involvement with licensing and inspection activities at the affected facility and who perform the single NRC investigation of a significant event as described in Section II of this handbook. An NRC senior manager leads the IIT. Each IIT reports directly to the Executive Director for Operations (EDO) and is independent of regional and headquarters office management. Incident Response Manual Chapter (IRMC) 300, “Incident Investigation” ([ML14113A013](#)), provides implementing guidelines for IITs.

C. Augmented and Special Inspections

An augmented or special inspection is performed by one or more technical experts from the region where the event took place and may be augmented by personnel from headquarters, contractors, or other regions, as needed. The inspector(s) may have had prior involvement with licensing and inspection activities at the affected facility. The inspector(s) report(s) directly to the appropriate regional administrator (RA) or office

director when the reactive inspection is led out of headquarters. [Inspection Procedure \(IP\) 93800, "Augmented Inspection Team"](#) (AIT) and [IP 93812, "Special Inspection"](#) (SI) are the implementing procedures for these reactive inspections.

D. Significant Event Process

1. General

- (a) A significant event is any radiological, safeguards, security, or other event at an NRC-licensed facility that poses an actual or potential hazard to public health and safety, common defense and security, property, or the environment. A significant operational event also may be referred to as "an incident" (see Management Directive (MD) 8.2, "NRC Incident Response Program," for more information).
- (b) The decision regarding an "investigatory response" for a significant event is defined by its risk significance, complexity, and generic safety or security implications. Significant events at power reactor facilities are evaluated considering both deterministic criteria and risk significance (e.g., conditional core damage probability (CCDP)) in order to define the level of investigatory response. Other significant events (e.g., fuel facility, material, non-power utilization facilities (NPUF), safeguards, and security events) are evaluated on the basis of deterministic criteria in order to define the level of investigatory response.
- (c) Significant events may involve responses by an IIT or less formal responses by an AIT or an SI, depending upon the level of response deemed appropriate. The level of investigatory response for significant power reactor events is based on both the deterministic criteria and the risk criteria included in this section. See Section I.D.2 of this handbook for the criteria for significant events involving power reactors, NPUFs, fuel cycle, and materials. Consult MD 8.10, "NRC Assessment Program for a Medical Event or an Incident Occurring at a Medical Facility," for detailed criteria for medical events.
- (d) Upon notification of a significant power reactor event, the RA and staff should perform an initial review to assess the safety or security significance of the event in order to determine the level of response required. The Office of Nuclear Regulatory Research (RES) will provide risk analysis support (coordinated by the Office of Nuclear Reactor Regulation (NRR)) to the regions for power reactor events that warrant at least consideration of an AIT. If requested by the RA, RES will provide risk analysis support for events for which only consideration of the need for an SI may be warranted.
- (e) If the initial review indicates that the event warrants at least consideration of an AIT response, the RA shall consult with the Director of the Office of Nuclear Security and Incident Response (NSIR) and the Director of NRR (power reactor and NPUF events), or the Director of the Office of Nuclear Material Safety and

Safeguards (NMSS) (fuel facility, material and material transportation events), to decide if an AIT or an IIT response is appropriate on the basis of their collective judgment.

- (f) Upon notification of a significant event at an NPUF, the Director of NRR and staff should perform the initial review to assess the safety or security significance of the event to determine the level of response required.
- (g) If the results of the initial review of a significant event at an NPUF conclude that the event warrants at least consideration of an AIT response, the Director of NRR shall consult with the Director of NSIR and the appropriate RA to decide if an AIT or an IIT is the proper response.
- (h) If an IIT is agreed upon, the initiating office makes that recommendation to the EDO. The EDO resolves differences among offices concerning whether an AIT or an IIT is the proper response.

2. Criteria to Evaluate Level of Response for a Significant Event

(a) Significant Event at a Power Reactor

- (i) A power reactor event meeting the following deterministic criteria should be evaluated for risk to aid in determining the level of response, if any. The event may include significant unplanned degraded conditions as identified by the licensee or the NRC.
 - Operation that exceeded, or was not included in, the design bases of the facility.
 - Major deficiency in design, construction, or operation having a potential generic safety implication.
 - Significant loss of integrity of the fuel, the primary coolant pressure boundary, or the primary containment boundary.
 - Loss of a safety function or multiple failures in systems used to mitigate an actual event.
 - Possible adverse generic implication.
 - Significant unexpected system interaction.
 - Repetitive failures or events involving safety-related equipment or deficiencies in operations.
 - Question or concern pertaining to licensee performance.
 - Circumstance sufficiently complex, unique, or not well enough understood, or involving safeguards concerns, or involving characteristics

the investigation of which would best serve the needs and interests of the Commission.

- (ii) Failure of licensee safety-related equipment or adverse impact on licensee operations because of a safeguards-initiated event (e.g., tampering).
 - Actual intrusion into the protected area.
 - Significant loss of safeguards information that could compromise common defense and security.
- (iii) A significant power reactor event meeting the above deterministic criteria should be evaluated for risk as follows:
 - CCDP best reflects loss of defense-in-depth due to the event, regardless of whether the cause is deficient licensee performance or otherwise.
 - CCDP accounts for actual plant configuration, including equipment that is unavailable because of maintenance and testing.
- (iv) [Inspection Manual Chapter \(IMC\) 0609, "Significance Determination Process,"](#) addresses CCDP determination. Although CCDP represents a fundamentally different concept for events than for degraded conditions that do not initiate an event, the same guidelines may be applied to each in assisting management in its risk-informed decision-making.
- (v) The lack of complete event information at the time of the NRC response decision focuses attention on the uncertainty of influential assumptions and their effect on the risk significance. [IP 71153, "Follow up of Events and Notices of Enforcement Discretion,"](#) discusses inspector input to risk analyses that is needed to understand the risk significance. In determining the risk significance of an event, NRC should assess the potential influence on risk of the following:
 - Dominant core damage sequence(s).
 - Level of confidence in failure/unavailability values assumed for the sequence(s).
 - Influence on the CCDP estimate of contributing factors where the confidence level is low.
- (vi) The following table lists appropriate power reactor event response options as a function of CCDP. The overlap of options relative to CCDP levels provides the opportunity to select different inspection or investigation options on the basis of factors like uncertainty of the risk estimate coupled with the deterministic insights. Risk insights should also be used in considering the number of inspectors, their expertise, and the areas of focus. In addition to

risk, NRC should assess whether degraded conditions could increase the likelihood of a large, early release resulting from containment failure.

Estimated CCDP				
CCDP < 1E-6	1E-6 -> 1E-5	1E-5 -> 1E-4	1E-4 -> 1E-3	CCDP > 1E-3
No Additional Inspection				
	SI			
	AIT			
			IIT	

(b) Significant NPUF, Fuel Facility, or Materials Event

In addition to the above guidance for power reactor events (and guidance found in [IMC 1301, “Response to Radioactive Material Incidents That Do Not Require Activation of the NRC Incident Response Plan,”](#) and [IMC 1302, “Follow-up Actions and Action Levels for Radiation Exposures Associated with Materials Incidents Involving Members of the Public”](#)) the following guidance should be considered for any significant NPUF, fuel cycle, or materials event, including materials events at power reactors:

(i) An IIT should be considered for a significant event with one or more of the following characteristics:

- Led to a significant radiological release (levels of radiation or concentrations of radioactive material in excess of 10 times any applicable limit in the license or 10 times the concentrations specified in 10 CFR Part 20, Appendix B, Table 2, “Effluent Concentrations,” when averaged over a year) of byproduct, source, or special nuclear material to unrestricted areas.
- Led to a significant occupational exposure or significant exposure to a member of the public. In both cases, “significant” is defined as five times the applicable regulatory limit (except for shallow-dose equivalent to the skin or extremities from discrete radioactive particles).
- Led to a site area emergency.
- Exceeded a safety limit of the licensee's technical specifications.
- Involved the medical use of byproduct, source, or special nuclear material and may have resulted in deterministic effects to a significant number of patients or individuals over a long period (months or years).

- Involved the medical, academic, or commercial use of byproduct, source, or special nuclear material and resulted in the potential exposure of a significant number of individuals above occupational or public dose limits.
 - Involved the deliberate misuse of byproduct, source, or special nuclear material from its intended or authorized use, which resulted in the exposure of a significant number of individuals.
 - Involved byproduct, source, or special nuclear material, which may have resulted in a fatality.
 - Involved circumstances sufficiently complex, unique, or not well enough understood, or involved safeguards concerns, or involved characteristics the investigation of which would best serve the needs and interests of the Commission.
 - Actual intrusion into the protected area or controlled access area or the established first-line physical barrier for controlling personnel access to the facility.
 - Involved a willful disclosure of classified information with potential damage to national security.
- (ii) For an event of lesser health and safety or safeguards significance an AIT should be formed. The characteristics of this event may include one or more of the following:
- Led to a radiological release of byproduct, source, or special nuclear material to unrestricted areas that resulted in occupational exposure or exposure to a member of the public in excess of the applicable regulatory limit (except for shallow-dose equivalent to the skin or extremities from discrete radioactive particles).
 - Involved the deliberate misuse of byproduct, source, or special nuclear material from its intended or authorized use and had the potential to cause an exposure of greater than 5 rem to an individual or 500 mrem to an embryo or fetus.
 - Involved a significant infraction or repeated instances of safeguards infractions that demonstrate the ineffectiveness of facility security provisions.
 - Involved repeated instances of inadequate nuclear material control and accounting provisions to protect against theft or diversions of nuclear material.
 - Involved the failure of the dam for mill tailings with substantial offsite release of tailings material and solution.

- Involved the failure of radioactive material packaging that resulted in external radiation levels exceeding 10 rads/hr or contamination of the packaging exceeding 1000 times the applicable limits specified in 10 CFR 71.87, "Routine Determinations."
- Involved a loss of classified or safeguards information with potential disclosure to unauthorized individuals affecting national security or the common defense and security.

II. INCIDENT INVESTIGATION TEAM

The investigatory initiative involving a response by an IIT is described in this part.

A. Objectives of an Incident Investigation Team

The objectives of an IIT are to—

1. Conduct a timely, thorough, systematic, formal, and independent investigation of certain safety-significant or security events occurring at facilities licensed by the NRC.
2. Collect, analyze, and document factual information and evidence sufficient to determine the probable cause(s), conditions, and circumstances pertaining to the event.

B. Scope of an Incident Investigation

1. An IIT investigation should emphasize factfinding and determination of probable cause for a significant event. The scope of the investigation must be sufficient to ensure that the event is clearly understood, the relevant facts and circumstances are identified and collected, and the probable cause(s) and contributing cause(s) are identified and substantiated by the evidence associated with the event. The investigation must consider whether licensee and NRC activities preceding and during the event were timely and adequate.
2. The scope of an IIT investigation must (1) be approved by the EDO and (2) include conditions preceding the event, event chronology, systems response, human factors considerations, equipment performance, precursors to the event, emergency response, safety significance, radiological considerations, security significance, and findings and conclusions. The scope of the IIT investigation will be established by a charter attached to the initiating memorandum from the appropriate office director to the EDO.
3. The scope of the investigation shall exclude—
 - (a) Specific assessment of violations of NRC rules and requirements;

- (b) Review of the design and licensing bases for the facility, except as necessary to assess the cause for the event under investigation;
 - (c) Assessment of reasonable assurance of offsite emergency response capabilities of Federally recognized Tribes, States(s), and local agencies; and
 - (d) Determination for resumption of licensed operation.
4. However, the NRC will consider information collected as part of the IIT process when a decision is made by the affected licensee to resume facility operations before issuance of the IIT report. These instances require close coordination between the IIT leader, the RA, the appropriate program office director, and the Director of NSIR.

C. Schedule

1. The IIT must be activated as soon as practicable after the health and safety significance of the event is determined and will begin its investigation as soon as practicable after the facility has been placed in a safe, secure, and stable condition. If there is an NRC incident response, the IIT investigation will begin after the incident response is deactivated. Refer to IRMC 300 ([ML14113A013](#)) for detailed activation and scheduling guidance.
2. The IIT must issue interim reports at appropriate intervals outlining the status, plans, and relevant new information related to its investigation.
3. The IIT must prepare and transmit its final report to the Commission and the EDO within 45 days of activation of the team, unless relief is granted by the EDO. The EDO will normally schedule a meeting for the IIT to brief the Commission on its investigation approximately 1 week after receipt of the final report. The final IIT report will be published as a NUREG.
4. Information contained in the report is not to be released to the public until a copy of the final report is placed in the Agencywide Documents Access and Management System (ADAMS), which normally occurs during the day of the Commission briefing, if one is conducted. Following the Commission briefing, the EDO will transmit a copy of the final report to the licensee and the NRC staff for review and comment before the EDO defines the follow-up actions and assigns them to NRC offices. If deemed necessary, the EDO may forward a copy of the final report to the affected licensee before the Commission briefing and simultaneously forward a copy of the final report to ADAMS.

D. Team Composition and Qualifications

1. The IIT will be composed of technical experts selected based on their expertise relevant to the event under investigation and their freedom from significant involvement in the licensing and inspection of the facility involved or other activities associated with issues that had a direct effect on the course or consequences of the

event. The number of members and areas of technical expertise required for each IIT will be determined based on the type of facility and characteristics of the event.

2. The special procedures for clearing non-Government individuals, which are outlined in IRMC 300, apply whenever these individuals are used to support an IIT.
3. The team leader and expert members should, to the extent practicable, be selected from rosters of candidates who have been certified through formal training in incident investigation. An NRC senior manager from the Senior Executive Service shall be the team leader.

E. Duties of the Incident Investigation Team

1. The IIT carries out the single NRC fact finding investigation of the event and is authorized to pursue and is responsible for pursuing all aspects of an event that are within its scope as defined above. NRC response personnel on site shall provide support as needed to ensure the efficient and effective transition to investigation of the event in a manner that does not interfere with facility safety.
2. IIT Leader
 - (a) Directs and manages the IIT in its investigation and ensures that the objectives and schedules are met for the investigation as defined in this handbook.
 - (b) Identifies, adds, and removes equipment and areas from the quarantined list to ensure facility safety. In addition, ensures that the licensee is able to perform appropriate maintenance and testing of equipment and determine causes for equipment anomalies.
 - (c) Works with the Office of Public Affairs (OPA) in providing the news media with information on IIT activities.
 - (d) Serves as principal spokesperson for IIT activities when interacting with the licensee, NRC offices, the Advisory Committee on Reactor Safeguards (ACRS), the Advisory Committee on the Medical Uses of Radioisotopes (ACMUI), news media, and other organizations on matters involving the investigation.
 - (e) Prepares frequent status reports documenting IIT activities, plans, significant findings, and health and safety concerns that may require timely remedial actions or issuance of information notices, bulletins, or orders.
 - (f) Receives direction from and supervision by the EDO.
 - (g) Identifies and requests that the EDO provide additional IIT resources (e.g., additional members, consultants, contractor assistance), as needed.
 - (h) Identifies and recommends to the EDO further studies and investigations, for example, as those involving staff performance in regulatory activities before the

event, when significant concerns could not be thoroughly evaluated because of time or resource limitations.

- (i) Ensures, in cooperation with the IIT members and the technical writer/editor, preparation of the final report by the due date established by the EDO.
- (j) Briefs the Director of NRR or NMSS, as appropriate, the Director of NSIR, and the RA on the facts surrounding the event in support of decision-making concerning resumption of facility operations by the affected licensee.
- (k) Promptly documents and conveys significant ancillary findings or information outside the scope of the IIT charter to regional management for follow-up action.
- (l) Ensures that a lessons-learned evaluation is conducted and documented on the IIT efforts and results.

F. Conduct of an Investigation

1. The investigation process is based on the principles of incident investigation provided in IIT training programs and described in [IRMC 300](#).
2. The composition of the IIT must be structured and the procedures developed to maintain independence and objectivity. Personnel possessing a high degree of independence, ingenuity, and resourcefulness should be selected to ensure that the investigation is conducted in a timely, professional, thorough, and coordinated manner.
3. Implementing procedures to guide and control the establishment and investigatory activities of an IIT are included in [IRMC 300](#). This procedure provides guidance for—
 - (a) Activating an IIT, including responsibilities, coordination, communication, team composition, and guidance;
 - (b) Outlining an IIT investigation of an event, including responsibilities, work plan, communication, interfaces, scope, and schedule;
 - (c) Interviewing personnel;
 - (d) Collecting and maintaining records, documents, data, and other information;
 - (e) Treating quarantined equipment and areas; and
 - (f) Preparing the IIT report, reviewing the IIT report for classified or sensitive unclassified information, and distributing the IIT report and related documents.
4. For an IIT involving a medical event, additional guidance is provided in MD 8.10.

G. Follow Up

1. Following NRC staff and licensee review and comment on the IIT report, the EDO identifies generic and facility-specific staff actions that must be taken as a result of the findings of the investigation. Following Commission approval, the EDO shall assign an NRC office responsibility for each action. Office directors shall provide a written status report on the disposition of each assigned action as directed by the EDO.
2. The memorandum assigning follow-up actions (i.e., staff actions) should address all IIT findings, including those that are judged to require no follow-up action, to document the consideration of all findings. The resolution of each staff action will be documented by the assigned NRC lead office in a single safety evaluation report, and each staff action will be individually tracked by the EDO's status tracking and reporting system.

III. AUGMENTED AND SPECIAL INSPECTIONS**A. Objectives of an AIT and an SI team**

1. Conduct a timely, thorough, and systematic inspection related to significant events at facilities licensed by the NRC.
2. Assess the health and safety significance of the event and communicate to regional and headquarters management the facts and safety or security concerns related to the event so that appropriate follow-up actions can be taken (e.g., study a generic concern, issue an information notice or bulletin, or issue a generic communication).
3. Collect, analyze, and document information and evidence sufficient to determine the cause(s), conditions, and circumstances pertaining to the event.

B. Scope of an augmented or special inspection

AIT inspections and SI are conducted using [IP 93800](#) and [IP 93812](#), respectively. The scope of inspection is defined by the inspection guidance contained in each IP and the inspection charter developed for the inspection.

1. The purpose of the charter is to delineate the general scope of the reactive inspection and to facilitate fact gathering and understanding thorough independent review. Available risk insights should be used to develop the scope of the charter. Examples of items the charter can include are conditions preceding the event, event chronology, system responses, human factors, safety culture, equipment performance, quality assurance, radiological considerations, safeguard considerations, event precursors, event response, operating experience, and safety or security impacts in determining the causes of the significant event and in support of appropriate agency follow-up actions. The charter should assess any immediate

corrective actions and compensatory measures taken to address immediate safety or security concerns. The charter should be consistent with event risk insights.

2. At power reactor sites, the charter should not attempt to assess the adequacy of any longer-term corrective actions used to improve licensee performance and prevent recurrence of significant conditions since those follow-up activities are addressed using supplemental or baseline inspections. Performing these activities during a reactive inspection may delay prompt dissemination of the facts and circumstances surrounding the significant event and pose unwarranted regulatory burden on licensees.
3. The charter is generally communicated as an enclosure to a memorandum from the approving authority to the leader. The charter may be modified during the inspection in consultation with management when the inspection develops significant new information that warrants review.

C. Schedule

The reactive inspection must be activated as soon as practicable after the health and safety significance of the event is determined and should begin its inspection as soon as practicable after the facility has been placed in a safe, secure, and stable condition.

D. Composition and Qualifications

AIT and SI lead, team composition, and qualifications are defined in [IP 93800](#) and [IP 93812](#), respectively.

E. Follow Up

1. Identification, review of licensee corrective actions, actions necessary for resumption of facility operations, and enforcement actions must be accomplished through the normal organizational structure and procedures.
2. After the inspection is documented, the inspection team should consider providing feedback to the appropriate headquarters division director with copy to the office director on any suggested changes to prevent or reduce the frequency of similar significant events or to enhance oversight. Based on this feedback and the results of the inspection, management will initiate appropriate follow-up actions. Generally, staff will handle any follow-up actions through the normal organizational structure and procedures.