

REACTIVE INSPECTION DECISION BASIS FOR REACTORS

0309-01 PURPOSE

01.01 To provide guidance to the NRR and the Regional staff for implementing the requirements prescribed in Management Directive (MD) 8.3, "NRC Incident Investigation Program."

01.02 To detail, clarify, and provide further additional information on the risk measures used for determining the risk significance.

01.03 To discuss the availability of various tools to communicate with internal and external stakeholders on event response and assessment.

01.04 To incorporate recent organizational changes.

0309-02 BACKGROUND

MD 8.3 is the Agency-level governing document for this Inspection Manual Chapter. MD 8.3 includes deterministic and risk criteria for determining the agency's appropriate event response and delineates responsibilities at the office-level for response to plant events. This manual chapter provides specific roles and responsibilities for the staff involved in the event response process as well as guidance for developing cooperative staff-level relationships among the participating offices. In addition to plant events, this manual chapter highlights the need to assess the significance of a plant's degraded condition for considering an appropriate reactive inspection and provides guidance on the use of risk metrics to assess the significance of a degraded condition.

Inspection Procedure 71153, "Event Followup," provides inspection guidance for evaluating licensee events and degraded conditions. It also specifies that inspectors communicate details regarding the event to management, risk analysts and others in the Region and Headquarters as input to their determining the need for an Incident Investigation Team (IIT), Augmented Inspection Team (AIT), or Special Inspection (SI).

Inspection Procedures 93800, "Safety system Engineering Inspection (SSEI)," and 93812, "Special Inspection," provide implementing guidance for AIT and SI responses. NUREG 1303 is a manual detailing the procedures for an IIT.

03.01 Operating Experience Section (OES)/Reactor Operations Branch (IROB)/Division of Inspection Program Management (DIPM)/NRR. Responsible for the initial NRR followup of significant operational power reactor events. It acts as the point of contact for NRR on the risk-informed event response. It works with the Regional Offices and inspectors to develop event details. It contacts appropriate technical branches for support to address relevant technical and regulatory issues, including safety significance determination. Coordinating with the Probabilistic Safety Assessment Branch (SPSB)/NRR, other technical branches, DIRO/NSIR, and the Division of Licensing Project Management (DLPM), it recommends the appropriate event response to NRR management. Based on the recommendation, the Director of NRR will consult with the appropriate Regional Administrator (RA) and the Director of DIRO/NSIR to decide on the appropriate reactive inspection.

03.02 SPSB/NRR. At the request of OES/IROB or the Regional Offices, SPSB evaluates the risk associated with significant operational events at power reactors. It contacts and coordinates with the Operating Experience and Reliability Analysis Branch (OERAB) of the Office of Regulatory Research (RES) to perform the risk evaluation. It also communicates with the regional Senior Reactor Analysts (SRAs) to share risk insights and results. The SPSB risk analyst and the regional SRAs should seek a consensus on the event's risk significance through effective communications, so that regional and Headquarters management receive the same risk insights or any significant differences in assumptions and corresponding results. SPSB provides the risk input to NRR management through OES/IROB.

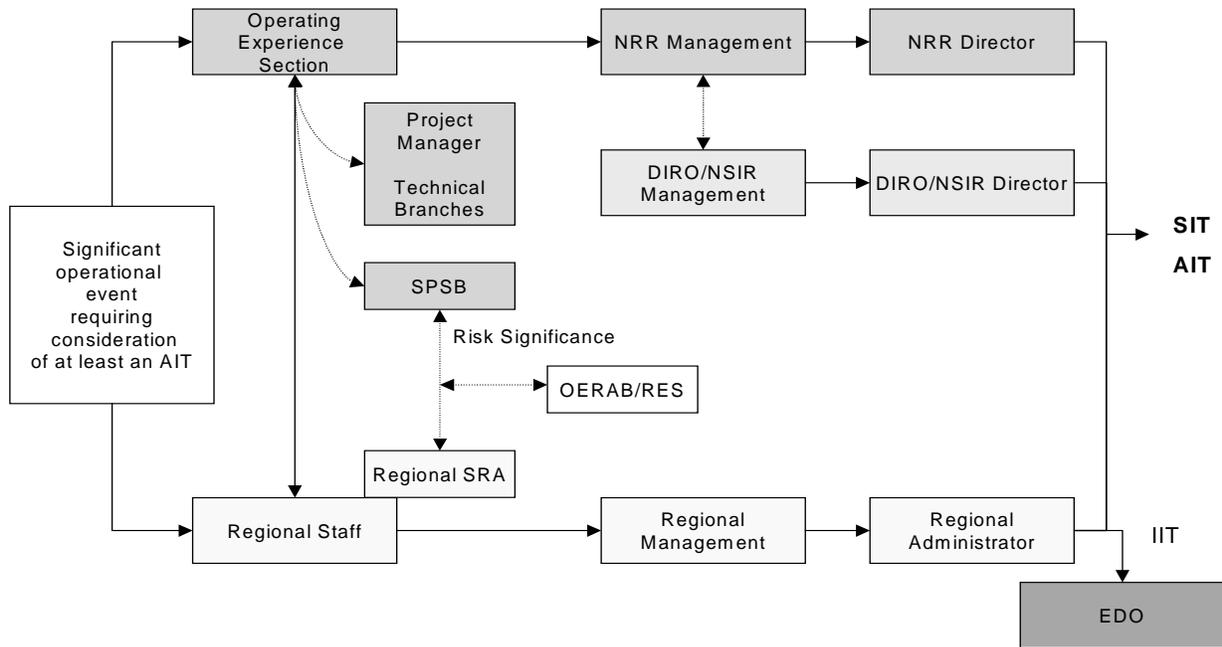
03.03 Other Technical Branches/NRR. At the request of OES/IROB, DLPM, or the Regional Offices, NRR technical branches provide technical support for resolving issues identified during followup of significant operational events.

03.04 DLPM/NRR. The DLPM Project Manager (PM) keeps abreast of the event and provides logistical support for the Regional Offices and other NRR staff during the short-term event response. It promptly alerts OES/IROB to potentially significant operational events.

03.05 Regional Staff. Formulate the recommendation to the RA regarding appropriate event response in the form of an SI, AIT, or IIT. For events and degraded conditions that require consideration of at least an AIT, promptly contact OES/IROB and provide event details. OES/IROB is the point of contact for NRR support to the Regional Offices for risk assessment and other technical issues. Prior to the final recommendation to Regional management, engage with NRR to seek a consensus view on appropriate event response. Based on the recommendation from the Regional staff, the RA consults with the Directors of NRR and DIRO/NSIR for the appropriate level of reactive inspection. If a decision is reached to conduct a specific reactive inspection, the regional staff provides the basis for that decision in the inspection charter. The charter discussion should include a description of the specific deterministic criteria and the risk analysis information that served as a basis for deciding on the specific reactive inspection.

The flow of communication among the participating staff organizations and the decision making points are depicted in Figure 1.

Figure 1: Flow Chart for Deciding an SI, AIT, or IIT



0309-04 REQUIREMENTS

04.01 Initial Event Notification and Followup. Upon notification to NRR of a power reactor event, OES/IROB performs the initial NRR event followup activities, including the coordination of the effort to determine the safety significance and generic implications of the event. The DLPM Project Manager (PM) is kept informed of the event information and provides logistical support for appropriate NRR event followup activities. OES/IROB or the DLPM PM requests assistance from NRR technical staff as needed.

The Regional staff requests technical support from NRR, if needed, typically by contacting OES/IROB. For events or degraded conditions that warrant at least consideration of an AIT, the Regional staff promptly informs OES/IROB of the event and event details. Conversely, the OES/IROB staff promptly inform the Regional Offices of any significant operational events that are being considered for appropriate event response in NRR.

04.02 Safety Significance Determination. Power reactor events meeting one or more of the deterministic criteria described in MD 8.3 are further evaluated for risk significance. In NRR, SPSB, coordinating with the Office of Research (RES) and the responsible Regional Office, promptly evaluates the risk of events or degraded conditions that warrant at least consideration of an AIT. Upon request, SPSB also evaluates the risk of events or degraded conditions that may warrant only an SI. Typically, OES/IROB or the Regional Offices asks SPSB for the evaluation. All currently available event (or degraded condition) and risk information should be provided to SPSB in a timely manner for risk evaluation. SPSB communicates with the regional counterparts, e.g., the regional SRAs, to share

pertinent risk information and reach a consensus on the risk significance of the event or degraded condition. The regional SRAs inform the regional management of the risk significance and SPSB provides the NRR risk input to NRR management, typically through OES/IROB.

04.03 Risk Measures and Quantitative Criteria. For a reactor event involving an initiating event, the conditional core damage probability (CCDP) of the event is estimated to determine its risk significance. For a degraded plant condition, the incremental CCDP (ICCDP) of the condition is estimated to determine its risk significance. The numerical CCDP guidance used to help determine an appropriate reactive inspection (or no additional inspection) is provided on page 6 of MD 8.3. This numerical guidance can also be used for ICCDP.

For events or degraded conditions associated with containment performance or bypass, the risk of a large early release, e.g., the conditional large early release probability (CLERP) or incremental CLERP (ICLERP), is evaluated, if practical. Table 1 lists appropriate power reactor operational event inspection response options as a function of CLERP or ICLERP.

Table 1: CLERP (ICLERP) vs. Event Investigative Response

Estimated CLERP or ICLERP				
CLERP <1E-7	1E-7 - 1E-6	1E-6 - 1E-5	1E-5 - 1E-4	CLERP >1E-4
No additional inspection				
		Special Inspection		
		AIT		
			IIT	

04.04 Additional Factors That May Warrant an AIT or an IIT. Additional event characteristics that may be considered in risk-informed event response decision making are listed in MD 8.3. As appropriate, other factors such as public confidence and public interest may be appropriately considered in deciding whether to dispatch an AIT or an IIT to the site. In addition, any unique event characteristics beyond the scope and capability of the risk assessment for the event or degraded condition should be appropriately

considered for their impact on the overall event significance or importance. If the impact is judged to be significant from the public health and safety perspective, an AIT or an IIT may be warranted.

04.05 Recommendation to Management. If an initial review of the safety significance of the event finds that the event may warrant at most a consideration of an SI, the regional management makes the decision. In this case, the regional management may consult with NRR and NSIR, but is not required to do so. For an AIT or an IIT, the OES/IROB Branch Chief consults with the corresponding Regional Office, DIRO/NSIR, and DLPM to formulate a recommendation to the Director of NRR regarding an appropriate event response. The decision to dispatch an AIT or an IIT for a significant operational event or a degraded condition is made by the RA in consultation with the Directors of NRR and DIRO/NSIR. For events that may warrant an IIT, the Director of NRR, in consultation with the RA and the Director of DIRO/NSIR, provides recommendations to the EDO.

04.06 Communications with the Internal and External Stakeholders on Event Response and Assessment. For significant operational events, the staff should be cognizant of the communication tools that are available to enhance the effectiveness and efficiency of the agency's communications with its stakeholders. The NRC has developed the Event Response and Assessment Communications Plan. The plan is available in the ADAMS Main Library internal folder entitled "Communication Plans," and should be consulted following a significant operational event or discovery of a significant degraded plant condition. The communication tools available for event or degraded condition response and assessment include:

- a. a communications team
- b. central tracking of controlled correspondence
- c. a notification sequence for significant regulatory documents
- d. formalized questions and answers (Q&A) for common and expected significant events for use by the Office of Public Affairs (OPA) during initial event response
- e. a dedicated Web page for each event

If it is determined that a communications team is warranted, DLPM typically plays the key NRR role in developing and coordinating the communications team and subsequent communications activities. Specific communication activity assignments are determined by the communications team. IROB, the Regional Offices and other NRR branches support such DLPM activities, as needed. Communication activities typically continue beyond the initial phase of investigative response until their goals have been accomplished.

0309-05 REFERENCES

Management Directive 8.2, "NRC Incident Response Program"

Management Directive 8.3, "NRC Incident Investigation Program"

Inspection Procedure 71153, "Event Followup"

NUREG1303, "Incident Investigation Manual"

Inspection Procedure 93800, "Augmented Inspection Team"

Inspection Procedure 93812, "Special Inspection"

Inspection Manual Chapter 0609, "Significance Determination Process"

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