

# *Question and Response Report*

*for:*

**Module 11b: Feedback of Operating Experience**

# IRRS Question and Response Report

Question No: 183

Module 11b: Feedback of Operating Experience

## Question

Describe the actions that are taken by the Regulatory Body to deal with operator's reports on abnormal occurrences.

## Response

The facility operator is required to report incidents and events as defined in the following documents:

- Title 10 of the Code of Federal Regulations (10 CFR) 20.2201, "Reports of Theft or Loss of Licensed Material"
- 10 CFR 20.2202, "Notification of Incidents"
- 10 CFR 20.2203, "Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Constraints or Limits"
- 10 CFR 20.2204, "Reports of Planned Special Exposures"
- 10 CFR 20.2205, "Reports to Individuals of Exceeding Dose Limits"
- 10 CFR 30.50, "Reporting Requirements," for incidents involving byproduct radioactive material
- 10 CFR 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors," requires a 10 CFR 50.73 report for any event or condition that prevented, or would have prevented, a RISC 1 or RISC 2 system, structure, or component from performing a safety significant function
- 10 CFR 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors"
- 10 CFR 50.73, "Licensee Event Report System"
- 10 CFR 70.50, "Reporting Requirements," for incidents involving special nuclear material
- 10 CFR 71.95, "Reports," concerning transportation incidents involving radioactive material
- 10 CFR 73.71, "Reporting of Safeguards Events" (physical protection)

These requirements have time constraints for reporting requirements between 1 hour and 60 days depending upon the event safety significance as defined in the U.S. Nuclear Regulatory Commission (NRC) rules and regulations. Immediate reporting of significant events such as those required by 10 CFR Part 20, "Standards for Protection against Radiation, 10 CFR 50.72, and 10 CFR 73.71 are made by telephone to the NRC Operations Center. The 10 CFR 50.72 and 50.73 regulations are explained in more detail in NUREG 1022, Revision 2, "Event Reporting Guidelines: 10 CFR 50.72 and 50.73," issued October 2000.

The Operations Center is always staffed for the receipt of reports of reactor events, materials events, and other information. It serves as the NRC's first response for events and activates the agency's response, as required. It notifies other Federal agencies of significant events. The Operations Center also provides prompt feedback to NRC Headquarters and the regional offices regarding reported events that require immediate regulatory attention. For example, the information on plant events is relayed to regional office duty officers, who then distribute the information to the responsible persons within their organization. Although an event may have the safety significance to require immediate response by the organization and dispatch of personnel to the reactor facility site, most of the reports only require notification of personnel within the organization directly responsible for oversight of the reactor facility. (However, the NRC routinely participates in emergency preparedness exercises conducted by reactor facility licensees. These exercises include activation of the NRC emergency response organization, coordination with other Federal, State and local agencies, and dispatch of an NRC onsite team).

These reports form part of the NRC system for obtaining operating experience (OpE) information relevant to nuclear safety, and for acting on the information in the appropriate regulatory manner. The NRR staff reviews the reactor event and other notifications to determine (1) the need for additional NRC action (such as performance of an inspection or issuance of a generic communication) and (2) that industry programs to identify and correct the reported deficiencies are operating effectively.

Management Directive (MD) 8.3, "NRC Incident Investigation Program," dated March 27, 2001, and MC 0309 provide criteria for determining which inspection procedure (IP) to enter. The onsite followup of events is a portion of the Reactor Oversight Process (ROP). IP 71153, "Follow-up of Events and Notices of Enforcement Discretion," dated February 2, 2010, provides guidance for abnormal events of lesser safety significance. It is not uncommon for an event to have enough safety significance to dispatch a team to the facility for further followup. In that case, NRC management may initiate a team inspection in accordance with IP 93812, "Special Inspection," dated March 23, 2009, for a special inspection, or IP 93800, "Augmented Inspection Team," dated March 23, 2009, for an augmented inspection team. Events of lesser safety significance may only require a written report to be submitted to the NRC by the facility licensee. For those reports, the ROP provides followup through IP 90712, "In-Office Review of Written Reports of Nonroutine Events at Power Reactor Facilities," dated December 31, 1998, and IP 92700, "Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities," dated December 31, 1998.

In addition, the reported events are reviewed at NRC Headquarters by a performance assessment team using plant-specific risk insights and the OpE branch to identify risk-significant and generic issues, and significant weaknesses in plant design, operation, or equipment. This centralized "OpE Clearinghouse" team collects, stores, screens, prioritizes, and distributes OpE information to interested users, conducts and facilitates OpE evaluation and application activities, facilitates communication of OpE lessons learned, and coordinates OpE activities among other organizations. These activities include the dissemination of OpE to technical branches for further review and evaluation by experts in the relevant fields. The appropriate technical branches also provide concurrence on the evaluation reports prepared by OpE staff.

In certain cases, these reported events are addressed through generic communications to the industry and other interested or potentially affected parties and are made available to the public through the Web.

The staff also uses the Accident Sequence Precursor Program to analyze events using probabilistic risk assessment techniques to determine conditional core damage probabilities. This program quantitatively evaluates operational operating experiences, and serves as one of several tools to ensure that

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important operating lessons learned are not overlooked.

As described in MD 8.7, “Reactor Operating Experience Program,” dated September 28, 2006, the Office of Nuclear Regulatory Research reviews and evaluates OpE to identify precursors to potential core damage sequences and to support the Industry Trends Program in the areas of initiating event frequencies, system and component reliability, and common-cause failures. It also supports near-term reviews, conducts analyses, and develops studies and evaluations on the basis of significant domestic and international OpE. In addition, the Office of Research oversees development of risk analysis tools and models and has instituted a program to provide periodic feedback to agency and licensee risk models based on OpE lessons learned from the application of these tools and models.

In addition to the methods described above for addressing event reports, the NRC also provides Congress and the public with the annual “Report to Congress on Abnormal Occurrences.” Section 208 of the Energy Reorganization Act of 1974 defines an “abnormal occurrence” (AO) as an unscheduled incident or event that the NRC determines to be significant from the standpoint of public health or safety. Event reports identified as AOs fall into one of the following AO criteria: I. For All Licensees; II. For Commercial Nuclear Power Plant Licensees; III. Events at Facilities other than Nuclear Power Plants and all Transportation Events; and IV. Other Events of Interest. The AO Working Group, comprised of technical staff from NRC Headquarters and the regions, determines which event reports meet the AO criteria. Only those event reports classified as AOs are included in the annual report to Congress.