

**Self-Assessment of the U.S. Nuclear Regulatory Commission's
Updated Incident Response Program
February 2021**

BACKGROUND

The U.S. Nuclear Regulatory Commission (NRC) maintains an incident response (IR) program to ensure that: the agency maintains its readiness to respond to an incident or event involving NRC-regulated activities that has the potential to adversely impact members of the public or environment; response is compatible with licensee responsibilities; response supports State and local government's emergency response functions; and response is coordinated with other Federal response. In 2004, the Office of the Inspector General (OIG) conducted an audit to determine whether the NRC's IR program: (1) is performed in a timely and effective manner; (2) provides adequate support to licensees; and (3) maintains readiness and qualifications of staff. On September 16, 2004,¹ OIG issued OIG-04-A-20, "Audit of the NRC's Incident Response Program," which concluded that the IR program was performed inconsistently, is not fully understood by licensees, and did not maintain a well-defined process for demonstrating that staff are qualified and ready to respond. The report identified 17 recommendations, related to the following 6 categories:

- Establish a well-defined, agencywide response plan;
- Develop plans for conducting protracted events;
- Evaluate the IR performance and regional programs. This should also include providing feedback to individual IR organization responders;
- Conduct robust exercises to include deployment of headquarters (HQ) and regional response staff, multiple events, and materials/fuel cycle facilities;
- Develop a training program and centralized database to track completion; and
- Conduct outreach for licensees.

In June 2010, the NRC staff completed its final actions necessary to satisfactorily address the recommendations and close the OIG's audit.

INCIDENT RESPONSE REORGANIZATION PROJECT

Over the past 2 years, the NRC staff embarked on an effort to overhaul the NRC's IR program and how staff responds to accidents or incidents at NRC-licensed facilities. The NRC formed a working group (WG) comprised of emergency response coordinators from HQ and all four regions to launch the multi-year Incident Response Reorganization Project (IRRP), which outlined the goals and steps to be taken to transform the NRC's IR program. The IRRP was designed to: (1) develop an agile IR program that could be staffed based on the severity of the event and expand and contract as necessary; (2) to better utilize resources across the agency; and (3) align with Federal doctrine. The WG used the lessons learned from the NRC's response to the Fukushima reactor accident and the NRC's response to hurricane events to update the IR program.² The WG developed new processes, response structures, and procedures to implement the new program and held several trainings and WG sessions to train over 400 existing responders on the new processes. Finally, the Office of Nuclear Security and

¹ Agencywide Documents Access and Management System (ADAMS) Accession No. ML042790283

² The new IR program is referred to as the "updated IR program." The IR program prior to November 2020 is referred to as the "legacy IR program."

Incident Response and the regions conducted four full-participation exercises to validate the updated IR program and procedures.

The NRC staff completed the IRRP by issuing a November 10, 2020, agencywide announcement that directed all NRC responders to use the new IR program procedures. As noted previously, the updated IR program:

- Aligns the NRC's response structure with those of other Federal response organizations to better synchronize a full Federal response to an event at an NRC-licensed facility;
- Transforms the IR program into an agencywide program that allows a flexible, scalable response structure, reducing the number of required positions that responders need to fill;
- Leverages current information technology improvements to incorporate responders from across the agency (regions and HQ) to establish a larger pool of responders that is no longer geographically fixed; and
- Fluidly expanded from a small response to a full agency response vice the mode steps in the legacy IR program.

PURPOSE

While the NRC staff effectively addressed the recommendations contained in OIG-04-A-20 and closed out the audit, the staff believed it would be a good measure of the effectiveness of the new program to reflect on the OIG-04-A-20 recommendations and conduct a self-assessment to benchmark how the updated IR program aligned with the OIG's 2004 recommendations.

PROCESS

Between January-February 2021, approximately 3 months after implementing the updated IR program, the NRC staff conducted a self-assessment of the IR program to determine if the changes aligned with the OIG's 17 recommendations. The self-assessment team (hereafter "the team")³ reviewed both approved and draft procedures that had been previously reviewed and approved by the internal staff-level (HQ and region) Incident Response Oversight Committee, as well as draft procedures that were in various stages of the approval process. In addition, the team also conducted interviews with key staff involved in the IRRP from HQ and the region to better understand the intent for procedures that were still in draft or not available for review at the time of the assessment. These interviews were helpful in identifying additional areas for improvement that would further enhance the program. Lastly, the team evaluated the close-out statements associated with the 17 recommendations identified in OIG-04-A-20 to gain an understanding of the basis for closure as well as some of the legacy IR program procedures that were put in place after the close-out actions.

³ Members of the team were not directly involved with the IRRP. This included staff whose primary responsibilities are to support the agency's continuity of operations program, as well as a developmental opportunity for a Nuclear Regulatory Apprenticeship Network (NRAN) employee. The NRAN employee gained insights on conducting programmatic self-assessments, while offering a neutral and non-biased perspective.

OBSERVATIONS

The team analyzed the legacy IR program, the program that included the modifications after the OIG audit, and the updated IR program to assess program effectiveness. Below are the team's observations related to the six categories for OIG recommendations.

AGENCY-WIDE RESPONSE PLAN

The team noted many positive aspects of the updated IR program that exceeded the recommendations from the OIG audit closeout statements. For example, OIG observed that there was no uniformity in regional response and HQ interaction. The updated IR program improves standardization and integrates the regional and HQ response as an agencywide level response. This ensures that the IR program is no longer geographically bound, provides better coordinated training to responders, and allows for more effective evaluations of the IR program.

CONDUCTING PROTRACTED EVENTS

The team identified significant enhancements in the updated IR program procedures for scheduling continued employee support during protracted events. The updated procedures incorporate lessons learned from the NRC's last protracted event, its response to the Fukushima reactor accident. These procedures assign the responsibilities to a new response group, the planning section, to (1) evaluate staffing needs, (2) contact qualified watch standers, and (3) develop a watch bill to ensure coverage for all positions, which includes recommended shifts for responders to address fatigue and support of other agency work.

EVALUATION OF IR PERFORMANCE AND REGIONAL PROGRAMS

The legacy and updated IR programs utilize the same evaluation and audit procedures, which enable effective internal assessments. This includes the development of an after-action report following each exercise, internal feedback, and assignment of corrective actions. In the legacy IR program, corrective actions were directly assigned to either HQ or the regions. The updated IR program establishes a common database, which assists in conducting trending analyses and will increase overall awareness of common issues while assigning the action to the appropriate programmatic area as needed.

Furthermore, the updated IR program established an exercise WG, with representatives from each of the regions and HQ. The exercise WG meets annually and establishes the exercise objectives for the following year, based upon lessons learned and will ensure that all aspects of the operational program (i.e., those parts of the IR program not designed specifically for program maintenance) are tested within a 3-year time frame.

The staff's use of a common corrective action program and the development of a WG to incorporate lessons learned into the following year's exercise objectives should enhance the staff's ability to evaluate and improve the updated IR program's performance.

OUTREACH TO LICENSEES

Consistent with staff's response to the OIG's recommendation, pre-exercise briefings include outreach to licensees as a key task to be performed prior to regional and HQ's participation in exercises. NRC response staff also continue to support external stakeholder engagements at

conferences such as the Nuclear Radiological Emergency Preparedness Conference and the NRC's Regulatory Information Conference.

The team assessed that changes made to the updated IR program should remain fairly transparent to licensees and other stakeholders. Additionally, similar to past exercise engagements, coordination between the licensee and the NRC during an active response would remain the same.

NON-EVALUATED AREAS

In the course of its review, the team identified several procedures that were still under development or pending planned updates and were therefore not ready for evaluation. Due to the NRC's response to the Coronavirus Disease 2019 pandemic, the updated IR program has not had the ability to exercise the actual deployment of onsite responders to licensee facilities. However, the team concluded that due to the specificity included in the updated IR procedures, the updated IR program has clearly delineated and robust steps in the procedures that define the roles and responsibilities needed to ensure that NRC staff are properly prepared when traveling to a licensee site as part of the response process.

MULTIPLE-EVENT RESPONSE EXERCISE

Similarly, the NRC has not had an opportunity to practice responding to a multiple licensee event scenario. A date for when the NRC will be able to conduct a multi-event response is yet to be determined. This response will test if there is sufficient flexibility in the IR program to respond to multiple events, given the scalable nature of the current response architecture, or if specific procedures need to be developed that help direct the NRC's actions during the challenges that may arise from a multiple event response. Finally, the NRC has not had an opportunity to conduct a fuel cycle exercise using the updated fuel cycle procedures. Observing such an exercise would be helpful to ensure that the NRC is ready to respond effectively to a fuel cycle-related event.

TRAINING PROGRAM

The team could not fully evaluate the IR training program or the process to electronically track qualifications in the agency's Talent Management System (TMS) at the time of the self-assessment because the draft procedures were not ready for review and the TMS process was not available to preview. Prior to the official implementation of the updated IR program, an interim qualification process was used for existing responders who were qualified under the legacy IR program. The interim qualification process blended previous response experience and knowledge into the updated response structure. While conducting the interviews with key staff, the team learned that there will be standardized qualification cards for the different response positions, utilization of the agency's TMS to provide a centralized location to track the individual responders' qualifications, and direct feedback to individual responders as part of continuing education.

CONCLUSION

The team recognizes the self-assessment was performed at the infancy of the updated IR program and is, therefore, an initial snapshot. The updated IR program continues to mature by correcting issues resulting from lessons learned collected after completing exercises with

licensees, finalizing new procedures, and responding to other identified programmatic needs raised by subject matter experts.

The team determined that the NRC's IR program continues to demonstrate that it is an effective response program that ensures the NRC's ability to conduct an independent evaluation of an event at NRC-licensed facility and respond as part of overall Federal government response.

RECOMMENDATION

Though the team concluded that this early review of the updated IR program found it to be effective, the staff recommends is that a similar self-assessment be completed in 2 years, which provides adequate time for the updated IR program to run through multiple iterations, as well as time for IR staff to gain more familiarity with the program and procedures.