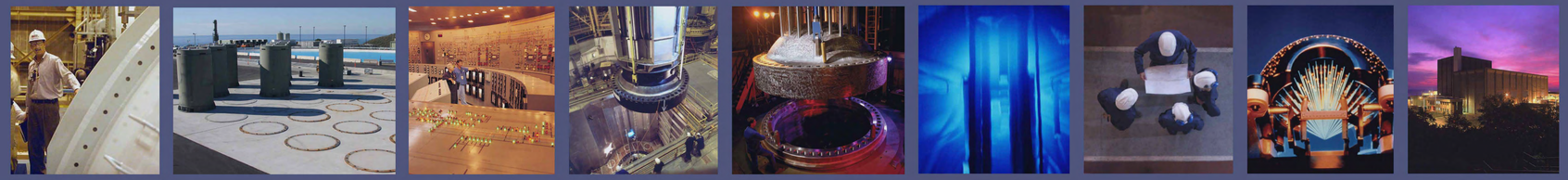
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

RIC 2012



One Year Later: Implementing Lessons Learned from Fukushima

Office of Nuclear Reactor Regulation

RIC Sessions Related to Fukushima Lessons Learned

Tuesday, March 13, 3:00 p.m. to 4:30 p.m.

T2 Discussion of Seismic Hazard Evaluation and the Regulatory Response to Recent Seismic Events (Salons A-C)

Wednesday, March 14, 1:30 p.m. to 3:00 p.m.

W10 Flooding: Lessons Learned and Near-Term Regulatory Actions (Salon D)

W13 Proposed Emergency Preparedness Regulatory Activities and Incident Response Improvements Following Real-World Events (Salons F-H)

Wednesday, March 14, 3:30 p.m. to 5:00 p.m.

W16 Near-Term Issues Related to Spent Fuel Pools (Salons A-C)

W18 Regulatory Actions on Extended Station Blackout Events (Salon E)

Thursday, March 15, 8:30 a.m. to 10:00 a.m.

TH25 Post-Fukushima International Research (Salons F-H)

TH28 Thermal-Hydraulic and Severe Accident Research (White Flint Amphitheater)

Thursday, March 15, 10:30 a.m. to 12:00 p.m.

TH34 Regulatory Actions Regarding Containment Venting and Filtration (Salon E)

Timeline: Major NRC Actions

March 11, 2011 A magnitude 9.0 earthquake struck near Honshu, Japan, generating an estimated 45-foot tsunami at the Fukushima Daiichi site.

March 23, 2011, Temporary Instruction (TI) 2515/183
The NRC gave guidance to its inspectors to assess the adequacy of actions U.S. licensees have taken in response to the Fukushima accident.

March 31, 2011, Information Notice (IN), 2011-08
NRC staff reported on the status of nuclear power plants (NPPs) in Japan and prompted U.S. fuel facilities to ensure that features necessary to address severe external events were reasonable.

March 18, 2011, Information Notice (IN) 2011-05 NRC staff reported on the status of NPPs in Japan and prompted U.S. reactor licensees to consider actions to avoid similar problems.

April 29, 2011, Temporary Instruction (TI) 2515/184
The NRC gave guidance to its inspectors to assess the state of severe accident management guidelines (SAMGs) at U.S. facilities.

May 11, 2011, NRC Bulletin 2011-01
The NRC required NPP licensees to verify compliance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(hh)(2) and respond with information about their mitigating strategies programs.

July 12, 2011, Near-Term Task Force (NTTF) Review of Insights from the Fukushima Dai-ichi Accident SECY-11-0093 The NTTF provided 12 recommendations to the Commission for enhancing reactor safety.

September 9, 2011, SECY-11-0124 NRC staff presented to the Commission the NTTF recommendations that should be initiated without delay.

September 30, 2011, Temporary Instruction (TI) 2600/0015 The NRC instructed its inspectors to verify that fuel cycle facilities are prepared to prevent and/or mitigate the consequences of selected safety- and licensing-basis events.

October 3, 2011, SECY-11-0137
NRC staff proposed to the Commission a three tier prioritization of the NTTF recommendations.

October 18, 2011, SRM The Commission approved the NRC staff's proposal to implement recommendations described in **SECY-11-0124** within 5 years (by 2016).

December 15, 2011, SRM The Commission approved the staff's proposed prioritization of the NTTF recommendations described in **SECY-11-0137**.

Public Meetings The NRC held 14 public meetings between July 2011 and January 2012 to obtain stakeholder input.

February 17, 2012, SECY-12-0025 NRC staff proposed to the Commission three orders and a request for information to be issued.

Near-Term Actions to be Taken Without Delay (Tier 1 Recommendations)

Orders

- Develop strategies to mitigate beyond design basis natural phenomena that address multi-unit events and reasonable protection of equipment (derived from Recommendation 4.2).
- Install reliable hardened vents in boiling water reactors with Mark I and II containments (derived from Recommendation 5.1).
- Install enhanced spent fuel pool level instrumentation (derived from Recommendation 7.1).

Request For Information Under 10 CFR 50.54(f)

- Reevaluate seismic and flooding hazards (derived from Recommendation 2.1).
- Perform walkdowns of seismic and flooding hazards (derived from Recommendation 2.3).
- Assess staffing and communications equipment needs to respond to multiunit events and prolonged station blackout (SBO) (derived from Recommendation 9.3).

Rulemaking

- Modify the SBO rule to enhance SBO mitigation capability (derived from Recommendation 4.1).
- Strengthen and integrate onsite emergency response procedures, training, and exercises (derived from Recommendation 8).

Next Steps

After issuing the orders and request for information, the NRC expects to conduct these followon activities:

- Meet with stakeholders to answer questions and discuss the development of guidance that licensees will use to respond to the orders and request for information.
- Evaluate licensee responses to the orders and request for information to determine the adequacy of the responses.
- Conduct inspections after implementation to verify compliance with orders and any commitments made by licensees in response to the request for information.
- Continue to work on longer term (Tier 2 and Tier 3) actions and evaluations while completing the Tier 1 rulemakings.

Tier 2

- Enhance spent fuel pool makeup capability.
- Take additional emergency preparedness (EP) regulatory actions.

Tier 3

- Confirm seismic and flooding hazards.
- Evaluate the need for reliable hardened vents in other containment designs.
- Assess the need for hydrogen control and mitigation inside containment and other buildings.
- Make additional EP enhancements to address prolonged SBO and multiunit events.
- Evaluate the need to enhance Emergency Response Data System capability.
- Modify the Reactor Oversight Process to reflect revised defense in depth framework.
- Enhance NRC staff training on severe accidents and SAMGs.

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