

Status of Fukushima Lessons Learned Actions

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**Joint Steering Committee Meeting
April 10, 2012**

Agenda

- **NRC Welcome and Opening Remarks**
- **Industry Opening Remarks**
- **NRC Presentation**
- **Industry Presentation**
- **Discussion with Industry**
 - **Mitigating Strategies**
 - **Vents**
 - **Spent Fuel Pool Instrumentation**
 - **Seismic Walkdowns and Reevaluations**
 - **Flooding Walkdowns and Reevaluations**
 - **Emergency Preparedness Staffing and Communications**
- **Public Comments**

Brief History

- **July 2011**
 - Near-Term Task Force (NTTF) report issued
- **September/October 2011**
 - NTTF recommendations prioritized
- **February 2012**
 - Draft orders and requests for information provided to the Commission
- **March 2012**
 - Tier 1 orders and requests for information issued on March 12, 2012

Schedule Overview – Orders

Milestone	Operating Reactors	Combined License Holders	Construction Permit Holders
Guidance Issued	August 31, 2012	August 31, 2012	August 31, 2012
1 st Update	October 31, 2012	October 31, 2012	October 31, 2012
Plan Submitted	February 28, 2013	August 31, 2013	August 31, 2013
Periodic Updates	Every six months	Every six months	Every six months
Latest Completion	December 31, 2016	Prior to initial fuel load	Prior to receipt of operating license

Order for Mitigating Strategies for Beyond Design Basis External Events

- **Issues for further discussion**
 - Loss of normal access to ultimate heat sink
 - Backup power for hydrogen igniters
- **Date for next public meeting not yet set**
- **Plan to issue proposed interim staff guidance (ISG) for comment by end of May**

Order for Reliable Hardened BWR Vents

- **Issues for further discussion**
 - No major issues
 - Staff continues to evaluate merits of vent filtration for July Commission paper
- **Next public meeting May 2**
- **Plan to issue proposed ISG for comment by end of May**

Order for Reliable Spent Fuel Pool Instrumentation

- **Issues for further discussion**
 - Water level monitoring and associated actions: top of fuel racks (L3) vs. ten feet above fuel (L2)
 - Order imposes only monitoring capability
- **Next public meetings April 18 and May 1**
- **Plan to issue proposed ISG for comment by end of May**

Schedule Overview – Guidance for Requests for Information

50.54(f) Request	Guidance Issued or Endorsed
Seismic/Flooding Walkdowns	May 31, 2012
Seismic/Flooding Reevaluations	November 30, 2012
Emergency Preparedness – Communications and Staffing	April 30, 2012

Seismic Reevaluations and Walkdowns

- **Issues for further discussion**
 - No major issues
 - Significant work remains to flesh out specifics for guidance document
- **Public conference call set for April 17**
- **Plan to issue or endorse guidance for walkdowns, and screening and prioritization, by end of May**

Flooding Reevaluations and Walkdowns

- **Issues for further discussion**
 - Reporting of “cliff-edge” effects
- **Next public meeting April 11-12**
- **Plan to issue or endorse guidance for walkdowns and prioritization by end of May**

Emergency Preparedness – Staffing and Communications

- **Issues for further discussion**
 - Definition of “Impeded Access” with an emphasis on the time of “no site access”
- **Date for next public meeting not yet set**
- **Plan to issue or endorse guidance in accordance with established schedule**

Rulemaking Activities

- **Station Blackout Rule**
 - Advance Notice of Proposed Rulemaking (ANPR) issued on March 20
 - Public meeting planned for April 25
- **Integration of EOPs, SAMGs, and EDMGs**
 - Public meeting held on February 15
 - ANPR on schedule for mid-April issuance
 - Next public meeting planned for May 23
- **Recommendation 1 – Regulatory Framework**
 - Public meeting in summer 2012

Other Near-Term Activities

- **Filtered Containment Vents**
 - NRC staff assessing issue technically
 - Reviewing insights from analytical tools (SOARCA, MELCOR)
 - Reviewing existing filter designs and capabilities
 - Engaging international counterparts
 - Plan to provide recommendation to Commission in July 2012

Tier 3 Plans

- **Recommendations to Commission in July**
 - Public meetings tentatively planned for May 3, 7, 14
 - ACRS meetings planned May 22-23 and June 6
- **Some plans may require longer-term study**
 - Decision for regulatory action based on results
- **Some are dependent on Tier 1 completion**
- **Each Tier 3 given to a lead technical organization within NRC**

Inspections

- **Near-term inspections for seismic and flooding walkdowns**
- **Longer-term: Conduct inspections following full implementation**
 - **Use Temporary Instructions**
 - **Expect to complete within six months of full implementation**
 - **Subject to normal ROP process**

Seismic and Flooding Walkdown Inspections

- **Temporary Instruction**
 - Verify walkdowns conducted in accordance with guidance
 - Independent NRC walkdowns
- **Dispositioning Findings**
 - Compliance issues (degraded or nonconforming)
 - Normal ROP
 - Issues outside licensing basis

Steering Committee Guiding Principles

- **Five Principles:**
 - **Do not distract from safety**
 - **Disciplined screening of additional issues**
 - **Do not displace more safety significant work**
 - **Do it right the first time**
 - **Sound basis for decisions**

BACKUP SLIDES

Tier 1 Activities

RFI – Seismic and flooding reevaluations

RFI – Seismic and flooding walkdowns

Rulemaking – Station blackout

EA-12-049 – Mitigating strategies for beyond design basis events

EA-12-050 – Reliable hardened vents for Mark I and II containments

EA-12-051 – Spent fuel pool instrumentation

Rulemaking – Integration of emergency procedures

RFI – Enhanced EP staffing and communications

Tier 2 Recommendations

- **Spent fuel pool makeup capability (Recommendation 7.2 – 7.5)**
 - Order licensees to provide safety-related AC electrical power for SFP makeup
 - Order licensees to revise their technical specifications to address requirements to have one train of onsite emergency electrical power operable for SFP makeup and SFP instrumentation when there is irradiated fuel in the SFP, regardless of the operational mode of the reactor.
 - Order licensees to have an installed seismically qualified means to spray water into the SFPs, including an easily accessible connection to supply the water.
- **Emergency preparedness regulatory actions (Recommendation 9.3b)**
 - Require licensees to have guidance for multiunit dose assessment capability
 - Require licensees to hold training and exercises for multi unit and prolonged SBO scenarios
 - Require that licensees practice the identification and acquisition of offsite resources
 - Require that licensees ensure that EP equipment and facilities are sufficient for dealing with multiunit and prolonged SBO scenarios,
- **Other (Related to Recommendation 1)**
 - Request that licensees perform an other external hazards evaluation

Tier 3 Recommendations

- 2.2 Ten-year confirmation of seismic and flooding hazards
 - 3 Potential enhancements to the capability to prevent or mitigate seismically induced fires and floods
- 5.2 Reliable hardened vents for other containment designs
 - 6 Hydrogen control and mitigation inside containment or in other buildings
- 9.1/9.2 Emergency preparedness (EP) enhancements for prolonged SBO and multiunit events
 - 9.3 ERDS capability
 - 10 Additional EP topics for prolonged SBO and multiunit events
 - 11 EP topics for decision-making, radiation monitoring, and public education
- 12.1 Reactor Oversight Process modifications to reflect the recommended defense-in-depth framework
- 12.2 Staff training on severe accidents and resident inspector training on SAMGs
 - Basis of Emergency Planning Zone Size (Additional Issue)
 - Prestaging of potassium iodide beyond 10 mile (Additional Issue)
 - Transfer of spent fuel to dry cask storage (Additional Issue)
 - Reactor and Containment Instrumentation (Additional Issue)

Schedule Overview – 50.54(f) Letter Seismic/Flooding Reevaluations

Milestone	Operating Reactors and Construction Permit Holders
Guidance Issued	November 30, 2012
Initial Response	January 30, 2013
Licensee Seismic Hazard Evaluations Due	September 9, 2013 (CEUS) / March 9, 2015 (WUS)
Licensee Flooding Hazard Evaluations Due	March 9, 2013 – March 9, 2015 (based on prioritization)
Future Steps	Pending NRC evaluation and prioritization, with completion of evaluations for all facilities between October 2016 and April 2019

Schedule Overview – 50.54(f) Letter Seismic/Flooding Walkdowns

Milestone	Operating Reactors
Guidance Issued or Endorsed	~ May 2012
Licensees Identify Walkdown Procedures To Be Used	June 9, 2012 (flooding) / July 9, 2012 (seismic)
Licensees Provide Results of Walkdowns	180 days after NRC endorsement of the walkdown procedure (~Feb/March 2013)

Schedule Overview – 50.54(f) Letter E.P. – Staffing and Communications

Milestone	Operating Reactors, Combined License Holders, and Construction Permit Holders
Mitigating Strategies Order – Guidance Issued or Endorsed	August 31, 2012
Licensee Responses	<p>June 9, 2012 (communications)</p> <p>June 9, 2012 (staffing items 3 through 6)</p> <p>October 31, 2012 (staffing items 1 and 2)*</p> <p>* 60 days after issuance of guidance associated with mitigating strategies order</p>