

# ***Status of Fukushima Lessons Learned Actions***

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For Reactor and Preparedness Programs**

**Joint Steering Committee Meeting  
May 18, 2012**

# ***Agenda***

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

# *Purpose*

**Today's Joint Steering Committee Meeting to:**

- **Discuss Tier 1 Issues and Status; Agree on Shared View of List of Issues, and Identify Any Significant Differences**
- **Discuss Path Forward on Resolution of Issues**
- **Review Tier 2 and Tier 3 Recommendations**

# ***Brief History***

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

# Schedule Overview – Orders

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

# ***Order for Mitigating Strategies for Beyond-Design-Basis External Events***

- **Issues for further discussion**
  - **Augmented/Consensus Standards**
  - **Backup power for hydrogen igniters**
  - **Use of reactor analysis codes**
- **Next public meeting May 30**
- **Plan to issue proposed interim staff guidance (ISG) for comment by end of May**









# ***Order for Reliable Hardened BWR Vents***

- **Public meeting held May 2**
  - **General alignment on ISG**
  - **Await BWROG input on ISG (mid-May)**
  - **No major issues**
- **Next public meeting May 23**
- **Plan to issue proposed ISG for comment by end of May**



# ***Filtered Vent Issue***

- **NRC staff action:**
  - **Assessing issue technically**
  - **Reviewing insights from recent research efforts**
  - **Reviewed available filter designs and capabilities**
  - **Engaged international counterparts**
  - **Plan to provide recommendation to Commission in July 2012**



# ***Order for Reliable Spent Fuel Pool Instrumentation***

- **No major issues**
- **May 11 - Industry submitted NEI 12-02**
- **June 1 - Staff plans to issue draft ISG for comment**
- **June 21 - Public meeting to receive stakeholder comments on draft ISG**



# ***Schedule Overview – Guidance for Requests for Information***

<b>50.54(f) Request</b>	<b>Guidance Issued or Endorsed</b>
<b>Flooding Reevaluation Prioritization Letter</b>	<b>May 11, 2012 (Complete)</b>
<b>Seismic/Flooding Walkdowns</b>	<b>May 31, 2012</b>
<b>Seismic/Flooding Reevaluations (Integrated/Risk Assessment Guidance)</b>	<b>November 30, 2012</b>
<b>Emergency Preparedness – Communications and Staffing</b>	<b>May 14, 2012 (Complete)</b>



# ***Seismic Walkdown and Reevaluation***

- **Walkdown Guidance Development**
  - No major issues
  - Goal to endorse by May 31, 2012
- **Reevaluation Screening and Prioritization Guidance**
  - Guidance development underway
  - Significant work remains to address specifics

# ***Flooding Walkdowns and Reevaluations***

- **Plan to issue or endorse guidance for walkdowns by end of May**
- **Prioritization list issued May 11**
- **Issues resolved since last meeting**
  - **“Cliff-edge” effects will be recorded as “available physical margin” and retained onsite for inspection/audit**
- **Next public meeting June 13-14**





# ***Emergency Preparedness – Staffing and Communications***

- **No outstanding issues remain**
  - “No site access” definition: NRC has agreed 6 hour minimum with a discussion of how the staff will access the site
  - Issues with the link to Rec. 4.2 are resolved
- **NEI 12-01 endorsed by NRC**
  - Endorsement letter sent May 14
- **60-day responses: alternative schedules proposed by many licensees**

# ***Rulemaking Activities***

- **Station Blackout Rule**
  - Advance Notice of Proposed Rulemaking (ANPR) issued on March 20
  - Public meeting held on April 25
  - Comment period closed May 4; staff reviewing feedback
- **Integration of EOPs, SAMGs, and EDMGs**
  - ANPR issued on April 18
  - Next public meeting planned for May 23
  - Comment period closes June 18
- **Recommendation 1 – Regulatory Framework**
  - Public meeting to be held summer 2012



# ***Tier 2 Update***

- **Spent fuel pool makeup capability (Recommendations 7.2 – 7.5)**
  - Plan remains consistent with description in SECY-11-0137
  - Initiate rulemaking that is informed by insights gained from Tier 1 Recommendations (namely, Rec. 2.1, 4.1, and 4.2)
- **Emergency preparedness (EP) regulatory actions (Rec. 9.3b)**
  - Plan to issue ANPR that addresses this item and several Tier 3 EP items (namely, Rec. 9.1 – 9.4, 10, and 11)
- **Evaluation of external hazards other than seismic and flooding**
  - Added as Tier 2 in SECY-12-0025 as result of ACRS comments and Congressional legislation
  - Expect to prepare request for information after gaining insights from seismic and flooding walkdowns and reevaluations





# ***Tier 3 Plans***

- **Recommendations to Commission in July**
  - Public meetings held on 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 is being addressed by a lead technical organization within NRC**

# ***Steering Committee Successes and Challenges***

- **Made considerable progress towards achieving established milestones**
- **Communication with all stakeholders has been beneficial**
- **Need to maintain our focus on resolving outstanding issues**



# BACKUP SLIDES

# ***Tier 1 Activities***

## **Orders**

- EA-12-049 – Mitigating strategies beyond design basis events**
- EA-12-050 – Hardened vents for Mark I and II containments**
- EA-12-051 – Spent fuel pool instrumentation**

## **Request for Information under 50.54(f)**

- Seismic and flooding walkdowns**
- Seismic and flooding reevaluations**
- Enhanced EP staffing and communications**

## **Rulemakings**

- Station blackout (SBO)**
- Integration of emergency procedures**

# ***Tier 2 Recommendations***

- **Spent fuel pool makeup capability – Order licensees to:**
  - Provide safety-related AC electrical power for SFP makeup
  - Revise TS to require one train of onsite emergency electrical power be operable for SFP makeup and SFP instrumentation whenever irradiated fuel is in the SFP
  - Have an installed means to spray water into the SFP, including an easily accessible connection to supply the water.
- **Emergency preparedness – Require licensees to:**
  - Have guidance for multiunit dose assessment capability
  - Hold training and exercises for multi unit and prolonged SBO scenarios
  - Practice the identification and acquisition of offsite resources
  - Ensure that sufficient EP equipment and facilities exist to deal with multiunit and prolonged SBO scenarios,
- **Reevaluation of other external hazards**
  - Request licensees reevaluate external hazards (other than seismic and flooding)

# ***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 11, 2012 (flooding) / July 9, 2012 (seismic)
Licensees Provide Results of Walkdowns	180 days after NRC endorsement of the walkdown procedure (~December 2012)

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

Milestone	Operating Reactors, Combined License Holders, and Construction Permit Holders
Mitigating Strategies Order	August 31, 2012
– Guidance Issued or Endorsed	
Licensee Responses	June 8, 2012 (communications)
	June 8, 2012 (staffing items 3 through 6)
	October 31, 2012 (staffing items 1 and 2)*

\* 60 days after issuance of guidance associated with mitigating strategies order