

Status Update on Implementation of the NTTF Recommendations

February 16, 2012

Background - Schedule

- **SECY-11-0137 placed the NTTF recommendations into three tiers, identified six additional issues for consideration and provided the staff's proposed approach and schedule for issuing Tier 1 Orders and 50.54(f) letters within 6 to 8 months of Commission approval**
- **SRM-SECY-11-0137 approved the staff's paper without significant schedule modification except in accordance with direction as provided in SRM-SECY-11-0124:**
 - **24-30 months for SBO rulemaking with an ANPR**
 - **Strive to complete and implement lessons learned within 5 years – 2016**
- **Recent events, stakeholder expectations and input have caused the staff to reconsider its proposed approach and schedule for Orders and 50.54(f) letters**
- **The staff has modified our approach and is accelerating the schedule to provide the Tier 1 Orders and 50.54(f) letters to the Commission on February 17, 2012**

Developments Since October

- **Staff Activities since October**
 - Established Japan Lessons Learned Project Directorate
 - Public Meetings
 - Meetings with Advisory Committee on Reactor Safeguards (ACRS)
 - Developed Tier 1 Orders and Requests for Information
- **Basis for Modification**
 - House and Senate Hearings
 - Language in the NRC's Appropriations Bill
 - ACRS letters dated October 13, 2011 and November 8, 2011
 - Stakeholder input from multiple public meetings
 - Resolution of the 6 additional issues from SECY-11-0137

Current Tier 1 Activities

- 2.1 – Seismic and flooding reevaluations**
- 2.3 – Seismic and flooding walkdowns**
- 4.1 – Station blackout rulemaking**
- 4.2 – Mitigating strategies for beyond design basis events**
- 5.1 – Reliable hardened vents for Mark I and II containments**
- 7.1 – Spent fuel pool instrumentation**
- 8.0 – Integration of emergency procedures rulemaking**
- 9.3 – Enhanced EP staffing and communications**

Recommendation 2.1

- **Seismic and Flooding Reevaluations:**
 - **Request:**
 - Licensees will be asked to perform and provide the results of a reevaluation of the hazards at their sites using present day NRC requirements and guidance and identify actions that are planned to address vulnerabilities. The results will determine whether additional regulatory actions are necessary (e.g., ordering plant modifications).
 - **Timeline:**
 - Within 180 days following issuance of the 50.54(f) letter each licensee is requested to submit a risk assessment approach, including acceptance criteria.
 - Site responses will be prioritized, however, all site hazard evaluations will be expected within 3 years.

Recommendation 2.3

- **Seismic and Flooding Walkdowns:**
 - **Request:**
 - Licensees will be requested to develop a methodology and acceptance criteria and perform walkdowns. We expect any performance deficiencies identified would be addressed by the site's corrective action program.
 - **Timeline:**
 - Licensees will be asked to confirm that they will be using the walkdown procedures jointly developed by the NRC and industry or provide an alternative within 90 days for flooding or within 120 days for seismic. Within 180 days after the NRC endorses the licensee's procedure, the licensees will be asked to provide the results of the walkdowns.
 - **Enhancement**
 - The staff evaluated an ACRS request (in addition to the language provided in Section 402 of the Consolidated Appropriations Act) and expanded the scope of the walkdowns to include the "integrated effects of severe storms" that are within the licensing basis for each plant.

Recommendation 4.2

- **Mitigating Strategies for Beyond Design Basis External Events:**

- **Requirement:**

- The Order requires a three-phase approach for mitigating beyond design basis external events. The initial phase requires the use of installed equipment and resources to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities. The transition phase requires providing sufficient, portable, onsite equipment and consumables to maintain or restore these functions until they can be accomplished with resources brought from offsite. The final phase requires obtaining sufficient offsite resources to sustain those functions indefinitely.

- **Timeline:**

- Implementation guidance (ISG) issued by August 31, 2012
 - The licensees shall submit their plans to the NRC by February 28, 2013
 - Full implementation to be completed no later than two refueling cycles after submittal of a licensee's plan or December 31, 2016, whichever comes first

- **Enhancement**

- Informed by the industry's FLEX paper, the staff has expanded upon the original NTTF recommendation regarding the protection of 50.54(hh)(2) equipment to include the identification and protection of equipment needed to prevent and mitigate beyond design basis events.

Recommendation 5.1

- **Reliable Hardened BWR Vents:**
 - **Requirement:**
 - BWR Mark I and Mark II containments shall have a reliable hardened vent to remove decay heat and maintain control of containment pressure within acceptable limits following beyond design basis events that result in the loss of active containment heat removal capability or prolonged SBO. The hardened vent system shall be accessible and operable under a range of conditions, including a prolonged SBO and plant conditions resulting from inadequate containment cooling.
 - **Timeline:**
 - Implementation guidance (ISG) issued by August 31, 2012
 - The licensees shall submit their plans to the NRC by February 28, 2013
 - Full implementation to be completed no later than two refueling cycles after submittal of a licensee's plan or December 31, 2016, whichever comes first
 - **Enhancement**
 - The staff has expanded this recommendation to include both Mark I and Mark II containments.

Recommendation 7.1

- **Reliable Spent Fuel Pool Instrumentation:**

- **Requirement:**

- All operating reactors shall have a reliable indication of the water level in associated spent fuel storage pools capable of supporting identification of the following pool water level conditions by trained personnel: 1) level that is adequate to support operation of the normal fuel pool cooling system, 2) level that is adequate to provide substantial radiation shielding for a person standing on the spent fuel pool operating deck, and 3) level where fuel remains covered and actions to implement make-up water addition should no longer be deferred.

- **Timeline:**

- Implementation guidance (ISG) issued by August 31, 2012
 - The licensees shall submit their plans to the NRC by February 28, 2013
 - Full implementation to be completed no later than two refueling cycles after submittal of a licensee's plan or December 31, 2016, whichever comes first

- **Enhancement**

- This has been expanded to specify the types of environments within which the instrumentation needs to function. The staff has also used a risk-informed approach to structure the proposed order.

Recommendation 9.3

- **Enhanced EP Staffing and Communications:**
 - **Request:**
 - Licensees will be requested to provide an assessment of current communications and equipment used during an emergency to ensure that power is maintained during a large scale natural event.
 - Licensees will be requested to provide an assessment of the staff needed to respond to a large scale natural event and to implement strategies contained in the emergency plan.
 - **Timeline:**
 - Written responses expected within 90 days
 - **Enhancement**
 - The communications portion has been expanded to include a systems level view of the equipment and the means to provide power to it.

Recommendations 4.1 and 8

- **Station Blackout Rulemaking:**

- **Path Forward:**

- SRM-SECY-11-0124 directed the staff to “initiate the rulemaking as an advance notice of proposed rulemaking (ANPR) rather than a proposed rule”

- **Timeline:**

- ANPR is in concurrence and is expected to be issued by March 2012
 - Commission directed that SBO rulemaking be completed within 24-30 months

- **Enhancement**

- The use of the ANPR to allow for early stakeholder involvement and formal comments. The staff has also identified that the strategies included in this rulemaking will be influenced by the results from Recommendation 4.2.

- **Emergency Procedures Integration Rulemaking:**

- **Path Forward:**

- Staff will publish an ANPR and hold a public meeting during comment period
 - Results of ANPR will be incorporated into a regulatory basis and proposed rulemaking activities

- **Timeline:**

- Rulemaking will follow the timeline contained in SECY-11-0137 and be completed in 2016

Other Recommendations for NRC Action

- **Tier 2 Recommendations – Could not be initiated in the near term due to resource or critical skill set limitations**
- **Tier 3 Recommendations – Require further staff study to support a regulatory action**

Next Steps

- **February 17th – Provide Commission with a notation vote paper on issuance of Orders with 50.54(f) letters attached for information**
- **March 9th – Issue 50.54(f) letters and, assuming Commission approval by March 2nd, issue orders**
- **After March 9th – Continue stakeholder interaction in support of any necessary guidance development**

BACKUP SLIDES

Background - Stakeholder Meetings

- Public Meeting: NTTF Review of NRC Processes and Regulations – July 28, 2011
- Public Meeting: Obtain Feedback on NTTF Recommendations – Aug. 31, 2011
- Public Meeting: NTTF Report – Short Term Actions – Sept. 14, 2011
- Public Meeting: NTTF Report – Prioritization of Recommendations – Oct. 11, 2011
- INPO Steering Committee Meeting – Nov. 18, 2011
- Commission Meeting with ACRS – Nov. 29, 2011
- Public Meeting: Implementation of NTTF Recommendations – Dec. 1, 2011
- Industry/NRC Joint Steering Committee Meeting #1 – Dec. 1, 2011
- Public Meeting: Fukushima Impact on EPR Design (AREVA) – Dec. 7, 2011
- Public Meeting: NTTF Recommendation 9.3 Implementation – Dec. 12, 2011
- Public Meeting: NTTF Recommendations 2.1 & 2.3 Implementation – Dec. 14, 2011
- Public Meeting: NTTF Recommendation 5.1 Implementation – Dec. 15, 2011
- Public Meeting: NTTF Recommendation 7.1 Implementation – Dec. 15, 2011
- Public Meeting – NTTF Recommendation 9.3 – Jan. 9, 2012
- Industry/NRC Joint Steering Committee Meeting #2 – Jan. 13, 2012

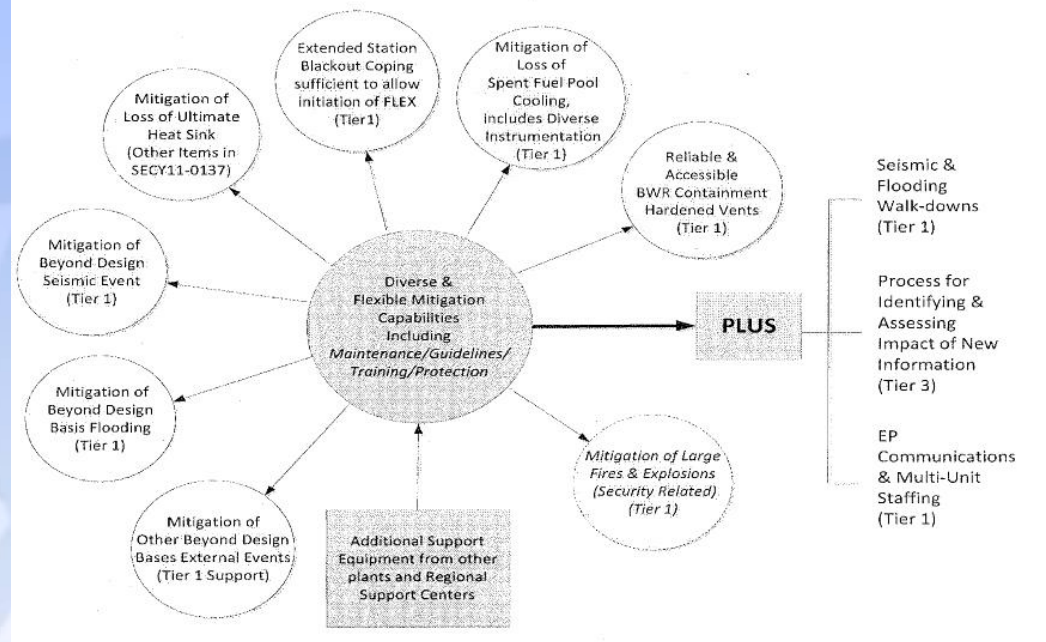
Background- Stakeholder Meetings

- **Recommendation-Specific Public Meetings**
 - **Recommendation 5.1 – Reliable Hardened BWR Vents: January 17, 2012**
 - **Recommendations 2.1 and 2.3 – Seismic and Flooding Reevaluations and Walkdowns: January 18, 2012**
 - **Recommendation 4.2 – Mitigating Strategies for Beyond Design Basis Events**
 - **Recommendation 9.3 – EP Staffing and Communications: January 19, 2012**
 - **Recommendation 7.1 – Spent Fuel Instrumentation: January 19, 2012**

Staff Assessment of FLEX

- December 16 – NEI provided a letter outlining the industry's proposed diverse and flexible approach (FLEX) for mitigating the effects of severe natural phenomenon
- The staff believes FLEX may provide an acceptable methodology for developing enhancements in accordance with the NTF recommendations for beyond design basis events
- However, the staff believes that the specific enhancements must demonstrate both strengthened and flexible approaches that are inspectable and enforceable

Figure 2
Improved Tier 1 with FLEX



NRC 2012 Appropriations

- **Section 402 - All hazards:**

The Nuclear Regulatory Commission shall require reactor licensees to re-evaluate the seismic, tsunami, flooding, and other external hazards at their sites against current applicable Commission requirements and guidance for such licensees as expeditiously as possible, and thereafter when appropriate, as determined by the Commission, and require each licensee to respond to the Commission that the design basis for each reactor meets the requirements of its license, current applicable requirements and guidance for such license. Based upon the evaluations conducted pursuant to this section and other information it deems relevant, the Commission shall require licensees to update the design basis for each reactor, if necessary.

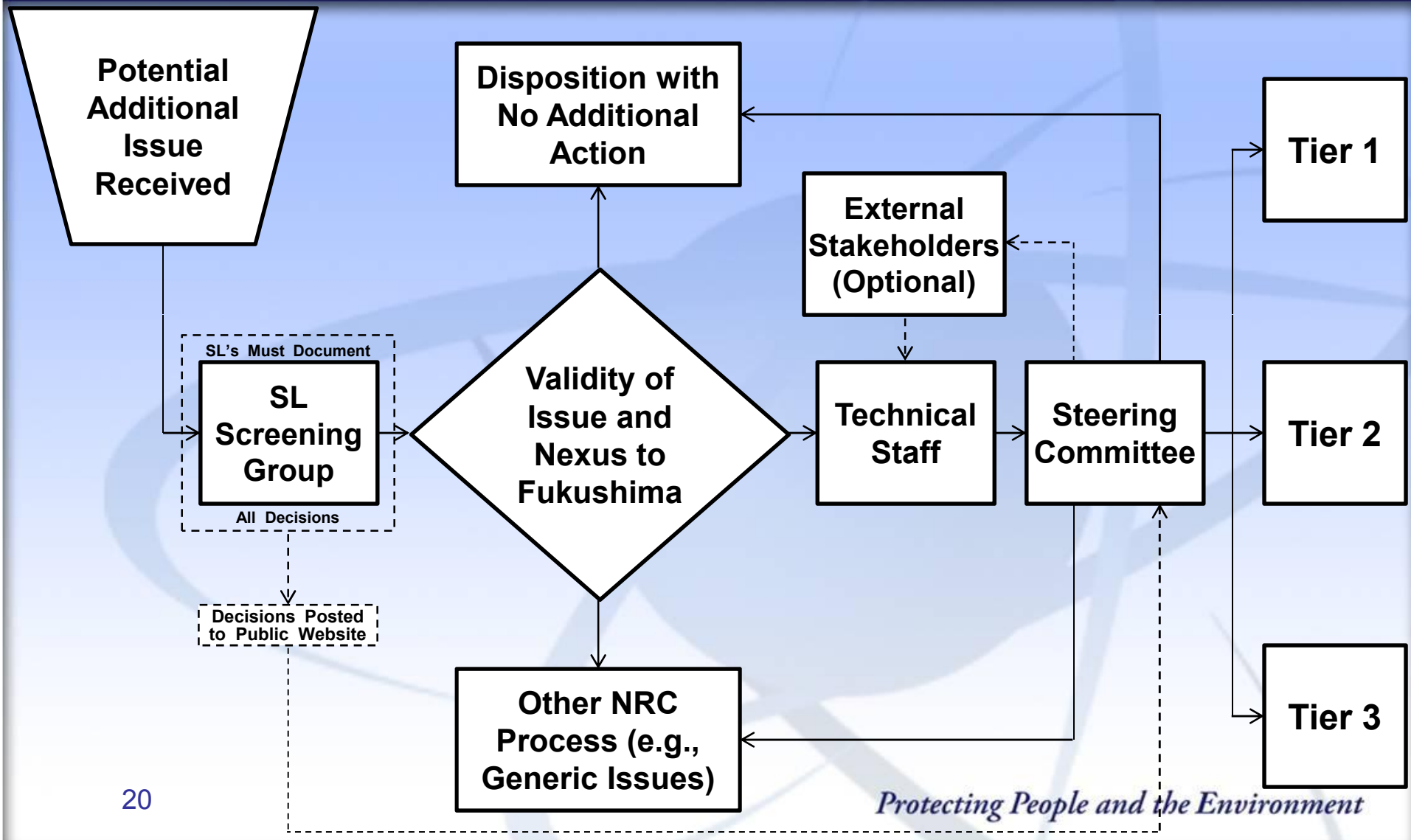
- **Accelerated Schedule:**

...The conferees direct the Commission to implement these [Tier 1] recommendations consistent with, or more expeditiously than, the schedules and milestones" proposed by NRC staff on October 3, 2011. The conferees direct the Commission to maintain an implementation schedule such that the remaining recommendations (not identified as Tier I priorities) will be evaluated and acted upon as expeditiously as practicable. The conferees request that the Commission provide a written status report to the House and Senate Committees on Appropriations on its implementation of the Task Force recommendations on the one year anniversary of the Fukushima disaster.

ACRS Recommendations

- The staff developed a process for reviewing stakeholder recommendations to ensure a disciplined approach was applied for identifying lessons learned from Fukushima
- ACRS provided its recommendations to the Commission and staff in letters dated October 13 and November 8, 2011
- All ACRS recommendations have been reviewed and prioritized

Reviewing Additional Recommendations



Six Additional Issues – SECY-11-0137

- **Staff reviewed and prioritized the 6 additional issues in SECY-11-0137:**
 - **Filtration of containment vents**
 - Preamble to the Tier 1 Orders on reliable hardened vent systems will identify filters as an issue under consideration
 - Policy issues will be presented in a Commission Paper in July 2012
 - **Instrumentation for seismic monitoring**
 - Addressed by NRR action outside of the Fukushima lessons learned process
 - **Basis of emergency planning zone size**
 - Tier 3 – Current approach is adequate, validate with Level 3 PRA effort results
 - **Prestaging of potassium iodide beyond 10 miles**
 - Tier 3 – Current approach is adequate, validate with Japanese radiological studies
 - **Transfer of spent fuel to dry cask storage**
 - Tier 3 – Current approach is adequate, validate by SFP scoping study
 - **Loss of ultimate heat sink**
 - Tier 1 – Considered within Recommendation 2.1, 2.3, 4.1 and 4.2 actions
 - Tier 2 – Considered within action on other external hazards