Enhancing Safety after Fukushima-Daiichi

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Overview

• Introduction
• Response timeline
• Tier 1 enhancements
• Tier 2 and 3 recommendations
• Conclusion
Timeline

December 16, 2011
Japan Announces Cold Shutdown Fukushima Units 1, 2, and 3

March 2012
The NRC staff issues orders and requests for information to US plants

October 18, 2011
Commission approved proceeding with next highest priority recommendations

December 15, 2011
Commission approved proceeding with high priority recommendations

March 11, 2011
Earthquake, Tsunami, Nuclear Emergency

July 12, 2011
Near-Term Task Force Report
Current U.S. Plant Safety

• Similar sequence of events in the U.S. is unlikely
• Existing mitigation measures could reduce the likelihood of core damage and radiological releases
• No imminent risk from continued operation and licensing activities
Enhancements without Delay

- Reevaluate external hazards, including seismic and flooding hazards
- Perform seismic and flooding hazard walkthroughs
- Modify SBO rule to require enhanced capability to mitigate prolonged SBO
Enhancements without Delay (cont’d)

• Mitigation Strategies for Beyond Design Basis External Events
• Require reliable hardened vent designs in BWRs with Mark I and II containments
• Enhancement of spent fuel pool instrumentation
Enhancements without Delay (cont’d)

• Strengthen and integrate onsite emergency response capabilities

• Require staffing and communications equipment to respond to multiunit events and prolonged SBO
Approach on Near Term Enhancements

• Commission approved implementation of specific recommendations
  – Issued orders, requests for information (50.54(f) letters), and new regulations
  – Seek stakeholder input as staff develops guidance for the licensees on how to respond
Schedule

• FY2012 Appropriations – Accelerate schedule

• NRC issued Tier 1 Orders and 50.54(f) letters in March 2012

• Filters for Mark I and II containment vents to be addressed in July Commission Paper

• Overall Goal – Complete enhancements in 5 years
NRC Follow-up

• Review and assess licensee responses
• Establish necessary regulatory framework
• Inspect to ensure compliance with all new regulatory requirements
• Consider implications for other nuclear facilities
Recommendations for Other Actions

• 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
Conclusions

• No immediate safety concerns based on Fukushima nuclear emergency
• Confirmed the existing safety measures for nuclear power plants, including SFPs
• Moving forward with nuclear power plant enhancements
• Examining additional near-term and long-term reviews
Tier 2 Recommendations

• Reevaluation of “other external hazards”

• Spent fuel pool makeup capability

• Additional emergency preparedness topics
Tier 3 Recommendations

• 10-year periodic updates
• Mitigation of seismically-induced fires/floods
• Hardened vents for other containments
• Hydrogen control and mitigation
• Additional emergency preparedness topics
• Additional training
Tier 3 Recommendations

- Emergency Planning Zone Size
- KI Beyond 10 Miles
- Dry Cask Storage