U.S. Changes Resulting from the Fukushima Accident

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Lessons Learned: The Near-Term Task Force

• Within weeks of the accident, NRC created a task force to review the events and provide recommendations to enhance safety at U.S. plants

• Near-Term Task Force report issued July 2011
Summary of Regulatory Actions

• **Orders** (issued March 2012)
  - Mitigation strategies for extreme external events
  - Containment venting system for Mark I and II containments
  - Spent fuel pool water level instrumentation

• **Request for Information** (issued March 2012)
  - Seismic and flooding walkdowns (completed Nov. 2012)
  - Seismic and flooding hazard reevaluations
  - Emergency Preparedness staffing and communications

• **Rulemakings** (ongoing)
  - Station Blackout Mitigation Strategies (SBOMS)
  - Onsite Emergency Response Capabilities
  - Filtering and Confinement Strategies
Mitigation Strategies
For Extreme External Events

Requires a three-phase approach for maintaining or restoring core cooling, containment, and spent fuel cooling.

<table>
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<tr>
<th>Phase</th>
<th>Licensee may use</th>
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<tbody>
<tr>
<td>Initial</td>
<td>Installed equipment</td>
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<tr>
<td>Transition</td>
<td>Portable, onsite equipment</td>
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<td>Final</td>
<td>Resources obtained from offsite</td>
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Containment Venting System

• Applies to boiling water reactors with certain designs
  (No South Carolina plants)
• Vents help control pressure by removing heat
• May help prevent core damage
• Must continue to function if core damage/melting occurs
• Required to work when all power is lost
Requires installation of water level instrumentation to indicate:

1 – Normal fuel pool level

2 – Below-normal level that still provides radiation shielding

3 – Very low level, near top of fuel racks, where immediate action to add make-up water should be taken
NRC asked licensees to:

- Inspect or “walk down” currently installed earthquake and flooding protection features, and correct degraded conditions.
- Use present-day information to reevaluate the potential effects of an earthquake or flooding event.
- Enhance emergency plans to ensure sufficient staffing and communication capabilities if multiple reactors at a single site are affected by the same event.
Rulemaking Activities

- Station Blackout Mitigation Strategies (SBOMS)
  - Will make Mitigation Strategies Order a regulation

- Onsite Emergency Response Capabilities
  - Will integrate plant emergency procedures

- Filtering and Confinement Strategies
  - Will consider additional protections to limit potential release of radioactive material
Process Overview

Accident at Fukushima

Near-Term Task Force

Orders, Requests for Information & Rulemaking

Plant Implementation

NRC Inspection and Verification
South Carolina Plants

• Catawba
  – Seismic and Flooding reevaluations – due March 2014
  – All Orders to be fully implemented
    • Unit 1 – Fall 2015
    • Unit 2 – Spring 2015

• Oconee
  – Seismic and Flooding reevaluations – submitted March 2013
  – All Orders to be fully implemented:
    • Unit 1 – Fall 2016
    • Unit 2 – Fall 2015
    • Unit 3 – Spring 2015
South Carolina Plants

• Robinson
  – Seismic & Flooding reevaluations – due March 2014
  – All Orders to be fully implemented – Spring 2015

• Summer
  – Seismic & Flooding reevaluations – submitted March 2013
  – All Orders to be fully implemented – Fall 2015
• Public website

From [www.nrc.gov](http://www.nrc.gov), find link under “Spotlight” section called “Japan Lessons Learned”

THANK YOU