



**Briefing to the Advisory Committee on
Reactor Safeguards
on the NRC Task Force and Actions
Following the Events in Japan**

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Agenda

- **NRC Actions to Date**
- **Reports**
 - **Japanese Government to the IAEA Ministerial Conference on Nuclear Safety**
 - **IAEA International Fact Finding Expert Mission**
- **NRC Task Force Actions and Longer Term Review**

Status of the 6 Daiichi Units



- **Date of Event**
 - **Units 1-3 were in operation**
 - **Units 4 was completely defueled**
 - **Units 5-6 were in cold shutdown with the reactor head installed and torqued**

- **CURRENT**
 - **Units 1–3 in a static condition**
 - **Temperatures relatively stable with adequate injection through feedwater**
 - **Units 4 was completely defueled**
 - **Units 5 and 6 in cold shutdown**

Actions to Date

- **Information Notices**
- **Temporary Instructions (TIs)**
- **Bulletin 2011-01, “Mitigating Strategies”**
- **Continued international interactions**

Japanese Report to the IAEA



- **Report provides extensive information and will enhance our understanding of the event**
- **NRC preliminary review indicates that nothing in the report calls into question the safety of operating U.S. reactors**

IAEA Expert Mission Report



- **Fact Finding Mission**
 - **May 24 – June 2**
- **Identified Lessons Learned**
- **Areas of Assessment**
 - **External Hazards**
 - **Severe Accident Management**
 - **Emergency Preparedness**
- **15 Conclusions/16 Lessons**

Tasking Memorandum and Charter



- **Tasking Memorandum/COMGBJ-11-002**
 - **NRC Actions Following the Events in Japan**
- **Task Force Charter**
 - **Formulate recommendations for near-term action**
 - **Identify a framework and topics for longer-term review**
 - **Provide Report in July 2011**

Task Force Actions

- **Discussions with NRC staff on technical topics**
- **Site visits**
- **Developing background and evaluation of focus areas**
- **Reviewing results of TIs**
- **Reviewing input from various stakeholders**

Areas of Focus

- **Using defense-in-depth approach**
 - **Protection**
 - **Mitigation**
 - **Emergency preparedness (EP)**
- **NRC programs**

Themes

- **Protection of equipment from the appropriate external hazards is a key foundation of safety**
- **Mitigation equipment and strategies that prevent core or spent fuel damage provide additional defense-in-depth**

Themes (Cont'd)

- **EP provides further defense-in-depth by minimizing public dose should radiological releases occur**
- **Principles of Good Regulation promote a consistent, coherent, and reliable regulatory framework**

Protecting Safety Equipment From Natural Phenomena



- **Protection of equipment from the appropriate external hazards is a key foundation of safety**
- **Rules and guidance have evolved**
 - **State of knowledge of hazards**
 - **State of the art of analysis methods**

Protection From Natural Phenomena (Cont'd)

- **Plants have different licensing bases and associated safety margins**
- **Regulatory initiatives to address vulnerabilities**
 - **Plant specific actions have enhanced margins without necessarily changing the design basis external hazards**

Mitigating Long-Term Station Blackout

- **Mitigation equipment and strategies that prevent core or spent fuel damage provide additional defense-in-depth**
- **Long-term SBO**
 - **Requires multiple concurrent equipment failures**
 - **Can result from beyond design basis external events**

Coping with SBO

- **Current requirements do not address common cause failure of all onsite and offsite AC power sources and distribution**
- **Current coping requirement assumes near-term restoration of AC power**

10 CFR 50.54(hh)(2)

- **10 CFR 50.54(hh)(2) requires mitigation capability for large fires and explosions**
- **Capability could be useful for other events such as long-term SBO, if available**

Availability of 10 CFR 50.54(hh)(2) Equipment

- **Equipment may not be protected for other initiating events**
- **NRC inspections revealed deficiencies in:**
 - **Maintenance/availability of equipment**
 - **Procedures**
 - **Training**

Severe Accident Management Guidelines (SAMGs)



- **SAMGs address plant response during a severe accident to:**
 - **Terminate core damage progression**
 - **Maintain containment integrity**
 - **Minimize radioactive releases**
- **Spent fuel cooling not included**
- **SAMGs were implemented as a voluntary initiative in the 1990s**

Hardened Vents

- **Provided to protect BWR Mark I containments from overpressure during a severe accident**
- **Implemented at all Mark I plants following Generic Letter 89-16**
- **Not included in regulations**
- **Plant-specific designs varied**

Emergency Preparedness

- **EP provides further defense-in-depth by minimizing public dose should radiological releases occur**
- **Existing EP requirements focus on single-unit events**
 - **Staffing, facilities, equipment, dose projection capability**

Emergency Preparedness (Cont'd)



- **Challenges during long-term SBO**
 - **Emergency notification**
 - **Communication**
 - **Data transmission**
- **Public and decision maker knowledge of radiation safety principles**

NRC Programs

- **Principles of Good Regulation promote a consistent, coherent, and reliable regulatory framework**
- **Past agency decisions for beyond design basis events have led to variability in licensee and NRC programs**

Next Steps

- **Near-term task force will recommend actions and topics for longer-term review**
- **Task force report will be provided to Commission in July in a notation vote paper**
- **July 19, 2011 Commission meeting**

Longer Term Evaluation

- **Steering Committee**
- **Will address areas identified by near-term task force**
- **Applicability of lessons to other licensed facilities**
- **Engage internal and external stakeholders**

Conclusions

- **Continuing confidence in safety of U.S. fleet**
- **We are continuing with license renewal and new reactor licensing activities**
- **We will not hesitate to make changes to our regulatory and oversight activities, as appropriate**
- **We welcome and appreciate ACRS input**