



Briefing on the Progress of the Task Force Review of NRC Processes and Regulations Following the Events in Japan

Bill Borchardt
Executive Director for Operations
June 15, 2011

Agenda

- **Actions to Date**
Martin Virgilio
- **Task Force Activities**
Dr. Charles Miller

Actions to Date

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

Task Force Activities 60-Day Update

**Dr. Charles L. Miller, Lead
NRC Task Force**

Task Force Actions Since Last Meeting

- **Continued task force 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 from natural phenomena**
 - **Mitigation for long-term station blackout (SBO)**
 - **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

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

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**

Status of SAMGs

- **NRC inspection:**
 - **Confirmed that every site has SAMGs**
 - **Revealed inconsistent implementation**
 - **Procedure availability and control**
 - **Plant configuration control**
 - **Training and exercises**

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**

NRC Programs (Cont'd)

- **Regulatory analysis guidelines do not provide sufficient clarity for balancing cost/benefit and defense-in-depth considerations**
- **Voluntary initiatives have limited regulatory treatment**

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 Review Approach

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

Acronym List

- **AC – Alternating Current**
- **BWR – Boiling Water Reactor**
- **EP – Emergency Preparedness**
- **NRC – Nuclear Regulatory Commission**

Acronym List (Cont'd)

- **SAMG – Severe Accident Management Guideline**
- **SBO – Station Blackout**
- **TI – Temporary Instruction**