



# **Task Force Review of NRC Processes and Regulations Following the Events in Japan**

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## **NRC Near-Term Task Force**

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# Summary of Recommendations

- 12 overarching recommendations
- Detailed recommendations support implementation
  - Policy Statement
  - Rulemakings
  - Orders
  - Staff actions
  - Long-term evaluation



## Focus Areas

- Regulatory framework
- Defense-in-depth philosophy
  - Protection from natural phenomena
  - Mitigation for long-term station blackout (SBO)
  - Emergency preparedness (EP)
- NRC programs



## Recommendation 1

Enhance NRC framework for  
regulating beyond design basis  
events and severe accidents



## Recommendation 1 Details

- Commission policy statement
  - Risk-informed defense-in-depth framework
  - Extended design-basis requirements
  - Adequate protection
- Rulemaking
  - Implement proposed framework



## Recommendation 1 Details (Cont'd)

- Modify NRC's Regulatory Analysis Guidelines
  - More effectively implement defense-in-depth
- Staff evaluate insights from risk studies
  - Individual Plant Evaluation (IPE)
  - Individual Plant Evaluation External Events (IPEEE)
  - Identify potential generic regulations and plant-specific requirements



## Recommendation 2

Update seismic and flooding analysis  
and protect plants from these events



## Recommendation 2 Details

- Order licensees to reevaluate seismic and flooding hazards at their sites
  - Use current NRC requirements and guidance
  - Upgrade plant design, as necessary, to protect against the updated hazards



## Recommendation 2 Details (Cont'd)

- Rulemaking
  - require confirmation of seismic and flooding hazards every 10 years
- Order for Interim action
  - licensees perform seismic and flood protection walkdowns
  - identify and address plant-specific vulnerabilities



## Recommendation 3

**Long Term Evaluation Topic:**  
Evaluate potential enhancements to prevent or mitigate seismically induced fires and internal floods



## Recommendation 4

Strengthen coping for prolonged  
station blackout events



## Recommendation 4 Details

- Rulemaking
  - Require minimum coping time of 8 hours
    - Permanently installed equipment
    - Minimal operator actions
  - Require 72-hour extended coping
    - Portable equipment may be used
    - Reasonable operator actions
  - Require preplanned offsite resources
    - Uninterrupted safety functions



## Recommendation 4 Details (Cont'd)

- Order for interim action
  - Availability of existing mitigation equipment
    - Require reasonable protection from natural phenomena
    - Require capacity for multiunit events



## **Recommendation 5**

**Require reliable hardened vent designs in BWRs with Mark I and Mark II containments**



## Recommendation 5 Details

- Order licensees to include a reliable hardened vent in BWR Mark I and Mark II containments.
  - Include performance objectives to ensure reliable operation
  - Ease of opening and closing during prolonged SBO conditions



## **Recommendation 5 Details (Cont'd)**

### **Long Term Evaluation Topic:**

Reevaluate the need for hardened vents for other containment designs.



## Recommendation 6

### Long Term Evaluation Topic:

Identify insights about hydrogen control and mitigation inside containment or in other buildings



## **Recommendation 7**

**Enhance spent fuel pool instrumentation  
and makeup capability**



## Recommendation 7 Details

Order licensees to provide safety-related instrumentation to monitor key spent fuel pool parameters from control room

- Water level
- Temperature
- Area radiation levels



## Recommendation 7 Details (Cont'd)

- Order licensees to:
  - Provide safety-related ac electrical power for the spent fuel pool makeup system
  - Revise Technical Specifications
    - One train of onsite emergency electrical power operable
      - Spent fuel pool makeup and instrumentation
      - All modes of operation and defueled



## Recommendation 7 Details (Cont'd)

- Order licensees to have seismically qualified means to spray water into the spent fuel pools
  - easily accessible connection to supply the water at grade from outside the building



## Recommendation 7 Details (Cont'd)

- Rulemaking
  - Spent Fuel pool Instrumentation
  - Spent Fuel makeup power supply
  - Technical Specification for Spent Fuel pool makeup and power supply
  - Spent Fuel pool spray capability



## Recommendation 8

Strengthen and integrate onsite emergency response capabilities

- Emergency Operating Procedures (EOPs)
- Severe Accident Management Guidelines (SAMGs)
- Extensive Damage Mitigation Guidelines (EDMGs)



## Recommendation 8 Details

- Order licensees to modify the EOP technical guidelines
  - Include EOPs, SAMGs, and EDMGs in an integrated manner
  - Specify clear command and control strategies for their implementation
  - Stipulate appropriate qualification and training for decisionmakers
  - Include in revised EOP guidelines in Technical Specifications



## Recommendation 8 Details (Cont'd)

- Rulemaking
  - Require more realistic, hands-on training and exercises for SAMGs and EDMGs
    - Operators and emergency responders
    - Emergency coordinators
    - Emergency directors



## Recommendation 9

Require that facility emergency plans address prolonged SBO and multiunit events



## Recommendation 9 Details

- Rulemaking
  - Require emergency preparedness (EP) enhancements for prolonged SBO and multiunit events in the following areas:
    - Communications capability
    - ERDS capability
    - Training and exercises
    - Equipment and facilities



## Recommendation 9 Details (Cont'd)

- Order for interim action:
  - Require licensees to address EP for prolonged SBO and multiunit events
    - Staffing
    - Multiunit dose assessment
    - Power for communications equipment
    - Enhance facilities and equipment
  - Require licensees complete modernization of Emergency Response Data System (ERDs)



## Recommendation 10

### Long-Term Evaluation Topic:

Additional EP topics related to multiunit events and prolonged SBO

- Protective equipment for emergency responders
- Decisionmaker qualifications
- Command and control
- Emergency Response Data System (ERDs)



# Recommendation 11

## Long-Term Evaluation Topic:

Additional emergency preparedness issues

- Offsite emergency response
- EP decisionmaking
- Radiation monitoring
- Public education on radiation safety and use of potassium iodide (KI)



## Recommendation 12

Strengthen regulatory oversight of licensee safety performance (ROP) by focusing more attention on defense-in-depth requirements