



**NRC ACTIVITIES AND PERSPECTIVES
RELATED TO THE FUKUSHIMA TASK FORCE
SEISMIC HAZARD RECOMMENDATIONS**

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Outline

- Background
- Scope
- Overall Approach
- Seismic Evaluation Approach
 - Site Hazard
 - Plant Risk
- Schedules

2



Background

- NRC established Near Term Task Force (NTTF) in response to accident at Fukushima Dai-ichi nuclear power plant
- NTTF developed a set of recommendations
- SECY-11-0124 identified recommendations to be taken without unnecessary delay
 - Three 10 CFR 50.54(f) information requests
 - Seismic and Flooding Design (R2.1 and R2.3)
 - Emergency Preparedness (R9.3)

3



Scope: NTTF Recommendation 2.1

- Reevaluate hazards at operating reactor sites
- Collect information to facilitate NRC's determination if there is a need for additional regulatory actions
- Gather information to subsume GI-199

4



Scope: NTTF Recommendation 2.3

- Develop a methodology and acceptance criteria for walkdowns
- Perform walkdowns using NRC- endorsed walkdown methodology
- Identify and address degraded, non-conforming, or unanalyzed conditions

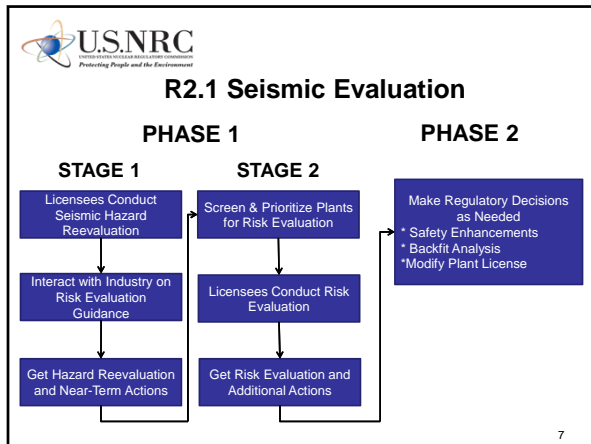
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Overall Approach: R2.1

- Recommendation 2.1 implemented in two phases
 - Phase 1: Licensees *reevaluate* seismic hazard using present-day regulatory guidance and methodologies and, if necessary, perform a risk assessment
 - Phase 2: Based on results of Phase 1, NRC will determine if further regulatory actions are necessary to protect against updated hazard

6



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- ### Seismic Hazard Reevaluation
- Determine Ground Motion Response Spectrum (GMRS) for Site
 - Use Probabilistic Method (PSHA)
 - Seismic Source Models
 - Seismic Ground Motion Models
 - Site Response Evaluation
 - Compare GMRS with Safe Shutdown Earthquake with Plant (SSE) Spectrum
- 8

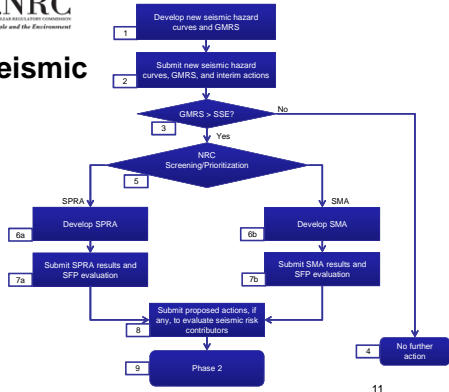
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- ### Seismic Hazard Reevaluation (cont.)
- New seismic source models for CEUS developed jointly by NRC, DOE, EPRI
www.ceus-ssc.com
 - EPRI (2004, 2006) ground motion prediction equations for CEUS
 - WUS sites to be given more time to develop similar seismic source and ground motion models
- 9

Seismic Risk Evaluation

- Depending on Screening Criteria perform
 - Seismic Margin Analysis (SMA) or
 - Probabilistic Seismic Risk Analysis (SPRA)
- SMA method is NRC SMA (NUREG/CR-4334) as enhanced for full-scope plants in NUREG-1407
- SPRA approach is Level 1 with estimate of Large Early Release Frequency (LERF) described in RG 1.200

10

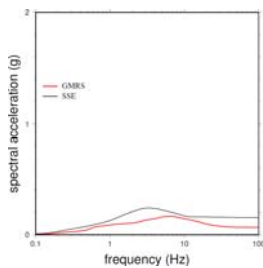
R2.1 Seismic



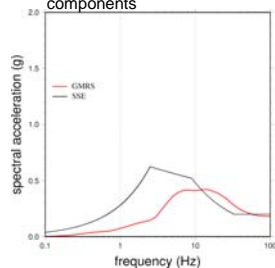
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R2.1 Seismic Screening

No Further Action: GMRS < SSE



Limited Further Action: confirm adequacy of high-frequency sensitive components

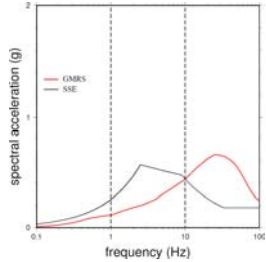


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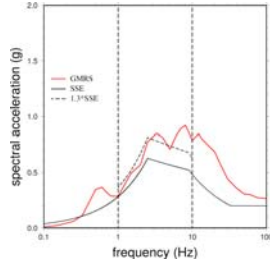


R2.1 Seismic Screening (cont.)

Further Action: verify adequacy of high-frequency sensitive components



Further Action: Risk Evaluation



13



Overall Approach: R2.3

- Licensees and staff interact to develop walkdown methodology and acceptance criteria
 - Procedures
 - Training
 - Staffing
- Licensee performs walkdown
- Degraded, nonconforming, or unanalyzed conditions addressed by licensees' corrective action program

14



Recommendation 2.1 & 2.3 Schedules

- Recommendation 2.1
 - Complete Phase 1 including hazard and risk evaluations within 4 to 7 years
 - Complete High-Priority Plants within 5 years
- Recommendation 2.3
 - Complete within approximately 1 year

15

Questions!

