



**Fukushima Lessons-Learned
Recommendation 2.1
Other External Events Protections**

NRC Perspective

February 22, 2012

Outline

- Scope
- Overall Approach
- Present Day Practices
- Walkdowns
- Schedule

Scope

- **Section 402 of the Consolidated Appropriations Act of 2012**

The Nuclear Regulatory Commission shall require reactor licensees to re-evaluate the seismic, tsunami, flooding, and other external hazards at their sites against current applicable Commission requirements and guidance for such licensees as expeditiously as possible, and thereafter when appropriate, as determined by the Commission, and require each licensee to respond to the Commission that the design basis for each reactor meets the requirements of its license, current applicable Commission requirements and guidance for such license. Based upon the evaluations conducted pursuant to this section and other information it deems relevant, the Commission shall require licensees to update the design basis for each reactor, if necessary.

Scope

- Phase 1

Issue 50.54(f) letters to all licensees to reevaluate other external hazards at their sites against present-day regulatory guidance and methodologies used for ESP and COL reviews and perform a plant assessment

- Phase 2

If necessary, and based upon the results of Phase 1, determine whether additional regulatory actions are necessary (e.g., update the design basis and SSCs important to safety) to protect against the updated hazards.

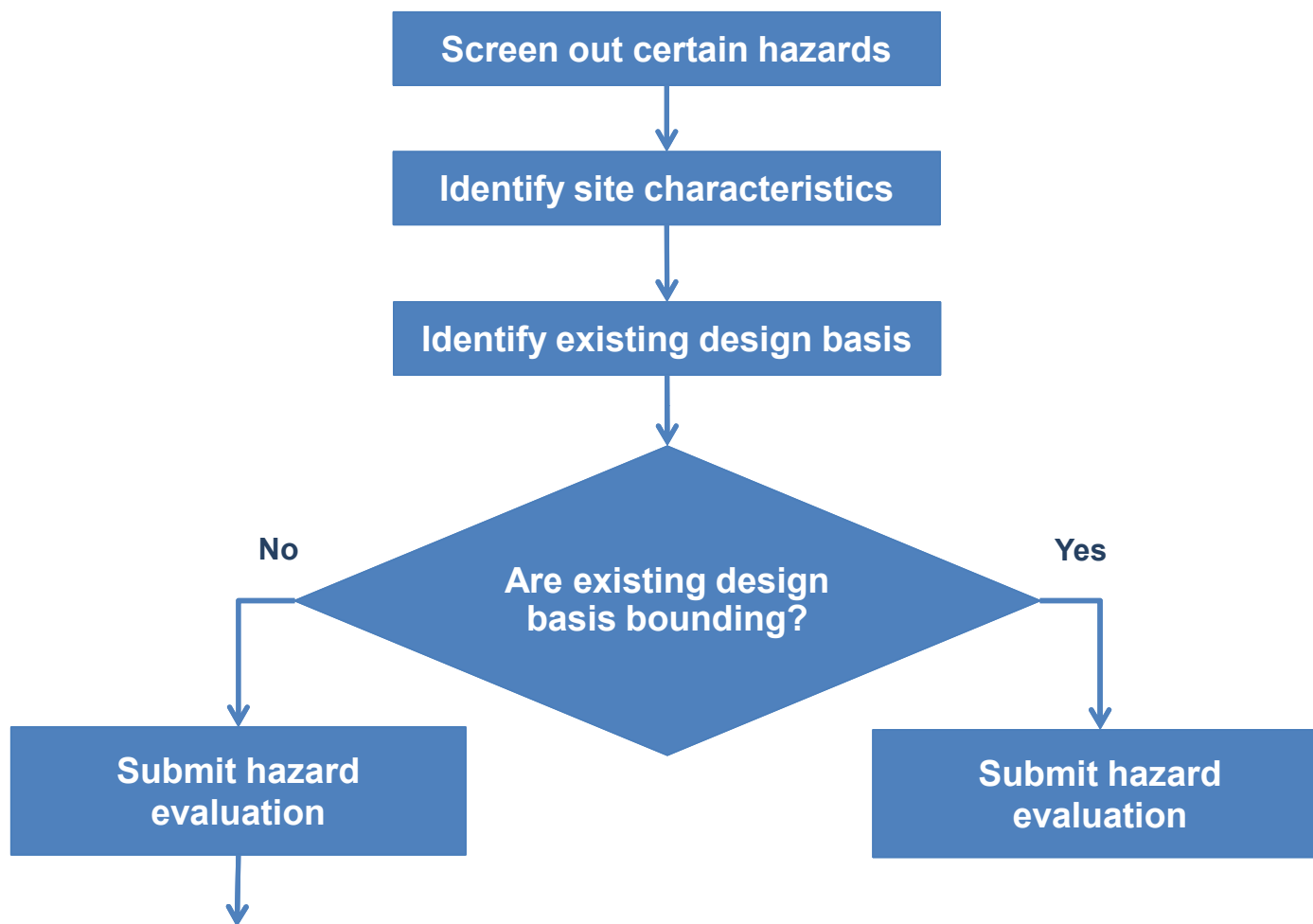
Scope

- Tentative List of Natural External Hazards

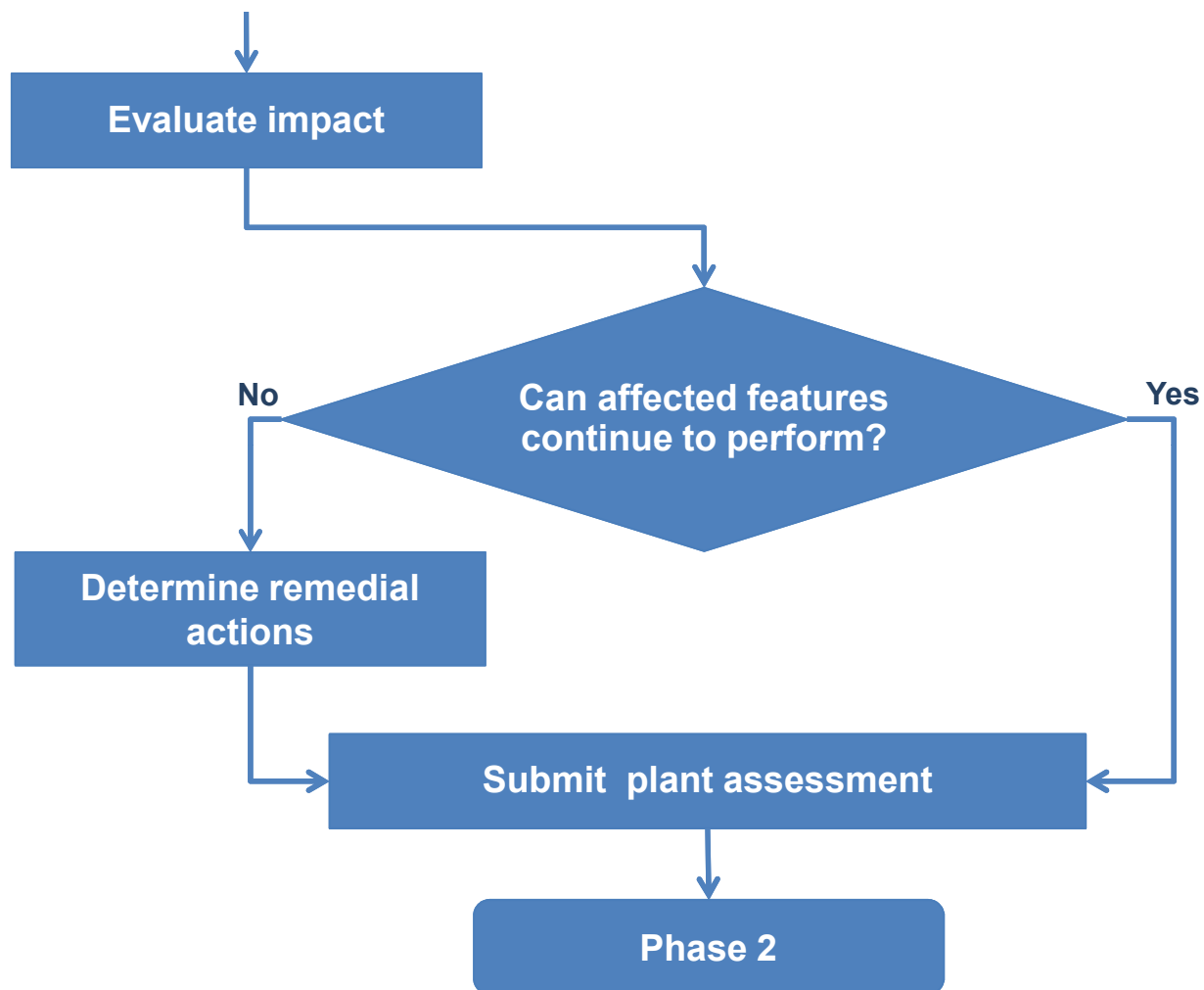
Avalanche	Hurricane	River Diversion
Biological Events	Ice Cover	Sandstorm
Drought	Landslide	Severe Wind
Forest Fire	Lightning	Snow
Frost	Low Water	Tornado
Hail	Low Temps	Volcanic Activity
High Temps	Precipitation	Water Spouts

- Identify any other natural phenomena not listed which can occur or which protective measures have or should be implemented
 - Review Reactor Operating Experience data

Overall Approach



Overall Approach



Present Day Practices

- ESP and COL Reviews
- Regulatory Guidance

Regulatory Guides	Standard Review Plan
RG 1.27 (UHS) RG 1.76 (Tornadoes) RG 1.221 (Hurricanes) RG 1.204 (Lightning)	SRP 2.3.1 (Climatology) SRP 2.4.2 (Floods) SRP 2.4.11 (Low Water) SRP 3.3.1 (Wind Loading) SRP 3.3.2 (Tornado Loading) SRP 3.5.1.4 (Missiles) SRP 6.4 (CR Habitability) SRP 9.2.5 (UHS) ISG-7 (Snow Loads)

Walkdowns

- Include “Other External Events” in the NTTF Recommendation 2.3 Flooding Walkdowns
 - Integrated effects of severe storms on flooding
 - Hazard screening
 - Avalanche, landslides
 - High wind susceptibilities
 - Wind effects and wind-borne missile effects

Schedule

