



# Generic Licensing Topics and Policy Issues for SMRs

Legacy Meeting Centre  
February 2, 2012

<Presentation Name>

- Bullet 1
  - 1<sup>st</sup> Indent
    - 2<sup>nd</sup> Indent
- Bullet 2
- Bullet 3....



# Environmental Alternatives

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## Environmental Alternatives

### **40 CFR 1502.14**

- Alternatives Including the Proposed Action - This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.

## **Applicable NRC Regulations**

- NRC's regulations which address alternatives analyses are in 10 CFR Part 51
- 10 CFR 51.45 and 10 CFR 51.50 address alternatives in the Environmental Report
- 10 CFR 51.71 addresses alternatives analysis in the Draft EIS
- 10 CFR 51.93 addresses alternatives analysis in the Final EIS

## Environmental Alternatives

### **Reg Guide 4.2**

- Chapters 9 and 10 discuss what needs to be in the ER in terms of alternate sites, energy sources, and system designs

## Standard Review Guidance

- NUREG-1555, Environmental Standard Review Plan (ESRP) directs the staff's analysis and evaluation of alternatives
- Chapter 9, Alternatives to the Proposed Action, has been recently updated and will be used by the staff in the review of an applications for construction and operations of SMRs

## Environmental Alternatives

### **Purpose and Need Relationship to Alternatives**

- The purpose and need statement for the EIS defines the range of reasonable alternatives
- Reasonable alternatives:
  - Support the purpose and need statement
  - Within scope of the proposed action
  - Implementable
  - Technically feasible



## Environmental Alternatives

### **Alternatives to be Analyzed**

- Proposed Action
- No Action Alternative
- Alternative sites
- Energy Alternatives
- System Design Alternatives

## Environmental Alternatives

### **Alternative Sites**

- Staff looking to see if the ER defines the rationale used to identify the alternative sites
- Use reconnaissance level information
- Determination of “obviously superior”

## Environmental Alternatives

### **Alternative Sites (con't)**

- Process must be logical and consistent
- Must align with purpose and need
- First focus is on environmental issues

### **Revised Chapter 9.3 from NUREG-1555**

The scope of the review directed by this plan should include the analysis and evaluation of the applicant's process and results related to the selection of the region of interest, candidate areas, potential sites, candidates sites, and the selection of the proposed site, and a reasonable number of alternative sites from among the candidate sites.



# Questions?



# Applicability and Implementation Of Fukushima Lessons Learned

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## NTTF – New Reactors

### SECY-11-0093, “Near-term Report and Recommendations for Agency Actions Following the Events in Japan” – July 12, 2011

- Task Force has considered the applicability and implementation of its recommendations for new reactors, including certified designs, designs in the certification process, certified designs applying for renewal, early site permits, and applications for operating licenses and COLs. ...
- Recommendation 8 for the integration of EOPs, SAMGs, and EDMGs and for controlling accident decisionmaking under technical specifications would be applicable to COLs. ...
- Task Force concludes that all of the current early site permits already meet the requirements of detailed recommendation 2.1, relating to the design-basis seismic and flooding analysis, and all of the current COL and design certification applicants are addressing them adequately ...
- The Task Force concludes that Recommendation 4, with new requirements for prolonged SBO mitigation, and Recommendation 7, about spent fuel pool makeup capability and instrumentation, should apply to all design certifications or to COL applicants if the recommended requirements are not addressed in the referenced certified design. The Task Force recommends that design certifications and COLs under active staff review address this recommendation before licensing.
- The Task Force recommends the SBO additions on the basis of adequate protection, the NRC should impose them as new requirements in accordance with 10 CFR 52.59(b)(1) ...
- The recommendations related to expanding 10 CFR 50.54(hh) and the EP requirements to fully address multiunit accidents and SBO conditions should apply to COL applicants. Near-term COLs could implement these recommendations through ITAAC.

## Prioritization

SECY-11-0137, “Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned” – October 3, 2011

- For **new reactor** designs currently under review, safety issues should be resolved at the design stage, to the extent practical.
- Consistent with the Commission policy encouraging standardization, it would be prudent to implement safety enhancements prior to certification or design certification renewal. As such, the staff intends to begin interactions with new reactor stakeholders in the near term to allow sufficient opportunity for design certification applicants and design certification renewal applicants to address recommended design-related safety enhancements prior to completion of the staff’s review.
- **The staff will encourage reactor vendors to provide enhanced safety features and safety margins consistent with the Commission policy on advanced reactors ...**





# Stakeholder Interactions (partial)

## NRC Staff

- Public meetings – December 2011
- Industry/NRC Joint Steering Committee meeting – 01/13/12
- Recommendation-specific public meetings – 01/17-19/12
- Steering Committee Meeting – 01/20/12
- SECY-12-XXXX – orders and 50.54(f) letters – [Feb xx, 2012]

## Industry

- INPO initiative
- Diverse & Flexible Coping Capability (FLEX) – 12/16/11, revisions
- On-going interactions with NRC staff
- NEI White Papers (Tier 1 topics)
- Feedback regarding orders and 50.54(f) letters



## Enhanced Tier 1 Recommendations (January 13, 2012 – Public Meeting)

### 2.1 – Seismic and flooding reevaluation 50.54(f) letters

- Expanded by Appropriations Bill and ACRS recommendations to include “other external hazards”

### 2.3 – Seismic and flooding walkdown 50.54 (f) letters

- Expanded by Appropriations Bill and ACRS recommendations to include “other external hazards”

### 4.1 – Station blackout rulemaking

- Enhanced by SRM-SECY-11-0124 and ACRS recommendations to include an ANPR

### 4.2 – Mitigating strategies for beyond design basis events Order

- Informed by Industry’s FLEX paper, loss of ultimate heat sink additional issue, and ACRS recommendations

### 5.1 – Reliable hardened vent Order for Mark I and II containments

- Expanded by SRM-SECY-11-0137 to include consideration of filters

### 7.1 – Spent fuel pool instrumentation Order

- Enhanced by ACRS recommendations

### 8.0 – Integration of emergency procedures rulemaking

### 9.3 – Enhanced EP staffing and communications 50.54(f) letter

## New / Advanced Reactors

For each design, address:

- Enhanced Tier 1 Recommendations
  - Consider regulatory approach / resolution for operating plants
  - Rule – compliance
  - Guidance – application may be challenge for some designs
- Tier 2 Recommendations (SECY-11-0137)
  - 7.2, 7.3, 7.4, and 7.5 – SFP makeup capability
  - 9.3 – Emergency preparedness (remaining 9.3 items with exception of ERDS)



## NRO Approach

- Design Certifications and COL Applications Under Active Review
  - Design certification applicants should address recommended design-related safety enhancements prior to completion of the staff's review [SECY-11-0137]
  - Reactor vendors are encouraged to provide enhanced safety features and safety margins consistent with the Commission policy on advanced reactors [SECY-11-0137]
- New and advanced DC or license applications not yet submitted
  - Expect applicants to address Commission-approved Fukushima requirements in applications, prior to submittal, to fullest extent practicable

## Bibliography (partial)

- SECY-11-0093, “Near-term Report and Recommendations for Agency Actions Following the Events in Japan” – July 12, 2011
- SECY-11-0117, “Proposed Charter for the Longer-Term Review of Lessons Learned from the March 11, 2011, Japanese Earthquake and Tsunami”
- SECY-11-0124, “Recommended Actions to be Taken without Delay from the Near-Term Task Force Report”
- SECY-11-0137, “Prioritization of Recommended Actions to be Taken in Response to Fukushima Lessons Learned” – October 3, 2011
- SECY-12-XXXX, “Proposed Initial Orders and Requests for Information Pursuant to 10 CFR 50.54(f) In Response to Lessons Learned from the March 11, 2011, Japanese Earthquake and Tsunami”
- <http://www.nrc.gov/japan/japan-meeting-briefing.html>