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United States Nuclear Regulatory Commission
Protecting People and the Environment

A Proposed Risk Management Regulatory Framework

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Risk Management Task Force Approach

- Provide a vision for a regulatory system 10-15 years in the future.
- The approach should build on the experience of the last 20 years and should be evolutionary rather than revolutionary.
- The need for a new regulatory approach was also recognized by the Fukushima Near Term Task Force Recommendation 1:
  - *Establish a logical, systematic, and coherent regulatory framework for adequate protection that appropriately balances defense-in-depth and risk considerations*

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2

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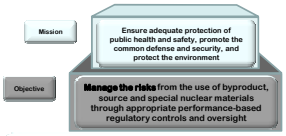
Risk-Informed, Performance-Based Defense in Depth



Risk Management Goal

Provide risk-informed and performance-based defense-in-depth protections to:

1) Establish appropriate **barriers and controls** to **prevent, contain, and mitigate** possible inadvertent exposure to radioactive material according to the **hazard present**, the **relevant scenarios**, and the **associated uncertainties**; and
2) Ensure that the **risks** resulting from the **failure of** some or all of the established **barriers** and controls are maintained **acceptably low**.

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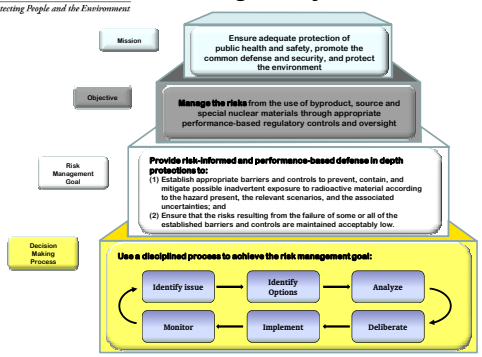
3

Proposed Risk Management Regulatory Framework



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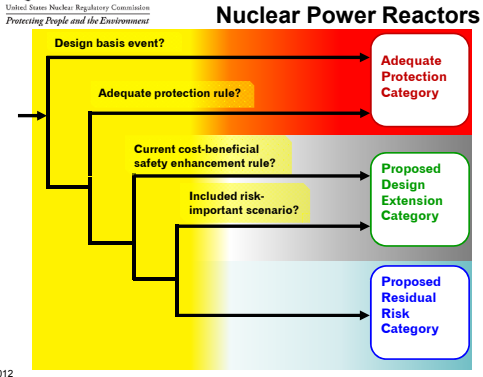
4

Proposed Framework Nuclear Power Reactors



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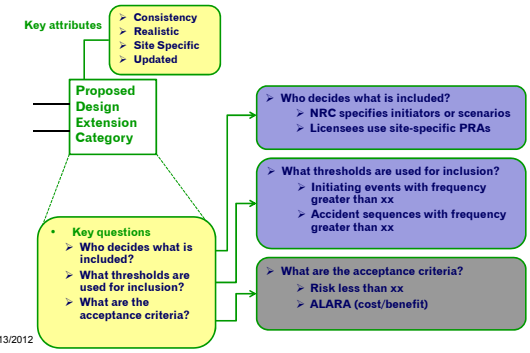
5

Design Extension Events Alternative Approaches



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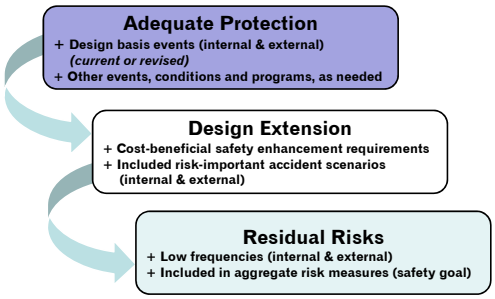
6

Proposed Framework Nuclear Power Reactors



3/13/2012 7

Benefits & Challenges

- Benefits
  - Incorporation of updated knowledge from risk studies into the regulations; realism
  - Performance-based approach improves flexibility and better focuses resource allocation
  - Improved process for decision-making
  - Greater consistency across the agency
  - Improved communication internally and externally
- Challenges
  - Culture change and long-term commitment
  - Communications
  - Resources

3/13/2012 8