



Staff Recommendations to Disposition Fukushima Near-Term Task Force Recommendation 1

**Improving NRC's Regulatory
Framework**

January 10, 2014

Agenda

1. Recommendation 1

- **Background and Conclusions**
- **Overview of Improvement Activities**
- **Details of Improvement Activities**
- **Near-Term Task Force (NTTF) Perspective**
- **Next Steps**

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2. Status of Tier 1 Activities

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3. Concluding Remarks

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Background

- **Establish “a logical, systematic, and coherent regulatory framework”**
- **Pursue Recommendation 1 “independent of ... other Task Force recommendations”**
- **“[P]rovide options and a staff recommendation to *disposition*”**
- **Consensus was difficult**
- **Recommendations represent a balance of diverse views**

Staff Conclusions

- **Current regulatory framework is robust and can maintain safety**
- **Can implement Fukushima lessons learned under current framework**
- **Some improvements to framework are warranted to enhance clarity, efficiency, and effectiveness of NRC's regulatory process**

Process

- **Staff from all program offices;
Oversight by Office Director
Steering Committee**
- **Substantial public outreach**

Improvement Activities

- 1. Establish design-basis extension category of events and associated regulatory requirements**
- 2. Establish Commission expectations for defense-in-depth**
- 3. Clarify role of voluntary industry initiatives in NRC regulatory process**

Improvement Activities

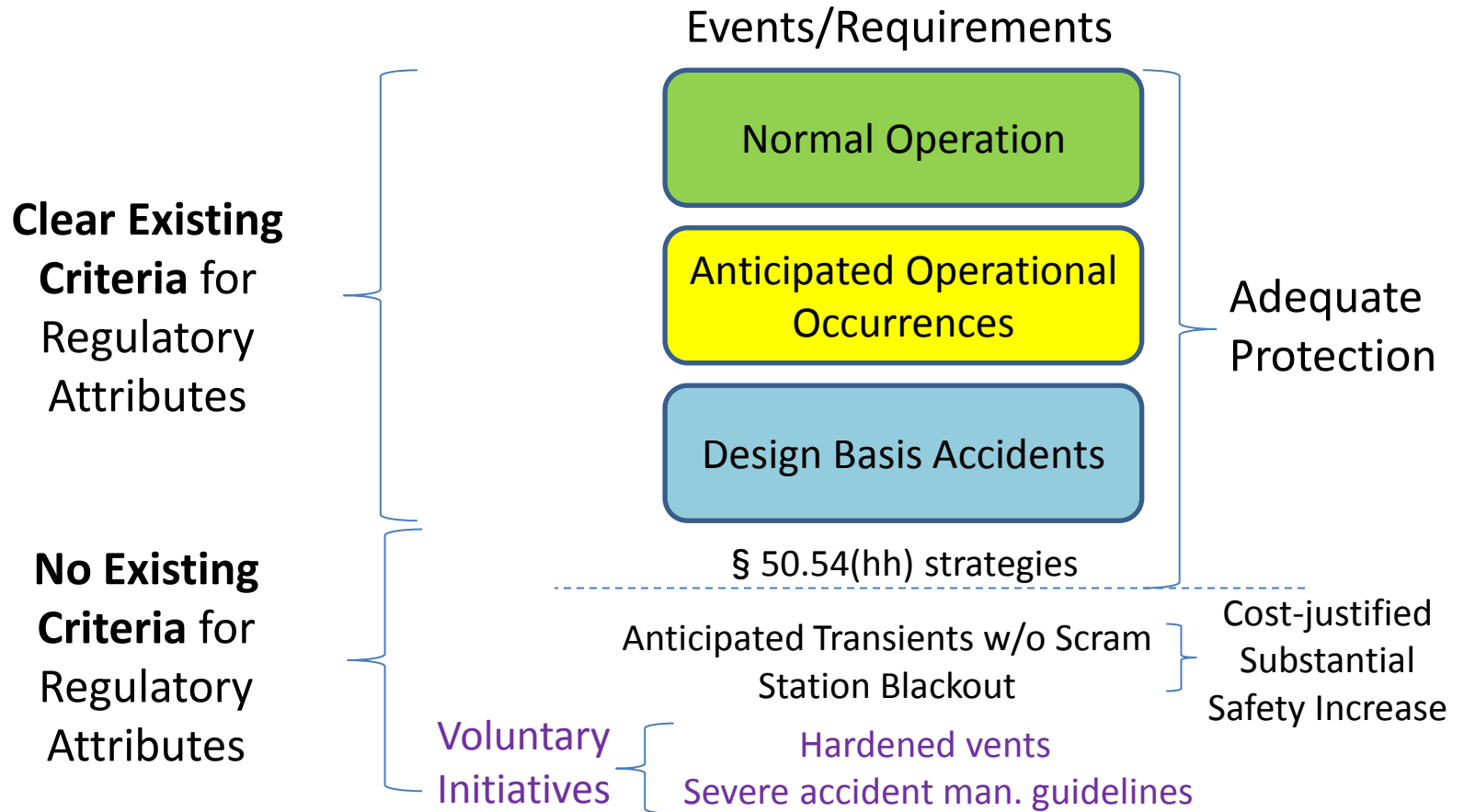
- **Not mutually exclusive options**
- **Maximize potential benefits while minimizing resource impacts**
- **Recommendations will likely result in modest safety enhancements**

Coordination with RMTF

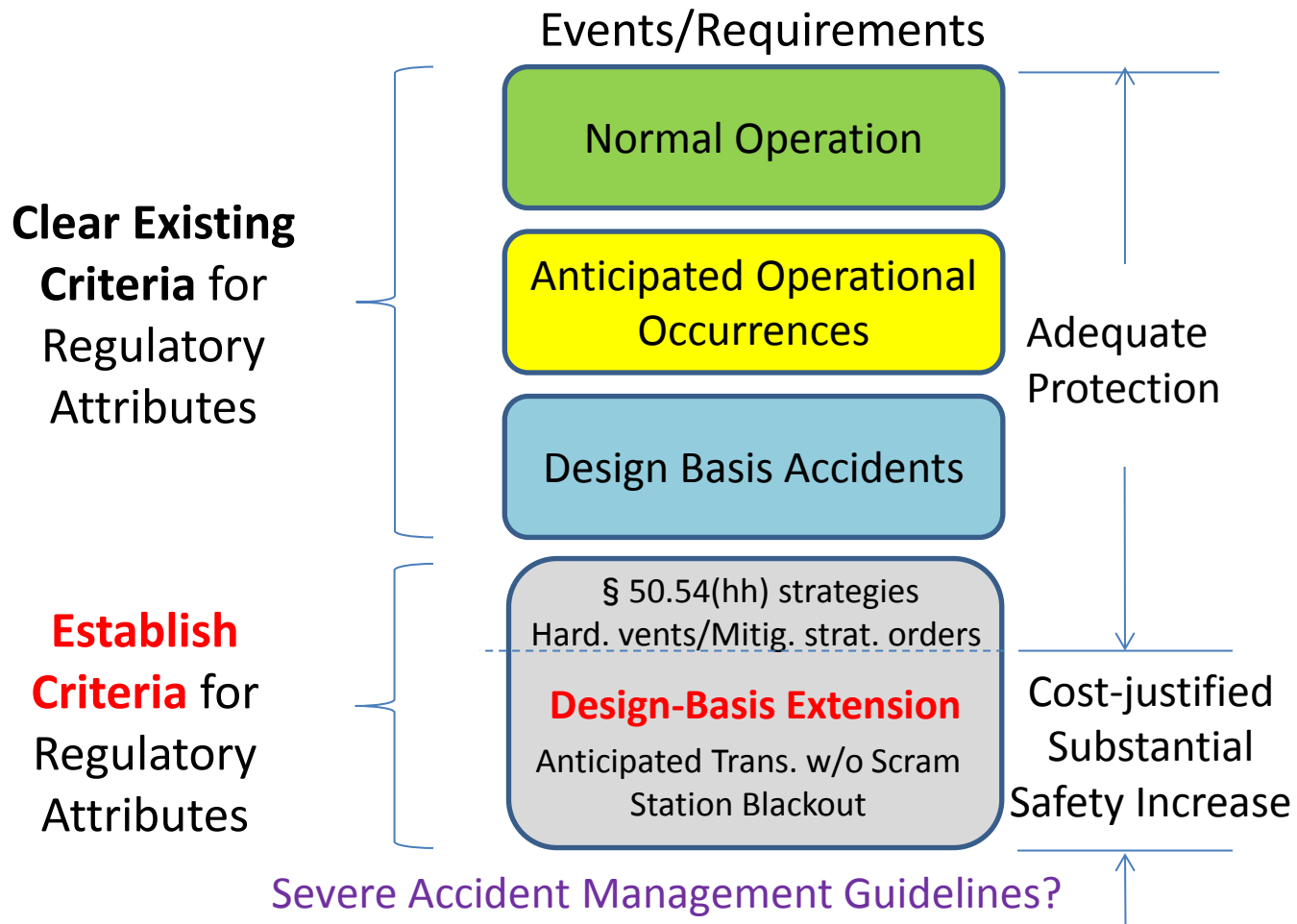
- **Considered Risk Management Task Force (RMTF) framework recommendations for power reactors in NUREG-2150**
- **Commission direction on Recommendation 1 will be considered when staff addresses RMTF recommendations**

Improvement Activity 1: Design-Basis Extension Category of Events and Associated Regulatory Requirements

Current Regulatory Structure



Design-Basis Extension Category



Design-Basis Extension Category

- **Generic basis**
- **Adequate protection and cost-justified substantial safety enhancements**
- **Regulatory attribute guidance in NUREG**
 - **Treatment requirements, quality assurance, change process, Final Safety Analysis Report documentation, training, analysis methods, etc.**
- **Implement via internal staff guidance**

Design-Basis Extension Category

- **Applies to current and future licensees/applicants**
- **Applies to new/additional design-basis extension requirements**

Identification of New Issues

- **Use existing processes to identify and address candidates for this category, e.g. operating experience program, industry trends program, etc.**
- **Thus, no retroactive search for additional design-basis extension events is needed**

Potential Benefits of the Design-Basis Extension Category

- **Promotes openness**
 - **Clarity and a common terminology**
 - **Consistent/complete approach to future requirements for all regulatory attributes**
 - **Aids the public's understanding**
- **Improves efficiency**
- **Increases alignment with international standards**

Improvement Activity 2: Establish Commission expectations for defense-in-depth

Defense-in-Depth (DID)

- **Improvement Activity 2 will develop**
 - **DID definition**
 - **DID structure**
 - **Set of DID principles**
 - **Set of levels of defense**
 - **DID decision process**
 - **Set of DID decision criteria**
 - **Include in Regulatory Analysis guidelines**
 - **Integrate with risk-based decision criteria**

Potential Benefits of the Defense-in-Depth Activity

- **Promotes efforts to ensure safety**
 - **Uniform, technically-justified concept**
 - **Enhances risk-informed decisionmaking**
- **Promotes openness, clarity, reliability**
 - **More efficient, timely, predictable decisions**
- **Involves international community**

**Improvement Activity 3:
Clarify the role of voluntary
industry initiatives in the
NRC regulatory process**

Current NRC Policy

- **Industry initiatives may not be used for adequate protection issues**
- **NUREG-BR-0058, Rev. 4**
 - **Supports reliance on industry initiatives**
 - **Credits them in decisionmaking**
- **No uniform review/acceptance process**
- **No formal verification process**

Improvement Activity 3:

- **Re-affirm industry initiatives may not be used to address adequate protection issues**
- **Credit only when well-documented and highly likely to be maintained**
- **Develop oversight guidance**
- **Review existing initiatives; verify implementation as appropriate**

Potential Benefits of Activity 3 on Voluntary Initiatives

- **Safety benefits consistently maintained over time**
- **Improves clarity of NRC regulatory processes**
 - **Clear criteria on use of voluntary initiatives**
 - **Visibility to all stakeholders**
 - **Defines oversight of voluntary initiatives**

NTTF Tasking Memo

- **Called for the Task Force to:**
 - **“evaluate all technical and policy issues to identify...adjustments to the regulatory framework” and**
 - **“determine whether the agency should make additional improvement to our regulatory system and make recommendations to the Commission for its policy direction”**

Task Force Evaluation

- **The current regulatory approach has served the Commission and the public well**
- **The NTTF also concluded that the regulatory system could and should be enhanced**

NTTF Recommendation 1

... establishing a logical, systematic, and coherent regulatory framework for adequate protection that appropriately balances defense-in-depth and risk considerations.

... enhancing ... the NRC regulatory framework to encompass beyond-design-basis events

Task Force Envisioned:

- 1. Coherent risk-informed and defense-in-depth regulatory framework**
- 2. Addressing safety-significant issues beyond the design-basis (including severe accidents)**
- 3. Generic and plant-specific issues**

Task Force Envisioned:

4. Requiring plant-specific PRAs

5. Increased clarity of the role of defense-in-depth in integrated regulatory decision-making

6. Increased clarity and oversight of voluntary initiatives

Proposed Activities:

- **Positive and practical steps toward a clearer, more risk-informed regulatory process**
- **More can and should be done:**
 - **consistent with PRA Policy**
 - **consistent with NTTF vision**
 - **consistent with ACRS views**
 - **embracing Risk Management and other PRA initiatives**

Recommendation 1

Next Steps

- **Staff will provide implementation plans 6 mo. after SRM on Recommendation 1**
- **Recommendation 1 implementation plans will be integrated with plans for addressing the Risk Management Task Force recommendations**

Overview

- **Implementation of lessons-learned is progressing at all plants**
- **Plants are better prepared for beyond design-basis events today than they were 3 years ago and will be even more prepared by the end of 2016**
- **Still a lot of work to do over the next 3 years**

Status of Tier 1 Activities

- **Orders**
 - **Mitigation strategies for beyond design basis external events**
 - **Containment venting system for Mark I and II containments**
 - **Spent fuel pool water level instrumentation**

Status of Tier 1 Activities

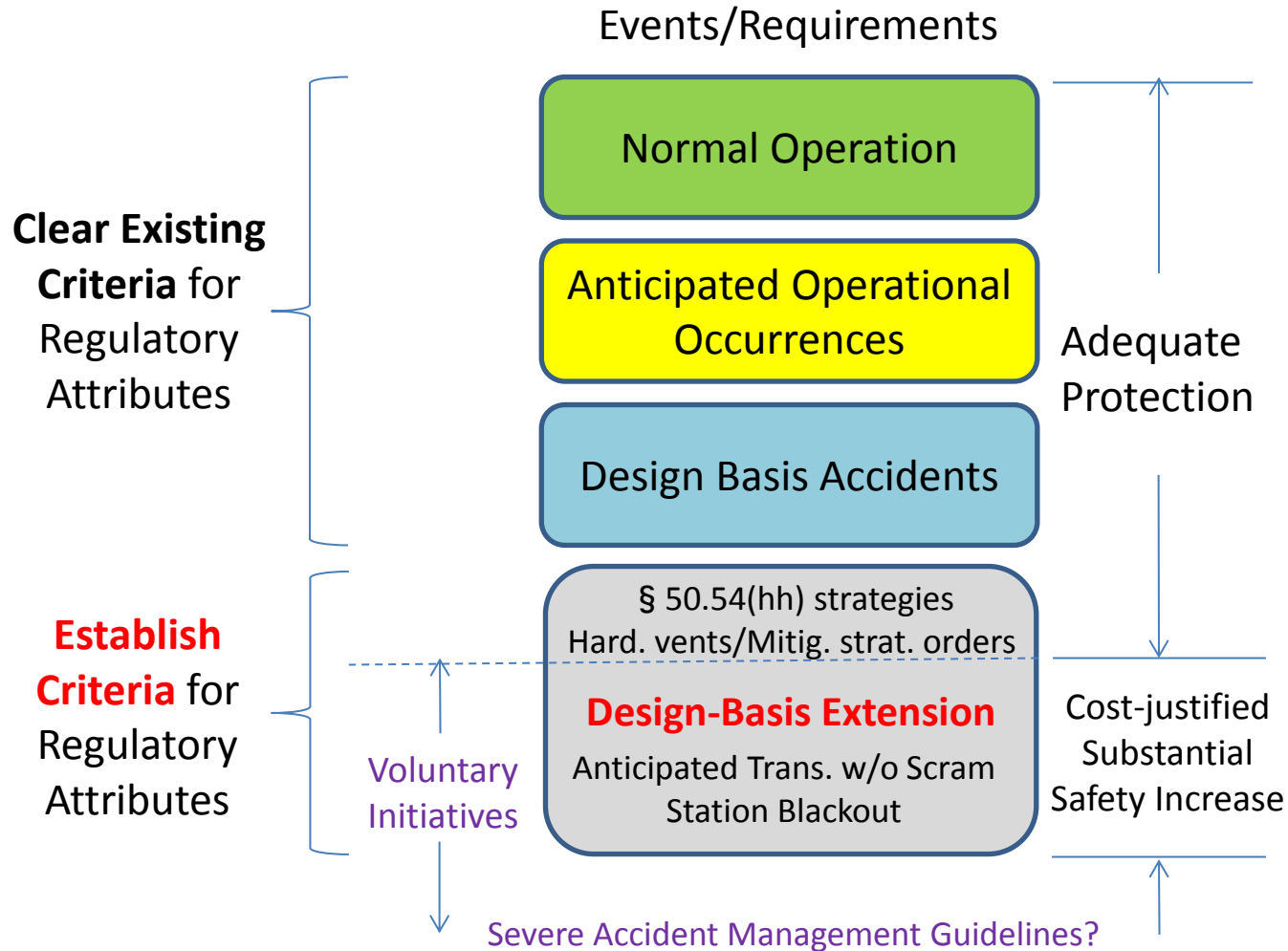
- **Request for Information**
 - **Seismic and flooding walkdowns (completed Nov. 2012)**
 - **Seismic and flooding hazard reevaluations**
 - **Emergency Preparedness staffing and communications**

Status of Tier 1 Activities

- **Rulemakings**
 - **Station Blackout Mitigation Strategies (SBOMS)**
 - **Onsite Emergency Response Capabilities**
 - **Filtering Strategies**

Backup Slides

Design-Basis Extension Category



Nuclear Power Reactor Defense-in-Depth May Consist of Four Levels

