

Integrated Approach to Reactor Decommissioning Requirements



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Overview

- ◆ **Decommissioning Program**
 - **John Greeves, Division Director, NMSS**
- ◆ **Background and Purpose**
 - **Stuart Richards, Project Director, NRR**
- ◆ **Technical Working Group (TWG) Study**
 - **Diane Jackson, Lead Engineer, NRR**
- ◆ **Decommissioning Rulemaking**
 - **Bill Huffman, Project Manager, NRR**

Decommissioning Program

Decommissioning Board Coordination (Examples)

- ◆ NRR - Project Management, EP, Spent Fuel Pool Accident Risk**
- ◆ NMSS - Spent Fuel Dry Storage, License Termination**
- ◆ RES - Entombment, Dose Modeling Support, Burnup Credit**
- ◆ Regions - Inspection, Oversight, Enforcement**

Background

- ◆ **Problems applying operating reactor regulations to decommissioning reactors**
 - **Unnecessary regulatory burdens**
 - **Exemption processing**
 - **Lack of clarity**
- ◆ **Decommissioning regulatory decision-making should be risk-informed**
- ◆ **SECY-99-168 addresses process and schedule**
 - **Spent fuel pool accident risk study**
 - **Rulemaking activities**

Presentation Purpose

Update on reactor decommissioning regulatory improvement activities

- ◆ **Broad scope effort**
- ◆ **Following process and schedule**
- ◆ **Technical assessment progressing**
- ◆ **Addressing stakeholder concerns**
- ◆ **Results will be incorporated into rulemaking and interim exemption criteria**

Technical Working Group (TWG) Study

- ◆ **Study of spent fuel pool accidents and associated risk for decommissioning plants**
- ◆ **Key areas of draft report issued in June:**
 - **Decay time estimation based on thermal hydraulic code analysis** *TH*
 - **Risk assessment** *PRA*
- ◆ **Risk assessment used a broad set of initiating events:**

Loss of SFP cooling, Tornado missiles, Seismic, Heavy load handling, Internal fire, Aircraft, Loss of SFP inventory

Stakeholder Interactions

- ◆ **Staff held several public meetings - April, May, June, and July (2-day workshop)**
- ◆ **Comments and additional information received from stakeholders (e.g., NEI, UCS, individuals) via meetings, telecons, and correspondence**
- ◆ **Major industry concern was that the risk analysis did not give sufficient credit for plant conditions and personnel actions**
- ◆ **TWG is performing follow-up activities, based on stakeholder concerns**

Follow-up Activities

- ◆ **Human reliability: Issued for comment an approach to identify conditions to support an assumption of high human reliability (e.g., procedures, training)**
- ◆ **Seismic: Reviewing NEI-proposed checklist to identify potential pool vulnerabilities compared with a nominal plant**
- ◆ **Heavy load movement: Reassessing using NEI's proposal to implement Phase I & II from NUREG-0612 (Control of Heavy Loads)**

Other Followup Activities And Concerns

- ◆ **Potential for criticality: Reassessing based on expanded scope of scenarios**
- ◆ **Adiabatic spent fuel heatup calculation:**
 - **Conservative, simple calculation**
 - **No current plans to use as a generic criterion**
- ◆ **Other stakeholder concerns also being addressed (e.g., concrete aging, safeguards)**

Other Activities

- ◆ **Continuing work to finalize study**
 - **Additional technical work by NRC contractors**
 - **Independent, technical, quality review (ITQR)**
 - **Application of risk-informed principles**

Risk-informed Decision Making

- ◆ **Conclusions from the technical study will be formulated using the risk-informed regulatory principles in RG 1.174:**
 - **Core damage frequency (CDF) & large early release frequency (LERF) goals**
 - **Defense in depth**
 - **Safety margins**
 - **Performance monitoring**
- ◆ **Based on all inputs, a realistic, risk-informed assessment will be developed**

TWG Product And Schedule

TWG is following its plan to finalize its assessment and address stakeholder concerns that will result in a solid technical basis for the development of rulemaking and interim exemption criteria

- ◆ Release draft report for public comment in early January 2000**
- ◆ Release final report in early April 2000**

Decommissioning Rulemaking

- ◆ **Two rulemaking efforts**
 - **Integrated decommissioning rulemaking**
 - **Decommissioning regulatory improvement initiative**
- ◆ **Integrated decommissioning rulemaking:**
 - **EP - Safeguards - Insurance - Backfit**
 - **Operator Staffing & Training**
- ◆ **Need SFP risk study results before proceeding with rulemaking**
- ◆ **Integrated rulemaking plan by May 31, 2000**

Decommissioning Rulemaking (continued)

- ◆ **Decommissioning regulatory improvement initiative:**
 - **Comprehensive regulatory review**
 - **Modification of regulations to clarify applicability to decommissioning**
- ◆ **41 potential areas identified for clarification**
- ◆ **Consolidation of reactor decommissioning regulations to a dedicated Part recommended**
- ◆ **Rulemaking plan by July, 2000**