



U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Public Meeting on Risk-Informed Regulatory Guidance for New Reactors

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Meeting Purpose

Discussion of Commission’s Staff Requirements Memorandum (SRM) regarding SECY-10-0121, “Modifying the Risk-Informed Regulatory Guidance for New Reactors”

Agenda

- **Contents of the SRM**
- **Deliverables**
- **Major tasks and schedule**
- **Next steps**

Contents of SECY-10-0121

- **Four major change processes and guidance**
- **Previous Commission expectations, policy papers, and Part 52 regulations**
- **Issues related to risk-informed changes to licensing basis and Reactor Oversight Process (ROP)**
- **Interactions with stakeholders**
- **Options and staff recommendation**



Options Provided in SECY-10-0121

- 1) No changes to existing risk-informed guidance (status quo)**
- 2) Implement enhancements to existing guidance to prevent significant decrease in enhanced safety (NRC staff recommendation)**
- 3) Develop lower numeric thresholds for new reactors**

- **Commission approved a hybrid of Options 1 and 2**
 - **Continue existing risk-informed framework pending a series of tabletop exercises that test existing guidance**

- **Commission “reaffirms” existing**
 - **safety goals**
 - **safety performance expectations**
 - **subsidiary risk goals and associated risk guidance**
 - **key principles (e.g., RG 1.174)**
 - **quantitative metrics**

- **Commission expects:**
 - **Advanced technologies in new reactors will result in enhanced margins of safety**
 - **As a minimum, new reactors have the same degree of protection of the public and environment as current generation LWRs**
- **New reactors with these enhanced margins and safety features should have greater operational flexibility than current reactors**

Key Deliverables

- **Brochure summarizing Commission policies and decisions regarding new reactor safety performance**
- **Guidance on 50.59-like process for new reactors under Part 52**
- **Tabletop exercises to test adequacy of existing guidance (risk-managed tech specs and 50.69 specifically called out)**
- **Progress report every 6 months**
- **Commission paper with specific recommendations by June 2012**

Staff's Proposed Approach

- **Leverage current industry effort to revise NEI 96-07 to address new reactor change processes (new Appendix C)**
- **Prepare summary document/brochure entirely with in-house NRO staff**
- **Leverage on-going efforts in the review of US-APWR risk-managed tech specs**
- **Address 50.69 and RI-ISI early on**
- **Utilize in-house staff to exercise SPAR models for AP1000, ABWR, and US-APWR**
- **Call upon reactor designers to perform parallel computations for realistic plant modifications and licensing basis changes**

Proposed Approach (cont.)

- **Define “significant decrease” in enhanced margin of safety, as necessary**
- **Address large release frequency (LRF), including such options as its elimination as a risk metric, replacement by LERF, or transition from LRF to LERF by initial fuel loading**
- **Draft Commission paper early 2012 along with holding several ACRS briefings**
 - **Recommendations on the kinds of changes to guidance that are necessary, but not a “red-line” mark-up of the documents**
 - **No expedited change to Reg Guides anticipated**
 - **If necessary, issue interim staff guidance**

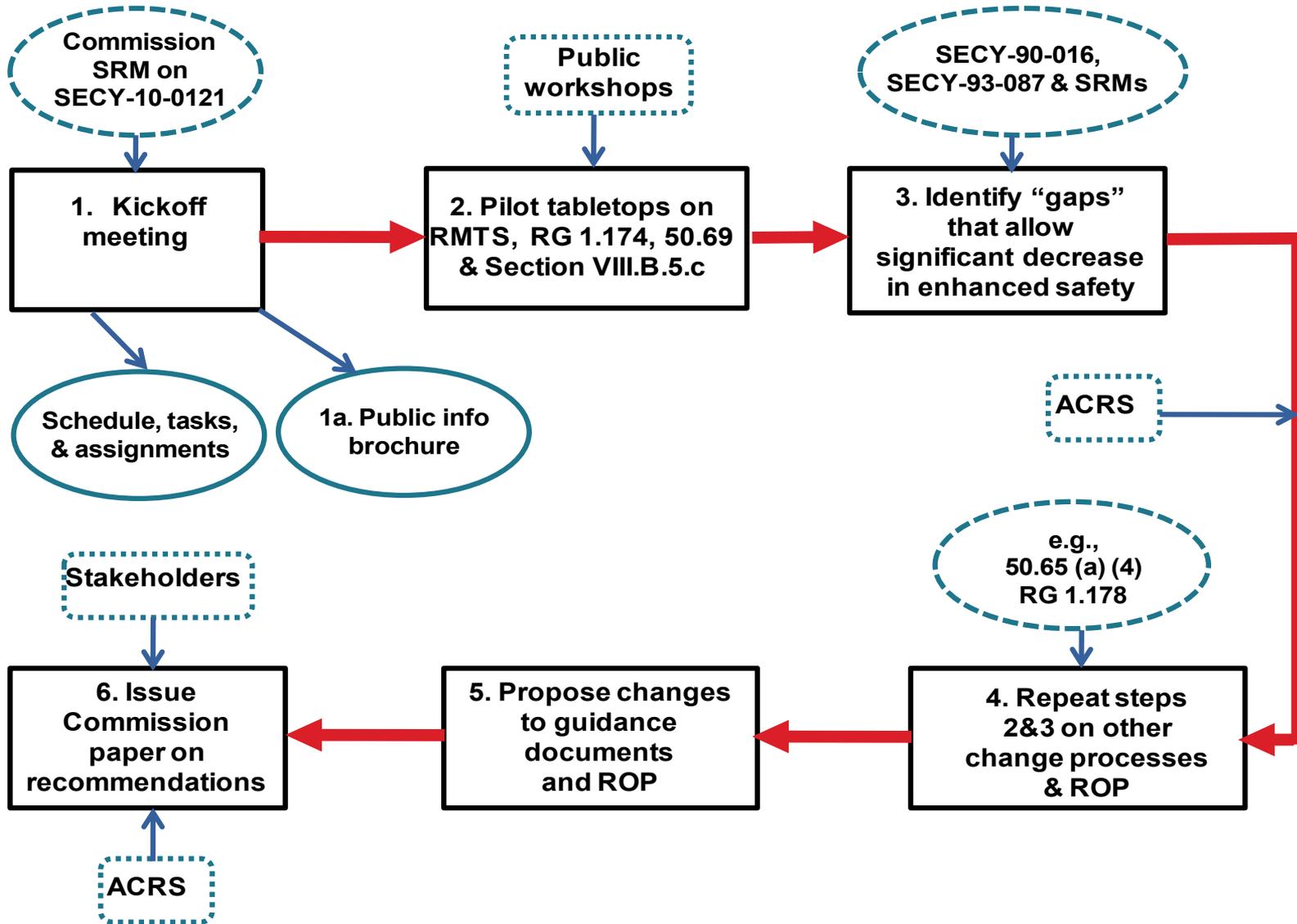
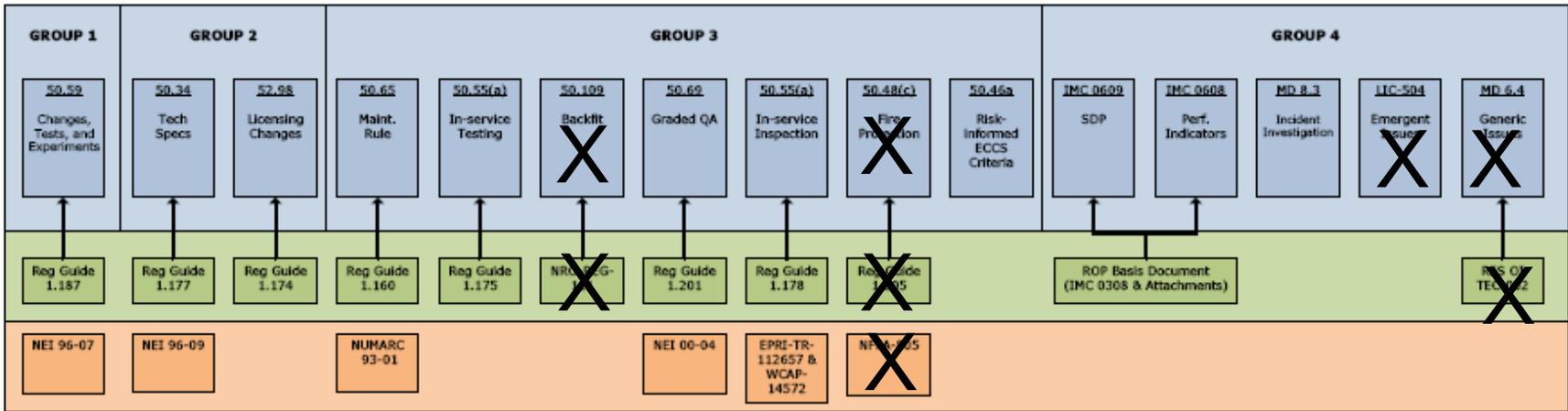


Figure 1. Proposed Staff Response to Commission SRM on SECY-10-0121

Figure 2. Key Risk-Related Regulations, Programs, & Processes



DISCUSSION

RG 1.174 defines defense-in-depth criteria and introduces the concept of an acceptably "small" increase in risk. Together, these are used to ascertain compliance with regulations. Although written for a specific application, the underlying philosophy and principles form the basis of a broad spectrum of regulatory activities. All of the programmatic areas and their guidance documents listed above have an implicit or explicit link to RG Guide 1.174.

For example, the ROP Basis Document (IMC 0308) states that thresholds should be "consistent with other NRC applications...e.g., RG 1.174."

If changes are made to either the deterministic criteria or risk thresholds in RG 1.174, the documents shown above may be affected. NRC staff and managers should evaluate each document to determine the impact and whether changes are appropriate.

SECY-10-0121 defines four categories of guidance documents that may be impacted by changes to RG 1.174:

- Group 1. Guidance for changes to a licensee's approved licensing basis without prior NRC approval.
- Group 2. Risk-informed guidance to support changes to a licensee's approved licensing basis, including operational programs, with prior NRC approval
- Group 3. Guidance to support implementation of risk-informed regulations
- Group 4. Guidance to support implementation of the ROP

These categories are important because the roles and responsibilities of NRC technical staff and managers may be different for each category. For example, the Division of Inspection and Regional Support in NRR may have the lead on Group 4 but have limited or no involvement in Group 2. Senior management will be responsible for ensuring a reasonably level of consistency between groups.

X Signifies processes where there is likely insufficient time & resources to tabletop

Contact: CJ Fong

Existing Risk-Informed Regulation, Program, Process, or Guidance	Specific Licensing Basis Change, Plant Modification, Event, or Performance Deficiency	Controls that Limit Decrease in Safety Margin	Analysis Results	Gap Identified?
Risk-Informed Tech Spec Initiative 4b (completion times)				
50.69 Risk-Informed Categorization and Treatment of SSCs				

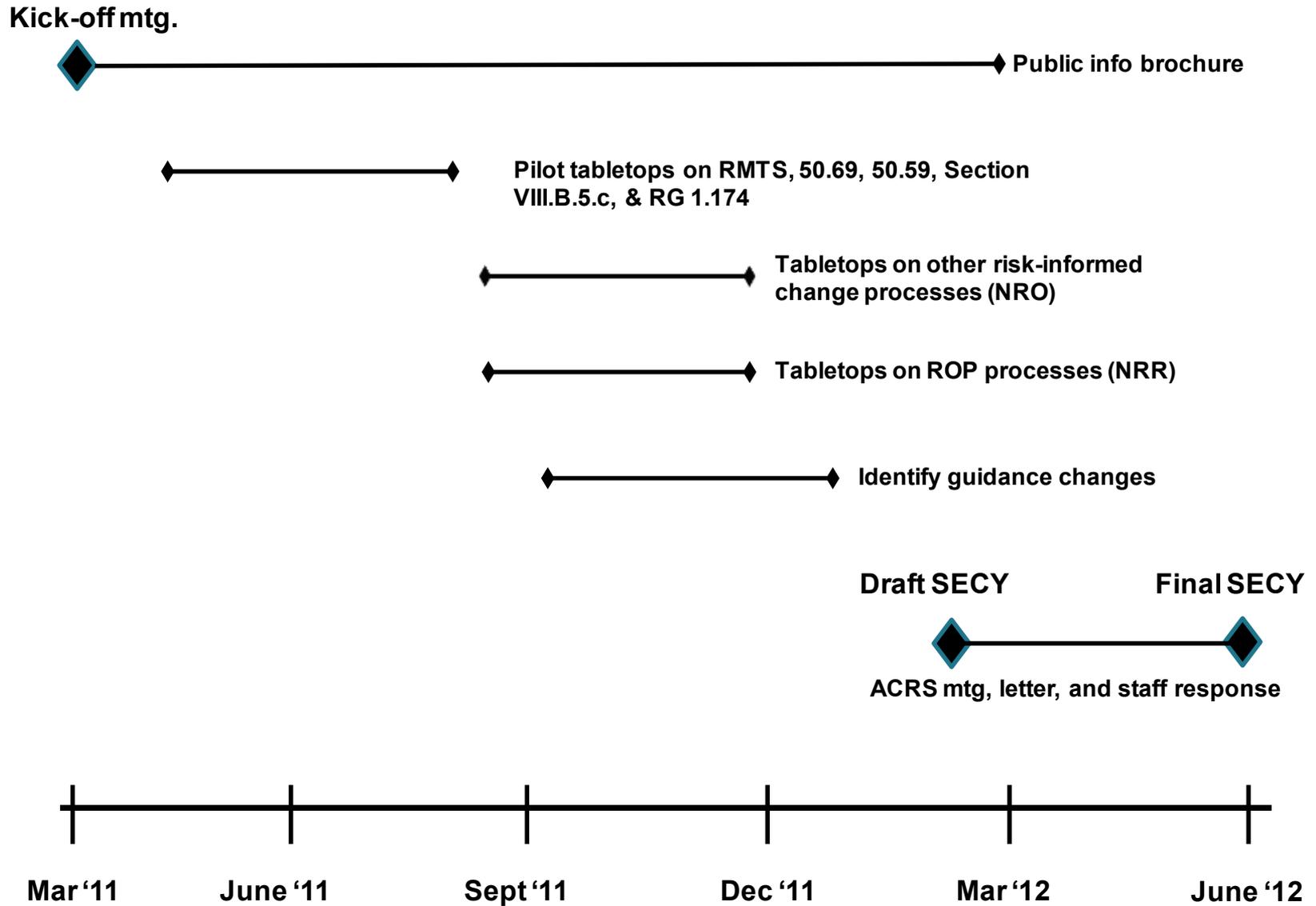


Figure 3. Approximate timeline

Next steps

- **Revise tasks and schedule as necessary**
- **Identify organizations, resources, and detailed schedule for the first three to four activities (RMTS, RI-ISI, 50.69, Part 52 change process)**
 - **For each change process, identify plant modification, condition, configuration, or deficiency to be assessed**
- **Staff proposes periodic workshops every three to four weeks for tabletop exercises, beginning late April/early May through November**
- **Others?**