



# **RISK-INFORMED PART 50 OPTION 2 STATUS**

**Steve West  
Office of Nuclear Reactor  
Regulation**

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## **Background**

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- **SECY-00-194 dated September 7, 2000 provided to Commission**
- **Status briefing per January 31, 2000 SRM direction**

2

# Overview of SECY-00-194

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- **Provides preliminary staff views of ANPR comments**
  - **Significant topics discussed in SECY**
  - **ANPR comments are grouped/addressed in the SECY attachment**
  - **Comments generally supportive of Option 2**
  - **Final responses to ANPR comments--proposed rule**
- **Discusses conceptual approach to implementing Option 2 rulemaking plan**

3

## ANPR Comments Preliminary Staff Views

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- **Selective Implementation**
  - **At a minimum categorize/treat RISC-2 SSCs**
- **Impact on Other Regulations**
  - **Relation of Option 2 to Part 54 (license renewal)**
- **Need for Prior NRC Review**
  - **Objective continues to be little or no prior review**
- **PRA Quality**
  - **Will consider other methods (than ASME/ANS std)**
  - **Reviewing NEI peer review process**

4

# **ANPR Comments Preliminary Staff Views (cont')**

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- **Rulemaking Approach**
  - ▶ **Revise Option 2 rules in a single rulemaking (except §50.36)**
- **Pilot Program**
  - ▶ **Future application of 50.69 to pilot plants**
  - ▶ **Scope of pilot activities could be less than STPNOC**
- **Part 21**
  - ▶ **Modify Part 21 to remove RISC-3 SSCs from scope**
  - ▶ **Reviewing need for reporting requirements for 50.69**

5

## **Option 2 Rulemaking Approach**

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- **Consistent with SECY-99-256 using:**
  - ▶ **Categorization**
  - ▶ **Maintain functionality of SSCs with existing or new programs**
  - ▶ **RISC-2 SSCs -- control reliability, availability, capability per categorization assumptions**
  - ▶ **RISC-3 SSCs -- maintain design functions "as described in UFSAR"**
- **Program for implementing 50.69 to be described in the UFSAR**

6

## **Next Steps for Option 2**

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- **Review NEI implementation guidance**
  - **Peer review process (NEI-00-02)**
  - **Categorization and treatment guideline**
  - **Provide feedback to NEI to support pilots**
- **Option 2 pilot activities**
- **Continue interaction with stakeholders**
- **Complete STP exemption review**
- **Proposed rulemaking to Commission**

# **Risk-Informing NRC Special Treatment Requirements (SECY 00-194)**

USNRC Briefing

September 29, 2000

Ralph Beedle

Senior Vice President & Chief Nuclear Officer,  
NEI



## **Industry Interest in Risk- Informed Regulation**

- 26 members on NEI working group
- Risk insights already being used in regulatory applications:
  - Oversight process - all plants
  - Maintenance rule - all plants
  - Configuration control - all plants
  - Inservice Inspection - 60 plants planned
  - Tech Spec AOTs - most plants



## SECY 00-194

- Continues unbalanced focus on low risk-significant SSC activities
- Unlikely to further industry interest in risk-informed regulation
- Concerns include:
  - PSA Quality
  - Selective Implementation
  - Treatment
  - Part 54

3



## PSA Quality for Option 2

- Industry proposal:
  - Use existing peer review process to facilitate focussed NRC review
    - ◆ Process submitted to NRC
    - ◆ NRC invited to observe
  - Develop Option 2 submittal template
  - Industry recognizes that some existing PSAs need improvement to support regulatory reform
- Industry considering several alternatives for providing NRC with updated risk information

4



## Selective Implementation

- No need to implement full categorization process for all systems
  - Reactor Protection system & potable water categorization clear without resource intensive evaluations
  - Screening methodology could identify systems for full categorization process
- Premature to impose schedule constraint

5



## Treatment -- RISC-2 SSCs

- Maintain performance-based approach
  - New monitoring program not required for licensees that implemented §50.65 based on functional failures
  - §50.65 monitoring with commercial (BOP) controls has demonstrated good performance and continues to provide reasonable assurance that safety-significant functions will be satisfied

6



## Treatment -- RISC-3 SSCs

- No need for prescriptive (“how to”) details of commercial (BOP) controls in FSAR
  - RISC-3 functions assured through performance monitoring & application of proven commercial controls
  - High level program summary of main commercial control elements could be added to FSAR to provide additional regulatory confidence. Example:
    - ◆ Procurement specifications shall provide assurance that the design basis functions, including service conditions, will be satisfied

7



## 10 CFR Part 54

- Risk-informed option for Part 54 is necessary
  - Coherency between Part 50 and Part 54 important in providing incentive for and understanding of Option 2
- Focus of risk-informed license renewal should be on safety-significant SSCs
- Performance monitoring and commercial controls will assure functionality during extended term

8



## Conclusion

- Continued progress on establishing a risk-informed regulatory regime will require strong NRC and industry leadership to address the cultural issues that are embedded in SECY 00-194
- Industry remains committed to risk-informed philosophy for plant operations

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## Views on Risk-Informing Special Treatment Requirements: KPCGB

David Lochbaum  
Nuclear Safety Engineer  
September 29, 2000

www.ucsusa.org

Union of Concerned Scientists

## KPCGB: Topics in SECY-00-0194

- ① Selective Implementation
- ② Impact on Other Regulations
- ③ Need for Prior NRC Review
- ④ Identification and Control of Attributes Requiring Special Treatment
- ⑤ PRA Quality Appropriate to Option 2 Applications
- ⑥ Approach
- ⑦ Pilot Program
- ⑧ 10 CFR Part 21 Application

UCS will address Items ①, ③, and ⑤ today

Slide 2

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## KPCGB: ① Selective Implementation

One of NRC's four objectives is to improve its efficiency and effectiveness.

On its present course, risk-informed regulation NRC-style will allow plant owners to:

- ▷ avoid all risk-informed regulations, or
- ▷ adopt some of the risk-informed regulations, or
- ▷ adopt all of the risk-informed regulations.

Thus, NRC will have to enforce a wider spectrum of regulations than it does today with fewer staff, making this objective very, very, very hard to meet.

Slide 3

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## KPCGB: ① Selective Implementation II

Recommendation:

- ① Make all plant owners adopt any and all risk-informed regulations (i.e., assure uniform regulations).

OR

- ② Allow non-uniform regulations today but converge on uniform regulations in the future.

Example: NRC should require all plant owners to implement any and all risk-informed regulations in the license renewal term. Plant owners not seeking renewal could finish out operation under the existing regulations. Others would move into "latest and greatest" form of regulation during renewal period.

Slide 4

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## KPCGB: ③ Need for Prior NRC Review

NRC staff's objective: "an approach [for classifying components into RISC boxes] that either entails no prior NRC review and approval, or minimizes the level of prior review involved."

What are RISC boxes?

Slide 5

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## KPCGB: RISC Boxes

RISC-1 Safety Related Safety Significant	RISC-3 Safety Related Not Safety Significant
RISC-2 Not Safety Related Safety Significant	RISC-4 Not Safety Related Not Safety Significant

Slide 6

Union of Concerned Scientists **KPCGB:**  
**③ Need for Prior NRC Review II**

Within the revised reactor oversight process, NRC and plant owner attention is focused on safety significant areas (i.e., RISC-1 and RISC-3 items are higher priority than RISC-2 and RISC-4 items).

If a plant owner classifies all the emergency diesel generators into the RISC-4 box, NRC inspectors will spend little, if any, time examining them.

Slide 7

Union of Concerned Scientists **KPCGB:**  
**Filling RISC Boxes?**

RISC-1 HH	RISC-3 TH
RISC-2 HT	RISC-4 TT

Slide 8

Union of Concerned Scientists **KPCGB:**  
**③ Need for Prior NRC Review III**

Without prior NRC review:

- ⊗ NRC staff won't be able to verify that plant owner has properly classified RISC levels
- ⊗ Public won't be able to review RISC classification levels.

With prior NRC approval:

- ⊗ NRC staff may be able to avoid repeating the GPU/N component declassification error that culminated in a \$210,000 civil penalty (10/08/97, Enforcement Action Nos. 97-070, 97-117, 97-127, and 97-256.)

Slide 9

Union of Concerned Scientists **KPCGB:**  
**③ Need for Prior NRC Review IV**

Recommendations:

- ⊗ NRC staff must conduct prior reviews of plant owners' efforts to risk-inform special treatment requirements.
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Slide 10

Union of Concerned Scientists **KPCGB:**  
**⑤ PRA Quality**

Last month, UCS released "Nuclear Plant Risk Studies: Failing the Grade" documenting our concerns with the quality of existing PRAs.

Case studies show that NRC's complete and utter failure to define minimum PRA standards resulted in widely scattered results for nearly identical plant designs.

RISC classifications draw lines between "significant" and "not significant" -- current PRA quality does not support this this application.

Slide 11

Union of Concerned Scientists **KPCGB:**  
**⑤ PRA Quality II**

Recommendation:

- ⊗ NRC staff should not allow plant owners to risk-inform special treatment requirements until "PRA quality" stops being an oxymoron.

Slide 12

## **SOUTH TEXAS PROJECT PRESENTATION TO THE NRC COMMISSIONERS**

**Joe Sheppard, Vice President  
Engineering & Technical Services  
September 29, 2000**

## **ANPR Comment Overview**

- **ANPR too prescriptive in its current form**
  - need flexibility for feedback/new insights
  - Appendix T should only define major elements
- **Recommend use of industry guideline (similar to NEI proposal)**
- **Plants that commit to an industry guideline should receive minimal NRC prior review and approval**

-2-

## **SECY-00-0194 Concerns**

- **NRC redefinition of four-box approach**
- **Need to identify all RISC-1 and RISC-2 SSCs within 3 years**
- **Maintenance Rule not acceptable for monitoring**
- **Unresolved issues (monitoring, treatment, PRA quality, commitment changes)**
- **Impact on pilot plant activities**

-3-

## **Importance of Option 2**

- **Success with Option 2 is vital for the future of risk-informed regulations**
- **STP is actively pursuing an Option 2 approach**
- **Other industry plants are closely monitoring the outcome of the STP submitted Exemption Request**

-4-

## **STP Exemption**

- **Originally submitted 07/13/99, and revised on 08/31/00 in response to RAIs**
- **Served to highlight policy/cultural issues**
- **STP concerns with NRC feedback to date:**
  - Excessive proof of SSC functionality
  - Commercial Practices details beyond Appendix B
  - Schedule for approval
  - Prescriptiveness of commitments, and stringent change process

-5-

## **Conclusion**

- **ANPR prescriptiveness needs to be modified to be acceptable**
- **SECY needs additional clarification**
- **Option 2 success will be greatly influenced by the outcome of the STP Exemption**
- **To be successful, Option 2 will require visionary leadership from both NRC and industry**

-6-

### **Voluntary Initiative Rulemaking**

**Safety and sound management require that analysis precede imposition of a new or modified regulatory requirement or staff position. It follows that those backfits imposed by rulemaking should undergo the same scrutiny as proposed by other means.  
50 Fed. Reg. 38101 (1985)**

7

### **Backfitting Process**

- **Rule requires balancing of ANPR benefits and additional burdens with costs**
- **Notwithstanding apparent positive attributes of the ANPR, are prescriptive requirements necessary to relax special treatment requirements?**

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### **NUBARG Recommendations**

- **Apply Backfitting Rule (cost-benefit analysis) to determine necessity of ANPR prescriptive elements**
- **Ensure that once initiative is adopted, subsequent plant-specific changes in NRC position are considered backfits**

9

## **Backfitting Implications of Risk-Informing Special Treatment Requirements**

**Thomas Poindexter  
Winston & Strawn/Nuclear Utility  
Backfitting and Reform Group**

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## **NUBARG Focus**

- **Preserve discipline in regulatory process achieved through the Backfitting Rule**
- **Promote NRC adherence to the Backfitting Rule**
- **Ensure that progress is not eroded as a result of regulatory reform**

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## **Backfit Definition**

**The modification of or addition to SSCs, facility design, procedures, or organizations that may result from new or amended provisions in the Commission's rules.**

**10 CFR § 50.109(a)(1)**

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## **Application of Backfit Principles**

- **NRC establishes generic positions through rulemaking**
- **Plant-specific regulation implementation offers the potential for inconsistent NRC interpretations**
- **Adoption of a voluntary initiative may still constitute a backfit**

4

## **Backfitting Concerns with the ANPR**

- **ANPR contains NRC position changes**
  - **PRA modeling, scope, quality**
  - **Integrated decision-making panel**
  - **Configuration control process procedures**
  - **Monitoring program for SSCs**

5

## **Preserve Backfit Principles**

- **Once the initiative is adopted, subsequent changes in plant-specific regulatory interpretations should be subject to the Backfitting Rule**
  - **Preserves predictability and discipline**
  - **Prevents erosion of voluntary initiative benefits**

6