



Risk-Informed Regulation Implementation Plan (RIRIP)

**Briefing to Commission
November 17, 2000**

Background

- **PRA Policy Statement**
- **PRA Implementation Plan**
- **GAO recommendation**
- **SECY-00-0062**

Focus of Briefing

- **SECY-00-0213**
- **Role of RIRIP**
- **Major Challenges**
- **Future Activities**

Purpose of RIRIP

- **Implement Strategic Plan strategies**
- **Roadmap to risk-informed regulation:**
 - **Where we are going**
 - **How to get there**
- **Communication and training for RIR**

Organization of the RIRIP

- **Part I – General**
- **Part II – Arena activities**
- **Part III – Corporate
Management Strategies**
- **Scope –primarily activities
initiated since 1995 PRA
Policy**

General Guidance

- **Where do we want to go?**
 - **Vision- 1995 Policy Statement**
 - **Application of Screening Criteria for selection of activities to be risk-informed**

Draft Screening Criteria

Would risk-informing:

- **Resolve a safety concern**
- **Make the NRC (or Agreement States) regulatory process more efficient, effective or realistic**
- **Reduce unnecessary regulatory burden on the applicant or licensee**

Draft Criteria (continued)

- **Help to effectively communicate a regulatory decision or situation**
- **Rely on existing risk data and analytical models (or data and models that could be developed)**

Draft Criteria (continued)

- **Have a net benefit**
- **Not encounter factors that would preclude changing the regulatory approach and therefore limit the utility of implementing a risk-informed approach**

General Guidance

- **Important considerations**
 - **Defense-in-depth**
 - **Safety margins**
 - **ALARA**
 - **Safety goals**

General Guidance

- **Implementation Issues**
 - **Performance-based**
 - **Voluntary versus mandatory**
 - **Selective implementation**
 - **Regulatory oversight**

Overarching R-I Strategy



Example – Reactor Arena

- **Performance Goal:**
 - **Maintain Safety**
- **Four Strategies**
- **Twenty two Activities**

Communication

- **Describe RIR and the RIR-IP**
- **Key Messages:**
 - **Safety is first priority**
 - **RIR helps focus on safety**
 - **Bases for change well grounded**
 - **Where are we going?
(implements Strategic Plan)**

Communication Milestones

- **Issue announcement (December 2000)**
- **Add RIRIP to NRC website (February 2001)**
- **Stakeholder participation:**
 - **Solicit input and feedback**
 - **Stakeholder meetings**

Risk Assessment Training Program

- **Methods & statistics**
- **Basic & advanced users**
- **Information available on web**
- **~300 students annually**
- **Emphasis has been on
reactor inspectors and risk
analysts**

Training Initiatives

- **Nuclear reactor safety**
 - **Work group on improving risk expertise**
 - **Additional risk training for selected regional staff**

Training Initiatives

- **Nuclear Materials Safety and Nuclear Waste Safety**
 - **“Introduction to Risk Assessment in NMSS”**
 - **“Risk Assessment for NMSS Technical Managers”**

Future Activities

- **Solicit internal and external feedback**
 - **ACRS/ACNW**
 - **GAO**
 - **Website**
 - **Workshops (NRC staff and the public)**

Future Activities

- **Apply screening criteria**
- **Develop integrated schedule**
 - **Critical path items**
- **Identify additional needs and activities**
 - **Infrastructure**
 - **Training**

Key Challenges

- **PRA quality**
- **Public availability of risk information**
- **Stakeholder confidence**
- **Development of materials and waste safety goals**

Summary

- **Progress continues to be made within the arenas in implementing risk-informed regulation**
- **PRA Steering Committee interactions**
- **RIRIP will be updated every 6 months**

BACKUP

Strategic Plan Safety Arenas

- **Nuclear Reactor Safety**
- **Nuclear Materials Safety**
- **Nuclear Waste Safety**

Strategic Plan Performance Goals

- **Maintain safety**
- **Increase public confidence**
- **More efficient, effective, and realistic**
- **Reduce unnecessary regulatory burden**

Reactor Safety Strategy

We will sharpen our focus on safety to include a transition to a revised NRC reactor oversight program for our inspection, assessment, and enforcement activities.

Implementation Activities

- 1. Oversight framework**
- 2. Inspection program**
- 3. Performance indicators**
- 4. Assessment process**
- 5. Enforcement**
- 6. Process improvements**

Reactor Safety Strategy

- **We will evaluate operating experience and the results of risk assessments for safety implications.**

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Implementation Activities

- 1. Risk-based performance indicators**
- 2. Performance indicator analysis**
- 3. Plant reliability studies**
- 4. Accident sequence precursor program**

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Implementation Activities

5. System reliability studies

**6. Individual plant
examinations for external
events**

7. Health effects models

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Reactor Safety Strategy

- **We will ensure that changes to operating licenses and exemptions to regulations maintain safety and meet regulatory requirements.**

Implementation Activities

1. Risk-informed guidance

- RG 1.174**
- Application-specific**
- Non-risk-informed
licensing applications**
- Reviewing human actions**

Reactor Safety Strategy

- **We will continue to develop and incrementally use risk information and, where appropriate, less prescriptive regulatory approaches to maintain safety.**

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Implementation Activities

- 1. Risk-inform Pt 50 (Option 2)**
- 2. Risk-inform Pt 50 (Option 3)**
- 3. Standard technical specs**
- 4. Fire protection**
- 5. Safeguards**
- 6. Reactor pressure vessel**

Reactor Safety Strategy

- **We will use risk information to improve the effectiveness and efficiency of our activities and decisions.**

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Implementation Activities

- 1. Advanced reactors**
- 2. Standards**
- 3. Methods**
- 4. Analytical tools**
- 5. International cooperation**
- 6. Regulatory effectiveness**

Reactor Safety Strategy

- **We will utilize risk information and performance-based approaches to reduce unnecessary regulatory burden.**

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Implementation Activities

- **Activities previously mentioned including --**
 - Option 2 and 3**
 - Licensing guidance**
 - Standard tech specs**

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Reactor Safety Strategy

- **We will improve our reactor oversight process by redirecting resources from those areas less important to safety.**

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Implementation Activity

- **Oversight process
(previously mentioned)**

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Materials Safety Strategy

- **We will continue to improve the regulatory framework to increase our focus on safety and safeguards, including incremental use of risk-informed ...regulatory approaches to maintain safety.**

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Implementation Activities

- 1. Develop a framework**
- 2. Develop improved risk methods and data**
- 3. Risk-inform Part 35**

Implementation Activities

- 4. Amend Part 70**
- 5. Integrate risk insights from
NUREG/CR-6642**
- 6. Revise the fuel cycle
facility oversight program**

Materials Safety Strategy

- **We will confirm that licensees understand and carry out their primary responsibility for conducting activities consistent with the regulatory framework.**

Implementation Activity

- 1. Institute a risk-informed,
performance-based
Temporary Instruction for
the nuclear medicine
program**

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Materials Safety Strategy

- **We will continue to improve the regulatory framework to increase our effectiveness, efficiency, and realism.**

Implementation Activity

- 1. Develop realistic assessments of risk impacts from radiation exposure**

Waste Safety Strategy

- **We will continue developing a regulatory framework to increase our focus on safety, including the incremental use of risk-informed ...regulatory approaches to maintain safety.**

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Implementation Activities

- 1. Study spent nuclear fuel cask responses to severe transportation accidents**
- 2. Conduct a spent fuel storage cask PRA**
- 3. Incorporate risk information in Yucca Mountain review**

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Implementation Activities

- 4. Analyze Part 72**
- 5. Revise regulations for reactors undergoing decommissioning**
- 6. Review independent spent fuel storage installation**

Implementation Activities

**7. Incorporate risk information
into the decommissioning
regulatory framework**

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Waste Safety Strategy

- **We will keep pace with the national high-level waste management program. We will ...resolve the issues most important to repository safety ...**

Implementation Activities

- 1. Identify those issues most important to repository safety**
- 2. Resolve key technical issues identified as being greater contributors to risk**

