

## MEMORANDUM

TO: R. P. Savio  
FROM: J. N. Sorensen *JNS*  
DATE: December 23, 1998  
SUBJECT: PRA Steering Committee Meeting, 12/21/98

I attended the December 21, 1998 meeting of the Steering Committee for Risk Informed Activities as an observer. A copy of the agenda is attached. An attendance list is also attached (Attachment 2).

The meeting was chaired by the Deputy Director of the Office of Research (Margaret Federline) because the committee chairman (Ashok Thadani) was on sick leave.

The first item on the agenda was discussion of preparations for three Commission briefings on risk informed activities scheduled for January 1999. The Director of NRR stated that the responsibilities for preparing the briefings had already been established in a prior meeting with the EDO. An outline of the Commission briefing planned for January 11, 1999, was provided to the steering committee (Attachment 3). Tom King (RES) and Gary Holahan (NRR) will coordinate preparations for the Commission briefing.

The second item on the agenda was discussion of a Commission paper being prepared by NMSS on a risk-informed framework for non-reactor activities. Seth Coplan made the presentation to the steering committee and will be the principal author of the paper. Mr. Coplan's talking points and the outline of the proposed paper are attached (Attachment 4).

The proposed NMSS paper responds to an April 15, 1997 SRM for DSI-12, "Risk-Informed, Performance-Based Regulation." SECY-98-138 addressed the SRM in a preliminary way, but concluded that NMSS would need to develop its own framework because the reactor framework was inappropriate. The paper will explore the possibility of developing a framework for materials related activities, analogous to the framework which the safety goals establish for reactors. The proposed paper is expected to go to the Commission some time in February 1999.

One of the issues highlighted by NMSS (Martin Virgilio) was their interest in having advisory committee oversight and input if the Commission approves the idea of proceeding with

*Sorensen  
Follow File*

"safety goals" for materials application. There was some discussion of the relative interests and capabilities of the two advisory committees (ACRS and ACNW) in this subject. The suggestion was made that perhaps the best oversight arrangement would be a joint subcommittee of ACRS and ACNW. The need for advisory committee input would occur after the Commission approved the concept of safety goals, presumably some time in February 1999.

c: J. T. Larkins  
ACRS Members  
ACNW Members  
ACRS/ACNW Staff and Fellows

## Attachment 1

December 17, 1998

Steering Committee for Risk-Informed Activities

(Revised Agenda for December 1998 Meeting)

- **Preparation for January 1999 Commission briefings on risk-informed activities:**
  - **Jan. 11, 1999 Briefing - overview of activities:**
    - objectives of briefing
    - key topics and issues to be discussed
    - office participation
    - outside participation (e.g., NEI, UCS)
  - **Jan. 13, 1999 Briefing - Reactor Licensing Activities**
    - same as above
  - **Jan. 20, 1999 Briefing - Reactor Oversight Process**
    - same as above
- **Overview of NMSS Commission paper (due to Commission 1/29/99) on a risk-informed framework for non-reactor activities:**
  - outline of paper
  - key issues and recommendations

ATTACHMENT 2

Attendance List

Steering Committee for Risk Informed Activities

December 21, 1998, T8-A-1

Committee Members or Alternates

Margaret Federline, RES  
Sam Collins, NRR  
James Lieberman, OE  
Joe Gray, OIG  
Martin Virgilio, NMSS  
Ernie Rossi, AEOD

Observers/Guests

Seth Coplan, NMSS  
Bob Perch, NRR  
Gary Holahan, NRR  
Tom King, RES  
Mark Cunningham, RES  
Spiros Drogitis, OSP  
Jocelyn Mitchell, OEDO  
Jack Sorensen, ACRS/ACNW

NRC Staff Activities in Risk-Informed Regulation  
Briefing to Commission  
(January 11, 1999)

Objective of Briefing:

- to provide brief background for new Commissioners regarding how risk information is currently used in the regulatory process and objectives of risk-informed regulation
- to summarize the status of key ongoing risk-informed activities in the Chairman's Tasking memo (e.g., Part 50, Plant Oversight Process)
- to discuss key issues related to ongoing and future risk-informed activities (e.g., policy issues, non-reactor plans)

Participation:

- RES lead
- NRR and NMSS representation/role
- external participation
  - NEI?
  - UCS?
  - states?

Key Topics for Discussion:

- Recent accomplishments:
  - guidance documents
  - training
  - licensing actions
  - options for risk-informing part 50, including RES work on 50.59
  - plant oversight process (to be covered in detail on 1/20/99)
- Near term plans and recommendations:
  - licensing activities
  - Part 50, including NEI whole plant study
  - non-reactor risk informed framework
  - PRA standard activity
- Long term issues for risk-informing Agency activities:
  - long term goals
  - staff training, expertise, infrastructure needs
  - guidance documents needed
  - resource implications
  - other important factors:
    - Safety Goal for non-reactor activities
    - revised Safety Goal Policy for reactors
    - CSIS recommendations
- Office roles and responsibilities

## RISK-INFORMED AND PERFORMANCE-BASED REGULATION IN NMSS SCOPING EFFORT

### Background

- The SRM of April 15, 1997 addressed DSI-12, "Risk-Informed, Performance-Based Regulation (RIPBR)". One part was directed specifically at NMSS and directed the staff to
  - review its RIPB approaches w.r.t. HLW and nuclear materials to assure that they are responsive to the needs of those licensees
  - review the bases for NMSS regulation to identify areas that can be made amenable to RIPBR with minimal additional resources
  - develop a framework for applying PRA to nuclear materials similar to the reactor framework
- SECY-98-138 addressed the SRM in a preliminary way. It concluded that
  - NMSS would need to develop its own "framework" because differences among its regulated activities and collectively w.r.t. reactors rendered the reactor framework inappropriate
  - development of a framework could be a substantial effort that would need to involve the Agreement States (AS)
  - the first two points above could not be fully addressed until a framework had been at least partially developed
  - NRC's resource picture is such that there first should be a task group effort to scope the development of a framework, estimate the requisite resources, and make a recommendation to the Commission on how we should proceed

### Purpose of the Scoping Effort

- The scoping effort addresses the commitment made in SECY-98-138. To that end it will
  - make a preliminary association of risk assessment methods with regulated uses of nuclear material
  - as appropriate for each regulated use and in coordination with the Agreement States, identify how these associated risk assessment methods can be used in a risk-informed regulatory framework for materials
  - identify alternative approaches for developing a framework and estimate the resources needed
  - make a recommendation to the Commission about completing a framework, given our resource constraints
  - identify a path forward for developing a safety goal for material uses
  - make a recommendation to the Commission about developing a safety goal

### Product

- The product will be a SECY paper -- asking for a notation vote on
  - alternative end points and approaches for developing a framework
  - whether and how to develop a safety goal for material uses

## Task Group

- A task group has been formed. It consists of
  - Stephen Koenick, NMSS/FCSS
  - Lawrence Kokajco, NMSS/SFPO
  - Dennis Serig (John Telford), NMSS/IMNS
  - Nathan Siu, RES
  - Garath Parry, NRR
  - Norman Eisenberg, ex-officio member
  - Seth Coplan, DWM, Chair
  
- The task group will develop the SECY Paper and pave the way for concurrence by the represented organizations

## Agreement State (AS) Involvement

- OSP has requested OAS participation
  - Agreement States are being overwhelmed by participation with us
  - The scoping effort was discussed during the November 12 monthly telecon with the Agreement States—it was agreed that during the scoping phase, Agreement State participation will take place through a pre-existing IMNS effort

## Schedule

- |                     |               |
|---------------------|---------------|
| Kick-off meeting    | 10/13         |
| TG Internal Outline | 10/17         |
| Brief CJP           | week of 10/19 |
| Outline Complete    | 10/23         |
| TG Internal Draft   | 1/8/99        |
| SECY paper to DWM   | 1/15/99       |
| SECY paper to NMSS  | 1/22/99       |
| Brief Directors     | 1/26/99       |
| SECY paper to EDO   | 1/29/99       |
  
- Oversight -- we need oversight; either ACRS or ACNW could work, but both have drawbacks

## SOME PRELIMINARY THOUGHTS

- **Preliminary Association of Risk Methods with Activities**
  - Decommissioning                      Performance Assessment
  - Waste Disposal                        Performance Assessment
  - Major Fuel Cycle Facilities        ISA
  - Repository Operations                ISA
  - ISFSI/MRS                              PRA (ISA?)
  - Transportation                         PRA
  - IMNS areas                              Output from IMNS study
  
- **Best Use of Method**
  - **PRA Policy Statement provides general guidance**
    - Decommissioning                      Direct by licensee/review by staff      Perf. Obj.
    - Waste Disposal                         Ditto    Ditto
    - Major Fuel Cycle Facilities        Ditto    Ditto
    - Repository Operations                Ditto    Ditto
    - Transportation                         ?    ?
    - ISFSIs/MRS                              ?    ?
    - Others (IMNS areas)                 ?    ?
  
  - Need to develop criteria for determining the level of staff review -- DWM criteria may be appropriate for this. Other possibilities include intrinsic "riskiness" of activity, etc.
  
- **Safety Goal**
  - Reactor safety goals are: (1) individuals should be afforded a level of protection from NPP operations such that they bear no significant additional risk to life and health and (2) societal risk from operation of NPPs should be no greater than that posed by viable competing technologies
  - Two quantitative objectives are used to determine achievement of these qualitative goals: (1) individual risk of prompt fatality in the vicinity of a NPP should not exceed 0.1% of the risk of fatality from all other accidents to which U.S. population is exposed; and (2) risk of cancer fatality to population in the vicinity of an NPP should not exceed 0.1% of cancer risk from all other causes
  - Qualitative NPP goals establish the basic framework for NPPs.
  - Need an analogous framework for the whole collection of NMSS-regulated activities. There are many constraints -- (1) consistency with reactor safety goals, (2) \$2000/person-rem C/B guidance, (3) OMB C/B guidance, (4) ICRP & NCRP guidance, (5) EPA standards and policy, and (5) some existing legislation. There are also a number of issues -- (1) what is the appropriate affected population? (2) Should public perception of risk be factored in? and (3) what should the goals be?
  - What process should be used (e.g., enhanced participatory process)?
  
- **Framework**
  - Is the SECY-98-138 process overkill? What alternatives are there? How can we

use contractor assistance?

- How should we estimate resources?

## OUTLINE FOR 12/31/98 COMMISSION PAPER

- O Purpose -- To address commitments made by the staff in SECY-98-138, to request Commission approval of the staff's recommended plan for developing a framework for applying risk assessment in regulating nuclear material uses and waste disposal, and to request Commission approval of the staff's recommendation for development of a safety goal policy for nuclear material uses.
- O Background -- One or, at most, two paragraphs that summarize
  - Commission direction in the SRM of 4/15/97
  - Commitments made by the staff in SECY-98-138
- O Discussion -- Three pages supplemented by attachments.
  - Preliminary association of risk assessment method with regulated uses of nuclear materials -- This info would be displayed in an attached table. The table would show groupings of regulated uses (e.g., fuel cycle facilities) and a corresponding assessment method for each. A two paragraph discussion of the rationale for the groupings and criteria used to associate groupings with methods would be included in the paper.
  - Regulatory use of the above risk assessment methods -- Cite PRA Policy Statement guidance to introduce a two or three paragraph discussion of the potential ways that risk assessment methods can be used in regulating nuclear material uses (i.e., staff use to inform rule-making, licensee use for compliance demonstration, etc.). For each grouping of uses, a one paragraph discussion of who (i.e., licensee or staff) would implement the method, for what purpose, and the rationale for the choices (to keep the paper short, this discussion may need to go into an attachment).
  - Alternative approaches for developing a framework -- Three paragraphs to describe perhaps three approaches for developing a framework and an estimate of the resources needed for each. The approach of SECY-98-138 would be one such approach. Examples of others might be (1) to articulate the criteria and logic used in the previous two topics and declare it a "framework" or (2) to re-interpret or recast the reactor framework in such a way as to make it applicable to the materials area. A one or two paragraph discussion of decision criteria would follow and finally there would be a three paragraph discussion of the alternatives with respect to decision criteria and a fourth paragraph which would make a recommendation.
  - Identification of any activities in the PRA Implementation Plan that should be discontinued because of inconsistency with the recommended direction.
  - Safety Goal for nuclear material uses. A discussion that would address the following points:
    - The programmatic value and use of a safety goal.
    - Its relationship to the reactor safety goal (and rationale for any differences)
    - Problematic areas: (1) the relative benefits of material uses and costs of risk reduction vary widely from one use to another; (2) public perception is a primary driver in risk management for materials; (3) how to define the affected population for any given use; (4) the need for both individual and societal goals; and (5) institutional considerations (e.g., legislation, EPA,

- IAEA, and other interests)
  - developmental approach (e.g., an enhanced participatory process)
  - a staff recommendation on how and whether to proceed.
- O Resources -- A one paragraph discussion of the resource impact of the staff's recommendations.
- O Recommendation -- that the Commission approve the staff's recommendations.
- O Coordination -- A short paragraph summarizing coordination within NRC and with the Agreement States.

Distribution for JNS-98-38

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