

# POLICY ISSUE INFORMATION

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SECY-03-0204

FOR: The Commissioners

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SUBJECT: RESEARCH EFFECTIVENESS REVIEW BOARD (RERB)

## PURPOSE:

To provide an update to the Commission on the activities of the Research Effectiveness Review Board (RERB). This paper provides the Commission an update of the efforts of the RERB to address the effectiveness of the research program in meeting the needs of the Offices of Nuclear Reactor Regulation (NRR), Nuclear Material Safety and Safeguards (NMSS), and Nuclear Security and Incident Response (NSIR), as well as the Regions, and on the effectiveness of the other offices in supporting and in articulating their needs and priorities to the Office of Nuclear Regulatory Research (RES).

## BACKGROUND

On May 3, 1996, the Nuclear Regulatory Commission (NRC) issued Strategic Assessment Issue Paper, "DSI-22, Research," which examined the state of the research program and identified options concerning its future. In a series of decisions, the Commission provided guidance on the role, responsibilities, and future direction of the research program. Largely as a result of that effort the staff proposed, in SECY-97-224, "Creation of a Research Effectiveness Review Board," dated October 1, 1997, and the Commission subsequently approved, in SRM - SECY-97-224, dated November 4, 1997, creation of the RERB.

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In SECY-01-0163, dated August 24, 2001, the staff reported on a reconstituted RERB that was focused on the identification of issues that were perceived to have a direct bearing on the effectiveness of the research process. An approach to assess the issues identified was presented, with each issue falling into one of three broad groupings: (a) effectiveness issues; (b) user need issues; and (c) roles and responsibilities. The RERB explored in depth how these issues were currently being handled using a systematic "vertical slice" review of three research projects. This review indicated that: (1) improvements to the user need process should be pursued; (2) efforts to enhance interfaces should continue; (3) a common prioritization approach should be explored; and (4) a common understanding should be reached on overarching issues such as roles and responsibilities of the Offices.

SECY-01-0163 also described on-going activities and future plans under five headings: (1) Implementation of New User Need Process; (2) Enhanced Interfaces; (3) Prioritization Approach; (4) Overarching Issues; and (5) RERB's Future Role. This paper reports on progress made in these areas.

#### DISCUSSION:

The five areas identified in SECY-01-0163 are discussed below:

##### (1) and (2) Implementation of New User Need Process and Enhanced Interfaces:

RES has been working closely with NRR and NMSS on improving the user need process. Regarding the NSIR and RES interface, development of a formal user need process has been deferred in favor of higher priority work. The first user need was received by RES from NSIR on a computer code called the Radiological Assessment System for Consequence Analysis (RASCAL) code (dated August 22, 2003). In the meantime, NSIR and RES are working together closely through senior management interactions and the Vulnerability Assessment Team (VAT) to ensure that necessary research is identified and carried out in support of agency programs for homeland security and incident response.

The RERB has noted improved coordination through a marked increase in the number and scope of inter-office meetings. There is improved communication between assigned points of contact in each office. There are regularly scheduled (approximately monthly) Division Director level interface meetings, as well as routine one-on-one meetings between management counterparts of the several offices. The discussions during these now-routine Division Director level interface meetings have served their intended purpose of identifying necessary research and monitoring its implementation. Further, to facilitate continued dialog, Office-level management has periodic meetings to discuss items of interest. Efforts are continually being made to refine these processes.

The user need processes, as employed by each user office with RES, are evolving. All offices assign priorities to user needs based on the agency's performance goals. Hence, decision-making is tied directly to agency performance and strategic goals. New user needs are considered for funding through the add/shed process based on priority assigned to existing work. Such a prioritization scheme helps RES develop its research plans within the scope of its program goals and objectives and within budget limitations. To date, no significant differences

between offices have occurred over the priority assigned to a user need. Should such differences arise, the Office-level meetings will provide the forum for resolution.

Good practices in the user need process and the coordination of activities are best illustrated through specific examples provided below.

#### NMSS:

1. NMSS coordinates and recommends long-term user needs for anticipatory research.
2. NMSS staff and management participated in the review of user needs and anticipatory research projects with the Advisory Committee on Nuclear Waste.
3. NMSS staff and management conducted an annual update of user needs. The final updated user needs were considered in the NMSS FY-05/06 planning process.
4. Interactions between NMSS and RES focus on operating plans. Quarterly meetings, held at the office director level, track work progress through reviews of each office's operating plans with interdependent milestones. This has facilitated improved horizontal communications and has provided early focus on developing issues.
5. NMSS and RES are implementing a process by which NMSS will provide formal feedback on key RES deliverables to provide a metric for measuring timeliness, relevance and other key program attributes.

#### NRR:

1. A pilot effort between RES and NRR's New, Research and Test Reactors Program Branch has been initiated to more closely align the offices during all stages of planning and implementing advanced reactor research projects. The planning function is being addressed by an Advanced Reactor Technical Advisory Group (TAG). TAGs are working-level interoffice groups that, as mentioned in SECY-01-0163, are vehicles to coordinate technical activities, facilitate communication between offices, and advise management of issues that need management attention. The advanced reactor TAG, which mirrors existing TAGs in the fuels and materials areas, provides advice and makes recommendations to a higher level management committee, which is the joint NRR/RES Advanced Reactor Steering Committee.
2. The Advanced Reactor Steering Committee focuses on review and research activities associated with advanced reactor pre-application reviews, design certification reviews, and advanced reactor research infrastructure development. SECY-03-0059 provides a detailed discussion of this concept, which ensures that advanced reactor review activities and research activities are planned and conducted in a manner that supports the agency's goals and objectives. Several wide-ranging issues are being addressed by the steering committee and the TAG, such as the Economic and Simplified Boiling Water Reactor (ESBWR) pre-application review and the advanced reactor research plan. Additionally, progress on specific issues has been achieved, such as basic agreement between NRR and RES on application of analytical codes for safety

assessments of the Canadian reactor ACR-700. Thus, there is increasing evidence that this pilot effort represents a successful model.

3. NRR has systematically reviewed existing user needs and updated them as needed. As a result, user needs reflect a scope and schedule focused on current regulatory issues and include consideration of changes in the regulatory environment.

#### NSIR:

1. The VAT, which consists of staff from NSIR, NMSS, NRR, and RES, is coordinating studies being performed in RES and other offices to identify potential vulnerabilities and possible mitigative strategies.
2. RES provided support to NSIR and NMSS for participation on the NRC-Department of Energy Working Group on Radiological Dispersal Devices (RDDs), which coordinated development and maintenance of the framework for controlling sources. A final report was issued in May 2003.
3. Based on experimental work and computational modeling supported by RES, NMSS, NSIR and other agencies, the NRC Operations Center has established capability to analyze the consequences of an RDD event. NSIR continues interaction with NMSS and RES on RDD modeling and remediation issues.
4. As documented in a July 18, 2003 memorandum from W. Kane to R. Zimmerman, a Nuclear Security Steering Committee (NSSC) has been established to provide oversight of work related to security and safeguards initiatives. This committee, represented by NSIR, NRR, NMSS, RES, and Office of General Counsel (OGC), provides advice and counsel on nuclear security policy and program issues.

#### Regions:

1. Meeting the needs of the regional staff continues to be given a high priority by RES. Work on the Reactor Oversight Process is an example of close cooperation between the Regions and RES, through NRR. Such collaboration is reflected in the improvements being explored for performance indicators and inspection findings. Continued consideration of regional needs is assured by the active participation of the regional representative on the RERB.

#### (3) and (4) Prioritization Approach and Overarching Issues:

The agency has taken significant steps to strengthen its planning, budgeting, and performance management processes (PBPM). Earlier this year, the program offices took steps to develop a common prioritized list of activities within each of the three safety arenas (reactors, materials, and waste) to help ensure the successful achievement of program goals. Further development and implementation of the common prioritization process is expected to result in significant gains in effectiveness and efficiency as office level management ensures the alignment of work activities with the agency's strategic and performance goals. The RERB has maintained awareness of the staff's efforts to further develop common prioritization methodology by arena.

RERB's own reviews, as reported in SECY-01-0163, have underscored the value of such an approach. The RERB has noted that, while the process continues to mature, the initial efforts in this area resulted in improved communications and increased alignment among offices on the priority of work. RERB recognizes that the common prioritization effort has much in common with the agency's efforts to meet the Office of Management and Budget's requirement to use the Program Assessment Rating Tool (PART). For example, both emphasize setting clear program goals and assigning accountability to improve a program's focus and increase its effectiveness. The RERB assists in overseeing these activities by identifying cross-cutting and interrelated leveraging opportunities. In parallel with these efforts, the agency is further pursuing the insights learned in the PART initiative that would expand program focus in all areas. The RERB will keep abreast of developments in the common prioritization methodology as well as PART and encourage development and implementation of the research program in a manner that supports and takes advantage of these activities.

The key impact of common prioritization and PART on PBPM is to improve the clarity of goals and objectives that drive decision making, resource allocation, and identification of appropriate measures by which performance of programs and activities will be assessed. The interface enhancements described above and the discipline of the PBPM process have improved planning. Plans now better reflect agency goals, objectives, and priorities. Office level budgeting decisions have also improved in that they reflect resource allocation agreements reached by properly aligning plans across offices. The RERB will be focusing more on performance management by observing whether the measures of performance reasonably reflect the effectiveness and quality of outcomes as noted below.

#### (5) RERB's Future Role

RERB plans to continue monitoring the process for development and implementation of the research program and has identified the following three areas to focus on in the future:

- (1) Improvements in performance management will be encouraged by the RERB so that the effectiveness of research programs is more evident and can be demonstrated as meeting agency needs.
- (2) The RERB will continue to monitor progress being made with respect to improving the user need processes supporting all arenas of activity. Best practices will be identified so that more uniform implementation can be encouraged where appropriate.
- (3) RERB will periodically sample and test the implementation of research activities within each program area. Examples might include "vertical slice" reviews of selected research projects to evaluate effectiveness and efficiency.

#### COORDINATION:

The Office of the Chief Financial Officer has concurred on this Commission paper. This paper was not sent to OGC for review because it does not involve rulemaking, interpretation of regulations, policy matters, or other actions with legal or regulatory implications.

RESOURCES:

Any additional resources needed will be considered through the PBPM process as the need arises.

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