January 6, 1999

FOR: The Commissioners

FROM: William D. Travers /s/
Executive Director for Operations

SUBJECT: SELF-ASSESSMENT OF OPERATIONAL SAFETY DATA REVIEW PROCESSES

PURPOSE:

To inform the Commission of the results of the self-assessment concerning effectiveness and efficiency improvements in agency-wide events assessment and review of operational data activities. Some improvements have been implemented and other recommendations will be considered in the planning, prioritization, and resource allocation activities of the respective offices.

BACKGROUND:

A 1993 NRC headquarters organizational review resulted in a "Report of the Review of Operational and Occupational Event Review, Evaluation, and Followup," August 1, 1994, sponsored by James L. Milhoan, which contained 16 recommendations to improve the effectiveness and efficiency of events assessment in the reactor and materials program areas.

The NRC's response to Phase II of the Administration's National Performance Review, SECY-95-154, contained a number of questions and issues regarding NRC review and assessment of operational safety data (see Appendix A of the self-assessment report). Subsequently, the Commission issued a Staff Requirements Memorandum (SRM) on January 14, 1998, regarding SECY-97-225, "Enhancing NRC Effectiveness and Efficiency." This SRM directed the staff to "consider incorporating efficiency improvements in the agency-wide events assessment and review of operational data function, and other outstanding candidate efficiency improvements discussed in SECY-95-154, in the Regulatory Excellence Plan."

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The staff responded by forming an interoffice self-assessment group representing the Office for Analysis and Evaluation of Operational Data (AEOD), the Office of Nuclear Reactor Regulation (NRR), the Office of Nuclear Material Safety and Safeguards (NMSS), and the Office of State Programs (OSP) to address this and the related issues raised in the "Strategic Assessment Phase I Final Report," described in SECY-98-065, "FY 1998 NRC Excellence Plan," April 2, 1998 (see Appendix A of the self-assessment report) . Some of these issues were identified and tracked by WITS and SARSC. The self-assessment group also received coaching from the Arthur Andersen consulting firm and input from Region IV personnel during the self-assessment. This self-assessment was conducted against a backdrop of changing priorities, budgets, and proposed changes in organizational structure and assignments. The self-assessment recommendations have been modified to reflect issues that may need further consideration by appropriate program offices depending upon the extent of changes in organizational structure and assignments that will be implemented as proposed. The staff committed to report the results of the assessment along with appropriate recommendations to the Commission.

DISCUSSION:

The self-assessment group produced their final attached report, "Self-Assessment of Operational Safety Data Review Processes," on December 17, 1998, which details how current headquarters events assessment and review of operational data can be made more effective and efficient. This report has been made available to each office to consider in their normal planning and budgeting efforts.

The scope of the 1998 self-assessment included NRC headquarters review and assessment of operational safety data from the occurrence of an event or discovery of a condition, through fact gathering event followup, to the production of a product or service. This self-assessment does not include activities and resources associated with the incident response function, as was done in the August 1994 Milhoan report; a 1998 self-assessment of the incident response function is currently under development. Regional contributions to the operational safety data review process are primarily in the event reporting and followup part of their inspection role and regional resource estimates were provided in this report related to these processes. No significant recommendations were made to the regional processes because it is expected that ongoing reviews of the reactor oversight program, including assessment and inspection using risk-informed methods, will provide the principal impetus for streamlining the region's event reporting and followup processes.

The self-assessment group modeled operational safety data review processes described in NRC Management Directive 8.5, "Operational Safety Data Review," using only direct resources from the FY99 current estimate budget for each office (see Appendices B and C in the self-assessment report). The AEOD direct reactor program FY99 current estimate budget resources in the self-assessment report are generally consistent with the total AEOD resources shown in SECY-98-228, "Proposed Streamlining and Consolidation of AEOD Functions and Responsibilities," October 1, 1998. The differences in the resources recommended in the self-assessment report and the various proposed reorganization papers recently submitted to the Commission occurred because (1) this review recommended changing some of the function and resource allocations among offices, (2) event assessment resources were estimated based on a bottom up analysis vs top down allocation, and (3) the use of direct instead of total FTE resources. The self-assessment group considered four factors in making its recommendations:

1. The relative contribution of each product, service, or process to meeting NRC strategic goals.

The contribution of functions in the three complementary program elements in the review and assessment of operational safety data (the assessment of plant-specific event safety significance; identification of generic vulnerabilities, feedback of generic lessons learned, and resolution of generic concerns; and assessment of plant-specific and overall industry performance) to the NRC strategic goals are different because each element has a unique purpose and time frame. The self-assessment group rated each product and service by its contribution to meeting three of the NRC's strategic goals by whether it was:

- used by licensees to improve safety at their facilities, had generic applicability and was time critical to safety
- used by the NRC to assess licensee safety performance
- used by the general public for information, and was timely and widely available

2. If the product, service, or process was useful to industry.

   The self-assessment group contacted the Institute of Nuclear Power Operations (INPO) and the Nuclear Energy Institute to discuss the usefulness of the reactor program products, services, and processes to the nuclear power industry and similarities between some of their current or planned efforts with those of the NRC.

3. If there were means to improve the effectiveness of the product, service or, process.

   Functions were recommended to be sunset, where warranted. NRC appropriation reductions, and streamlining and consolidation recommendations to the Commission made during the course of the self-assessment affected some of the recommendations in the self-assessment report.

4. If there were means to improve the efficiency of the product, service, or process.

   Duplication of effort was eliminated where found. Recommendations to consolidate functions were made, commensurately with the desire to maintain a degree of independence of critical functions. Future opportunities for achieving efficiencies through increased data sharing and integration among event systems may be identified when the agency develops the strategic data model for the "Safety Concern" business area.

The self-assessment group found that operational safety data review and feedback is an essential element of the safety mission performed by the NRC, and is an agency strength. This review and feedback process provides measures of how well the industry is achieving the desired outcomes of the regulatory process. It yields insights about the effectiveness of NRC rules, regulations, and processes and identifies issues warranting additional regulatory action, on the basis of actual experience.

Reactor Operational Safety Data Review Program

The group compared the FY99 current estimate budget resources of June 29, 1998, with those in the 1994 "Report of the Review of Operational and Occupational Event Review, Evaluation, and Followup," by James L. Milhoan. The 1994 comprehensive review of the operational data review process had a broad scope including activities not directly related to events assessment that were not in the scope of the 1998 self-assessment, such as the systematic assessment of licensee performance and related plant performance meetings, allegations, and enforcement. The 1994 report estimated that 174 FTE were used in agency-wide reactor operational safety data review under its broad scope, whereas the 1998 self-assessment estimated approximately 126.5 FTE were used in 1994 for the scope of the 1998 self-assessment. The FY99 current estimate budgets resources of 94.5 FTE in Table ES-1 of the 1998 self-assessment report, reflects a reduction of 25 percent from the 126.5 FTE over the last 5 years. This reduction resulted from efficiency improvements in specific programs, changes in work scope and level of effort on specific items, as well as improvement in reactor performance.

If all of the effectiveness and efficiency recommendations in the 1998 self-assessment report are realized, it would result in saving a total of 10.5 FTE (i.e., 19 percent of the June 29, 1998, headquarters FY99 current estimate budget or 11 percent of the agency-wide events assessment FY99 current estimate budget). These recommendations preserve the following key elements of the program:

- daily screening of plant-specific operating experience.
  (see Sections 3.5.2 and 3.5.7)
- generic communications to feedback safety significant lessons learned
  (see Sections 3.2.1, 3.2.3, and 3.2.9)
- risk-based performance analyses needed as the NRC moves toward risk-informed regulation (see Sections 3.2.5 through 3.2.8, 3.4.1, and 3.4.3, through 3.4.6)
- independent perspective in critical function areas, such as the long-term assessment of operational safety data and the investigation of safety significant operational events with potential regulatory effectiveness implications, as described in SECY-98-0228.

Section 3 of the self-assessment report provides the detailed recommendations and their bases. Table 3 in the self-assessment report summarizes all of the recommendations. The most important recommendations are described below.

Potential effectiveness savings of approximately 4.9 FTE and $300,000 are recommended by eliminating AEOD Senior Management Meeting analyses (see Section 3.2.12), systematic review of all licensee event reports (see Section 3.5.10), and related AEOD functions. However, the prudence of achieving savings by eliminating AEOD Senior Management Meeting analysis will be reexamined after more experience is gained with risk-informing the plant assessment processes, including the Senior Management Meetings in 1999 and 2000.

Efficiency savings of approximately 5.6 FTE and $50,000 are recommended by (1) eliminating duplication of effort in generic communications preparation (see Sections 3.2.1 and 3.2.3), regional morning reports (see Section 3.2.14), review of foreign reactor events and INPO operational safety data (see Sections 3.5.1, 3.5.7, and 3.5.10), and events screening (see Section 3.5.7), and (2) raising the threshold on information notices (see Section 3.2.3). The recommendation to increase the effectiveness of the morning report system was made in part as a result of discussions with industry. However, increased use of morning reports and continued NRR review of foreign reactor events warrant using a small part of the savings recommended in other areas (see Sections 3.2.14, 3.2.18, and 3.5.1). Many of the efficiency recommendations in this self-assessment report have already been implemented and NRR has already achieved approximately 5 FTE reduction that is within the "Final FY99 budget [Rev. 0]," of October 20, 1998. These NRR FTE reductions result in fewer products.

The self-assessment group recommended that industry operating experience feedback be considered when evaluating the need for generic communications (see Section 3.2.1 and 3.2.3). This would minimize NRC and industry duplication of effort, but is not wholly consistent with the Commission's position in response to a General Accounting Office report, as reflected in a letter from Chairman Selin to Congressman Markey, dated July 19, 1991, that stated, "when the NRC staff determines that it would be appropriate for reasons of safety to issue an information notice, the staff will issue the notice without regard to whether INPO has already notified the industry about the subject of the notice." This policy will be revisited through a separate Commission paper for policy review.

Rulemaking has already commenced to revise reporting requirements in 10 CFR 50.72 and 50.73 to make them more risk-informed (see Section 3.5.5). The resulting rule will eliminate or reduce the reporting of information with little or no safety/risk significance, improve the reporting of risk-significant information, and assure information to be reported is necessary for the new risk-informed regulatory oversight program. This effort is being tracked for completion by February 25, 2000.

Materials Operational Safety Data Review Program

The 1994 Milhoan report found that nuclear materials operational safety data reviews had fewer resources and a less formal process than the reactor reviews, and recommended formalizing the process and increasing its resources. The 1998 self-assessment found that NMSS had made significant progress on these recommendations and has 14.3 FTE in its FY99 current estimated budget for this effort. However, the self-assessment group concluded that the overall materials program still needs additional resources to analyze and feedback long-term generic lessons-learned from materials operational safety data.

There is no routine, long-term analysis of materials operational safety data. If all of the nuclear materials recommendations in Tables 4 and 5, and Section 4 of the self-assessment report are implemented, it would result in an increase of 3.7 FTE (17 percent) and $254,000 in FY99 current estimated budget resources, due primarily to the need to restore funding for generic materials event studies (see Sections 4.2.8 and 5.1). The self-assessment group concluded that these generic studies are necessary to identify and feedback trends and patterns in materials operating experience to both the NRC and Agreement State licensees, as well as areas for regulatory improvement to NMSS. Further, the generic materials event studies were recommended to be performed in an independent office that has agency-wide responsibilities, such as RES. While increased resources are needed to achieve effectiveness in the generic feedback of materials operational safety data to reduce the frequency of similar events, these resources are not budgeted and cannot be reprogrammed from current AEOD or NMSS resources under either current or future priorities. The level and balance in operating experience review between power reactors and materials lines of business were found to be appropriate under the current priorities, except for generic materials events studies, which were eliminated from the FY99 presidents budget, as confirmed in a July 29, 1998, letter to Senator Domenici. It should be also noted that the recommendation to restore generic material events studies is not consistent with the streamlining of AEOD as described in SECY-98-0228 and approved by the SRM of December 10, 1998.

Resource Summation

The self-assessment group report estimated a Reactor Program savings of 10.5 FTE and $350,000, offset by a Nuclear Material Program increase of about 3.7 FTE and $254,000, for a "net" savings of 6.8 FTE and $96,000. Of this net savings, approximately 5 FTE have already been taken in the NRR current FY99 budget leaving a potential realization of approximately 1.8 FTE and $96,000. The resource implications would apply to FY2000 as well and would be addressed by the respective offices in their upcoming budget cycle.

COORDINATION:

The Office of the Chief Financial Officer has reviewed this Commission paper for resource implications and has no objections. The Office of the Chief Information Officer has reviewed this Commission paper for information technology impacts and compliance with the Paperwork Reduction Act and concurs in it. The Office of the General Counsel has no legal objection.

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Attachment: Self-Assessment of Operational Safety Data Review Processes