June 6, 1997

FOR: The Commissioners

FROM: L. Joseph Callan /s/
Executive Director for Operations

SUBJECT: INTEGRATED REVIEW OF THE NRC ASSESSMENT PROCESS FOR OPERATING COMMERCIAL NUCLEAR REACTORS

PURPOSE:

The purpose of this Commission paper is to inform the Commission of the staff's plan to perform an integrated review of the current NRC assessment processes (including plant performance reviews [PPRs], senior management meetings [SMMs], and systematic assessments of licensee performance [SALPs]) for operating commercial nuclear reactors. This paper addresses several recent Commission staff requirements memoranda (SRMs), but the primary focus is on SRM M970129A, as discussed in detail below.

BACKGROUND:

In several recent Commission SRMs, the staff was tasked to seek improvements to processes used to assess the performance of licensees. The SRMs and the pertinent staff action from the Maine Yankee Independent Safety Assessment (ISA) are summarized below.

In a memorandum dated November 27, 1996, the Executive Director for Operations directed the staff to resolve the staff actions resulting from the Maine Yankee ISA. Issue 7, adequacy of agency expectations regarding licensee performance, tasked the staff to "evaluate the appropriateness of the existing SALP definitions of superior, good, and acceptable performance in light of the NRC's contemporary expectations for licensee performance. Revise these definitions as necessary." The staff intends to address this item in conjunction with its response to the Commission SRMs that are discussed below.

In response to the Commission briefing of October 18, 1996, on the Maine Yankee ISA, the Commission requested a followup briefing on the SALP system and the NRC assessment process. This supplemental briefing was held on

December 16, 1996. In response to the SALP briefing, the Commission issued SRM M961216 (January 17, 1997), "Staff Requirements - Briefing on SALP System and Assessment Process," which directed the staff to "continue to seek improvements in the processes used to assess performance and regulate the nuclear power industry." SRM M961216 contained eight specific improvement areas, one of which augmented Maine Yankee ISA staff action number 7. Specifically, SRM M961216 directed the staff to improve the timeliness, objectivity, accuracy, efficiency, breadth, use of risk insights, simplicity, and clarity of the NRC assessment process. The due date for the staff's response to this SRM was May 30, 1997. This Commission paper constitutes the staff's response to SRM M961216.

In response to a briefing on January 29, 1997, the Commission issued SRM M970129A (February 14, 1997), "Staff Requirements - Briefing on Operating Reactors and Fuel Facilities." It directed the staff to "evaluate the efficacy of defining and formalizing a unified licensee performance assessment program that integrates the various separate processes being utilized (i.e., SALPs, PPRs, and SMMs)." SRM M970129A also directed the staff to reexamine the SALP process to determine its value, including the need for, and structure of, numerical categorization of plants. The due date for the staff's response to this SRM is July 31, 1997.

In response to a briefing on February 13, 1997, the Commission issued SRM M970213A (March 17, 1997), "Staff Requirements - Briefing on Operating Reactor Oversight Program and Status of Improvements in NRC Inspection Program." It directed the staff to address the use of engineering judgment in the performance assessment process and to "consider whether, when, and how the plant issues matrix should be made available to licensees and the public." The Commission also emphasized that as improvement initiatives are implemented, the staff should ensure that regulatory actions ultimately lead to a clear and coherent view of operating reactor performance. The due date for the staff's response to this SRM is July 31, 1997.

In response to the Commission briefing of February 18, 1997, on the Arthur Andersen assessment of the SMM process and information base, the Commission issued SRM M970218B (February 26, 1997), "Staff Requirements - Briefing on Analysis of Quantifying Plant Watch List Indicators (Arthur Andersen Study)." It directed the staff to continue to make improvements to the SMM process. The Arthur Andersen report contained several recommendations, including (1) reengineering the current performance information to better support the SMM and other NRC processes, (2) increasing automation, and (3) reformatting data to meet the needs of process customers. In SRM M970218B, the Commission emphasized that "consistency must be shown between the senior management meeting decisions and decisions which are reached in other evaluative processes." The due date for the staff's response to this SRM was March 31, 1997. The staff issued SECY-97-072, "Staff Action Plan to Improve the Senior Management Meeting Process," on April 2, 1997, which responded to the principal points of SRM M970218B. The staff also briefed the Commission on April 23, 1997.

In response to a Commission paper on the strategic assessment, the Commission issued on March 25, 1997, an SRM titled, "Staff Requirements - COMSECY-96-060 - Operating Reactor Program Oversight ([Direction-Setting Issue] DSI 11)." It directed the staff to "continue with the ongoing comprehensive review and systematic reexamination of the areas of licensing, inspection, and performance assessment to identify areas for improvement, implement corrective actions, and verify their effectiveness." It also directed the staff to "develop objective standards to measure licensee performance that reduces subjectivity and establishes an understandable level of performance expectations" and to "improve application of early indicators of declining performance to reduce reliance on event driven assessments." The due date for the staff's response to this SRM is July 31, 1997.

History of the NRC Assessment Process for Operating Commercial Nuclear Reactors

The individual components of the assessment process for operating commercial nuclear reactors were developed and implemented at different times. The first major assessment process component, the SALP, was being developed before the Three Mile Island accident and was implemented in 1980. The second major assessment process component, the SMM, was developed in response to the 1985 Davis-Besse loss-of-feedwater event and was first implemented in April 1986. PPRs were developed to provide for better allocation of NRC resources and were implemented in 1988.

All three of these major components of the assessment process have been subject to periodic, detailed reviews. In addition, minor changes were made to each process to allow some integration with the other components. However, the agency has never conducted an integrated review of the entire assessment process.

DISCUSSION:

Rather than addressing the SRMs individually, the staff proposes to conduct an integrated review that examines all components of the current assessment process. This effort will be responsive to Commission direction in the various SRMs and the Maine Yankee ISA. Preliminary results from the job task analysis (JTA) of resident and regional Divisions of Reactor Projects provide an additional catalyst for the effort. The JTA preliminarily concluded that (1) the assessment-related processes are strong candidates for reengineering; (2) rather than examining the individual pieces, a more holistic approach is probably needed; (3) process repetition should be eliminated; and (4) the rate and multiple sources of process change are too high, not communicated clearly, and training is typically not provided on the process changes. The proposed review is also fully responsive to Direction-Setting Issue 11 as it applies to the NRC assessment process for operating commercial nuclear reactors.

The primary goals of the integrated review are to clarify objectives; eliminate redundancies; define roles, responsibilities, and authorities; improve consistency; match processes to staff resources; and reduce administrative burden. The scope of the review will include an examination of all components of the current assessment process in an integrated manner, focusing on process objectives, inputs (including inspection reports, which are the primary building blocks of the assessment process), efficiency, and outputs. It will examine the assessment process in its entirety, including infrastructure, to see how it can be made more effective and more clearly focused on safety. The effort may include a review of the regulatory practices of other organizations including nuclear and nonnuclear, foreign and domestic.

As discussed below, the integrated review of the assessment process will be somewhat lengthy (approximately 18 months through full implementation of a revised process) because of its scope and consideration of inputs from multiple stakeholders. Therefore, the staff will continue to implement the existing processes in the interim with incremental improvements such as those in response to the Arthur Andersen study. These incremental improvements may be integral to the new assessment process as they will include development of objective, predictive performance criteria. However, the staff proposes to minimize changes to the existing individual components of the assessment process while the effort is underway. This approach is being taken to minimize rework and to allow for better communication, training, and implementation of the final process that is developed.

This effort will be facilitated by an independent contractor to minimize staff bias and to ensure that all stakeholder interests are considered. The stakeholders will include Headquarters offices, all regional offices, the nuclear industry, and the public. Significant regional office involvement is critical to the success of this effort, as the regional offices are the primary implementors of the NRC assessment process for operating commercial nuclear reactors.

Resources

A preliminary cost estimate to perform the integrated review is five direct full-time equivalents (FTE) and approximately $200,000 for contractor support. To initiate this program, NRR will reprogram approximately $25,000 in FY 1997 with no programmatic impact. The FY 1998 and FY 1999 resource requirements will be evaluated as part of the upcoming internal budget review and a recommendation on the resources will be made at that time. Resource savings may result if a revised assessment process is implemented, but the primary goal is improved effectiveness.

Coordination

This Commission paper was coordinated with the Chief Information Officer and the Chief Financial Officer.

Schedule

The staff anticipates the following approximate schedule:

- Three months to finalize the facilitator contract following Commission approval
- Six months to perform the integrated review
- Two months to evaluate the results and compare them to the existing process and planned improvements
- Four months to develop an integrated implementation plan, obtain industry and public feedback, and obtain the Commission's approval for implementation
- Three months to train personnel

Therefore, the staff anticipates full implementation of a revised process approximately 18 months after the Commission's approval to begin the integrated review.

RECOMMENDATION:

The staff recommends that the Commission --

1. Note that the staff will initiate efforts to obtain a facilitator contract and begin the integrated review within 10 working days from the date of this paper unless instructed otherwise by the Commission. The staff will update the Commission on the status of the integrated review periodically, following completion of major project milestones. SRM M970129A will be used to track this effort.

2. Note that staff action to address the attached SRM M961216 will be subsumed by the planned review effort. Therefore, unless directed otherwise, the staff will defer action on SRM M961216 and close it out upon completion of the review effort.

L. Joseph Callan
Executive Director for Operations

CONTACT: David L. Gamberoni, NRR
415-1144

Attachment: As stated