

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary
FROM: COMMISSIONER MERRIFIELD
SUBJECT: **SECY-00-0007 - PROPOSED STAFF PLAN FOR LOW
POWER AND SHUTDOWN RISK ANALYSIS RESEARCH TO
SUPPORT RISK-INFORMED REGULATORY DECISION
MAKING**

Approved in part ✓ Disapproved in part ✓ Abstain _____

Not Participating _____

COMMENTS: *See attached comments*



SIGNATURE

3/14/06

DATE

Entered on "STARS" Yes _____ No _____

Commissioner Merrifield's Comments on SECY-00-0007

I cannot support the staff's proposed plan for low-power and shutdown (LPSD) risk analysis research. Specifically, I **approve** Task 1 of the proposed second phase of the program which supports the staff's active participation in the American Nuclear Society's (ANS) work to develop LPSD PRA standards. I do not believe that the staff has presented an adequate basis for supporting Tasks 2, 3, and 4, and thus I **disapprove** them.

I have carefully reviewed the Office of Nuclear Regulatory Research's (RES) December 1999 perspectives report on low power and shutdown risk. The report was valuable because it provided me with a better historical perspective on this matter and helped frame the regulatory and operational challenges associated with low power and shutdown conditions. I commend the staff for their efforts associated with this report.

RES's perspectives report highlights the extensive domestic and international research that has already been conducted in this area and the tools that have been developed. It also highlights the guidance and regulatory framework that has already been developed to ensure licensees understand and manage the risks associated with low power and shutdown operations. Specifically, the report discusses initiatives undertaken by the NRC to improve its oversight of LPSD operations, including Generic Letter 88-17, as well as guidance provided by the NRC in Regulatory Guide 1.174 for using risk information in regulatory decision-making. Industry initiatives in this area include NUMARC 91-06 and NUMARC 93-01. Recent revisions to the Maintenance Rule (10 CFR 50.65) and NUMARC 93-01 provide further evidence that the importance of managing the risk associated with low power and shutdown operations is well-understood by the nuclear industry. For example, RES's perspectives report captures several insights including: 1) LPSD risk appears to be dominated by three classes of initiating events - loss of shutdown cooling, loss of coolant, and loss of offsite power, 2) the most risk dominant plant operational states are characterized by high decay heat and reduced inventory, 3) transition risk can be significant, and 4) risk management is important during maintenance activities. These insights are similarly captured in NUMARC 93-01 in that it provides guidance to licensees on assessing and managing risk associated with the performance of maintenance activities during shutdown conditions, it addresses transition risk, and it focuses licensees on the importance of not only decay heat removal capability, inventory control, and power availability, but also reactivity control and containment. My point is that based on my review of industry guidance and the NRC's regulatory framework associated with LPSD conditions, I am confident that the staff and our licensees understand the vulnerabilities associated with low power and shutdown conditions, and are taking the steps necessary to adequately manage risk during these conditions.

I believe that my views are supported by two important conclusions of RES's perspectives report. First, the staff concludes that licensees have developed qualitative and quantitative methods and tools for managing safety during LPSD operations. Specifically, the staff found that to manage LPSD risk, industry guidance has already been developed and implemented which provides a qualitative means for licensees to manage safety during outages. Furthermore, most licensees supplement this qualitative guidance with some type of quantitative probabilistic risk analysis tools and information. Second, the staff concludes that current methods provide a strong foundation for considering LPSD accident risks in regulatory activities. Specifically, the staff found that the qualitative and quantitative methods now used by licensees appear to have been very successful in maintaining safety during outages. The importance of these two conclusions cannot be overstated, especially in assessing the **need** for additional regulatory actions or guidance.

As was discussed at the February 9, 2000 Commission meeting on the RES program review, the agency is subject to increasing budgetary pressures. Therefore, we must prioritize our regulatory activities, including research initiatives, so that agency resources are dedicated to those activities that have the potential for the greatest safety benefit. In their draft report on the NRC's research program that was provided to the Commission on February 7, 2000, the ACRS reiterates the importance of assessing the value of research initiatives and provides the following 3 questions to facilitate that assessment.

- Is this issue delaying or otherwise restricting the meeting of performance goals?
- What specific results will improve definite measures by which performance goals are met?
- What are the consequences of not having the knowledge that the research is designed to provide?

These questions helped facilitate my assessment of the value of the four proposed tasks outlined in SECY-00-0007. Based on the information provided, I believe it is worthwhile for the staff to support the development of an American Nuclear Society LPSD PRA standard (Task 1). I agree with the staff that it is important to provide the technical expertise necessary on the standard so that it meets NRC needs and can be used to support risk-informed regulatory activities. Our support will also help resolve technical issues important to the development of plant-specific PRAs. I believe this task can clearly be linked to NRC Performance Goals in the Nuclear Reactor Safety arena and that it supports several of the key strategies designed to achieve these performance goals. Furthermore, I believe the potential benefits to both our licensees and the NRC outweigh the costs associated with this task. Regarding Tasks 2, 3, and 4, while I appreciate the staff's desire to improve NRC guidance, methods, and tools in the LPSD area, I do not believe they have provided a sufficient basis for doing so. Specifically, I do not believe the staff has sufficiently demonstrated a need for these tasks to be carried out, nor made a compelling case as to how these tasks would enhance safety, improve the regulatory framework associated with LPSD conditions, or assist the staff in achieving the strategic and performance goals of this agency. The staff has simply not made the case that the perceived benefits justify the costs. Thus, I believe our resources could more prudently be spent on other matters of greater safety significance.

Finally, I share Commissioner Diaz's view that the agency's initiatives to risk-inform its regulations will continue to provide the foundation for further improvements in the consideration of LPSD risk.



2/14/00



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

March 31, 2000

SECRETARY

MEMORANDUM TO: William D. Travers
Executive Director for Operations

FROM: Annette Vietti-Cook, Secretary *Annette Vietti-Cook*

SUBJECT: STAFF REQUIREMENTS - SECY-00-0007 - PROPOSED STAFF
PLAN FOR LOW POWER AND SHUTDOWN RISK ANALYSIS
RESEARCH TO SUPPORT RISK-INFORMED REGULATORY
DECISION MAKING

The Commission has approved the staff's proposal to actively participate in the American Nuclear Society's work to develop low power and shutdown (LPSD) probabilistic risk assessment standards (part 1 of the 4 part proposal). In support of the standard development, the staff should 1) identify those plant operating states which need to be included in the scope of the standard for consistency in the treatment of shutdown risk and associated configuration risk management decision-making; 2) identify specific shutdown events which are important to risk and need to be considered to provide focus for the standard. Funding for these two tasks (not included in Part 1 of the staff's proposal) should be provided by reprogramming the proposed Tasks 2,3 and 4 to cover one year's work. The staff should report to the Commission its progress and propose additional work if needed.

(EDO)

(SECY Suspense: 3/2001)

The Commission has disapproved the development of improved guidance for considering LPSD risks (part 2), the development of improved methods and tools for assessing human reliability analysis and level 2 risk (part 3), and evaluation of areas identified by the ACRS and other stakeholders as potentially important to risk (part 4).

cc: Chairman Meserve
Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan
Commissioner Merrifield
OGC
CIO
CFO
OCA
OIG
OPA
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)
PDR
DCS