NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER DIAZ

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

Approved XX Disapproved XX Abstain _____

Not Participating _____

COMMENTS:

SEE ATTACHED COMMENTS.

-- REC'D BY NOD --

18 JAN 00 9:22

SIGNATURE

Feb 9, 2000

DATE

Entered on "AS" Yes ✓ No ____

COMMISSIONER DIAZ'S COMMENTS ON SECY-00-0007

The operating nuclear power industry has changed and continues to change rapidly. Nuclear regulation is also changing rapidly. I believe there is strong evidence that the sum total of these changes is good for safety and good for the nation. In particular, the mission of assuring adequate protection of public health and safety is being enhanced by risk-informed regulation. Risk-informed regulation, in its simplest interpretation, means focusing attention and resources on those issues that are most important to safety. Both the industry and the NRC face daily challenges from the dynamic interaction between industry's operational safety and licensing needs and the safety-focused, risk-informed regulatory regime being established by the NRC.

One area especially affected by these interactions is low power and shutdown (LPSD) operations. It certainly has had the attention of the Commission and the industry, and will receive the scrutiny of the public. The staff, in the December 1999 Low Power and Shutdown report, has provided an assessment of LPSD based on current data that included operational and regulatory experiences, and I thank them.

The history and significance of LPSD events are now understood. Many significant developments have taken place since the Diablo Canyon and Vogtle LPSD events and the issuance of Generic Letter 88-17. I agree that there are measurable frequencies for actual LPSD events. However, although there are potential risks in any event, there have been no actual measurable consequences, i.e., nothing approaching a radiological event. Furthermore, the
just-released Phase 1 study and the interactions with stakeholders, including the LPSD workshop, support the conclusion that licensees have developed qualitative and quantitative methods and tools for managing safety during LPSD operations. Thus, it would not be an overstatement to say that nuclear power plants and the NRC are very aware of LPSD risks, of where and when additional risks could occur, and of the remedial actions that have been taken to reduce the risks. It is widely accepted that calculated core damage frequency during transitional periods of LPSD could be comparable to those at power; however, these risks are dominated by a few, short periods of well-recognized vulnerabilities. There is also agreement that realistic consequences are low (especially if credit is given for operator actions) and that necessary actions can be taken to prevent and mitigate occurrences. Of course, physical facts during LPSD events work in favor of mitigating or even eliminating consequences. These physical facts include orders of magnitude reductions in the reactor core heat content and pressure, in cooling requirements, and reductions in the radioactive source terms. All these physical facts substantially increase the time for remedial actions.[1]

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[1] From full reactor power to shutdown's short periods of well-recognized vulnerabilities, the following risk-significant reductions take place: 1) the reactor heat content and core cooling

The regulations and licensee programs already provide frameworks for addressing LPSD risk. Moreover, the new Maintenance Rule (10 CFR 50.65) especially addresses normal shutdown operations and the added paragraph (a)(4) requires licensees to "assess and manage the increase in risk that may result from the proposed maintenance activities." (Emphasis added). Regulatory Guide 1.174 provides general guidance on risk-informing LPSD license amendment activities. Industry's NUMARC 91-06 and the revised NUMARC 93-01 (Section 11) also provide guidance on maintaining key safety functions during LPSD conditions.

I believe that, at this time, our goal of improving safety would be better served by recognizing the limited impact of the remaining uncertainties associated with LPSD, and the management of that impact, rather than by attempting to further quantify those uncertainties. While human error appears to be a large contributor to potential LPSD risk (including the associated uncertainties), improvements in human risk factors need to be addressed as part of the overall effort in this area and should not be addressed piecemeal. This approach is consistent with the simple principle of risk-informed regulation cited above, i.e., focus resources on those issues which are most important to safety.

Based on the above considerations, I do not find compelling reasons to approve the entire Proposed Staff Plan for Low Power and Shutdown Risk Analysis Research to Support Risk-Informed Regulatory Decision Making. I approve only the staff's active participation in the ANS work to develop LPSD PRA standards. I am confident that the staff knows and has clearly informed licensees of the potential LPSD high-risk areas. The staff should continue participation with industry in its efforts to clarify its existing guidance. Additional NRC guidance is unnecessary.

The agency's initiative on risk-informing its regulations will continue to provide the foundation for further improvements in the consideration of LPSD risk. After thirteen years of analyzing and attempting to further regulate LPSD risk, I am of the opinion that we already have the knowledge and means to manage LPSD risk and that the proposed plan would not be a wise use of NRC resources.

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requirements decrease by about three orders of magnitude (~ 3000 MW th to a few MW th); 2) the reactor coolant system pressure decreases by three orders of magnitude (from about 2200 psi (PWR) or 1000 psi (BWR) to ambient pressure); 3) the radiological risks are reduced by not less than order of magnitude. The time required to take remedial action for a depressurized system goes from minutes to hours.