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FINAL REPLY:

Mario V. Bonaca, ACRS

TO:

Chairman Meserve

FOR SIGNATURE OF :

\*\* GRN \*\*

CRC NO: 03-0149

Travers, EDO

DESC:

ROUTING:

Reactor Oversight Process

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ACRS File

DATE: 03/17/03

ASSIGNED TO:

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SPECIAL INSTRUCTIONS OR REMARKS:

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AUTHOR: Mr. Mario Bonaca  
AFFILIATION: ACRS  
ADDRESSEE: CHRM Richard Meserve  
SUBJECT: Concerns the reactor oversight process

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, D.C. 20555-0001

March 13, 2003

The Honorable Richard A. Meserve  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

SUBJECT: REACTOR OVERSIGHT PROCESS

Dear Chairman Meserve:

The Advisory Committee on Reactor Safeguards (ACRS) and its Plant Operations Subcommittee have had a number of interactions with the U.S. Nuclear Regulatory Commission (NRC) staff on the Reactor Oversight Process (ROP). In reports dated October 12, 2001, and February 13, 2002, the ACRS raised several issues that included:

- the appropriateness of the threshold values for the yellow-red performance indicator (PI) levels, and
- inconsistencies between the performance assessment and the significance determination process (SDP).

The ACRS met with the staff at its 500<sup>th</sup> meeting on March 6, 2003, to discuss these issues. At the conclusion of this meeting, it was evident that there are still significant disagreements between the staff and the Committee. This report, then, is intended to clarify the ACRS views on this matter and to serve as a basis for further discussion.

The ACRS views on the ROP are as follows:

1. The purpose of the ROP is to assess safety performance so that the agency can take appropriate action.
2. The ROP is risk-informed because it focuses on performance areas and indicators that affect safety.
3. It is incorrect to base thresholds for PIs on risk metrics such as  $\Delta$ CDF (changes in core damage frequency) and  $\Delta$ LERF (changes in large, early release frequency).
4. The thresholds separating all the performance levels (colors) should be performance-based and determined by expert judgement similar to the selection of the current green/white thresholds.
5. The principal role for the SDP is to assign risk characterization to inspection findings – not to be an evaluation of performance.

6. PIs are needed for the cross-cutting issues and their development should be pursued by the staff.
7. The Action Matrix should reflect the complementary results of the performance assessment and the SDP.
8. Lack of parity among thresholds may result in suboptimal allocation of NRC and licensee resources.

## DISCUSSION

Our view is that the purpose of the ROP is to assess changes in performance, not changes in risk. We believe that the ROP is risk-informed because it focuses attention on performance areas that are known to be cornerstones of safety. As we have noted previously, however, it is misleading to assess the importance of changes even in a risk-informed PI in terms of  $\Delta$ CDF.

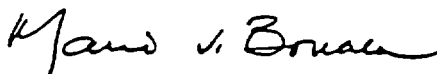
Clearly, degraded performance can translate into an increase in the risk posed by a given plant. However, a realistic estimate of  $\Delta$ CDF cannot be determined from changes in a single isolated parameter with the assumption that all other factors that can affect CDF remain constant. Thus, the selection of thresholds based on  $\Delta$ CDF, as was done for the "number-of-scrams" PI, is misleading with respect to indicating the extent of degraded performance. Our view is that such thresholds should be selected on a performance basis and chosen through expert judgment and not be based on such risk considerations.

The SDP process should continue to evaluate the risk significance of events and findings. This information complements the performance assessment findings from the PIs. The two sets of information are complementary, and it is appropriate that both be addressed in the Action Matrix.

We continue to doubt the validity of the assumption that degraded performance in the cross-cutting areas will be revealed by the current PIs and inspections. Efforts to develop new PIs should be focused on licensees' corrective action programs, human performance, and safety conscious work environment.

The staff and the Committee agree that the significance of the thresholds for the various PIs should be examined. In addition to improving the coherence of the Action Matrix, parity in significance will yield another benefit. NRC and licensee resources are naturally biased toward performance areas that are rated other than green. If the thresholds are chosen inappropriately, then resources may be misallocated.

Sincerely,



Mario V. Bonaca  
Chairman