
**UNION OF
CONCERNED
SCIENTISTS**

May 5, 2000

Mr. Thomas L. King
Office of Research
United States Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: COMMENTS ON RISK-BASED PERFORMANCE INDICATORS

Dear Mr.King:

I appreciated the opportunity to participate along with representatives from NEI, INPO, and Public Citizen in a dialogue with the NRC staff on April 28, 2000, on the concept and approach for risk-based performance indicator development. I also appreciated the efforts by Mr. Hossein G. Hamzehee in providing me with material like the white paper well in advance of the meeting.

The round-robin structure of the meeting afforded me ample opportunity to ask clarifying questions and provide comments. I do not have any new comments to add at this time, but I would like to reiterate some of the key aspects:

1. The issue about quality standards and scope for the plant safety assessments appears to be a larger obstacle to the development of risk-based performance indicators than in the development and use of current performance indicators. Specifically, plant safety assessments simply do not have the necessary quality to permit truly risk-based thresholds to be defined for performance indicators. Until the quality issue is resolved, the green-to-white threshold, as a minimum, for RBPIs must be established more on industry experience than on plant safety assessment data.
2. Mr. Steve Floyd of NEI raised a point about potential proliferation of RBPIs. He explained that the concept for the current set of PIs is to provide the NRC with meaningful insight into plant owner performance rather than an objective measure of safety levels. That distinction is supported by the green-to-white thresholds being established using 95%/5% industry experience and being used to trigger deeper NRC examinations. Mr. Floyd expressed NEI's position that significant expansion of the PI set shifted the RROP towards objective measures of safety levels, thus justifying the revision of the green-to-white thresholds to risk measures. UCS disagrees. A doubling or tripling of the PI (or even RBPI) set would not result in objective measuring of safety levels - it would merely provide a larger sample size of plant owner performance.

3. UCS continues to believe that the exclusion of other than core damage accidents from the risk studies for nuclear power plants is non-conservative. We tolerated this deficiency during the development of the RROP because we thought that NRC inspections would catch any serious problems. Our thinking has been undermined by the NRC staff's reliance on the Significance Determination Process to NRC inspection findings. The SDP discounts any problem that does not factor in to a core damage frequency value. Consequently, a problem with the potential to cause criticality in the spent fuel pool can never be anything but GREEN. The development of RBPIs may also be degraded by this issue. For example, the NRC staff plans to develop a shutdown RBPI in Phase I of the effort. During refueling at many reactors, the reactor core is fully offloaded to the spent fuel pool. The chances for a core damage accident approach zero very closely. But the chances for an accident causing the release of radioactivity to the environment are anything but negligible. It is imperative that RBPIs consider the threats from reactivity, decay heat, and radioactive material at all times - not just inside the reactor pressure vessel.

Thank you again for including UCS in this meeting. I am interested in this effort and would like to remain involved to the extent possible.

Sincerely,



David A. Lochbaum
Nuclear Safety Engineer