May 22, 2000

Mr. Thomas L. King, Director
Division of Risk Analysis and Applications
Office of Nuclear Regulatory Research
Mail Code 10 E5O
U.S Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Mr. King:

Thank you for the opportunity to participate in the public meeting held on April 28, 2000 to discuss the NRC Research White Paper, "Development of Risk-Based Performance Indicators: Program Overview." This letter reiterates our oral comments at that meeting and the issues we believe need to be addressed in the ongoing effort to develop meaningful and useful performance indicators for use in the Reactor Oversight Process (ROP).

NEI believes it is appropriate for NRC to pursue improvements to the ROP performance indicators. However, it is important to keep in mind the intended purpose of these indicators. PIs perform an important, but limited role in the ROP. They are meant to be a set of indicators which, in conjunction with inspection and the SDP process, allow the NRC to assess plant performance and determine where to allocate inspection resources.

Performance indicators in the ROP are not meant to be the full set of systems, structures, and components whose reliability and unavailability will allow one to calculate an integrated core damage frequency using plant specific Standardized Plant Analysis Risk (SPAR) models. That is not the purpose of PIs, although it appears to be a major objective of NRC Research in developing Risk-Based Performance Indicators (RBPI). Seeking to "measure safety through a comprehensive set of indicators is a significant departure from the current purpose of PIs and should be dealt with as a policy issue.

The plant specific SPAR models used by the NRC have not been validated by utilities. These models should be reviewed and modified as necessary prior to attempting to implement plant specific thresholds.

The issue of the applicability and use of the Equipment Performance and Information Exchange System (EPIX) data base to populate Research's RBPIs is also an issue which needs to be discussed at a management level above the working level group. In fact, the NEI Data Review Group (which includes NRC, NEI, INPO and utility membership) is studying the data demands on industry and the cost/benefit of additional data collection. The group will be reporting to the NEI Nuclear Strategic Issues Advisory Committee (NSIAC - a group consisting of all utilities Chief Nuclear Officers) later this year.

We are concerned that NRC Research is proceeding with pilot plant evaluations of new RBPIs using the EPIX data base without the participation of NRR and NEI's Plant Safety Assessment Task Force. The process of developing the PIs in the ROP was in large measure successful due to the public interaction and deliberative process employed to identify potential indicators, determine their value in the context of plant assessment, refine definitions prior to piloting, careful data collection, and finally acceptance.

The White paper suggests that PIs may be developed to attempt to measure cross-cutting issues, such as PIs at the component level and measurement of human performance. We believe these efforts will be as unsuccessful in the future as they have proven to be in the past.

In addition, the paper suggests the development of an "integrated" indicator. The ROP purposefully avoided the development of an integrated or overall "score" for the program for two reasons: (1) it places inappropriate attention on a single number (derived through subjective decisionmaking in the case of SALP; in this case, a subjective system to weight different indicators) and (2) a single integrated indicator is not actionable, i.e., what specific action should be taken based on this artificial, made-up number?

We believe that the efforts of Research as described in the White Paper should be reoriented to address the key problems with the current set of indicators and to propose new indicators in those areas currently lacking indicators. For example:

- The fault exposure time aspect of the unavailability indicator is an artificiality which is creating false indications of operations and maintenance performance.
- The definitions and exceptions in the unavailability calculation need revision to ensure consistency with the maintenance rule.

- Focus on the unintended consequences of an excessively low threshold for unavailability. Too low a threshold may result in inadequate time for planned maintenance which could have a negative impact on overall performance after a period of time. In some cases the threshold is more stringent than the licensee 5 maintenance rule unavailability.
- Supporting efforts to create meaningful security and fire protection PIs.

We also believe it will be useful for NRC to pursue whether there is a more appropriate criteria for the "green-white" threshold, which in most cases is now based on the concept of outliers from normal and satisfactory industry performance (i.e., a 95th percentile threshold.) While a more risk based threshold should be explored, it must be capable of being easily explained to all stakeholders.

It is not clear what level of resources it would take to gather the vastly expanded number of RBPIs. This increased regulatory burden needs to be balanced against the gain of reduced inspection activity. Is the NRC truly receptive to reducing the baseline inspection program based on additional PIs?

If additional PIs are added to the ROP, what will be the impact on the Regulatory Action Matrix? It would seem that there should be an adjustment in the number of white indicators which cause one to move from one column to another.

Two characteristics of useful indicators which are not mentioned in the white paper, but which are essential if they are to be used in the ROP are: (1) easy to understand and collect data, and (2) minimize potential for unintended consequences, e.g., causing an operator or manager to take inappropriate action in order to avoid crossing a P1 threshold.

Please call me at 202-739-8078 or email me at sdf@nei.org if you have any questions.

Sincerely

Stephen D. Floyd