

April 7, 2004

MEMORANDUM TO: Michael T. Lesar, Chief
Regulatory Publications Branch
Division of Administrative Services
Office of Administration

FROM: Charles E. Ader, Director /RA/
Division of Risk Analysis & Applications
Office of Nuclear Regulatory Research

SUBJECT: FEDERAL REGISTER NOTICE - REQUEST FOR PUBLIC COMMENT
ON DRAFT "REPORT ON THE INDEPENDENT VERIFICATION OF
THE MITIGATING SYSTEMS PERFORMANCE INDEX (MSPI)
RESULTS FOR THE PILOT PLANTS."

Attached is one signed original of the subject Federal Register notice for transmittal to the Office of the Federal Register for publication. Four additional hard copies and an electronic copy on a disk are also attached for your use.

Contact: Donald A. Dube
(301) 415-5472

Attachments:

1. Original and 4 copies of
Federal Register notice
2. Electronic version on disk

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NUCLEAR REGULATORY COMMISSION

Report on the Independent Verification of the Mitigating Systems Performance Index (MSPI) Results for the Pilot Plants

AGENCY: Nuclear Regulatory Commission.

ACTION: Request for comment.

SUMMARY: The Nuclear Regulatory Commission is announcing the availability of the draft document entitled: "Report on the Independent Verification of the Mitigating Systems Performance Index (MSPI) Results for the Pilot Plants," dated February 2004 for review and comment by external stakeholders. Interested individuals may obtain a copy of this document from ADAMS Accession ML040550036 via the public web site, or from the person identified under the caption: "For Further Information Contact."

DATES: Submit comments by June 15, 2004. Comments received after this date will be considered if it is practical to do so, but the Commission is able to ensure consideration only for comments received on or before this date.

ADDRESSES: Submit comments to: Chief, Rules and Directives Branch, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Deliver comments to: 11545 Rockville Pike, Rockville, Maryland, between 7:30am and 4:15pm Federal workdays.

The draft document and certain other documents related to this action, including comments received, may be examined in the NRC Public Document Room, 11555 Rockville Pike, Rockville, Maryland.

FOR FURTHER INFORMATION CONTACT: Donald A. Dube, Division of Risk Analysis and Applications, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory

Commission, Washington, DC 20555-0001. Telephone: 301-415-5472, e-mail: dad3@nrc.gov

SUPPLEMENTARY INFORMATION:

The Reactor Oversight Process (ROP) was created four years ago to improve the NRC's regulatory oversight of licensee operation of commercial nuclear power plants. It is intended to better risk-inform agency actions and bring more objectivity to the regulatory process. The ROP is consistent with the goals of the Commission's Probabilistic Risk Assessment (PRA) Policy Statement and the NRC's Strategic Plan (NUREG-1614), which include increased use of the PRA technology in ". . . regulatory matters to the extent supported by the state-of-the-art in PRA methods and data and in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy." The ROP is reflective of the NRC's efforts to better risk-inform its core processes.

SECY-99-007 and 99-007A, "Recommendations for Reactor Oversight Process Improvements," described the ROP. The ROP was implemented in April 2000 following a six-month pilot program conducted in 1999. The results of this pilot program were described in SECY-00-0049, "Results of the Revised Reactor Oversight Process Pilot Program." A fundamental aspect of the ROP is the use of both performance indicators and inspection findings to determine whether the objectives of the ROP's cornerstones of safety are being met on a plant-specific basis.

In light of the movement toward more risk-informed and performance-based oversight, draft Risk-Based Performance Indicators (RBPI) were developed to (1) address specific areas in the current ROP that were identified in SECY-00-0049 as possible enhancements and (2) potentially support any future development of performance indicators using improved risk analysis tools. NUREG-1753, "Risk-Based Performance Indicators: Results of Phase 1

Development," discussed the technical feasibility of using available risk models and data to enhance the NRC's ability to monitor plant-specific safety performance of reactors in a risk-informed and performance-based manner. This development activity was designed to fit into the ROP concept for indicators, thresholds, and performance monitoring while continuing to move the NRC's programs forward in accordance with the PRA Policy Statement and the goals of the Strategic Plan.

The Mitigating Systems Performance Index (MSPI) builds upon the insights and findings developed in the RBPI Program as discussed in NUREG-1753. The MSPI is described in "NRC Regulatory Issue Summary 2002-14, Supplement 1 Proposed Changes to the Safety System Unavailability Performance Indicators," Attachments 1 and 2, draft NEI 99-02, Rev. 0, "Regulatory Assessment Performance Indicator Guideline," Section 2.2 "Mitigating Systems Performance Index" and Appendix F "Methodologies for Computing the Unavailability Index, the Unreliability Index, and Determining Performance Index Validity".

The MSPI was developed as a potential replacement for the Safety System Unavailability (SSU) performance indicator. The purpose of the MSPI is to "monitor the performance of selected systems based on their ability to perform risk-significant functions..." The NRC's Office of Nuclear Regulatory Research developed the MSPI to address several specific problems with the currently used performance indicators including: the use of fault exposure hours in the SSU, the omission of unreliability elements in the indicator, the use of mostly one-size-fits-all performance thresholds irrespective of risk-significance of the system, and the cascading of support system failures onto mitigating system unavailability. A twelve-month pilot program on the MSPI consisting of twenty nuclear power plant units was initiated in September of 2002. For the first six months, licensees submitted system and component performance data, and

exercised the MSPI algorithm. Over the second six months of the pilot, the NRC staff worked to fully assess the results as well as to identify technical issues and to provide recommendations for their resolution. Numerous meetings involving both internal and external stakeholders have been held to discuss developmental details of the MSPI. The MSPI was extensively tested, evaluated, and reviewed during the pilot plant trial and evaluation period. Although the NRC staff recently announced that use of the MSPI in the ROP, as piloted, would not be pursued further, the subject draft report is being made available to document the results of the NRC evaluation of technical issues and detailed proposed changes to the MSPI methodology. The report can be found as ADAMS Accession #ML040550036 via the NRC public web site at www.nrc.gov. A briefing on the results of the MSPI pilot before the Advisory Committee on Reactor Safeguards Subcommittee on Reliability and PRA, and Plant Operations, is currently scheduled for April 14, 2004 from 8am to 11am at NRC Headquarters in T2B3 of Two White Flint, Rockville, MD. Separately, the Office of Nuclear Reactor Regulation intends to document the concerns with the piloted MSPI and conduct a public meeting to solicit further stakeholder input regarding the MSPI. Information regarding this public meeting will be provided at a later date.

At this time, we are interested in comments regarding all aspects of the subject report, particularly the following areas:

- Fundamental mathematical formulation of the MSPI.
- Recommended improvements to the originally formulated MSPI methodology per draft revision to NEI 99-02.

- Overall technical findings and results of the MSPI pilot, including validity of MSPI outcomes.

Dated at Rockville, Maryland, this 7th day of April, 2004.

For the Nuclear Regulatory Commission.

_____/RA/
Charles E. Ader, Director,
Division of Risk Analysis and Applications,
Office of Nuclear Regulatory Research.

ROUTING AND TRANSMITTAL SLIP	Date: 4/6/2004
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TO: (Name, office symbol, room #, building, agency/post)	Initials	Date
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2. P. Baranowsky - Concur	PWB	4/6
3. C. Ader - Signature	CEA	4/7
4. Nancy - Distribute - Fill in Template No., Accession No., & Res File Code	NLL	4/7
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REMARKS

FEDERAL REGISTER NOTICE - REQUEST FOR PUBLIC COMMENT ON DRAFT "REPORT ON THE INDEPENDENT VERIFICATION OF THE MITIGATING SYSTEMS PERFORMANCE INDEX (MSPI) RESULTS FOR THE PILOT PLANTS."

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FROM: (Name, org. symbol, Agency/Post)	Room # - Bldg.
	Phone #