POLICY ISSUE
(Notation Vote)

November 4, 2008 SECY-08-0172

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: DENIAL OF PETITION FOR RULEMAKING PRM-50-87 CONCERNING CONTROL ROOM HABITABILITY RADIOLOGICAL DOSE REQUIREMENTS AS GOVERNED BY REGULATIONS SPECIFIED IN APPENDIX A TO 10 CFR PART 50 AND IN 10 CFR 50.67

PURPOSE:

To obtain Commission approval to deny the petition for rulemaking (PRM) submitted by Mr. Raymond A. Crandall.

SUMMARY:

On May 17, 2007, Mr. Crandall submitted a PRM (PRM-50-87) requesting that the U.S. Nuclear Regulatory Commission (NRC) amend Appendix A, "General Design Criteria for Nuclear Power Plants" to Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," of the *Code of Federal Regulations* (10 CFR Part 50) and 10 CFR 50.67, "Accident source term." Specifically, the petitioner requested to delete the 5 rem whole body dose limit specified in General Design Criterion (GDC) 19, "Control Room," of Appendix A to 10 CFR Part 50 and the 0.05 sievert (Sv) (5 rem) total effective dose equivalent (TEDE) limit specified in both GDC 19 and 10 CFR 50.67 (b)(2)(iii). The petitioner stated that the current deterministic radiological dose requirements for control room habitability have resulted in several negative safety consequences including an increased risk to public safety.

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BACKGROUND:

The NRC published a notice of receipt and request for public comment in the *Federal Register* on July 12, 2007 (72 FR 38030). On June 19, 2008, the Petition Review Board unanimously approved the working group's recommendation to deny the PRM (Agencywide Documents Access and Management System (ADAMS) Accession No. ML081930466). The bases for the NRC staff's recommendation to deny the petition are contained in the enclosed proposed *Federal Register* notice. This action will close PRM-50-87.

Petitioner's Request

PRM-50-87 requested that the NRC take the following two actions:

(1) Revise the regulations related to control room habitability at nuclear power plants by deleting the following sections specified in GDC 19, "Control Room," of Appendix A to 10 CFR Part 50;

"Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident."

"Applicants for and holders of construction permits and operating licenses under this part who apply on or after January 10, 1997, applicants for design certifications under part 52 of this chapter who apply on or after January 10, 1997, applicants for and holders of combined licenses under part 52 of this chapter who do not reference a standard design certification, or holders of operating licenses using an alternative source term under § 50.67, shall meet the requirements of this criterion, except that with regard to control room access and occupancy, adequate radiation protection shall be provided to ensure that radiation exposures shall not exceed 0.05 Sv (5 rem) total effective dose equivalent (TEDE) as defined in § 50.2 for the duration of the accident."

(2) Revise the regulations related to control room habitability at nuclear power plants by deleting the following section specified in 10 CFR 50.67(b)(2);

"[(b)(2)](iii) Adequate radiation protection is provided to permit access to and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 0.05 Sv (5 rem) total effective dose equivalent (TEDE) for the duration of the accident."

DISCUSSION:

In support of his requests, the petitioner stated the following two points in his petition:

(1) The petitioner noted that current regulations provide specific dose criteria, based on deterministic radiological dose analyses performed by the licensee and reviewed by the NRC staff, for demonstrating the acceptability of the control room design for radiological release events. NRC regulatory guides and standard review plans provide the methodologies used to perform dose analyses that are incorporated into a licensee's

site-specific technical specifications (TS). The petitioner stated that this deterministic dose analysis methodology and associated regulatory process has resulted in several negative safety consequences. The petitioner stated that these consequences include the following:

a. Current Designs Not Optimum

"Control designs that are not optimum for ensuring continued control room habitability. Current designs required in order to meet the current dose methodology criteria may actually increase the probability of having to evacuate the control room compared to establishing the design based on good engineering principles."

b. Procedures Not Optimized

"Site procedures for mitigation of the dose consequences to control room personnel that are not optimum for ensuring control room habitability. The procedures designed to ensure consistency with the dose analysis assumptions are inconsistent with more effective mitigation strategies."

c. Challenges to Safety Systems

"Unnecessary challenges to safety systems, such as increased challenges to the Emergency Diesel Generators if control room ventilation system fans are loaded on the diesels early in the accident to meet analysis assumptions."

d. Inappropriate TS Action Statements

"Technical Specifications Action Statement requirements that result in a net increase in the risk to the public. This specifically refers to Technical Specifications that require a plant shutdown for failure to meet a control room dose analysis input assumption."

e. Unjustified Technical Specification Surveillances

"Technical Specifications Surveillance requirements that cannot be cost-justified based on the risk-significance. This results in the required expenditure of resources that could be used on risk-significant improvements."

(2) The petitioner stated that the suggested revisions would eliminate the specific radiological dose acceptance criteria; the need for deterministic dose analyses; and the need for the associated regulatory process, including the TS imposed to ensure compliance.

The petitioner also stated that the proposed changes do not eliminate the requirement for the control room to be designed to ensure safe conditions under accident conditions, but would eliminate the safety concerns with the current regulation.

Stakeholder Comments

The NRC received two public comments, one from Mr. Walston Chubb, and one from Mr. James H. Riley on behalf of the Nuclear Energy Institute (NEI).

The NRC staff reviewed and considered the comments in its decision to deny the petition. Details on the reasons for denial are provided in the enclosed proposed *Federal Register* notice. A brief summary of the reasons for denial are highlighted below.

NRC Staff's Response

The NRC regards the radiological dose standards, 5 rem TEDE in 10 CFR 50.67 and 5 rem whole body in GDC 19, as performance-based regulations. Performance-based regulations do not provide prescriptive requirements and, therefore, do not require licensees to use specific designs or methodologies to comply with the regulations. However, the NRC does provide regulatory guidance to licensees that includes acceptable designs and methodologies for demonstrating compliance with the regulations. The use of the guidance is optional, and licensees are free to propose alternative means of complying with the NRC's regulations.

The performance-based control room dose criterion is designed such that an acceptable level of control room habitability will be maintained even under the maximum credible accident scenario. The NRC has determined that providing an acceptable level of control room habitability for design-basis events is necessary to provide reasonable assurance that the control room will continue to be effectively manned and operated to mitigate the effects of the accident and protect public health and safety. By removing the acceptance criteria of 5 rem, a regulatory basis will no longer exist, and would not support the Commission's policy regarding performance-based regulations.

RECOMMENDATION:

Based upon its review of the petition and the comments submitted, the NRC staff has determined that the conclusions upon which the petitioner relies do not substantiate a basis to eliminate the control room radiological dose acceptance criteria from current regulations as requested. Accordingly, the staff recommends denying the PRM and requests Commission approval to do so and publish the *Federal Register* notice (Enclosure 1) of the denial. A letter is enclosed for the Secretary's signature (Enclosure 2), informing the petitioner of the Commission's decision to deny the PRM. Appropriate congressional committees will be informed.

COORDINATION:

The Office of Information Services and the Office of Administration concur with this package. The Office of the General Counsel has reviewed this package and has no legal objection.

/RA Bruce S. Mallett for/

R. W. Borchardt
Executive Director
for Operations

Enclosures:
1. *Federal Register* Notice
2. Letter to the Petitioner

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The Office of Information Services and the Office of Administration concur with this package. The Office of the General Counsel has reviewed this package and has no legal objection.

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Enclosures:
1. *Federal Register* Notice
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*via memo

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