

April 4, 2003

Dr. Mario V. Bonaca, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: PROPOSED RESOLUTION OF GENERIC SAFETY ISSUE 191,
"ASSESSMENT OF DEBRIS ACCUMULATION ON PWR RECIRCULATION
PERFORMANCE"

Dear Dr. Bonaca:

In your letter to me dated February 20, 2003, you summarized the results of the review by the Advisory Committee on Reactor Safeguards (ACRS) of the proposed NRC Generic Letter 2003-XX, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," and Draft Regulatory Guide DG-1107, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant-Accident." These documents are associated with the resolution of Generic Safety Issue (GSI) 191. On the basis of its review, the ACRS provided comments, which are addressed below.

Your Comment:

"We agree with the staff's proposal to issue the proposed Generic Letter for public comment."

Response:

The staff acknowledges the Committee's comment and continues to pursue issuance of a generic communication regarding the potential impact of debris blockage at pressurized water reactors. However, the staff is currently in the process of determining the appropriate regulatory vehicle. Upon completion of that near-term determination, the staff plans to meet with the Committee to Review Generic Requirements to review the generic communication.

Your Comment:

"We agree with the staff's proposal to issue Draft Regulatory Guide DG-1107 provided that the accompanying request for public comments incorporates our recommendation 3 and the associated discussion."

Response:

The staff appreciates the Committee's endorsement for issuance of Draft Regulatory Guide DG-1107. The guide was issued for public comment on February 28, 2003. As indicated below, the accompanying *Federal Register* notice incorporated recommendation 3 from your letter dated February 20, 2003.

Your Comment:

"The staff should evaluate the possibility that strainers may prove to be so susceptible to debris blockage that alternative solutions may be required to ensure long-term cooling. The staff should invite public comments on this matter."

Response:

The staff recognizes that alternative solutions may be required to ensure long-term cooling if significant sump screen blockage occurs. Therefore, the staff has added Section 1.1.4 to DG-1107 to address the possible need for alternative solutions and has specifically invited public comments on this matter in the *Federal Register* notice.

Your Comment:

"The 'acceptable methods' discussed in DG-1107 should be peer reviewed after technical reports from the Office of Nuclear Regulatory Research (RES) contractors become available."

Response:

The staff agrees with the Committee on the importance of peer review. The following information provides background on reviews and peer reviews that have been performed on the research information that supports the methods described in DG-1107.

DG-1107 discusses methods and approaches which are acceptable to the staff for issues associated with the debris generation, debris transport to and accumulation on the sump screen, and the resulting head loss in a pressurized water reactor (PWR). These methods and approaches are the same as those reviewed and accepted by the staff for the resolution of the strainer clogging issue for boiling water reactors (BWRs). The PWR debris transport technical reports (NUREG/CR-6772 and NUREG/CR-6773) by our contractor, Los Alamos National Laboratory (LANL), are based on experimental data. The design of the experiments was peer reviewed by the phenomena identification and ranking table (PIRT) panel. LANL's review of data from selected experiments compared favorably with the analytical simulation results. The work performed by LANL has been reviewed by LANL's other subject matter experts. The results were also peer reviewed and published in the technical journal *Nuclear Technology* (Vol. 139, No.2, page 145-155) in August 2002.

These methods and approaches are also described and discussed in a knowledge base report (NUREG/CR- 6808) that has been prepared to summarize the current state of knowledge about the sump clogging issue. This knowledge base report has been peer reviewed by an international panel of experts.

Consequently, the staff considers that the acceptable methods discussed in DG-1107 have been adequately reviewed and peer reviewed.

The letter further noted that the ACRS looked forward to reviewing final drafts of the generic letter and DG-1107 after resolution of public comments. The staff will provide the ACRS with a final draft of DG-1107 and the generic letter prior to issuance. Furthermore, if the staff determines that issuance of a generic communication without a public comment period is warranted, the ACRS will be informed and provided a copy for information. We appreciate the Committee's effort in reviewing the proposed resolution of GSI 191. I trust that this appropriately responds to the comments in your February 20, 2003, letter.

Sincerely,

/RA by William F. Kane Acting For/

William D. Travers
Executive Director
for Operations

cc: Chairman Diaz
Commissioner Dicus
Commissioner McGaffigan
Commissioner Merrifield
SECY

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