



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 4, 1999

MEMORANDUM TO: William D. Travers
Executive Director for Operations

FROM: Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

Roy P. Zimmerman

SUBJECT: STATUS REPORT ON WITS ITEM 9600184, "CLARITY AND INTENT
OF NRC SAFETY GUIDE 1"

One of the issues identified by the NRC Independent Safety Assessment Team (ISAT) inspection at the Maine Yankee Atomic Power Station (in a report dated October 7, 1996) was the inclusion of containment accident pressure (containment overpressure) in determining whether adequate net positive suction head (NPSH) exists for the emergency core cooling system and the containment heat removal pumps following a design-basis loss-of-coolant accident (LOCA). As a result of the review of this issue during and following the ISAT inspection, the NRC staff questioned the guidance in NRC Safety Guide 1, "Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal System Pumps," dated November 2, 1970, related to reliance on containment overpressure for ensuring adequate NPSH for these pumps. This issue became WITS Item 9600184. The time period for responding to this issue was extended as a result of the issuance of Generic Letter (GL) 97-04, "Assurance of Adequate Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal Pumps," dated October 7, 1997, so as to provide time for staff review of the industry responses since these were directly related to the question raised by the WITS item.

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WITS 9600184 requests that the staff

Review and clarify the staff's criteria relative to relying on containment overpressure for ensuring appropriate NPSH for emergency core cooling and containment heat removal pumps. The staff is already conducting a separate program to determine if and how all plants, including Maine Yankee, meet these criteria. Upon review of this information, the staff will determine the measures to be taken for those plants not in compliance with the criteria.

We are continuing our review of licensee responses to GL 97-04. As of February 19, 1999, the staff has completed the review of 88 of 103 plants for GL 97-04. The remaining reviews require further staff discussion with licensees. The major issue has been the need to clarify the licensing basis with respect to the use of containment overpressure in NPSH calculations. The need for containment overpressure comes from several different factors. In general, the older plants have more of a need for containment overpressure. Only a few pressurized water

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reactors (PWRs) need containment overpressure to ensure adequate NPSH. The staff considers credit for containment overpressure that has not been previously reviewed and approved by the staff to be an unreviewed safety question as defined in 10 CFR 50.59. Licensees have submitted revised analyses and licensing amendments, as appropriate, to resolve this issue. The staff has discussed this issue with the Advisory Committee on Reactor Safeguards (ACRS), and the ACRS agrees with the staff approach to this issue (see letter from R. L. Seale, Chairman, ACRS, to NRC Chairman Jackson, dated December 12, 1997). Some enforcement actions have also been taken.

The staff anticipates that the remaining reviews will be closed by October 1, 1999.

The Office of Nuclear Regulatory Research is currently working on a related issue, Generic Safety Issue (GSI) 191, "Assessment of Debris Accumulation on Pressurized Water Reactor Sump Performance." GSI 191 deals with the adequacy of the design of PWR containment emergency sumps with respect to LOCA-generated debris, an issue with a direct impact on NPSH. (This issue was resolved for boiling water reactors with the issuance of NRC Bulletin 96-03, "Potential Plugging of Emergency Core Cooling Suction Strainers by Debris in Boiling Water Reactors.") GSI 191 is not scheduled to be completed until 2001. When this issue is resolved, the staff will assess the need to revise the present regulatory guidance related to NPSH.

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* See previous concurrences

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