



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

OCT 17 1986

TO ALL LICENSEES OF BOILING WATER REACTORS AND APPLICANTS

Gentlemen:

SUBJECT: AVAILABILITY OF NUREG-1169, "TECHNICAL FINDINGS RELATED TO
GENERIC ISSUE C-8; BOILING WATER REACTOR MAIN STEAM ISOLATION
VALVE LEAKAGE AND LEAKAGE TREATMENT METHODS" (Generic Letter 86-17)

This letter is to inform you that NUREG-1169, "Technical Findings Related to Generic Issue C-8; Boiling Water Reactor Main Steam Isolation Valve Leakage and Leakage Treatment Methods", was published in June, 1986. This NUREG presents the results of the NRC staff and contractor efforts to assess Generic Issue C-8, "MSIV Leakage and LCS Failures". This issue deals with the difficulty of some main steam isolation valves (MSIVs) in Boiling Water Reactors (BWRs) to meet Technical Specification leakage rate limits (which are typically 11.5 SCFH at a 25 psig test pressure) and with the need for leakage control systems. The leakage rates are based on a large loss-of-coolant accident (LOCA), a specified design basis source term from the core (TID 14844), the worst single active failure, and no credit for any non-seismic Category I equipment, components, and structures. To ensure acceptable performance guidelines for engineered safety features, leakage control systems (LCS) have been installed on most BWRs to direct any leakage past MSIVs during the design basis LOCA to an area served by the Standby Gas Treatment System (SGTS). If the leakage rate past an MSIV significantly exceeds the Technical Specification value, the LCS may not be effective because of limitations in its design.

As a result of these concerns, the staff prioritized the MSIV leakage and LCS failures as a high priority Generic Issue in January 1983. Independently, the BWR Owners Group (BWROG) formed the MSIV Leakage Control Committee to determine the cause of high leakage rates associated with many of the MSIVs, and to develop recommendations for reducing the leakage rates. The BWROG Committee completed its effort and provided recommendations and comments to the staff in February, 1984 and April, 1986.

In evaluating MSIV leakage with respect to offsite doses following a LOCA, the technical evaluation of this Generic Issue has used realistic assumptions concerning the equipment, facilities and site characteristics available to mitigate the effects of a LOCA. The specific elements of the effort were:

- ° To evaluate the BWROG recommendations associated with reducing leakage past the MSIVs and assess the effectiveness of the recommendations as implemented by licensees.
- ° To evaluate the existing safety-related LCS comparing it's effectiveness with that of other methods of handling the leakage likely to be available following a LOCA.

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- ° To perform a probabilistic risk assessment (PRA) to evaluate the reliability and relative risks associated with the different methods of mitigating the effects of a LOCA.
- ° To evaluate the use of alternate equipment to mitigate the effects of a LOCA, and potential changes in allowable MSIV leakage rates.
- ° To identify areas in current licensing guidance (the Regulations, the Standard Review Plan, the Regulatory Guides, and the Technical Specifications) that are related to MSIVs and LCSs that will be considered in the second, or regulatory assessment, phase of resolution of the generic issue.

A safety-related LCS was evaluated by comparing its effectiveness with other methods of handling leakage that could be available following a LOCA. Several ways to treat leakage which make use of the holdup volume and surfaces of the main steam lines (MSL) and condenser and fission product attenuation elsewhere, were considered. A PRA considering the reliability and relative risks associated with the different methods of mitigating the effects of a LOCA was performed. The overall risks from the accident sequences in which MSIV leakage could be a significant factor were found to be low without an LCS, and alternate fission product handling techniques were shown to produce significant potential dose reductions.

NUREG-1169 represents technical findings associated with Generic Issue C-8 and the staff expects it to be used in the regulatory resolution of the issue. The latter is anticipated to be complete in another year in coordination with ongoing generic activities relating to accident source terms, to overall containment leak rate and leak rate testing considerations.

Neither this letter nor NUREG-1169 constitute a change in the existing generic staff positions or allowable MSIV leakage rates, nor the specifications for MSIV leakage control systems. Therefore, no action is being requested of applicants or licensees. The information contained in NUREG-1169, however, including the recommendations of the BWROG, may be useful guidance for some licensees contemplating plant specific change requests related to this issue pending final generic resolution.

NUREG-1169 may be purchased by calling (202) 275-2060 or (202) 275-2171 or by writing to the Superintendent of Documents, U.S. Government Printing Office, Post Office Box Number 37082, Washington, D. C. 20013, or the National Technical Information Service, Department of Commerce, 5258 Port Royal Road, Springfield, Virginia 22161.

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This letter is provided for information only. It does not contain any new requirements or guidance for licensees of boiling water reactors. Actions based on the contents provided herein are voluntary and no reply to the NRC is required.

Sincerely,

Original Signed By:
Robert M. Bernero

Robert M. Bernero, Director
Division of BWR Licensing
Office of Nuclear Reactor Regulation

OFC	: PSB:DBL	: PSB:DBL	: AD-BWR	: D:SRO	: D:BWR	:	:
NAME	: JRidgely:ye	: Gulman	: GLainas	: TSpeis	: RBernero	:	:
DATE	: 10/2/86	: 10/3/86	: 10/1/86	: 10/1/86	: 10/17/86	:	:

LIST C. RECENTLY ISSUED GENERIC LETTERS

Generic Letter No.	Subject	Date of Issuance	Issued To
GL 86-16	WESTINGHOUSE ECCS EVALUATION MODELS	10/22/86	ALL PRESSURIZED WATER REACTOR APPLICANTS AND LICENSEES
GL 86-15	INFORMATION RELATING TO COMPLIANCE WITH 10 CFR 50.49, "EQ OF ELECTRICAL EQUIPMENT IMPORTANT TO SAFETY"	09/22/86	ALL LICENSEES AND HOLDERS OF AN APPLICATION FOR AN OPERATING LICENSE
GL 86-14	OPERATOR LICENSING EXAMINATIONS	08/20/86	ALL POWER REACTOR LICENSEES AND APPLICANTS
GL 86-13	POTENTIAL INCONSISTENCY BETWEEN PLANT SAFETY ANALYSES AND TECHNICAL SPECIFICATIONS	07/23/86	ALL POWER REACTOR LICENSEES WITH CE AND B&W PRESSURIZED WATER REACTORS
GL 86-12	CRITERIA FOR UNIQUE PURPOSE EXEMPTION FROM CONVERSION FROM THE USE OF HEU FUEL	07/03/86	ALL NON-POWER REACTOR LICENSEES AUTHORIZED TO USE HEU FUEL
GL 86-11	DISTRIBUTION OF PRODUCTS IRRADIATED IN RESEARCH REACTORS	06/25/86	ALL NON- POWER REACTOR LICENSEES
GL 86-10	IMPLEMENTATION OF FIRE PROTECTION REQUIREMENTS	04/28/86	ALL POWER REACTOR LICENSEE AND APPLICANTS
GL 86-09	TECHNICAL RESOLUTION OF GENERIC ISSUE NO. B-59 (N-1) LOOP OPERATION IN BWRs AND PWRs	03/31/86	ALL BWR AND PWR LICENSEES AND APPLICANTS
GL 86-08	AVAILABILITY OF SUPPLEMENT 4 TO NUREG-0933, "A PRIORITIZATION OF GENERIC SAFETY ISSUES"	03/25/86	ALL LICENSEES, APPLICANTS AND CONSTRUCTION PERMIT HOLDERS
GL 86-07	TRANSMITTAL OF NUREG-1190 REGARDING THE SAN ONOFRE UNIT 1 LOSS OF POWER AND WATER HAMMER EVENT	03/20/86	ALL LICENSEES AND APPLICANTS

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