October 31, 1997

FOR: The Commissioners

FROM: L. Joseph Callan /s/ Executive Director for Operations

SUBJECT: PROPOSED SUPPLEMENT TO GENERIC LETTER 96-06, "ASSURANCE OF EQUIPMENT OPERABILITY AND CONTAINMENT INTEGRITY DURING DESIGN-BASIS ACCIDENT CONDITIONS"

PURPOSE:

The purpose of this paper is to inform the Commission, in accordance with the guidance in a memorandum dated December 20, 1991, from Samuel J. Chilk to James M. Taylor regarding SECY-91-172, "Regulatory Impact Survey Report--Final," of the staff's intent to issue a supplement to Generic Letter (GL) 96-06. The supplement is for information only and does not request addressees to perform any actions. The supplement to the generic letter informs addressees about ongoing efforts and new developments associated with GL 96-06 and provides additional guidance for completing corrective actions. A copy of the proposed supplement is attached.

DISCUSSION:

GL 96-06 was issued on September 30, 1996, and requested addressees to review cooling water systems that serve the containment air coolers and determine if they are susceptible to waterhammer or two-phase flow development, or both, during postulated accident conditions. Additionally, the generic letter requested addressees to determine if piping systems that penetrate the containment are susceptible to thermal expansion of fluid such that overpressurization may occur.

The staff requested that licensees respond within 120 days of the date of the generic letter with a summary report stating: (1) actions taken in response to the requested actions noted above, (2) conclusions that were reached relative to susceptibility for waterhammer and two-phase flow in the containment air cooler cooling water system and overpressurization of piping that penetrates containment, (3) the basis for continued operability of affected systems and components as applicable, and (4) actions that were implemented or are planned to be implemented. The staff is currently performing detailed reviews of licensees' responses to GL 96-06. In an initial review of the licensees' 120-day responses, the staff noted that licensees of operating reactors have completed operability determinations and either made modifications to ensure operability or concluded that affected systems and components are operable.

Making plant modifications to resolve the GL 96-06 issues can have a significant impact on outage schedules and resources, and some licensees have indicated that it would be prudent to take more time to better understand the specific concerns that have been identified in order to optimize whatever modifications are needed and to assure that they do not ultimately result in a detriment to safety. Current issues and ongoing efforts that could influence a licensee's decision in this regard include: (1) risk implications of installing relief valves to deal with the thermal overpressurization issue; (2) feasibility of using the acceptance criteria contained in Appendix F to Section III of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for the permanent resolution of the GL 96-06 issues; (3) ongoing tests by the Electric Power Research Institute to support a generic resolution of the overpressurization of piping issue; and (4) questions regarding the staff's closure of Generic Safety Issue 150, "Overpressurization of Containment Penetrations." Risk insights and industry initiatives that are being considered or that may be proposed could also influence the course of action that licensees take to resolve the GL 96-06 issues.

Although a number of issues have arisen that could affect licensees' schedules for resolving GL 96-06, licensees of the operating plants have determined that systems and components susceptible to the conditions discussed in GL 96-06 remain operable. Therefore, the staff is receptive to licensees revising their schedular commitments for resolving the GL 96-06 issues, if justified. The staff is notifying the licensees through a supplement to GL 96-06 that if a licensee elects to revise its schedular commitments, it should submit a revised response to the generic letter.

The staff has reviewed the original responses to GL 96-06 and noted that licensees of 16 plants with outages scheduled during the fall of 1997 plan to implement modifications related to GL 96-06 during these upcoming outages. The staff plans to send letters to these licensees to notify them that the NRC is receptive to revisions in schedular commitments if justified. The staff is also planning to participate in a public workshop later this fall to discuss current issues related to GL 96-06 and licensees' schedules for implementing actions in response to the GL.

Because the GL supplement is informational, requires no specific action or response, and is the result of ongoing efforts between NRC staff and licensees to resolve GL 96-06 issues, there is no need for additional opportunities for comment. Accordingly, a notice of opportunity for public comment on the proposed generic letter will not be published in the *Federal Register*.

The Office of the General Counsel has reviewed the proposed generic letter supplement and has no legal objection to its issuance.

A copy of the proposed supplement to the generic letter has been transmitted to the Committee To Review Generic Requirements (CRGR) for information only. Since the supplement contains no requirements and no licensee action or response is required, the staff recommended that no CRGR review would be appropriate. Verbal communications with members of the CRGR indicated that they agreed with the staff's recommendation that CRGR review would not be required.

The staff intends to issue this generic letter approximately 5 working days after the date of this information paper.

L. Joseph Callan
Executive Director for Operations

Contact: Beth Wetzel, NRR 301-415-1355

Attachment: Proposed Supplement 1 to GL 96-06

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

(DATE)

NRC GENERIC LETTER 96-06, SUPPLEMENT 1: ASSURANCE OF EQUIPMENT OPERABILITY AND CONTAINMENT INTEGRITY DURING DESIGN-BASIS ACCIDENT CONDITIONS

Addressees

All holders of operating licenses for nuclear power reactors except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this supplement to Generic Letter (GL) 96-06, "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions," to inform addressees about ongoing efforts and new developments associated with GL 96-06 and to provide additional guidance for completing corrective actions. Addressees may find this information useful in planning and scheduling future actions associated with GL 96-06. This generic letter supplement contains no new NRC requirements. Furthermore, no specific action or written response is required.

Background

GL 96-06 was issued on September 30, 1996, to address the following issues of concern:

1.Cooling water systems serving the containment air coolers may be exposed to the hydrodynamic effects of waterhammer during either a loss-of-coolant accident (LOCA) or a main steam line break (MSLB). These cooling water systems were not designed to withstand the hydrodynamic effects of waterhammer and actions may be needed to satisfy system design and operability requirements.

2.Cooling water systems serving the containment air coolers may experience two-phase flow conditions during postulated LOCA and MSLB scenarios. The heat removal assumptions for design-basis accident scenarios are based on single-phase flow conditions and actions may be needed to satisfy system design and operability requirements.

3.Thermally induced overpressurization of isolated water-filled piping sections in containment could jeopardize the ability of accident-mitigating systems to perform their safety functions and could lead to a breach of containment integrity through bypass leakage. Actions may be needed to satisfy system operability requirements.

GL 96-06 states--

"If systems are found to be susceptible to the conditions discussed in this generic letter, addressees are expected to assess the operability of affected systems and take corrective action as appropriate in accordance with the requirements stated in 10 CFR Part 50 Appendix B and as required by the plant Technical Specifications."

GL 96-06 also referred to GL 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability," for guidance on the resolution of issues identified in GL 96-06. Criterion XVI, "Corrective Actions," of Appendix B to 10 CFR Part 50 states, in part, "Measures shall be established to assure that...nonconformances are promptly identified and corrected." GL 91-18 states that the timeliness of corrective actions should be commensurate with the safety significance of the issue, and that the corrective action requirements of Appendix B may be satisfied by making changes in the design of the plant in lieu of restoring the affected equipment to its original design. In one example, GL 91-18 specifically discusses the use of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section III, Appendix F, criteria for interim operability determinations for degraded and nonconforming piping and pipe supports. It states that use of Appendix F criteria is valid until the next refueling outage when the supports are to be restored to the final safety analysis report criteria.

Addressees have responded to the generic letter and have established schedules for resolving the GL 96-06 issues. The NRC staff is currently reviewing the information that has been submitted.

Discussion

Implementing corrective actions to resolve the GL 96-06 issues can have a significant impact on outage schedules and resources, and some addressees have indicated that it would be prudent to take more time to better understand the specific concerns that have been identified in order to optimize whatever modifications are needed and to assure that they do not ultimately result in a detriment to safety. Current issues and ongoing efforts that could influence an addressee's decision in planning corrective actions include: (1) risk implications of installing relief valves to deal with the thermal overpressurization issue; (2) feasibility of using the acceptance criteria contained in Appendix F to Section III of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for the permanent resolution of the GL 96-06 issues; (3) ongoing tests by the Electric Power Research Institute to support a generic resolution of the overpressurization of piping issue; and (4) questions regarding the staff's closure of Generic Safety Issue 150, "Overpressurization of Containment Penetrations." Risk insights and industry initiatives that are being considered or that may be proposed could also influence the course of action that addressees take to resolve the GL 96-06 issues.

Addressees are responsible for assessing equipment operability, determining actions, and establishing schedules that are appropriate for resolving the specific conditions that have been identified. In determining the appropriate actions and schedules for resolving GL 96-06 issues, addressees should consider, for example, the continued validity of existing operability determinations, compensatory actions required to maintain operability, the safety significance associated with the specific nonconformances or degraded conditions that have been identified, risk insights, and the time required to complete any generic initiatives and/or plant-specific actions (e.g., engineering evaluations, design change packages, material procurement, and equipment modification and installation). Also, analytical solutions employing the permanent use of the acceptance criteria contained in the ASME Code, Section III, Appendix F (or other acceptance criteria) may present viable alternatives to plant modifications and can be used where appropriate, justified, and evaluated in accordance with NRC requirements such as 10 CFR 50.59, as applicable. Addressees may find the revised guidance contained in GL 91-18, Revision 1, dated October 8, 1997, helpful in determining appropriate actions and schedules. Although adjustments in schedules may be warranted on the basis of these (and other) considerations, specific actions that have been defined and are clearly needed should not be delayed without suitable justification.

It is the staff's current position that addressees can use the ASME Code, Section III, Appendix F criteria for interim operability determinations for degraded and nonconforming piping and pipe supports until permanent actions have been identified and approved by the NRC (as applicable) for resolving the GL 96-06 issues. This guidance supplements the guidance provided by GL 91-18 for resolution of the GL 96-06 issues.

In order to further facilitate resolution of the GL 96-06 issues, the NRC will participate in a public workshop on this topic later this fall. The workshop proceedings will be summarized by the NRC staff and made publicly available. The need for additional NRC guidance and generic communication will be considered upon completion of the workshop.

Requested Information

Addressees who choose to revise their commitments for resolving the GL 96-06 issues should submit a revised response to the generic letter. Revised responses should include appropriate discussion of the considerations discussed above, the current resolution status and actions remaining to be completed, and plans being considered for final resolution of the GL 96-06 issues.

Federal Register Notification

Because this GL supplement is informational, requires no specific action or response, and is the result of ongoing efforts between NRC staff and addressees to resolve GL 96-06 issues, there is no need for additional opportunities for comment. Accordingly, a notice of opportunity for public comment was not published in the *Federal Register*. However, comments on the content of this supplement to GL 96-06 may be sent to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001.

Paperwork Reduction Act Statement

For those addressees who find it necessary to revise their commitments for resolving the GL 96-06 issues, this generic letter supplement contains information collections that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). These information collections were approved by the Office of Management and Budget, approval number 3150-0011, which expires on August 31, 2000.

The public reporting burden for addressees who find it necessary to revise their response to GL 96-06 is estimated to average 40 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The U.S. Nuclear Regulatory Commission is seeking public comment on the potential impact of the collection of information contained in the generic letter and on the following issues:

(1) Is the proposed collection of information necessary for the proper performance of the functions of the NRC, including whether the information will have practical utility?

(2) Is the estimate of burden accurate?

(3) Is there a way to enhance the quality, utility, and clarity of the information to be collected?

(4) How can the burden of the collection of information be minimized, including the use of automated collection techniques?

Send comments on any aspect of this collection of information, including suggestions for reducing this burden, to the Information and Records Management Branch, T-6F33, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, and to the Desk Officer, Office of Information and

Regulatory

Affairs, NEOB-10202 (3150-0011), Office of Management and Budget, Washington, D.C. 20503.

If you have any questions about this matter, please contact the lead project manager or one of the technical contacts listed below, or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager for a specific nuclear power plant.

Jack W. Roe, Acting Director
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Technical Contacts:

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Attachment: List of Recently Issued NRC Generic Letters