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December 4, 2001

MEMORANDUM TO: Jack R. Strosnider, Director
Division of Engineering

FROM: P.T. Kuo, Chief (A) **/RA/**
Mechanical and Civil Engineering Branch
Division of Engineering

SUBJECT: REQUEST FOR APPROVAL OF AN ABSTRACT OF A PAPER TO BE
PRESENTED AT THE 2002 ASME PVP CONFERENCE TO BE HELD IN
VANCOUVER, BC, CANADA

Hans Ashar of my Branch is co-authoring a paper, "Aging Management of Primary Containment Structures for License Renewal," with Rich Morante and Joseph Braverman of Brookhaven National Laboratory, for presentation at the subject Workshop to be held on August 4 through August 8, 2002. Hans is not planning to travel to Vancouver for presentation of the paper. In accordance with COM-207, Revision 1, "Procedures for Reviewing and Approving Speeches, Presentations, Papers, and Journal Articles by NRR Staff and Contractors," dated October 31, this is a request for approval of the attached abstract of the paper.

The paper, which will be transmitted for your approval, will not contain predecisional material related to the NRC's regulatory activities.

Please sign below if the abstract is acceptable.

original signed by FXE for JRS

12/4/01

Jack R. Strosnider

Date

Attachments:

An Abstract of the Paper, "Aging Management of Primary Containment Structures for License Renewal."

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**AGING MANAGEMENT OF PRIMARY CONTAINMENT STRUCTURES
FOR
LICENSE RENEWAL**

by

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ABSTRACT

The License Renewal Rule (10 CFR Part 54) provides an opportunity for nuclear power plant licensees to operate their plants for a maximum of twenty (20) additional years beyond the current licensing term of forty (40) years. To obtain a renewal license, a licensee must document and submit for NRC staff review a detailed technical basis demonstrating that passive, long-lived structures and components will continue to perform their intended functions, in accordance with the current licensing basis, throughout the license renewal period. The focus of the application for a renewal license is the identification and management of significant aging effects that could compromise performance of intended functions.

The primary containment structure is the most critical structure at all U.S. nuclear power plants. It is the last line of defense against uncontrolled radiation releases in the event of a reactor accident. Its design is based on withstanding the maximum internal pressure and temperature postulated to occur during such an event. For concrete primary containments, both reinforced and prestressed, an additional function is protection of the Nuclear Steam Supply System from external hazards such as tornado-generated missiles.

The primary containment structure is passive and long-lived, and performs a critical intended function. Consequently, a license renewal applicant must conduct an aging management review of the primary containment structure and describe the aging management programs that are credited to manage the applicable aging effects. This paper summarizes (1) the technical efforts of the NRC staff to provide generic guidance for satisfying the requirements of the License Renewal Rule for primary containment structures, in conjunction with the use of ASME Code Section XI, Subsections IWE and IWL; (2) the NRC staff's experiences in evaluating the primary containment structure section of several license renewal applications; and (3) the aging management issues that have proven to be the most difficult to resolve for primary containment structures.