August 19, 2002

Mr. Richard E. Gimple, Chairman
ASME Subcommittee on Nuclear Inservice Inspection
Post Office Box 411
Burlington, Kansas 66839 - 0411

Dear Mr. Gimple:

After circumferential cracking was discovered in the pressure boundary of CRDM penetrations in the upper heads of a number of pressurized water reactors, parallel efforts were initiated to address the safety concerns associated with such cracking. One of these efforts involved the formation of the ASME Section XI Task Group on Alloy 600/182/82 Issues to develop changes to the Code in the areas of examination, repair and replacement requirements that modify or supplement current requirements for Alloy 600/182/82 pressure boundary applications. That effort is beginning to bear results.

The recent identification of severe boric acid corrosion of the Davis-Besse reactor pressure vessel head and boric acid deposits found elsewhere inside of the Davis-Besse containment raises significant questions regarding licensees' practices for identifying and resolving boric acid degradation for the entire reactor coolant pressure boundary (RCPB). One of the interim actions that the NRC is undertaking is to issue a supplement to Bulletin 2002-01,"Pressure Vessel Head Degradation and Reactor Coolant Boundary Integrity," to obtain more specific information on the details of each licensee's boric acid inspection program to assess the scope and to ascertain whether these programs are sufficiently comprehensive. Such information is currently lacking for RCPB components other than the reactor pressure vessel upper head. The information obtained will form the basis for further actions that the NRC may deem necessary.

In regard to the applicable rules of the ASME Code, the lack of specificity in the requirements of IWA-5240 and IWB-3522 of Section XI may lead to ineffective implementation of boric acid inspection programs. For example, in terms of scope, it is not clear whether the rules apply to all parts of all RCPB components except for portions that may be considered by these rules to be inaccessible. In addition, for insulated components in borated systems, the only required removal of insulation is for pressure retaining bolted connections regardless of the circumstances. Hence, leakage due to stress corrosion cracking(SCC) in welds and other reactor coolant pressure boundary material that is covered with insulation could go undetected for significant periods of time. Under corrective actions, the bases for "local areas of general corrosion that reduce the thickness by more than 10%" is not clear and evaluation required for such a condition is not specified. There are other examples that could be discussed here, however, it seems to be clear that Section XI needs to reevaluate their inspection and corrective action requirements for all systems that are potentially susceptible to SCC and boric acid corrosion. We would expect that changes to the rules be based on technically sound analyses supported by data that reflect the applicable corrosion mechanisms and rates involved.

I am requesting that reevaluation be undertaken on an urgent basis in parallel, but obviously related to, the ongoing efforts of the Task Group on Alloy 600/182/82 Issues. I recommend ASME consider forming a task group similar to the one on Alloy 600/182/82 to develop the needed improvements to the existing rules. The NRC is currently planning to provide criteria that will better assure early detection and/or prevention of SCC and boric acid corrosion of RCPB components. These criteria will be implemented on an interim basis until new or revised inspection criteria are proposed by ASME and found acceptable by the NRC.

Sincerely,

Brian W. Sheron ***/RA/***
Associate Director for Project Licensing
and Technical Analysis

cc: C. Wesley Rowley, Chairman, BNCS
J. Ling, Associate Executive Director, ASME Codes and Standards
G.M. Eisenberg, Director, Nuclear Codes and Standards
G. C. Bishchoff, Project Director, Westinghouse Electric Company
A. Marion, NEI
P. McCullough, V.P. Accreditation, Inst. Of Nuclear Power Operations
G. B. Stramback, Regulatory Services Project Manager, GE Nuclear Energy
G. Vine, Sr. Washington Representative, EPRI
J.A. Gray, Jr., Chairman, BWR Owners Group
J.F. Mallay, Director, Regulatory Affairs, Framatome ANP
H.A. Sepp, Manager, Regulatory Licensing & Engineering, Westinghouse Electric Corp.

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*See previous Concurrence