Lent, Susan

From: Singal, Balwant
Sent: Wednesday, January 02, 2013 2:27 PM
To: Paul, Jamie
Cc: 'Chappell, Coley'
Subject: Request for Additional Information for Relief Request RR-ENG-3-09 - TAC No. 9806

By letter dated November 16, 2012 (Agencywide Document Access and Management System (ADAMS) Accession No. ML12299A287), as supplemented by letter dated November 14, 2012 (ADAMS Accession Number ML12341A229), STP Nuclear Operating Company (STPNOC, the licensee), requested relief from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) to defer repairs to a degraded flange in the essential cooling water system (ECWS). In order to complete its review, the U.S. Nuclear Regulatory Commission (NRC) staff requests the following additional information.

1. The NRC staff does not concur with the results of the analysis used in the relief request to demonstrate structural integrity of the piping under consideration. The NRC staff believes that the analysis uses "as received" material properties. Selective leaching, the degradation mechanism of interest in this request, is known to degrade material properties ahead of advancing cracks. At the time of the request, neither the degree to which the material properties are degraded nor the area over which this degradation occurs is known or can be determined without destructively examining the flange under consideration. Given that the appropriate material properties for use in the structural integrity evaluation are not known, the NRC staff's evaluation is based on a worst case scenario, i.e., that the strength of the material from which the flange is constructed is completely degraded, i.e., zero tensile strength.

   Given that zero tensile strength in the degraded material is assumed, the NRC believes that, in the event of an earthquake, a guillotine break is likely to occur at the degraded pipe location. Such a break would encompass the full 360 degree circumference of the flange and result in complete separation of the ECWS A train piping from the ECWS B train and cross-tie piping.

   While the NRC staff acknowledges that the piping system, as designed, i.e., piping from trains A and B and the cross-tie piping function as a single unit, are seismically qualified, based on the information provided, it is not clear that this piping system remains seismically qualified when severed at the degraded flange.

Please demonstrate that the Trains A and B and Cross-tie piping of the ECWS remain seismically qualified when severed by a guillotine break at the degraded location on the flange in the cross-tie piping.

The request for additional information (RAI) was discussed with STPNOC staff on December 18, 2012 and it was agreed that the response to the RAI will be provided within 30 days from the date of the formal transmittal of RAI.

Please treat this e-mail as formal transmittal of the RAI.

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