

August 19, 2008

MEMORANDUM TO: Allen L. Hiser, Jr., Chief  
Steam Generator Tube Integrity and  
Chemical Engineering Branch  
Division of Component Integrity  
Office of Nuclear Reactor Regulation

FROM: Paul A. Klein, */RA/*  
Steam Generator Tube Integrity and  
Chemical Engineering Branch  
Division of Component Integrity  
Office of Nuclear Reactor Regulation

SUBJECT: ARGONNE NATIONAL LABORATORY TECHNICAL LETTER  
REPORT ON EVALUATION OF HEAD LOSS BY PRODUCTS OF  
ALUMINUM ALLOY CORROSION (TAC NO. MD5538)

Argonne National Laboratory (ANL) has been providing technical assistance to the U.S. Nuclear Regulatory Commission NRC Staff in the Steam Generator Tube Integrity and Chemical Engineering Branch to help evaluate certain aspects of GSI-191 chemical effects. The enclosed document, "Technical Letter Report on Evaluation of Head Loss by Products of Aluminum Alloy Corrosion," provides the results from vertical head loss loop testing performed at ANL. These tests showed a head loss contribution from intermetallic particles in the aluminum alloy that were released as the aluminum corroded in the borated, alkaline solution. For unit mass of aluminum removed from solution, the WCAP-16530-NP chemical precipitate appears to be somewhat more effective at increasing head loss than precipitates formed in-situ by aluminum corrosion.

Enclosure:  
As stated

CONTACT: Paul Klein , DCI/CSGB  
(301) 415-4030

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SUBJECT: ARGONNE NATIONAL LABORATORY TECHNICAL LETTER  
REPORT ON EVALUATION OF LONG-TERM ALUMINUM  
SOLUBILITY IN BORATED WATER (TAC NO. MD5538)

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