November 24, 2009

MEMORANDUM TO: Aladar A. Csontos, Chief
Component Integrity Branch
Division of Engineering
Office of Nuclear Regulatory Research

FROM: David L. Rudland, Senior Materials Engineer ***/RA/***
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SUBJECT: SUMMARY OF PUBLIC MEETING BETWEEN THE NUCLEAR REGULATORY COMMISSION STAFF AND REPRESENTATIVES OF THE NUCLEAR POWER INDUSTRY REGARDING PWSCC FLAW EVALUATION PROCEDURES

On November 19-20, 2009, Nuclear Regulatory Commission (NRC) staff met with representatives of the Electric Power Research Institute (EPRI), Westinghouse Electric Company, AREVA, Dominion Engineering Inc. (DEI), Structural Integrity Associates (SIA), and other industry and utility representatives at a Category 2 public meeting in Rockville, Maryland. The purpose of this meeting was to discuss procedures for conducting PWSCC flaw evaluations. A summary of the meeting concerning these activities is provided below.

**Summary**

NRC held a public meeting with industry representatives to discuss procedures for conducting ASME Section XI flaw evaluations for PWSCC indications found during dissimilar metal (DM) weld inspections per the MRP-139 guidelines. The through-wall weld residual stress (WRS) in DM welds is a major driving force for PWSCC growth. The current Section XI flaw evaluation procedures do not provide direct guidance on appropriate values of WRS to use in these analyses. NRC presented a framework for a typical PWSCC flaw evaluation procedure, which included inputs, models, assumptions, and WRS details. Modifications were made to the outline to reflect the discussion between NRC staff and industry representatives. In addition, several presentations were made:

- Warren Bamford (Westinghouse) presented information on future planned inspections for the next several outages which included:
    - Spring 2010 – 7 plants: all CE design
    - Fall 2010 – 3 plants: 2 CE and one CBI design
    - Spring 2011 – 4 plants: 3 CE and 1 Rotterdam design
    - Fall 2011 – 4 plants: 3 CE and 1 B&W design
    - One plant has not completed a baseline hot leg inspection per the MRP-139 guidelines and four plants have not completed the baseline cold leg inspection. The remainder of the plants is re-inspecting.

- Pete Riccardella (Structural Integrity Associates) presented additional Spring 2010 outage information and residual stress results from their Phase IV calculations.
- Dave Rudland (NRC/RES) presented the geometry and publishing status of the DM weld residual stress results.

Major conclusions and action items from this meeting are given below:

- Flaw evaluations develop and use defensible through-wall weld residual stresses to include the characteristics of assumed weld repairs.
- Industry will be developing a checklist, flow chart, or document describing a typical PWSCC flaw evaluation procedure. NRC will comment on this document and follow-up with another public meeting, if necessary.
- NRC will consider the possibility of accelerating the publishing schedule for the reactor inlet/outlet nozzle welding residual stress analyses conducted to date.

Enclosures:
List of Attendees
Presentations (5)

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