

May 8, 2003

MEMORANDUM TO: File

FROM: Mohan Thadani, Senior Project Manager, Section 1 /RA/
Project Directorate IV
Division of Licensing Project Management

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION (NRC)
HEADQUARTERS AND REGION IV STAFF TELEPHONE
CONVERSATION WITH STP NUCLEAR OPERATING COMPANY
(STPNOC) REGARDING SOUTH TEXAS PROJECT (STP), UNIT 1,
BOTTOM MOUNTED INSTRUMENTATION (BMI) LEAKAGE ISSUE;
NONDESTRUCTIVE EXAMINATION (NDE) AND REPAIR OPTIONS
(TAC NO. MB8435)

On April 24, 2003, the NRC Region IV and Headquarter's staff held a telephone conference call with STPNOC, the licensee for STP, Unit 1. The conference call was held as a result of the ongoing discussions related to the identification of apparent leakage at the interface of reactor vessel bottom head and BMI Penetrations 1 and 46. Attachment 1 is a list of the participants.

On this telephone conference call the licensee briefed the NRC staff on the current status of its actions regarding NDE and repair options addressing BMI penetration leakage.

NDE Plans

The licensee pointed out several problems of the NDE. The difficulty of access to the nozzles and providing adequate shielding are the primary complication. To maintain shielding, the reactor vessel will have to be flooded. The licensee stated that the underwater camera visual inspection technique has been used by Framatome. The licensee is working with the Electric Power Research Institute to build a life size mockup of the typical BMI penetration. The mockup is expected to be ready in a week and will eventually be at the site.

The licensee is exploring options to perform ultrasonic and eddy current examination of the BMI nozzle tube. The underwater visual exam would cover the J-groove weld surface. The licensee believes that it could qualify the visual examination to provide equivalent resolution as compared to a liquid penetrant examination of the weld surface.

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The licensee is exploring using the Seabrook, Unit 2 reactor vessel to perform liquid penetrant examination of the BMI penetrations to ascertain whether any fabrication related indications exist. The Seabrook, Unit 2 and STP, Unit 1 vessels were manufactured in a similar manner.

Root Cause Analysis

The licensee will investigate the condition by continuing its inspection activities, including NDE techniques and metallographic analysis, in order to determine the cause of the leak. This effort will include visual inspection by qualified inspectors and eddy current or ultrasonic testing. Industry experts will be used in conjunction with the licensee's own expert staff to expeditiously identify the root cause of the condition.

Extent of Condition

The licensee will evaluate the impact of the condition on the other 56 BMI penetrations of STP, Unit 1, and all BMI penetrations of Unit 2. The licensee will also apply the NDE techniques to determine whether any reactor vessel material wastage exists.

Repair Options

The licensee's repair options involve moving the pressure boundary from inside the vessel to outside the vessel. The selected option will ensure that pressure boundary integrity is maintained. The licensee will also address the need to continue to monitor this area.

The licensee is considering three alternative repair methods: (1) half tube repair which cuts off the lower portion of the tube about midway through the vessel thickness. A temper-bead is applied and a new lower portion is welded in place (using the Code Case N-638 and N-2142-1); (2) encapsulation by welding a tube over the existing stub and attaching to the vessel via temper-bead welding, and (3) use of mechanical clamp and seal device attached to the vessel with rods. In all cases, the pressure boundary is relocated from the original J-groove weld to outside the reactor vessel. The repair will be done with reactor reassembled and fuel loaded. This is necessary so that in-cores can be inserted to reduce the radiation field in the area of the repairs. These repairs will require NRC review and approval.

Briefings to NRC

The licensee will have face to face meetings with NRC to review the progress of its efforts at suitable intervals, and continue to hold weekly telephone conferences at 2:00 p.m. Central Daylight Savings Time on Thursdays, to keep NRC fully informed of the root cause, extent of conditions, and repair methods prior to restarting the unit.

Public Meetings

The NRC staff discussed the benefit of holding a public meeting in the vicinity of STP site at a time closer to the Unit 1 restart. The licensee agreed to support the meeting for the purpose of public outreach.

Docket No. 50-498

Attachment: List of Participants

LIST OF PARTICIPANTS

Licensee's Representatives

Gary Parkey - Vice President, Generation
Tom Jordan - Vice President, Engineering & Technical Services
Ed Halpin - Plant General Manager
Mark McBurnett - Manager, Quality & Licensing
Will Jump - Manager, Training
Steve Thomas - Manager, Plant Design Engineering
Alex Kent - Manager, Testing Program
Scott Head - Manager Licensing
Paul Sera - Manager, Plant Protection
Michael Lashley - Supervising Engineer, Testing Engineering
Harry Murray - Manger, Facilities
Mike Meier - General Manager, Station Support
Wayne Harrison - Sr. Staff Licensing Engineer

NRC Participants

Headquarters

Robert Gramm
William Reckley
Leonard Wert
Carol Moyer
Mark Hartzman
Donnie Harrison
Stephen Monarque
Jack Foster
Mohan Thadani
Allen Hiser (from home)
Stephanie Coffin

Region III

John Jacobson

Region IV

Pat Gwynn
Dwight Chamberlain
Charles Marschall
Dale Powers
Victor Dricks
James Adams
Geoff Miller
Bill McNeil
Wayne Sifre
Lee Ellershaw
Tim McConnell
Bill Maier
Chuck Paulk

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*SEE PREVIOUS
CONCURRENCES

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DATE	5/8/03	5/8/03	05/08/03	05/08/03

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