

Licensee/Facility:

Vermont Yankee Nuclear Power Corp.
Vermont Yankee 1
Vernon, Vermont

Notification:

MR Number: 1-93-0101
Date: 10/07/93
RI PC

Dockets: 50-271
BWR/GE-4

Subject: CORE SHROUD INSPECTION

Reportable Event Number: N/A

Discussion:

During the current Refueling Outage XVII, Vermont Yankee (VY) performed supplemental inspections of core shroud surfaces and weldaments to evaluate shroud integrity. Visual inspection techniques were incorporated with a 1 mil wire resolution criterion; ultrasonic testing was not performed.

The inspections were performed in response to recent crack indications found in the H3 and H4 welds at the Peach Bottom and Brunswick power plants and General Electric Service Information Letter No. 572, "Core Shroud Cracks." Based on the preliminary inspection results, no crack indications were found in the areas of concern. On the inner shroud surface, two of four vertical welds were completely inspected. Two circumferential welds (below the top guide support ring at the 270 degree azimuth and the middle weld at 270 and 115 degrees) were examined for

approximately 240 linear inches. Also examined were portions of the outer shroud upper weld near the core spray downcomer, and 30 percent of the total length of welds associated with the shroud annulus area near the jet pumps. Very little oxide build-up was observed, and no crack indications were observed on the steam separator-to-shroud holddown bolts; these are considered as precursors of core shroud cracking. The top guide support at VY is a forging and, therefore, not configured like that at Brunswick.

General Electric considers VY a low risk plant, in part, because the core shroud is forged without plates using ASTM, A-240 Type 304 material. The VY shroud was fabricated at the Rotterdam Dry Dock. Although VY is not a hydrogen water chemistry plant, other considerations include historically low reactor water conductivity (VY ranks in the best 30 percent of all utilities based on EPRI water quality guidelines), and low neutron fluence on shroud welds due to a relatively large water gap between the shroud and fuel. Vermont Yankee expects to complete their evaluation of the core shroud after GE Level 3 NDE review, prior to reactor startup scheduled for the week of October 24.

Regional Action:

The Resident Inspector is monitoring licensee activities.

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