

Local PDR



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

January 16, 1980

Docket No. 50-271

LICENSEE: Yankee Atomic Electric Company

FACILITY: Vermont Yankee Nuclear Power Corporation

MEETING HELD ON DECEMBER 11, 1979 TO DISCUSS VY FUEL HISTORY AND WATER ROD WEAR

On December 11, 1979 representatives of Vermont Yankee Nuclear Power Corporation, Yankee Atomic Electric Company, and General Electric Company met with the NRC staff in Bethesda, Maryland. Attachment A lists attendees.

There was a discussion of the operational history of Vermont Yankee fuel including recent hot lab examination results. The information discussed is contained in a proprietary letter from J. Charnley of General Electric to F. Coffman of the NRC dated December 11, 1979. General Electric was requested to provide a nonproprietary version of this letter.

The water rod lower end plug wear observed on Vermont Yankee fuel assemblies was also discussed. The Division of Operating Reactors has prepared a draft information notice for use by the Division of Inspection and Enforcement. This draft information notice, which summarizes the discussions at the meeting of December 11, is included as Attachment B.

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Enclosures:  
As stated

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ATTACHMENT B

Recommendations by DOR on Information Notice for  
8x8R Water Rod Lower End Plug Wear

On October 3, 1979, Vermont Yankee Nuclear Power Corporation reported (LER-79-25/IP) observance of lower end plug wear on the water rods of 8x8R demonstration fuel assemblies. These observations were obtained during re-fueling outage inspections. Subsequent to the initial LER, the Licensee issued LER 79-25/IT on October 17, 1979. LER 79-25/IT provided more detailed descriptions of the probable cause and corrective action associated with this event.

The lower end plug wear was isolated to the water rods of the 8x8R fuel assemblies. The cause of the wear was attributed to flow excitation of the water rods by coolant cross flow within the lower tie plate flow volume. The repetitive contact of the Zircaloy lower end plug with the stainless steel lower tie plate resulted in preferential wear of the softer Zircaloy end plug. No significant wear was observed in the lower tie plate.

To provide in-reactor experience on the modification proposed to mitigate lower end plug wear, the Licensee will include four modified 8x8R fuel bundles in their upcoming cycle of operations. The primary modification consists of using two capture water rods with shorter lower end plugs to eliminate the flow-induced excitation. Two of these fuel assemblies were previously irradiated. Vermont Yankee Nuclear Power Corporation plans to perform surveillance on these four modified bundles at the next refueling outage. The surveillance will confirm the efficacy of the modifications and the currently estimated rate of wear.

Based on evaluation of the lower end plug wear rates, and the absence of any indicated rotational movement of the water rods with worn lower end plugs, GE and the Licensee have concluded that no additional corrective action is warranted at this time.

To support this conclusion, on December 11, 1979, the Licensee and General Electric Company (GE) presented detailed status of their evaluations and analyses of this condition to the NRC staff. As a result of the information provided in the December 11, 1979 meeting, the staff agreed with the conclusion that no additional corrective action is warranted at this time.

The staff requested that GE document and formally submit proprietary, and non-proprietary versions of their evaluations and analysis. In addition, the staff requested the Licensee to submit a supplement to the earlier LER's considering the potential for loose parts.

To provide additional confirmatory evidence supporting the findings by GE and the Licensee, GE will develop a surveillance program specifically addressed at inspections for wear of the lower end plugs. When this program is developed, GE will propose the program to the NRC staff. BWR Licensees are encouraged to support a GE surveillance program.