

NRC PDR



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

DECEMBER 14 1979
12/12/79

Docket Nos. 50-282
and 50-306

LICENSEE: Northern States Power Company (NSP)
FACILITY: Prairie Island Nuclear Generating Plant Unit Nos. 1 and 2
SUBJECT: SUMMARY OF MEETING HELD ON NOVEMBER 26, 1979 TO DISCUSS THE REACTOR VESSEL UNDERCLAD CRACKING PROBLEM

On November 26, 1979, representatives of Westinghouse (W) and NSP met with the staff to present the details of underclad cracking problems overseas in Framatome reactor vessel nozzles and the status of the review of the similar Prairie Island Plant vessels also made by Framatome.

Background

On September 25, 1979 Westinghouse notified the NRC by phone that cracks had been discovered in several reactor vessel nozzles that had been manufactured in France. Since the Prairie Island Plant reactor vessels were manufactured by Framatome in France, we were potentially concerned that they could be subject to the same cracking problem. On September 28, 1979, on the basis of a memo from B. Grimes to A. Schwencer, a phone call was made to NSP to alert them to our concern about this potential problem. NSP was already aware of the problem in a general way and was proceeding to look into the matter with Westinghouse. On October 24, 1979 a memo was issued to the Commissioners (Attachment 2), reporting the information that was known to the staff at that time.

On November 16, 1979 the staff called this meeting for November 26, 1979 to update our understanding of the problem to get a status report, and to discuss the future plans of Westinghouse and NSP regarding this matter as it specifically related to the Prairie Island Plant units.

Meeting Summary

The meeting was opened with a presentation by the Westinghouse staff. They indicated that Westinghouse was notified by Framatome that base metal cracking was discovered in several reactor vessel nozzles under the stainless steel cladding. The cause of the cracking is believed to be hydrogen embrittlement. Similar base metal cracking was also found beneath the cladding on steam generator tube sheets. This underclad cracking problem affected vessels manufactured by Framatome using a certain welding procedure. The Prairie Island reactor vessels were manufactured by Framatome, as were the offshore power system (OPS) vessels.

The Westinghouse presentation included an outline of the problem, an action plan for resolution, early results of some investigations and tests that has been performed on some OPS reactor vessel nozzles, a schedule of developing ISI procedures, results of a broad study of reactor vessels manufactured by other suppliers, and the future laboratory program. Details were outlined in viewgraphs (See Attachment 3), and photos of the early test results were circulated.

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There was a detailed discussion on each of the areas with all questions posed by the staff answered. Considerable time was spent in reviewing the photographs of various specimens.

Following this Westinghouse presented plans and some preliminary results of fracture mechanics studies of the Prairie Island Plant. Early results indicated that flaws up to 1/2 inch of present would meet all accident requirements without loss of vessel integrity. As noted below, NSP test conducted in 1977 showed no evidence of cracking.


In summary, a Westinghouse staff action plan is underway and based on samples taken from the OPS nozzles and the preliminary fracture mechanics studies, the problem was considered under control with no immediate concern for loss of integrity of the reactor coolant procedure boundary for the Prairie Island RCS.

Following the Westinghouse presentation of NSP staff reviewed its plans. These plans consisted primarily of conducting the new ISI tests developed by the Westinghouse program. It is expected that these additional ISI tests will be performed on Unit 1 during its Spring 1980 refueling outage.

NSP conducted an inservice inspection of one outlet nozzle from each vessel in 1977 and found no evidence of cracking. A code fracture mechanics analysis of all reactor vessel nozzles will be performed.

Conclusion

The staff concluded that the Westinghouse was proceeding in an appropriate measure and that no staff action was required at this time. Westinghouse will provide a written account of their presentation in about ten days. NSP will file a written account of their plans in about fifteen days. The staff will review these plans and comment further as necessary.


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Meeting Summary for Northern States Power Company

DECEMBER 12 1979

Docket Files

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Local PDR

ORBI Reading

NRR Reading

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