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SUBJECT: Forwards response to NRC 80065 request for comments on NUREG-0619, "BWR Feedwater Nozzle & Control Rod Drive Return Line Nozzle Cracking," Pressure control station not necessary for safe control rod driveline sys.

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NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

July 11, 1980

Director of Nuclear Reactor Regulation
Attn: Mr Richard Snaider, Generic Issues Branch
U S Nuclear Regulatory Commission
Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Comments on NUREG-0619, BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking

In a letter dated June 5, 1980 from Mr D G Eisenhut, Director, Division of Licensing, USNRC, we were provided with a "for comment" edition of NUREG-0619, "BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking." We were requested to submit comments to Mr Richard Snaider of the Generic Issues Branch by July 7, 1980. We were later notified by the Monticello Project Manager in the Division of Licensing that the comment date had been extended to July 21, 1980.

NUREG-0619 has been reviewed by the Monticello plant technical staff and our engineering consultants. We have several comments which we believe should be incorporated in the final NRC Staff position on resolution of the BWR feedwater and control rod drive return nozzle cracking issue. Our comments are attached.

Please contact us if you have any questions related to our comments or wish to discuss them in detail.

L. O. Mayer

L O Mayer, PE
Manager of Nuclear Support Services

LOM/DMM/ak

cc: J G Keppler
G Charnoff

Attachment

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Draft NUREG 0619 Comments, Part I - Feedwater Nozzles

With respect to the first paragraph of Section 4.2, we understand that system modifications and procedure changes will allow extensions to inspection intervals applicable to the plant specific configuration. The welded-in thermal sleeve design presented for NRC staff review on April 30, 1980 provides nozzle protection at least equivalent to the GE triple sleeve design. It is, therefore, believed that the inspection interval for Monticello after installing the welded-in thermal sleeve should be based on the triple sleeve inspection interval shown in Table 2 with extensions allowed for system modifications and procedure changes. We therefore, believe that paragraph 4.3.2.2 should be revised to provide for a case by case review of inspection intervals proposed by licensees.

The RWCU system at Monticello was modified during the February, 1980, refueling outage to provide heating of feedwater in both feedwater loops. Testing indicates that the RWCU return flow heats the feedwater by as much as 160°F during low flow conditions and heats the feedwater by as much as 100°F during startup under conditions of high turbine bypass flow. RWCU flow is 1% of rated feedwater flow.

600 psi turbine roll was successfully performed on April 5, 1980 and again on April 28, 1980. Data collected during these startups are being evaluated to determine the merit of low pressure turbine roll. Preliminary results of the investigation indicate that normal startup yields lower nozzle fatigue usage. The problem with low pressure turbine roll is that up to three hours are required at high turbine bypass flows. This time is required to remove enough conservatism from IRM calibration to allow power to be increased to the point where sufficient bypass flow is established to roll and load the turbine to minimum requirements without exceeding Technical Specification limits on IRM scram setpoint. The advantage of normal turbine startup is that the reactor is in RUN mode prior to rolling the turbine so that IRM scram is bypassed. Only one half hour at high turbine bypass flow is typically required. We are investigating system modifications which may alleviate this problem since a 600 psi start sequence equivalent to normal startup will surely result in reduced nozzle fatigue usage.

With respect to the second paragraph of section 4.3.2.4, we have found that differential expansion of the feedwater nozzle and thermal sleeve caused by pressurization and heat up will cause the fit between thermal sleeve and safe end to loosen. This may cause results of an in-vessel leak test to be non-representative of thermal sleeve performance at power.

With respect to the fourth paragraph of section 4.3.2.4, the presentation made to the NRC staff on February 21, 1980 provided a detailed, analytical review of the on line leakage monitor installed at Monticello. A detailed review of field data was also presented. We do not believe that this paragraph reflects the current level of NRC acceptance of on line monitoring systems.

With respect to section 4.4, we believe that licensees should be given the opportunity to demonstrate that the existing low flow controller meets the intent of the low flow controller recommended in NEDE 21821-02.

Draft NUREG 0619 Comments, Part II - CRD Return Line Nozzle

Item 8.1(5) requires licensees, who choose to reroute the CRDRL, to add the GE recommended pressure control station to the cooling water header. The NUREG states that this station acts to buffer hydraulic perturbations from any connected system in order to prevent pressure fluctuations in the CRD system. This is not the intent of the system as described in GE SIL No. 200, Revision 1, dated July 1979. This station has two functions, neither of which has anything to do with "connected systems". First, it allows the exhaust header to re-pressurize following a scram. Second, it eliminates the reverse flow through the 121 valves during the cooling mode of operation.

The orifice in the exhaust water check valve already allows re-pressurization of the exhaust header following a scram. Therefore, the station's function is redundant to a more simplistic, reliable orificed check valve.

The second function, to eliminate reverse flow through the 121 valves is of very little concern. First, tests performed by the valve manufacturer have not shown this flow to be detrimental to valve operation. Second, Monticello presently performs rod exercise tests weekly which would indicate if the 121 valves are not functioning properly. Third, the 121 valves have no effect on the scram function of the CRD system. Minor changes in these valves and their operation would only affect normal drive insertion. Again, this is of little safety concern.

Monticello has been operating since June 1977 with the return line isolated. During this three year period, all modes of plant operation have been experienced with the CRD system responding properly and consistently. Also, numerous different tests have been performed on the CRD system with satisfactory results, comparable to results of tests prior to isolation.

In conclusion, it is believed that installing the pressure control station is not necessary to maintain a safe reliable CRD system. Also, it would contain more "active" components that could fail.