NSP

Northern States Power Company

Prairie Island Nuclear Generating Plant

1717 Wakonade Dr. East
Welch, Minnesota 55089

October 30, 1998

10 CFR 50.9

U S Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

50.9 Report - Containment Heavy Load Weight Issues Follow-up Report

On August 18 and 19, 1998, NSP notified NRC Region III staff, in accordance with 10CFR50.9, of a case where information supplied to the NRC may not be complete and accurate in all material respects. On September 16, a written report provided background information, conclusion, and an action plan. The purpose of this letter is to address each of those action plan items and provide conclusions. Following are the action plan items and results.

Action Plan and Status

1. If possible, locate reactor vessel head drop calculation to determine weight used.

   Status
   We were unable to locate the original reactor vessel head drop calculation that resulted in the original deflection determination. That original deflection determination was 0.55 inches.

2. If the reactor vessel head weight [used in the original calculation] is less than the typical weight or the original calculations are unavailable, then calculate deflection due to dropping the head from an anticipated elevation.

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Status
Since the original calculation was unavailable, a new calculation was performed. This calculation assumed the following inputs and considerations:

- Weight (Reactor vessel head, additional equipment, and contingencies): 187,000 pounds
- Initial elevation of reactor vessel head prior to drop: 765 foot elevation

Some considerations used in the calculation were:

- Mass of water in the reactor and the refueling pool is neglected. This assumption is conservative since the weight of water would tend to dampen and reduce vertical movement.
- Potential energy of the head drop is assumed to be converted entirely to strain energy.
- Plastic impact of the reactor vessel head onto the reactor flange is considered in which the entire reactor assembly and a portion of the shield wall then moves with the impacting missile (reactor vessel head).
- Compression of the supporting ventilation pads and concrete shield wall.

The new calculation determined the deflection to be less than 0.55 inches, which was the value used as the input to the original analysis determining whether the Safety Injection (SI) lines would remain intact.

3. If the deflection is less than previously calculated for a dry pool, no additional calculations are necessary.

   Status
   Since the new calculated deflection is less than the original, no additional calculations are necessary.

4. If the deflection is greater than previously calculated for a dry pool, determine if the 4-inch SI lines will stay intact or if the Reactor Coolant System legs will remain intact. If either of these conditions are met, no additional calculations are necessary.

   Status
   Since the new calculated deflection is less than the original, no additional calculations are necessary.

5. Alternatively, an acceptable deflection could be calculated working back from the allowables for the SI line.

Status

Since the new calculated deflection is less than the original, no additional calculations are necessary.

6. Determine if the drop calculations provide sufficient proof that previous conclusions are still applicable.

Status

The current calculations reinforce and provide the basis for the prior reported results. This calculation determined the deflection to be 0.431 inches. This compares with the 0.55 inches used in the analysis in which SI line integrity was determined to exist.

7. Report results of investigation and analysis to NRC.

Status

This letter fulfills that prior commitment.

Conclusions

The current calculations confirm the validity of the prior statements made in the licensing documentation reported in our September 16 letter. We have determined that a safety issue does not exist.

If you have any questions regarding this matter, please contact Joseph Gonyeau of our staff at 651-388-1121.

Commitment

In this letter we have made no new Nuclear Regulatory Commission commitments.

Joel P. Sorensen

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Plant Manager
Prairie Island Nuclear Generating Plant

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