



Northern States Power Company

Monticello Nuclear Generating Plant
2807 West County Road 75
Monticello, MN 55362

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

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

Closeout of Commitments Associated with Structural Design of
ECCS Suction Strainers (TAC No. M96156)

Ref. 1 Letter from NSP to US Nuclear Regulatory Commission, "Commitments Associated with Structural Design of ECCS Suction Strainers (TAC No. M96156) July 29, 2000

In Ref. 1, NSP made two new NRC commitments. The purpose of this letter is to document completion of those commitments.

Commitment (1):

Prior to startup from the next scheduled refueling outage, NSP commits to conduct a test on a full-scale strainer to determine the hydrodynamic mass coefficient for the acceleration drag volume. The testing will be designed to determine an empirical value of the hydrodynamic mass coefficient that is not derived from extrapolation or engineering judgment. The test results will be reported to the Staff.

Response:

In December 1997, a hydrodynamic test program was satisfactorily completed. This test was witnessed by NRC Staff. The significant conclusion was:

"The resultant effective hydrodynamic mass coefficient, C_m , is substantially lower than that for an impervious smooth cylindrical body of same major dimensions. A typical value for cylinders in water is reported as 2.0, including both the contained fluid (a mass

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coefficient of 1.0) and the "apparent" fluid (an additional mass coefficient of 1.0). For the strainer tested, the C_m was 0.55. Even including a 10% margin, the recommended C_m for design is 0.63 based on the volume contained by the strainer envelope."

Therefore, the original stress analysis used for the strainer installation, which assumed a C_m value of 1.5, is conservative compared to the empirically obtained hydrodynamic mass coefficient value of 0.63.

The full report is available at the Monticello site should further NRC review be desired.

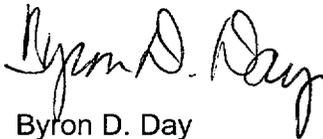
Commitment (2):

Within 18 months of startup from the current maintenance outage, NSP commits to conduct additional analyses in order to refine the level of detail in the stress models. These additional analyses will use data from the full-scale testing. The analyses will incorporate the reactions due to the strainer modifications into revised models and will quantify the resulting stresses at affected components in accordance with the Mark I program.

Response:

Additional stress analysis was completed using models with more refined level of detail than was used for the original strainer installation analysis. The resulting stresses have been quantified in accordance with the Mark I program and remain within Mark I acceptance criteria. This additional analysis was completed within the committed 18 months and is available at the Monticello site should further NRC review be desired.

Please contact Sam Shirey, Sr. Licensing Engineer, at (763) 295-1449 if you require further information.



Byron D. Day
Plant Manager
Monticello Nuclear Generating Plant

c: Regional Administrator - III, NRC
NRR Project Manager, NRC
Sr. Resident Inspector, NRC
Minnesota Department of Commerce
J. Silberg, Esq.