

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 72-10

Report No: 72-10/99001(DNMS)

Licensee: Northern States Power Company

Facility: Prairie Island Nuclear Generating Plant

Location: 1717 Wakonade Drive East
Welch, MN 55089

Dates: March 8 through April 13, 1999

Inspector: R. B. Landsman, Project Engineer

Approved By: Bruce L. Jorgensen, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

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EXECUTIVE SUMMARY

Prairie Island Nuclear Generating Plant, Units 1 & 2 Prairie Island Inspection Report 72-10/99001(DNMS)

This special inspection included direct observation by the inspector of various portions of the loading of the eighth and ninth dry fuel storage casks, from the spent fuel pool to the Independent Spent Fuel Storage Installation located away from the main protected area of the Prairie Island site. Portions of all phases of the fuel movement activities were observed starting with the initial spent fuel movements in the spent fuel pool and concluding with the placement of the storage casks on the Independent Spent Fuel Storage Installation pad. Overall, the loadings were performed well.

Report Details

1.0 Loading of the Eighth and Ninth Cask

a. Inspection Scope (60855)

The inspector observed various portions of the loading of the eighth and ninth casks to verify compliance with the applicable sections of the loading procedures.

b. Observations and Findings

The plant had successfully loaded seven casks between the spring of 1995 and January 1997. After careful consideration that over two years had passed since the last cask load, the plant decided to perform a readiness assessment of their ability to resume loading activities after the two year delay. Industry peers from Wisconsin Electric and Alliant Energy, along with two members of Northern States staff performed the review. The assessment resulted in ten recommendations for actions to be completed prior to loading Cask No. 8 and longer range implementation recommendations to be completed after loading Cask No. 9. The ten recommendations were accomplished prior to loading.

Pre-job briefings were held and attended by all workers involved with each evolution. The plant manager was present to provide upper management attention and focus. Overall, the briefings went well with open exchanges of questions, clarifications and identification of each worker's rules and responsibilities.

All the procedural tasks were completed correctly during the two loadings. Safety concerns were reinforced by the team. Problems that occurred were quickly brought to the attention of management. Sound decisions were made throughout the loading. Radiation protection activities and controls were good. Good communication between workers and health physics personnel was evident, and workers exhibited good radiation worker practices. During the move of the casks from the auxiliary building to the Independent Spent Fuel Storage Installation (ISFSI), security activities and control were good. There was sufficient security force personnel to support cask movement to the ISFSI without compromising regular plant security.

During removal of Cask No. 8 from the pool after finishing loading fuel, water was observed leaking from a crack in the outer weather skin around the neutron shield. The crack was located just above one of the lower trunnions, in the weld that connects the lower ring to the vertical plate that forms the cutout area above the trunnion. The area was ground out and rewelded. After the repair, the annulus was vacuumed dried to prevent any residual water from corroding the internal shielding shell surfaces. The resin material used for neutron shielding will not be affected by any water. The licensee has determined that one cause of the crack might be due to a manufacturing deviation across the outer skin between the bottom trunnion plates of 0.05 inches greater than allowable. A tight fit in the transportation saddles could have caused this crack. A condition report has been written to determine the root cause and to define what, if any, design or procedure changes should be made to the fabrication and procedures.

c. Conclusions

The loading of the eight and ninth casks demonstrated a thorough understanding of the procedures and activities by the cask team. All activities observed by the inspector were performed well.

2.0 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at an exit meeting on March 11, 1999, and at a followup exit to the Plant Manager on April 13, 1999. The licensee did not identify any information discussed as being proprietary.

PARTIAL LIST PERSONS CONTACTED

M. Brossart, Dry Cask System Engineer
B. Ellison, Dry Cask Master
J. Kapitz, Dry Cask Storage Project Manager
D. Schuelke, Plant Manager
J. Sorensen, Site General Manager

INSPECTION PROCEDURE USED

IP 60855: Operation of an Independent Spent Fuel Storage Installation