

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-263/83-19(DRMSP)

Docket No. 50-263

License No. DPR-22

Licensee: Northern States Power Company
414 Nicollet Mall
Minneapolis, MN 55401

Facility Name: Monticello Nuclear Generating Plant

Inspection At: Monticello Site, Monticello, MN

Inspection Conducted: October 11-12, 1983

Inspector: W. B. *W. B. Greger for*

10/27/83
Date

Approved By: *L. R. Greger*
L. R. Greger, Chief
Facilities Radiation
Protection Section

10/27/83
Date

Inspection Summary

Inspection on October 11-12, 1983 (Report No. 50-263/83-19(DRMSP))

Areas Inspected: Routine, unannounced inspection of transportation activities including: packaging; inspection of packages; procedures for exclusive use shipments; shipping papers; procedures for receipt of packages; and 10 CFR 61 implementation preparations. The inspection included a review of findings from an inspection conducted on September 19, 1983, by a representative of the Department of Health and Environmental Control, State of South Carolina, of a radioactive shipment from Monticello Nuclear Generating Plant upon arrival at Barnwell, South Carolina. The inspection involved nine inspector hours onsite by one NRC inspector.

Results: Of the seven areas inspected two apparent items of noncompliance were identified in one area (violation - failure to maintain a strong tight package - Section 4; violation - excessive radiation levels at surface of package - Section 4).

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DETAILS

1. Persons Contacted

- L. Brehm, Engineer II
- *F. Fey, General Superintendent, Radiological Protection and Chemistry, Corporate
- D. Orrock, Radiation Protection Specialist
- *G. Mathiasen, Supervisor Radiation Services
- *D. Nevirski, Plant Superintendent, Engineering and Radiation Protection
- *W. Shamla, Plant Manager
- *L. Waldinger, Superintendent, Radiation Protection
- J. Windschill, Associate (Lead) Health Physicist

* Attended the exit meeting.

2. General

This inspection, which began at 11:30 a.m. on October 11, 1983, was conducted to examine transportation activities and the status of preparation for 10 CFR 61. The inspection included a plant tour, review of licensee records and reports, discussions with licensee personnel, and review of inspection findings from the State of South Carolina.

3. Licensee Actions on Previous Inspection Finding

(Closed) Item of noncompliance (263/83-13-01) unauthorized addition of temporary shielding to a shipping cask. Shipping procedures have been reviewed and revised, where appropriate. Proper interpretation of the requirements have been discussed with personnel responsible for radioactive shipments.

4. Transportation Activities

On September 20, 1983, the State of South Carolina Department of Health and Environmental Control informed NRC (Region II Office) of apparent violations associated with a shipment of radioactive material from Monticello Nuclear Generating Plant that had arrived at Chem-Nuclear's Mobile Operation Division, Barnwell, South Carolina on the previous day. Copies of the South Carolina Department of Health and Environmental Control inspection report dated September 19, 1983, and the forwarding letter dated September 20, 1983 are attached. The State of South Carolina did not impose enforcement actions since the shipment was not designated as radioactive waste. The two items of noncompliance identified by the State were as follows:

- a. The metal box containing a contaminated fill head had a hole in the bottom and a small amount of removable contamination (3980 dpm/100 cm²) apparently leaked out. This is contrary to the DOT requirement for a strong tight package. (263/83-19-01)

- b. Radiation levels at the surface of the package exceeded the DOT limit of 1000 mR/hr. State personnel measured 1500 mR/hr at the package surface. (263/83-19-02) (See Attachment)

According to licensee personnel, the fill-head for the mobile radwaste solidification unit became contaminated in May 1983, to the extent that it was an external exposure hazard to personnel in the area. Decontamination failed and a new fill-head was obtained to replace the contaminated equipment. Because of the high exposure rates on the contaminated fill-head, it was placed into a steel LSA box within a high radiation area, such that accessible whole body dose rates were less than 1000 mR/hr. The fill-head remained in storage for several months awaiting Chem-Nuclear's decision to return the equipment to Barnwell for refurbishing.

On September 15, the Chem-Nuclear operator stationed at Monticello notified the radioactive material shipping coordinator that a shielded van was enroute to Monticello to retrieve the contaminated fill-head. The truck arrived the following morning. The normal shipping process was initiated to handle the shipment, including use of the following procedures: #8110, "Master Radioactive Material Shipping Procedure", and #8077, "Radioactive Materials Shipment - LSA - Not Exceeding A Type "A" Quantity In Exclusive Use Vehicle". When the shipment arrived at its destination, the discrepancies with shipping regulations were identified.

The inspector reviewed the licensee's records of this shipment (83-62). The procedures in effect at the time were followed. The licensee stated that even though the fill-head had been shored and braced prior to storage, the package was examined again before shipment and additional bracing added to prevent horizontal movement. Shoring was not installed to prevent vertical movement. Time constraints and ALARA considerations limited the repacking effort according to licensee personnel.

The box was punctured during transportation by a tie-down tab on the fill-head. There are four welded tie-down appendages extending radially from the upper part of the fill-head. When the fill-head was placed on its side in the box, two of the protruding tie-down tabs were supporting one end of the head. The concentrated weight, combined with the vibrations associated with truck transportation, apparently produced the puncture between the supporting skids on the bottom of the box. Procedure #8077 focuses attention on inspection of the package to ensure integrity at the time of departure; it does not specifically address insults to package integrity which might occur under conditions normally incident to transportation.

According to licensee personnel, a change in DOT regulations, effective July 1, 1983, was overlooked resulting in the failure to comply with the external package dose rate limits. This matter has since been corrected.

The inspector reviewed the following licensee procedures for the transportation of radioactive material: Special Procedure #8077, Rev. 5 "Radioactive Material Shipment -LSA- Not Exceeding , Type A Quantity In

Exclusive Use Vehicle"; Special Procedure #8089, Rev. 4, "Radioactive Material Shipment - Type A Quantity, Fissile Exempt." The procedures were revised October 6, 1983, to include the external radiation limit of 1000 mR/hr at the package surface required by the July 1, 1983 DOT regulation. The revised procedures also added an additional inspection for all radioactive material packages, other than compacted trash, by the Radioactive Material Shipping Coordinator (Supervisor Radiation Services) to ensure that packages are properly packaged and that package integrity will not be jeopardized during normal transport.

Two items of noncompliance were identified.

5. Status of Preparation for 10 CFR 61

The licensee's preparations for compliance with 10 CFR 61, which becomes effective December 27, 1983 were discussed. According to licensee representatives they are aware of the requirements of 10 CFR 61 and are developing specific procedures or revising existing procedures to effect compliance with the regulation. No problems were identified. This will be reviewed during a future inspection.

6. Exit Meeting

The inspector met with licensee representatives (denoted in Section 1) on October 12, 1983. In response to certain items discussed by the inspector, the licensee:

- a. Stated that changes in transportation of radioactive material procedures required by the July 1, 1983 change in DOT regulations had been made. (Section 4)
- b. Stated that shipping procedures had been revised to add an additional inspection step by Rad Protection Management to help ensure package integrity for all shipment of radioactive material except compacted trash. (Section 4)

7. Enforcement Meeting

A telephone enforcement meeting was held on October 19, 1983, between Mr. C. E. Larson, Director, Nuclear Generation, Northern States Power Company and Mr. J. A. Hind, Director, Division of Radiological and Materials Safety Programs, USNRC, Region III, and members of their staffs. During this meeting, the results of this inspection, the licensee's corrective actions, and NRC enforcement options were discussed. The licensee personnel questioned the categorization of these noncompliances as severity category III events. In response to this concern, the NRC personnel discussed the enforcement policy and its recent application to similar events. In addition to the corrective actions previously noted, the licensee stated that a corporate function had been initiated to review radiation protection/rad waste procedures to assure they conform to current regulations. In attendance at the enforcement meeting were:

USNRC

- J. A. Hind, Director, Division of Radiological and Materials Safety Programs
- L. R. Greger, Chief, Facilities Radiation Protection Section
- R. D. Walker, Chief, Project Section 2C
- W. H. Schultz, Enforcement Coordinator
- W. B. Grant, Radiation Specialist
- C. Brown, Senior Resident Inspector - Monticello

Northern States Power Company

- C. E. Larson, Director, Nuclear Generation
- L. R. Eliason, General Manager, Nuclear Plants
- W. A. Shamba, Plant Manager, Monticello
- M. H. Clarity, Assistant to the Plant Manager, Monticello
- D. E. Nevinski, Plant Superintendent, Engineering and Rad Protection, Monticello
- F. L. Fey, General Superintendent, Radiological Protection and Chemistry
- L. H. Waldinger, Superintendent, Radiation Protection, Monticello
- G. D. Mathiasen, Supervisor Radiation Services, Monticello