U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-263/90007(DRSS)

Docket No. 50-263 License No. DPR-22

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

Facility Name: Monticello Nuclear Generating Station

Inspection At: Monticello Site, Monticello, Minnesota

Inspection Conducted: February 26-March 2, 1990

M. A. Kunowski

Inspector: M. A. Kunowski

March 19, 1990
Date

A. S. Januska for

Approved By: M. C. Schumacher, Chief
Radiological Control and
Chemistry Section

March 19, 1990
Date

Inspection Summary

Inspection on February 26-March 2, 1990 (Report No. 50-263/90007(DRSS))
Areas Inspected: Routine, announced inspection of the radiation protection and radioactive materials transportation programs (Inspection Procedure (IP) 83750), including: changes in organization, external exposure control, and radioactive materials transportation. Also reviewed were previous inspection findings (IP 92701).
Results: Overall results of the inspection were good. Some minor paperwork problems were identified. A violation (improper documentation of radioactive waste shipment -- Section 6) was identified; however, because the provisions of Section V.A. of the NRC Enforcement Policy were satisfied, a Notice of Violation was not issued.

DETAILS

1. Persons Contacted

B. Andrie, Radiation Protection Specialist (RPS)
+D. D. Antony, Plant Manager
+G. T. Bart, Quality Assurance (QA) Supervisor, Northern States Power, Power Supply QA
L. E. Brehm, Radiological Services Engineer
+B. D. Day, General Superintendent, Engineering and Radiation Protection
J. B. Peterson, RadioChemistry Supervisor
+J. S. Rowan, QA Supervisor, Northern States Power, Power QA
+J. H. Swailes, General Superintendent of Training
M. White, President, Safety Management Systems
L. O. Wilkerson, Quality Supervisor
+J. Windschill, Superintendent Radiation Protection
P. A. Yurczyk, Radiation Protection Supervisor

+P. B. Moore, NRC Resident Inspector
+J. E. Hard, NRC Senior Resident Inspector

The inspector also contacted other licensee and contractor personnel.

+Denotes those present at the exit meeting on March 2, 1990.

2. General

This inspection was conducted to review recent organization changes in the radiation protection group, external exposure control, and transportation of radioactive material.

3. Licensee Action on Previous Inspection Findings (IP 92701)

(Closed) Violation (263/89021-01): Failure to adequately evaluate the radiation hazard prior to a job. The licensee revised pertinent radiation protection procedures and conducted training of plant staff on the violation. In addition, the licensee independently developed an advanced radiation worker (radworker) training program which addresses the subject area. The inspector attended the first day of the initial presentation of the 3-day program. The licensee's actions are adequate to avoid a repeat of the violation.

(Closed) Violation (263/89004-02): Failure to follow procedure implementation and quality control procedures for a radioactive waste shipment. Shortly after the violation was identified, training was provided to the radiation protection, quality control, and maintenance workers involved in the shipment and to other personnel. In addition, the relevant administrative control directive governing procedure implementation was revised to clarify requirements. Just prior to the current inspection, the station quality control group was retrained on the violation, emphasizing applicable requirements of the procedure implementation and quality control procedures.

4. <u>Changes in Organization (IP 83750)</u>

The inspector reviewed several recent changes in the radiation protection organization made since the previous inspection in autumn 1989 (Inspection Report No. 50-263/89021(DRSS)). No problems were identified. The results of the review are summarized below.

In December 1989, an individual who recently completed training to be the station's Radiation Protection Manager (RPM) was promoted to Superintendent of Training. He was replaced by an individual with a Master of Science degree in Environmental Health (with specialization in Health Physics) and approximately six years of radiation protection experience at Monticello. In addition, the individual spent two years with the radiation protection group of a leading industry audit organization where he participated in audits at other nuclear power plants and contributed to a recent industry standard on radiation protection practices. The inspector determined that this individual meets the qualifications for RPM as specified in Technical Specification 6.1.D.

In February 1990, the radiation protection and chemistry group reorganized. Formerly, the chemistry group reported to the Superintendent of Radiation Protection (i.e., the RPM), who reported to the General Superintendent of Engineering and Radiation Protection. Now, the chemistry group, through the Senior Plant Chemist, reports directly to the General Superintendent. The new organization is intended to ease the work load of the RPM and increase station upper management awareness of station chemistry.

No violations of NRC requirements were identified.

5. <u>External Exposure Control (IP 83750)</u>

The inspector reviewed the licensee's external exposure control, including ALARA considerations for 1989. No major problems were identified. The licensee dose total for 1989 was 506 person-rem, most of which was accumulated during an 83-day refueling outage. Most of the dose during the outage came from the replacement of the feedwater heaters, decontamination and painting of the torus, removal and replacement of a reactor water cleanup system pipe, inservice inspection, and decontamination of the reactor recirculation system. While the dose total is high compared to the 1988 total of 110 person-rem, the reactor was online for 363 days in 1988. The total is similar to that of 1987, the last refueling outage year, when 530 person-rem were recorded.

Since early November 1989, the licensee has had a General Electric zinc injection (GEZIP) system in operation in an effort to control Co-60 buildup. According to the vendor, the benefits of GEZIP are enhanced by hydrogen water chemistry (HWC), which the licensee has had operational since early 1989 (currently, hydrogen is being added at 30 standard cubic feet per minute). Discussions with a licensee representative and a review of data indicated that it was too early in the operational history of GEZIP to observe any change in reactor coolant Co-60, currently at

3-7 x 10^{-4} microcuries per milliliter. In addition, an increase in reactor coolant Zn-65, seen at other utilities that have implemented GEZIP, has not occurred at Monticello, to date.

Tours of the plant and independent radiation surveys by the inspector identified only several minor posting discrepancies which were promptly addressed by the licensee.

No violations of NRC requirements were identified.

6. <u>Transportation of Radioactive Materials (IP 83750)</u>

The inspector reviewed radioactive material shipment records, toured shipment preparation areas, reviewed shipment quality control reports, and interviewed cognizant personnel. No major problems were identified by the inspector.

The station made approximately 95 shipments of radioactive material in 1989, a large increase over 1988 when 34 shipments were made. The increase is attributed to greater radioactive waste (radwaste) generation during the refueling outage -- a refueling outage was not held in 1988 -- and a change from the practice of laundering protective clothing onsite to using a commercial laundry. Almost half of the shipments in 1989 were laundry. In addition, several shipments included items not normally shipped, such as the four feedwater heaters removed during the outage and several liners of resins generated from the chemical decontamination of the reactor recirculation system performed during the outage.

Of the non-laundry shipments, most were radwaste. In 1988, the station made 13 shipments of radwaste, consisting of approximately 5220 ft^3 and 293 Ci, whereas in 1989, the station made 23 shipments, consisting of approximately 8755 ft^3 and 59662 Ci. The large curie quantity shipped in 1989 was from three shipments of irradiated control blades and power range monitoring system equipment. These shipments were categorized as Class C waste and shipped in Type B packages. The licensee used the Fort St. Vrain irradiated fuel casks (FSV-1) as packages. A review of records and discussions with licensee representatives indicated that the shipments were made in accordance with NRC Certificate of Compliance Number 6346, issued for the FSV-1 packages.

The licensee stated that, in 1989 and 1990 to date, no major problems were encountered with radioactive material shipments, but several minor paperwork problems were identified. Most significant was a radwaste shipment of 80 drums of dry active waste (DAW) sent for burial for which the licensee was cited by the State of Washington (in a letter dated October 12, 1989) for a violation of U. S. Department of Transportation regulations on shipping papers. One of the drums listed on the manifest was not included with the drums received, whereas a drum that was not listed on the manifest was received. The State of Washington did not suspend the station's authorization to use the burial site, but did require the licensee to submit a description of the corrective actions for the problem. The station responded with a corrected shipping manifest, a procedure revision to include a sign-off for verification of waste packages with the shipment documents during loading, and implementation of a requirement for dual verification of waste packages with shipping documents during staging. In a letter dated November 20, 1989, the State of Washington accepted the corrective actions.

The licensee stated to the inspector that the drum that was not shipped but was listed on the manifest had been removed from the staging area when it was found to be damaged. Another drum was staged and subsequently shipped instead, but the shipping manifest was not revised to delete the damaged drum and include the other drum. The licensee made three subsequent shipments of drums without recurrence of the problem. Shipment of the drum without describing its radwaste contents on the shipping manifest is a violation of 10 CFR 20.311(b). As allowed by Section V.A. of the NRC Enforcement Policy, a Notice of Violation will not be issued for this isolated Severity Level V violation (NCV 50-263/90007-01).

One violation of NRC requirements was identified, but a Notice of Violation was not issued.

7. Exit Meeting (IP 30703)

The inspector met with the individuals denoted in Section 1 at the conclusion of the inspection to summarize the tentative findings. Specifically, the inspector discussed:

+ the non-cited violation regarding the radwaste shipment, and the need for attention to detail when preparing paperwork for radwaste shipments (Section 6);

+ the closeout of two previously identified violations (Section 3);

+ the licensee's good efforts with the advanced radworker course (Section 3) and GEZIP (Section 5); and,

+ the recent appointment of a new RPM (Section 4).

The licensee did not identify any material reviewed by the inspector as proprietary.