

FILE COPY

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
788 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

OCT 22 1975

Northern States Power Company  
ATTN: Mr. Leo Wachter, Vice  
President, Power  
Production and System  
Operation  
414 Nicollet Mall  
Minneapolis, Minnesota 55401

Docket No. 50-263

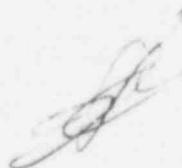
Gentlemen:

This refers to the inspection conducted by Messrs. Hueter and Greger of this office on September 30 and October 1, 1975, of activities authorized by NRC Operating License No. DPR-22, and to the discussion of our findings with Mr. Larson, and other members of the plant staff at the conclusion of the inspection.

A copy of our report of this inspection is enclosed and identifies the areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, interviews with plant personnel, and observations by the inspectors.

During this inspection, it was found that certain of your activities appear to be in noncompliance with NRC requirements. The item and reference to the pertinent requirements are listed under Enforcement Action in the Summary of Findings section of the enclosed inspection report. Prior to the conclusion of the inspection, the inspectors determined that corrective action had been taken with respect to this item of noncompliance and that measures have been taken to assure that a similar, future noncompliance will be avoided. Consequently, no reply to this letter is required, and we have no further questions regarding this matter at this time.

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Northern States Power  
Company

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OCT 22 1975

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you or your contractors believe to be proprietary, it is necessary that you make a written application to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. Any such application must include a full statement of the reasons for which it is claimed that the information is proprietary, and should be prepared so the proprietary information identified in the application is contained in a separate part of the document. Unless we receive an application to withhold information or are otherwise contacted within the specified time period, the written material identified in this paragraph will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely yours,

Gaston Fiorelli, Chief  
Reactor Operations Branch

Enclosure:  
IE Inspection Rpt No. 050-263/75-15

bcc w/encl:  
PDR  
Local PDR  
NSIC  
TIC  
Anthony Roisman, Esq., Attorney

## SUMMARY OF FINDINGS

### Inspection Summary

Inspection on September 30 and October 1, (75-15): Reviewed radiation protection program implementation during refueling and maintenance period. One item of noncompliance related to personal extremity overexposures was reviewed.

### Enforcement Items

The following item of noncompliance was identified during the inspection:

#### Infraction

Contrary to 10 CFR 20.101(a), three employees of Northern States Power received exposure to the hands in excess of the quarterly limit for the third quarter of 1975, resulting from maintenance activities on July 19.

This infraction was identified by the licensee and had the potential for causing or contributing to an occurrence with safety significance. (Paragraph 7)

#### Licensee Action on Previously Identified Enforcement Matters

Not applicable.

#### Other Significant Items

##### A. Systems and Components

Revised technical specifications associated with the augmented offgas system are to be effective when the system is fully operational. It is currently estimated that the system will be fully operational within 30 days after the Fall 1975 startup.

##### B. Facility Items (Plans and Procedures)

None.

##### C. Managerial Items

The feedwater sparger repairs scheduled for the present refueling period will require extensive personal exposure controls.

D. Noncompliance Identified and Corrected by Licensee

None.

E. Deviations

None.

F. Status of Previously Reported Unresolved Items

No previously reported unresolved items within the scope of this inspection.

Management Interview

The inspectors conducted an interview with Mr. Larson, Plant Manager, and other members of the plant staff, at the conclusion of the inspection on October 1, 1975. The following items were specifically discussed with the licensee personnel:

- A. The inspectors stated that they had reviewed the item of noncompliance, identified by the licensee and reported timely to the Commission, involving exposure to the hands of three maintenance employees in excess of the quarterly limits. The contributing factors to the exposures and corrective measures taken to minimize potential for recurrence were discussed. The licensee was informed that the inspectors had no further questions at this time regarding the matter. (Paragraph 7)
- B. The inspectors stated that gaseous effluent data shows that the average release rate of iodine 131 for the year through mid-September has been running about 100% of the annual average limit. Licensee personnel stated that they planned to be well within the limit by the end of the year, due to the large reduction in the release rate during the current outage (expected to last for at least 7 weeks) and due to the replacement during this outage of all fuel with known cladding failure. (Paragraph 8)
- C. The licensee stated that utilization of the new form entitled "Specific RWP Status Summary" would be reviewed in light of the inspection findings. (Paragraph 5)

## REPORT DETAILS

### 1. Persons Contacted

C. Larson, Plant Manager  
L. Eliason, Radiation Protection Engineer  
P. Smith, Radiation Protection Supervisor (Nuclear Plant Services)

### 2. General

This inspection was conducted in order to observe the conduct of the licensee's radiation protection program during a refueling and maintenance period. In addition to a general inspection of plant working conditions, the inspectors observed work in progress on the refueling floor and in the drywell. The inspectors reviewed the licensee's health physics staffing, radiation protection equipment, and radiation surveys and controls. No deviations from regulatory requirements nor prudent health physics practices were observed during the inspection.

### 3. Health Physics Staffing

The licensee provides continuous health physics coverage through the use of the normal Monticello health physics staff plus two radiation protection personnel from the licensee's Prairie Island plant and eighteen contract health physics personnel. The majority of the contract radiation protection personnel are provided by Nuclear Plant Services, Fremont, California. General Electric is providing health physics coverage for the torus work. Delineation of radiation protection responsibilities and interactions between the health physics personnel are specified in a memo from the Monticello Radiation Protection Engineer.

### 4. Radiation Protection Equipment

No inadequacies were identified by the inspectors with respect to instrument, protective clothing, or respiratory protection supplies. Protective clothing was observed to be reused only on a personal basis and only after a radiation survey yielded acceptable results. Protective clothing is shipped offsite for laundering.

### 5. Radiation Protection Surveys

The inspectors selectively reviewed the licensee's airborne radioactivity, direct radiation, and contamination survey records for the September 11 through September 30, 1975 period. The licensee was noted to be conducting surveys on a frequency dictated by job

requirements with a minimum observed frequency of once per twelve-hour shift. The survey package for each access control point was noted to be reviewed daily by supervisory personnel, although not necessarily by all specified personnel. The "Specific RWP Status Summary" sheets were observed to be missing one or more of the four specified signatures on a significant number of occasions. The final review signature was noted to be present on all of the summary sheets reviewed. The licensee stated that the matter would be investigated.

#### 6. Exposure Control

At the time of the inspection there were four major access control areas: 1) drywell, 2) torus, 3) refueling floor, and 4) off-gas recombiner. Each of the four areas had a security guard and a radiation protection man assigned full time. Access to the areas was controlled by security badges and radiation work permits. Protective clothing requirements were specified on the radiation work permits. Personal exposures are controlled by general and specific exposure authorizations. Personal exposure records are tabulated by the guards and totaled daily by radiation protection personnel. In addition to the four major access control points, two additional access control points were in use: 1) control rod drive repair and steam chase area and 2) reactor water cleanup pump area. These two control points were manned by radiation protection personnel only when work was actually in progress. Due to the limited numbers of personnel working within the latter two areas, security guards were not utilized.

The licensee utilized: 1) a 50 mrem daily dose limit for personnel without special authorization to exceed this limit, 2) a 1000 mrem quarterly dose limit for personnel without Form NRC-4 completed, and 3) a 2000 mrem quarterly dose limit (2500 mrem in special cases) for personnel with Form NRC-4 completed. Review of the licensee's exposure records for the quarter ending September 27 indicated the highest quarterly dose received to be 2600 mrems, with six persons receiving in excess of 2000 mrems. Airborne exposures are calculated and records maintained for personnel who are exposed to airborne concentrations greater than ten percent of MPC (after utilizing respiratory equipment protection factors). The licensee utilizes a 20 MPC hours per seven consecutive days administrative limit. Nasal smears are taken from personnel exposed to airborne concentrations greater than ten percent of MPC. Urinalyses are performed if the nasal smears are greater than 1000 dpm; the individual is not allowed back in a controlled area until the urinalysis results are back if the nasal smear is greater than 5000 dpm. Whole body counting was being conducted during the inspection period. Selected maintenance operations personnel plus personnel with high nasal smears during the current outage were scheduled to be counted.

7. Hand Exposure in Excess of Quarterly Limit

By letter<sup>1/</sup> the licensee notified the Commission of exposure to the hands of three employees in excess of the quarterly limit stated in 10 CFR 20.101(a). The exposure occurred during replacement of a seal on a reactor water clean-up pump. Factors contributing to the higher than expected hand exposure included: 1) difficulty in removal of a setscrew and 2) the loss of a puller for removal of the impeller, resulting in the use of wedges.

The licensee has since obtained approval from the pump manufacturer to discontinue use of the setscrew on the basis that it is not necessary, and another puller has been made. The puller and other tools are now being separately maintained for this specific job. The impeller of one pump has recently been replaced with a new one during a seal change and another impeller is on order for the second pump. These replacements should minimize exposure during pump reassembly and possibly during future seal replacements. Instructions on the Radiation Work Permit used for a recent pump seal replacement were observed to caution against any direct handling of the impeller. Past study has shown the activity to be "fixed" corrosion products, consisting of about 50% cobalt 60, 25% cobalt 58, 20% manganese 54 and about 2% each of zinc 65 and iron 59. The licensee is involved in a study cosponsored by GE to determine the source of the corrosion products.

8. Iodine 131 Release Rate

Licensee data show that the average release rate of iodine 131 for the year as of mid-September has been running about 100% of the annual average limit. The release rate has dropped off substantially with time into the current outage, which began on September 11 and is expected to last for at least 7 weeks. All fuel with known cladding failures is being replaced during this outage. Therefore, the licensee is anticipating a significantly reduced iodine release rate for the remainder of the year.

Although problems have been experienced with the augmented offgas system, it has been used most of 1975 with resultant low levels of iodine released to the atmosphere via the stack from the air ejector offgas. Effluent from the reactor building vent, which is unaffected by the augmented offgas system, has become the major source of iodine 131 release. Reactor building vent releases are attributed primarily to the venting of liquid and solid waste processing vessels and storage tanks.

1/ NSP ltr to IE dtd 8/15/75.

9. Feedwater Sparger Repairs

The licensee has identified cracking problems with the feedwater sparger and anticipates corrective maintenance during the current refueling period. The job will require maintenance personnel to work under radiation exposure conditions which will limit stay times to fifteen to thirty minutes in order to prevent exceeding quarterly dose limits. The exposure control methods utilized by the licensee and the exposures received by the maintenance personnel will be described in greater detail during a subsequent inspection.

10. Followup on Items from Previous Inspection <sup>2/</sup>

- a. Review of the licensee's respiratory protection records indicated that the licensee has discontinued use of the combination (charcoal sorbent and particulate filter) cartridges with air purifying respirators. Airline supplied suits are utilized occasionally, but only in conjunction with other respiratory protection equipment. In such cases, no protection factor is claimed for the airline supplied suit.
- b. The licensee has modified the radiation protection survey and radiation work permit procedures to allow for schedule slippage.

<sup>2/</sup> 1E Inspection Report No. 050-263/75-10.