

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

A. IE Inspection Report No. 050-263/75-06

Transmittal Date : April 28, 1975

Distribution:  
IE Chief, FS&EB  
IE:HQ (5)  
DR Central Files  
Regulatory Standards (3)  
Licensing (13)  
IE Files

Distribution:  
IE Chief, FS&EB  
IE:HQ (4)  
L:D/D for Fuels & Materials  
DR Central Files  
IE Files  
IE Chief, M&PPB  
L:D/D for Reactor Project

B. IE Inquiry Report No. \_\_\_\_\_

Transmittal Date : \_\_\_\_\_

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IE:HQ (5)  
DR Central Files  
Regulatory Standards (3)  
Licensing (13)  
IE Files

Distribution:  
IE Chief, FS&EB  
IE:HQ  
DR Central Files  
IE Files

C. Incident Notification From: \_\_\_\_\_  
(Licensee & Docket No. (or License No.)

Transmittal Date : \_\_\_\_\_

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Licensing (4)  
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Distribution:  
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UNITED STATES  
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799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

SEP 28 1975

Northern States Power Company  
ATTN: Mr. Leo Wachter  
Vice President  
Power Production and System  
Operation  
414 Nicollet Mall  
Minneapolis, Minnesota 54401

Docket No. 50-263

Gentlemen:

This refers to the inspection conducted by Messrs. Jorgensen and Januska of this office on April 2 - 4, 1975 of activities at the Monticello site authorized by NRC Operating License No. DPR-22 and to the discussion of our findings with Mr. Larson and others of your 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.

No items of noncompliance with NRC requirements were identified within the scope of this inspection.

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.



Northern States Power  
Company

- 2 -

APR 20 1975

No reply to this letter is necessary; however, 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 Report  
No. 050-263/75-06

bcc: IE Chief, FS&EB  
IE:HQ (4)  
Licensing (4)  
Central Files  
IE Files  
PDR  
Local PDR  
NSIC  
TIC  
OGC, Beth, P-506A  
A. Roisman

U. S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Independent Measurements Inspection

IE Inspection Report No. 050-263/75-06

Licensee: Northern States Power Company  
414 Nicollet Mall  
Minneapolis, Minnesota

Monticello Nuclear Generating Plant  
Monticello, Minnesota

License No. DPR-22  
Category: C

Type of Licensee: BWR (GE) 545 MWe

Type of Inspection: Routine, Announced

Dates of Inspection: April 2-4, 1975

Dates of Previous Inspection: March 11 - 14, 1975 (Operations)

Principal Inspector: *B. L. Jorgensen*  
B. L. Jorgensen

4/23/75  
(Date)

Accompanying Inspector: *A. Januska*  
A. Januska

4/23/75  
(Date)

Other Accompanying Personnel: None.

Reviewed By: *J. A. Pagliaro*  
J. A. Pagliaro  
Senior Environmental Scientist  
Environmental and Special  
Projects Section

4/24/75  
(Date)

## SUMMARY OF FINDINGS

Enforcement Action: None.

### Licensee Action on Previously Identified Enforcement Matters

No previously identified enforcement items within the scope of this inspection

Unusual Occurrences: None within the scope of this inspection.

### Other Significant Findings

#### A. Current Findings

This inspection consisted of an evaluation of the licensee's performance in analysis of radioactivity in effluent samples. The licensee's results have yielded 83% Agreements or Possible Agreements and 17% Disagreements when compared to the results of the NRC reference laboratory.

#### B. Status of Previously Reported Unresolved Items

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

### Management Interview

A management interview was held with Messrs. Larson, Anderson and Eliason. The following items were discussed with licensee representatives.

- A. The NRC inspectors discussed the scope of this specific inspection and the results of comparative measurements. (Paragraphs 2 and 3, Report Details)
- B. The inspectors discussed the result yielding an "Unacceptable" comparison. No apparent cause for the discrepancy was identified. (Paragraph 4, Report Details)

REPORT DETAILS

1. Persons Contacted

C. Larson, Plant Superintendent  
W. Anderson, Superintendent of Operations  
L. Eliason, Radiation Protection Engineer  
R. Jacobson, Plant Chemist  
E. Wright, Radiation Technician

2. General

The licensee is required to measure the quantities and concentrations of radioactive material in effluents from his facility to assure that they are within the limits specified in his license and NRC regulations. This inspection consisted of a test of the licensee's measurements of radioactivity in actual samples of his effluents. The test consists of comparing the licensee's measurements with those of the NRC's reference laboratory. The two laboratories make measurements on the same samples, or on duplicates or splits of the same samples. The measurements made by the NRC's reference laboratory are referenced to the National Bureau of Standards radioactivity measurements system by laboratory intercomparisons.

3. Analytical Results

This inspection showed some of the licensee's measurements on these samples are acceptable under the test criteria used by the Office of Inspection and Enforcement for comparing measurements results (see the Attachment). However, some of the licensee's measurements are not acceptable under the test criteria. The types of samples tested and the results of measurements were:

- a. Type of Sample: Off-gas (10/74)  
(Result in units of  $\mu\text{Ci/ml}$ )

ACCEPTABLE

<u>Radionuclide</u>	<u>NRC Reference Measurement</u>	<u>Licensee's Measurement</u>
Xe-133	$2.88 \pm 0.08 \text{ E-01}$	$2.98 \pm 0.01 \text{ E-01}$

NOT ACCEPTABLE: None.

- b. Type of Sample: Particulate Filter (9/74)  
(Result in units of  $\mu\text{Ci}/\text{sample}$ )

ACCEPTABLE

<u>Radionuclide</u>	<u>NRC Reference Measurement</u>	<u>Licensee's Measurement</u>
Cs-137	$3.00 \pm 0.07$ E-03	$2.37 \pm 0.05$ E-03
Cs-134	$1.31 \pm 0.05$ E-03	$1.45 \pm 0.04$ E-03
Co-60	$1.8 \pm 0.1$ E-04	$2.85 \pm 0.31$ E-04

NOT ACCEPTABLE

<u>Radionuclide</u>	<u>NRC Reference Measurement</u>	<u>Licensee's Measurement</u>
Ba-140	$5.2 \pm 0.5$ E-03	$1.31 \pm 0.08$ E-02

- c. Type of Sample: Charcoal Adsorber (9/74)  
(Results in units of  $\mu\text{Ci}/\text{sample}$ )

ACCEPTABLE

<u>Radionuclide</u>	<u>NRC Reference Measurement</u>	<u>Licensee's Measurement</u>
I-131	$2.18 \pm 0.05$	$3.49 \pm 0.02$

NOT ACCEPTABLE: None.

4. Samples Not Meeting Acceptance Criteria

The licensee's reported result on analysis of a particulate filter for Ba-140 has yielded an "Unacceptable" comparison. Discussions with the licensee and with the reference laboratory did not provide information to indicate a probable cause for the discrepancy. The licensee's results is a factor of about 2.5 times larger than that reported by the reference laboratory. If this difference is real and representative of routine licensee analyses, the licensee may have over-reported releases of this nuclide near the time of this comparison. The licensee analysed a particulate filter with acceptable results for Ba-140, during a previous comparison. This analysis will be re-examined during a subsequent inspection.

Attachment:  
Attachment 1

ATTACHMENT 1

CRITERIA FOR COMPARING ANALYTICAL MEASUREMENTS

This attachment provides criteria for comparing results of capability tests and verification measurements. The criteria are based on an empirical relationship which combines prior experience and the accuracy needs of this program.

In these criteria, the judgement limits are variable in relation to the comparison of the NRC Reference Laboratory's value to its associated uncertainty. As that ratio, referred to in this program as "Resolution", increases the acceptability of a licensee's measurement should be more selective. Conversely, poorer agreement must be considered acceptable as the resolution decreases.

<u>RESOLUTION</u>	<u>RATIO = LICENSEE VALUE/NRC REFERENCE VALUE</u>		
	<u>Agreement</u>	<u>Possible Agreement A</u>	<u>Possible Agreement B</u>
3	0.4 - 2.5	0.3 - 3.0	No Comparison
4 - 7	0.5 - 2.0	0.4 - 2.5	0.3 - 3.0
8 - 15	0.6 - 1.66	0.5 - 2.0	0.4 - 2.5
16 - 50	0.75 - 1.33	0.6 - 1.66	0.5 - 2.0
51 - 200	0.80 - 1.25	0.75 - 1.33	0.6 - 1.66
200	0.85 - 1.18	0.80 - 1.25	0.75 - 1.33

"A" criteria are applied to the following analyses:

Gamma Spectrometry where principal gamma energy used for identification is greater than 250 Kev.

Tritium analyses of liquid samples.

"B" criteria are applied to the following analyses:

Gamma spectrometry where principal gamma energy used for identification is less than 250 Kev.

89Sr and 90Sr Determinations.

Gross Beta where samples are counted on the same date using the same reference nuclide.