

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

CENTRAL FILES

AUG 5 1976

Wisconsin Public Service
Corporation
ATTN: Mr. E. W. James
Senior Vice President
Power Generation and
Engineering
P. O. Box 1200
Green Bay, Wisconsin 54305

Docket No. 50-305

Gentlemen:

This refers to the inspection conducted by Mr. G. T. Gibson of this office on July 23, 1976, of activities at the Kewaunee Nuclear Power Plant authorized by NRC Operating License No. DPR-43, and to the discussion of our findings with Mr. C. Luoma at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

No items of noncompliance with NRC requirements were identified during the course 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, except as follows. If this report contains information that you or your contractors believe to be proprietary, you must apply in writing to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. The application must include a full statement of the reasons for which the information is considered proprietary, and should be prepared so that proprietary information identified in the application is contained in an enclosure to the application.



Wisconsin Public Service
Corporation

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AUG 5 1976

We will gladly discuss any questions you have concerning this inspection.

Sincerely yours,

W. L. Fisher, Acting Chief
Fuel Facility and Materials
Safety Branch

Enclosure:
IE Inspection Rpt
No. 050-305/76-11

cc w/encl:
Mr. C. Luoma, Plant
Superintendent

bcc w/encl:
Central Files
Reproduction Unit NRC 20b
Hearing Status
PDR
Local PDR
NSIC
TIC

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

REGION III

Report of Confirmatory Measurements Inspection

IE Inspection Report No. 050-305/76-11

Licensee: Wisconsin Public Service Corporation
P. O. Box 1200
Green Bay, Wisconsin 54305

Kewaunee Nuclear Power Plant
Kewaunee, Wisconsin

License No. DPR-43
Category: C

Type of Licensee: PWR (W) 1650 MWt

Type of Inspection: Special, Announced

Date of Inspection: July 23, 1976

Principal Inspector: *B. H. Forzese*
for G. T. Cibson

8/3/76
(Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: *A. S. Januska*
J. A. Pagliaro, Chief
Environmental and Special
Projects Section

8/4/76
(Date)

SUMMARY OF FINDINGS

Inspection Summary

Inspection on July 23 (Unit 1, 76-11): discussed results of comparative analyses on effluent samples taken at the plant in February 1976; obtained a gas decay tank sample, liquid waste sample, charcoal adsorber sample, air particulate filter sample, and submitted to the licensee a spiked liquid waste sample, and spiked particulate filter for comparative analyses, results of which will be examined at a subsequent inspection.

Enforcement Items

None.

Licensee Action on Previously Identified Enforcement Items

None.

Other Significant Items

A. Systems and Components

No significant items identified.

B. Facility Items (Plans and Procedures)

No significant items identified.

C. Managerial Items

None.

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

A management interview was conducted with Mr. C. Luoma, Plant Superintendent, and members of his staff at the conclusion of the inspection on July 23, 1976. The following items were discussed with the licensee representatives.

- A. The NRC inspector discussed the scope and intent of this specific inspection. (Paragraph 2, Report Details)
- B. The results of comparative analysis of effluent samples split pursuant to this inspection were discussed, with emphasis on the results not yielding an acceptable comparison. (Paragraph 3, Report Details)

REPORT DETAILS

1. Personnel Contacted

C. Luoma, Plant Superintendent
J. Richmond, Technical Supervisor
G. Jarvella, Health Physics Supervisor

2. General

This inspection consisted of a test of the licensee's measurements of radioactivity in actual samples of his effluents and on a NRC sample standard. The test consists of comparing the licensee's measurements of radioactivity with those of the NRC's reference laboratory. The two laboratories make measurements of the same samples, or on duplicates or splits of the same sample. The measurements made by the NRC's reference laboratory are traceable to the National Bureau of Standards' Radioactivity Measurements System by laboratory intercomparisons. Criteria for the comparison of the NRC and licensee measurements are presented in Attachment 1.

3. Analytical Results

The results of the February 1976 confirmatory measurements split sample collection are presented in Table I. Some of the licensee's measurements are not acceptable under the test criteria used by the Office of Inspection and Enforcement for comparing measurement results (See the Attachment). For the licensee measurements not acceptable under the test criteria, the inspector discussed with licensee personnel those results yielding unacceptable comparisons, as follows:

a. Liquid Waste

For the liquid waste sample, two isotopes failed to yield acceptable comparisons: Sr-90 and Co-58. The inspector discussed radiostrontium sample preparation and counting techniques with licensee representatives. Licensee personnel indicated the radiostrontium counting procedure was being reviewed for low-level radiostrontium analysis. Licensee representatives agreed to analyze a spiked radiostrontium liquid sample which would be provided by the NRC. Results of this analysis will be reviewed during a subsequent inspection. The results of the Cobalt-58 analysis were

also reviewed by the inspector and licensee personnel. Licensee representatives indicated present laboratory counting equipment calibration checks have indicated the background presence of Cobalt-58 in the counting chamber. The licensee representatives stated a review is being conducted to determine the nature, extent, and remedial action required to alleviate this background Cobalt-58. This item will be reviewed during a subsequent inspection.

b. Particulate Filter (Spiked)

The inspector discussed with licensee personnel the results of the spiked particulate filter submitted to the licensee in February 1976. The inspector noted an unacceptable comparison where Zinc-65 was not identified as being present by the licensee on the particulate filter. The inspector reviewed with licensee personnel particulate filter counting instrumentation. Licensee representatives agreed to analyze an additional spiked particulate filter which will be provided by the NRC. The results of the spiked filter analysis will also be reviewed during a subsequent inspection.

Attachments:

1. Table 1.
2. Attachment 1; Criteria for Comparing Analytical Measurements

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.

TABLE I
U S NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
CONFIRMATORY MEASUREMENTS PROGRAM
FACILITY: KEWAUNEE
FOR THE 1 QUARTER OF 1976

		-----HSL-----		---LICENSEE---		-----HSL:LICENSEE-----					T
SAMPLE	ISOTOPE	RESULT	ERROR	RRESULT	ERROR	Z	VALUF	PCT	RATIO	RES	
L WASTE	BETA	2.9E-06	8.0E-08	2.9E-06	0.0	0.0		0.0	1.0E+00	3.6E+01	A
	SR 90	7.1E-08	9.0E-09	0.0	0.0	0.0		0.0	0.0	7.9E+00	D
	CO 58	1.1E-05	4.0E-07	2.2E-05	0.0	1.2E+01		1.0E+02	2.0E+00	2.8E+01	D
	I 131	5.0E-07	3.0E-07	0.0	0.0	0.0		0.0	0.0	1.7E+00	N
C FILTER	I 131	1.4E-02	7.0E-04	1.3E-02	0.0	1.0E+00		7.1E+00	9.3E-01	2.0E+01	A
F SPIKED	CE 144	1.5E-03	1.0E-04	1.6E-03	0.0	6.8E-01		6.7E+00	1.1E+00	1.5E+01	A
	CS 137	1.2E-03	3.0E-05	1.2E-03	0.0	0.0		0.0	1.0E+00	4.0E+01	A
	MN 54	3.3E-04	9.0E-06	2.1E-04	0.0	1.1E+01		3.6E+01	6.4E-01	3.7E+01	P
	ZN 65	6.0E-04	2.0E-05	0.0	0.0	0.0		0.0	0.0	3.0E+01	D
	CO 60	1.0E-03	3.0E-05	6.9E-04	0.0	8.5E+00		3.1E+01	6.9E-01	3.3E+01	P

T TEST RESULTS:
A=AGREEMENT
D=DISAGREEMENT
P=POSSIBLE AGREEMENT
N=NC COMPARISON