

TRANSMITTAL MANIFEST
 NORTHERN STATES POWER COMPANY
 NUCLEAR GENERATION DEPARTMENT
MONTICELLO NUCLEAR GENERATING PLANT

**Effluent and Waste Disposal Semiannual Report
 for January 1, 1989 through June 30, 1989**

Manifest Date: August 29, 1990

USNRC	4	ANI Library	1
Regional Admin-III		General Electric .	2
NRR Project Manager		San Jose Cust. Serv.	
DCD		San Jose Fuel Proj. Mgr.	
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		Trowbridge	1
M E Reddemann	1	J Silberg	
P H Kamman	1	Prairie Island Plant Manager	1
Monticello Plant Manager	8		
ERAD Dept.	1	Safety Audit Committee	10
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NRS File	1	R L Hannen	
NSS File	1	H S Isbin	
MDH	1	D D Lanning	
Attn: Commissioner of Health		T M Parker	
MPCA	1	J A Thie	
Attn: J W Ferman	1	F P Tierney	
		Secretary	
		File (Manifest only)	

NORTHERN STATES POWER COMPANY
MONTICELLO NUCLEAR GENERATING PLANT
License No. DPR-22

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
Period : Jan - Jun 1990

Supplemental Information

1. Regulatory Limits - Quarterly levels requiring reporting to
Nuclear Regulatory Commission

A. Noble Gases :

5 mrad/quarter gamma radiation
10 mrad/quarter beta radiation

B. Long Lived Iodines, Particulates, and Tritium :

7.5 mrem/quarter dose to any organ

C. Liquid Effluents :

1.5 mrem/quarter dose to the total body
5.0 mrem/quarter dose to any organ

2. Maximum Permissible Concentrations

A. Noble Gases :

10 CFR Part 20, Appendix B, Table II, Column 1

B. Long Lived Iodines, Particulates, and Tritium :

10 CFR Part 20, Appendix B, Table II, Column 1

C. Liquid Effluents :

10 CFR Part 20, Appendix B, Table II, Column 2
2.0 E-4 uci/ml for dissolved and entrained gases

3. Average Energy

(Not Applicable)

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PDR ADDCK 050*****
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Supplemental Information (continued)

4. Measurements and Approximations of Total Radioactivity

A. Noble Gases :

Continuous gross activity monitors in Reactor Building Vent and Plant Stack exhaust streams. Weekly isotopic analysis of exhaust streams.

B. Iodines in Gaseous Effluent :

Continuous monitoring with charcoal cartridges in Reactor Building Vent and Plant Stack exhaust streams with weekly analysis.

C. Particulates in Gaseous Effluent :

Continuous monitoring with particulate filters in Reactor Building Vent and Plant Stack exhaust streams with weekly analysis.

D. Tritium in Gaseous Effluent :

Continuous monitoring with silica gel cartridges in Reactor Building Vent and Plant Stack exhaust streams with weekly analysis.

E. Liquid Effluents :

Tank sample analyzed prior to each planned release and continuous monitoring of gross activity during planned release.

5. Batch Releases

A. Liquid :

1. Number of Batch Releases	0	
2. Total Time Period for Batch Releases	NA	min
3. Maximum Time Period for a Batch Release	NA	min
4. Average Time Period for a Batch Release	NA	min
5. Minimum Time Period for a Batch Release	NA	min
6. Average River Flow During Release	NA	cf/sec

B. Gaseous :

1. Number of Batch Releases	0	
2. Total Time Period for Batch Releases	0.0	min
3. Maximum Time Period for a Batch Release	0.0	min
4. Average Time Period for a Batch Release	0.0	min
5. Minimum Time Period for a Batch Release	0.0	min

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Supplemental Information (continued)

6. Abnormal Releases

A. Liquid :

1. Number of Releases	0	
2. Total Activity Released	NA	Ci

B. Gaseous :

1. Number of Releases	0	
2. Total Activity Released	0.0	Ci

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Table 1A Gaseous Effluents - Summation of all Releases

	Units	1st Qtr	2nd Qtr	Est. Total Error, %
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A. Fission & Activation gases

1. Total Release	Ci	7.11E+02	6.64E+02	5.00E+01
2. Average Release Rate	uci/sec	9.14E+01	8.44E+01	
3. Percent Tech Spec Qtrly Reporting Level				
Gamma Radiation	%	1.03E+00	1.15E+00	
Beta Radiation	%	2.63E-01	2.87E-01	

B. Iodines

1. Total I-131 Release	Ci	4.59E-03	5.50E-03	5.00E+01
2. Average I-131 Release Rate	uci/sec	5.90E-04	7.00E-04	

C. Particulates

1. Total Particulates	Ci	9.45E-04	9.43E-04	5.00E+01
2. Average Release Rate	uci/sec	1.22E-04	1.20E-04	
3. Gross Alpha Radioactivity	Ci	6.32E-06	8.05E-06	

Tritium

1. Total Release	Ci	1.29E+01	1.74E+01	5.00E+01
2. Average Release Rate	uci/sec	1.65E+00	2.22E+00	

E. Percent Qtrly Tech Spec Reporting Levels

1. Iodines, Particulates, and Tritium	%	1.04E+00	1.18E+00	
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Table 1B Gaseous Effluents - Elevated Releases

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		1st Qtr	2nd Qtr	1st Qtr	2nd Qtr
1. Fission Gases					
KR-85M	Ci	8.27E-01	4.14E+00	0.00E+00	0.00E+00
KR-87	Ci	5.98E+00	8.00E+00	0.00E+00	0.00E+00
KR-88	Ci	2.93E+00	9.19E+00	0.00E+00	0.00E+00
XE-133	Ci	2.13E+02	9.58E+01	0.00E+00	0.00E+00
XE-133M	Ci	5.46E+00	1.80E+00	0.00E+00	0.00E+00
XE-135	Ci	1.57E+01	4.27E+01	0.00E+00	0.00E+00
XE-135M	Ci	4.16E+01	4.20E+01	0.00E+00	0.00E+00
XE-137	Ci	2.01E+02	2.09E+02	0.00E+00	0.00E+00
XE-138	Ci	1.01E+02	1.15E+02	0.00E+00	0.00E+00
Total for Period	Ci	5.88E+02	5.28E+02	0.00E+00	0.00E+00
2. Iodines					
I-131	Ci	1.35E-03	1.49E-03	0.00E+00	0.00E+00
I-133	Ci	5.77E-03	7.82E-03	0.00E+00	0.00E+00
I-135	Ci	7.41E-03	1.11E-02	0.00E+00	0.00E+00
Total for Period	Ci	1.45E-02	2.04E-02	0.00E+00	0.00E+00
3. Particulates					
MN-54	Ci	0.00E+00	1.12E-07	0.00E+00	0.00E+00
CO-58	Ci	0.00E+00	7.10E-08	0.00E+00	0.00E+00
CO-60	Ci	9.26E-07	2.58E-06	0.00E+00	0.00E+00
ZR-95	Ci	2.52E-07	0.00E+00	0.00E+00	0.00E+00
CS-137	Ci	4.63E-06	4.71E-06	0.00E+00	0.00E+00
BA-140	Ci	4.29E-04	4.05E-04	0.00E+00	0.00E+00
CE-141	Ci	0.00E+00	8.55E-08	0.00E+00	0.00E+00
SR-89	Ci	1.98E-04	2.10E-04	0.00E+00	0.00E+00
SR-90	Ci	1.17E-06	8.61E-07	0.00E+00	0.00E+00
Total for Period	Ci	6.34E-04	6.23E-04	0.00E+00	0.00E+00

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Table 1C Gaseous Effluents - Building Vent Releases

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		1st Qtr	2nd Qtr	1st Qtr	2nd Qtr
1. Fission Gases					
XE-133	Ci	8.99E+00	3.55E+00	0.00E+00	0.00E+00
XE-135	Ci	4.00E+01	4.95E+01	0.00E+00	0.00E+00
XE-135M	Ci	7.39E+01	8.28E+01	0.00E+00	0.00E+00
Total for Period	Ci	1.23E+02	1.36E+02	0.00E+00	0.00E+00
2. Iodines					
I-131	Ci	3.24E-03	4.01E-03	0.00E+00	0.00E+00
I-133	Ci	2.11E-02	2.58E-02	0.00E+00	0.00E+00
I-135	Ci	1.45E-02	3.62E-02	0.00E+00	0.00E+00
Total for Period	Ci	3.88E-02	6.60E-02	0.00E+00	0.00E+00
3. Particulates					
MN-54	Ci	1.61E-06	0.00E+00	0.00E+00	0.00E+00
CO-60	Ci	3.97E-05	5.72E-05	0.00E+00	0.00E+00
CS-137	Ci	4.36E-06	4.42E-05	0.00E+00	0.00E+00
BA-140	Ci	2.09E-04	1.59E-04	0.00E+00	0.00E+00
CE-141	Ci	1.06E-05	0.00E+00	0.00E+00	0.00E+00
SR-89	Ci	4.53E-05	5.94E-05	0.00E+00	0.00E+00
Total for Period	Ci	3.11E-04	3.20E-04	0.00E+00	0.00E+00

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Table 2A Liquid Effluents - Summation of all Releases

	Units	1st Qtr	2nd Qtr	Est. Total Error, %
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A. Fission & Activation products

1. Total Release (not including tritium, gases, alpha)	Ci	0.00E+00	0.00E+00	0.00E+00
2. Avg Diluted Concentration	uci/ml	0.00E+00	0.00E+00	

B. Tritium

1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00
2. Avg Diluted Concentration	uci/ml	0.00E+00	0.00E+00	

C. Dissolved and Entrained Gases

1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00
2. Avg Diluted Concentration	uci/ml	0.00E+00	0.00E+00	

D. Percent Qtrly Tech Spec Reporting Level

1. Whole Body Dose	%	0.00E+00	0.00E+00	
2. Organ Dose	%	0.00E+00	0.00E+00	

Gross Alpha Radioactivity

1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00
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F. Volume of Waste Released	Liters	0.00E+00	0.00E+00	0.00E+00
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F. Volume of Dilution Water Used	Liters	0.00E+00	0.00E+00	0.00E+00
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Table 2B Liquid Effluents

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		1st Qtr	2nd Qtr	1st Qtr	2nd Qtr

None Released This Period

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Table 3 Solid Waste and Irradiated Fuel Shipments

A. Solid Waste Shipped Offsite for Burial or Disposal (not irradiated fuel)

1. Type of Waste	Units	6-month Period	Est. Total Error, %
A. Spent resins, filter sludges, evaporator bottoms, etc.	Cu. Meter	3.50E+01	5.00E+01
	Ci	2.66E+02	
B. Dry compressible waste, contaminated equipment, etc.	Cu. Meter	1.59E+01	5.00E+01
	Ci	2.81E-02	
C. Irradiated components, control rods, etc.	Cu. Meter	0.00E+00	5.00E+01
	Ci	0.00E+00	
D. Other (describe)	Cu. Meter	0.00E+00	5.00E+01
	Ci	0.00E+00	

2. Estimate of major nuclide composition (by type of waste)	Nuclide	Percent
A	Cr-51	5.80E-01
	Mn-54	4.88E+00
	Fe-55	4.12E+01
	Co-58	5.09E-01
	Fe-59	1.13E-01
	Co-60	3.65E+01
	Ni-63	1.44E+00
	Zn-65	3.97E+00
	Sr-89	7.95E-01
	Sr-90	2.91E-02
	I-131	1.09E+00
	Cs-134	6.07E-01
	Cs-137	6.64E+00
	Ba-140	5.94E-01
	La-140	2.54E-01
	Ce-141	1.27E-01
B	Mn-54	8.50E-02
	Fe-55	3.96E+01
	Co-60	3.50E+01
	Ni-63	1.63E+00
	Zn-65	2.00E+01
	Ru-103	7.00E-02
	I-131	6.80E-02
	Ba-140	1.60E-01
	Ce-141	4.10E-01

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Table 3 Solid Waste and Irradiated Fuel Shipments

3. Solid waste disposal

Number of Shipments	Mode of Transportation	Destination
4	Truck	Chem-Nuc Inc., Barnwell, SC.
3	Railway	Chem-Nuc Inc., Barnwell, SC.

B. Irradiated Fuel Shipments

1. Disposition

Number of Shipments	Mode of Transportation	Destination
None This Period		

C. Shipping Container and Solidification Method

No.	Volume M3	Activity Ci	Type of Waste	Container Code	Solidification Code
-01	5.83E+00	3.83E+01	A	A	D
-04	5.83E+00	7.19E+01	A	A	D
90-06	5.83E+00	3.40E+01	A	A	D
90-10	5.83E+00	4.37E+01	A	A	D
90-12	5.83E+00	3.58E+01	A	A	D
90-16	5.83E+00	4.23E+01	A	A	D
FWH	1.59E+01	2.81E-02	B	L	N

Container Codes :

L - LSA
A - Type A
B - Type B
Q - Large Quantity

Solidification Codes :

C - Cement
U - Urea Formaldehyde
D - Dewatering
N - Not Applicable