

Attachment A

Effluent and Waste Disposal Semiannual Report
Period July - December 1995

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

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
Period : Jul - Dec 1995

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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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	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
6. Average River Flow During Release	0.0	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	0.0	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	3rd Qtr	4th Qtr	Est. Total Error, %
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A. Fission & Activation gases

1. Total Release	Ci	1.27E+02	1.08E+02	2.00E+01
2. Average Release Rate	uci/sec	1.60E+01	1.36E+01	
3. Percent Tech Spec Qtrly Reporting Level				
Gamma Radiation	%	7.88E-02	7.80E-02	
Beta Radiation	%	3.25E-02	2.80E-02	

B. Iodines

1. Total I-131 Release	Ci	8.89E-04	1.14E-03	1.00E+01
2. Average I-131 Release Rate	uci/sec	1.12E-04	1.44E-04	

C. Particulates

1. Total Particulates	Ci	4.82E-04	3.79E-04	3.00E+01
2. Average Release Rate	uci/sec	6.07E-05	4.77E-05	
3. Gross Alpha Radioactivity	Ci	7.08E-06	3.20E-06	

D. Tritium

1. Total Release	Ci	1.16E+01	6.96E+00	1.00E+01
2. Average Release Rate	uci/sec	1.46E+00	8.76E-01	

E. Percent Qtrly Tech Spec Reporting Levels

1. Iodines, Particulates, and Tritium	%	1.83E-01	2.33E-01	
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Table 1B Gaseous Effluents - Elevated Releases

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		3rd Qtr	4th Qtr	3rd Qtr	4th Qtr
1. Fission Gases					
KR-85M	Ci	1.15E+00	8.31E-01	0.00E+00	0.00E+00
KR-87	Ci	1.70E+00	1.08E+00	0.00E+00	0.00E+00
KR-88	Ci	2.79E+00	1.44E+00	0.00E+00	0.00E+00
XE-133	Ci	2.61E+01	2.80E+01	0.00E+00	0.00E+00
XE-133M	Ci	1.69E-01	2.03E-01	0.00E+00	0.00E+00
XE-135	Ci	1.61E+01	1.34E+01	0.00E+00	0.00E+00
XE-135M	Ci	7.55E+00	5.31E+00	0.00E+00	0.00E+00
XE-137	Ci	4.24E+01	3.41E+01	0.00E+00	0.00E+00
XE-138	Ci	2.15E+01	1.53E+01	0.00E+00	0.00E+00
AR-41	Ci	6.66E-02	8.62E-02	0.00E+00	0.00E+00
Total for Period	Ci	1.19E+02	9.97E+01	0.00E+00	0.00E+00
2. Iodines					
I-131	Ci	2.98E-04	2.71E-04	0.00E+00	0.00E+00
I-133	Ci	1.84E-03	1.52E-03	0.00E+00	0.00E+00
I-135	Ci	2.64E-03	2.18E-03	0.00E+00	0.00E+00
Total for Period	Ci	4.78E-03	3.97E-03	0.00E+00	0.00E+00
3. Particulates					
MN-54	Ci	0.00E+00	3.79E-08	0.00E+00	0.00E+00
CO-60	Ci	3.26E-06	2.62E-06	0.00E+00	0.00E+00
CS-137	Ci	2.73E-06	1.37E-06	0.00E+00	0.00E+00
BA-140	Ci	1.37E-04	1.03E-04	0.00E+00	0.00E+00
SR-89	Ci	1.17E-04	2.10E-05	0.00E+00	0.00E+00
SR-90	Ci	2.58E-07	2.70E-07	0.00E+00	0.00E+00
Total for Period	Ci	2.60E-04	1.29E-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	
		3rd Qtr	4th Qtr	3rd Qtr	4th Qtr
1. Fission Gases					
XE-135	Ci	7.01E+00	5.36E+00	0.00E+00	0.00E+00
XE-135M	Ci	8.55E-01	3.17E+00	0.00E+00	0.00E+00
Total for Period	Ci	7.86E+00	8.53E+00	0.00E+00	0.00E+00
2. Iodines					
I-131	Ci	5.92E-04	8.74E-04	0.00E+00	0.00E+00
I-133	Ci	4.63E-03	7.18E-03	0.00E+00	0.00E+00
I-135	Ci	5.95E-03	1.19E-02	0.00E+00	0.00E+00
Total for Period	Ci	1.12E-02	2.00E-02	0.00E+00	0.00E+00
3. Particulates					
MN-54	Ci	3.36E-06	0.00E+00	0.00E+00	0.00E+00
CO-60	Ci	1.54E-04	1.94E-04	0.00E+00	0.00E+00
ZN-65	Ci	2.29E-05	3.44E-06	0.00E+00	0.00E+00
CS-137	Ci	3.20E-05	1.21E-05	0.00E+00	0.00E+00
BA-140	Ci	0.00E+00	3.07E-05	0.00E+00	0.00E+00
SR-89	Ci	1.01E-05	9.80E-06	0.00E+00	0.00E+00
Total for Period	Ci	2.22E-04	2.51E-04	0.00E+00	0.00E+00

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Table 2A Liquid Effluents - Summation of all Releases

	Units	3rd Qtr	4th 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	

E. 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	
		3rd Qtr	4th Qtr	3rd Qtr	4th 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 Ci	5.25E+01 3.16E+02	3.70E+01
b. Dry compressible waste, contaminated equipment, etc.	Cu. Meter Ci	9.63E+00 5.46E-01	3.50E+01
c. Irradiated components, control rods, etc.	Cu. Meter Ci	0.00E+00 0.00E+00	0.00E+00
d. Other (describe)	Cu. Meter Ci	0.00E+00 0.00E+00	0.00E+00

2. Estimate of major nuclide composition (by type of waste)				
Nuclide	Type A percent	Type B percent	Type C percent	Type D percent
H-3	5.03E-02	2.66E-01		
C-14	7.57E-02	4.92E-02		
Mn-54	1.44E+00	5.29E+00		
Fe-55	1.48E+01	4.92E+01		
Co-58	1.36E-01	3.58E-01		
Fe-59		2.03E+00		
Ni-59	4.81E-03			
Co-60	1.58E+01	1.80E+01		
Ni-63	4.28E-01	4.27E+00		
Zn-65	5.88E+01	1.92E+01		
Sr-89	9.17E-02	1.79E-02		
Sr-90	1.90E-02	3.50E-02		
Nb-94		3.42E-06		
Tc-99	6.37E-08	1.17E-06		
Cd-109		1.69E-08		
I-129	7.84E-07	3.92E-06		
I-131	2.85E-01			
Cs-134	7.34E-02	3.74E-02		
Cs-137	7.73E+00	4.98E-01		
Ba-140	1.02E-01			
La-140		7.76E-11		
Ce-141	9.15E-02	1.38E-10		
Ce-144	1.27E-02	3.39E-02		
Eu-154		3.39E-08		
Pu-238	3.93E-04	2.65E-01		
Pu-239	1.85E-04	1.28E-01		
Am-241	1.71E-03	1.48E-02		
Pu-241	1.38E-02	7.02E-02		
Cm-242	1.27E-03	4.57E-02		
Pu-242		2.08E-01		
Cm-243	1.12E-03	4.14E-03		

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Table 3 Solid Waste and Irradiated Fuel Shipments

3. Solid waste disposal

Number of Shipments	Mode of Transportation	Destination
30	Truck	Chem-Nuc Inc., Barnwell, SC.

B. Irradiated Fuel Shipments

1. Disposition

Number of Shipments	Mode of Transportation	Destination
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None This Period

C. Shipping Container and Solidification Method

No.	Volume M3	Activity Ci	Type of Waste	Container Code	Solidification Code
95-15	5.83E+00	1.86E+01	A	A	D
95-16	5.83E+00	6.74E+01	A	A	D
95-18	5.83E+00	6.64E+01	A	A	D
95-21	5.83E+00	4.61E+01	A	A	D
95-22	5.83E+00	2.77E+01	A	A	D
95-23	5.83E+00	1.71E+01	A	A	D
95-20	5.83E+00	2.09E+01	A	A	D
95-24	5.83E+00	4.72E+01	A	A	D
95-37	5.83E+00	4.51E+00	A	A	D
9378a	5.04E-01	7.90E-06	B	L	N
9378b	3.96E-01	1.06E-05	B	L	N
9379a	1.35E+00	1.03E-05	B	L	N
9379b	7.50E-01	9.60E-06	B	L	N
9410a	1.70E-02	4.69E-05	B	L	N
9446a	5.15E-01	2.02E-03	B	L	N
9446b	8.78E-02	9.23E-02	B	L	N
9446c	1.09E+00	3.94E-02	B	L	N
9446d	3.26E-01	3.37E-03	B	L	N
9446e	5.10E-01	1.02E-03	B	L	N
9464a	9.63E-01	7.37E-02	B	L	N
9464b	4.11E-01	2.04E-01	B	L	N
9464c	1.56E-01	2.07E-04	B	L	N
9464d	5.38E-02	1.37E-02	B	L	N
9464e	2.83E-03	2.59E-04	B	L	N
9471a	8.55E-01	3.11E-02	B	L	N
9471b	1.27E-01	5.16E-02	B	L	N
9471c	2.69E-01	1.25E-03	B	L	N
9471d	8.16E-01	1.82E-02	B	L	N

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C. Shipping Container and Solidification Method (Cont.)

No.	Volume M3	Activity Ci	Type of Waste	Container Code	Solidification Code
9471e	1.70E-01	6.24E-03	B	L	N
9471f	2.61E-01	8.05E-03	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