Attachment 1

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER COMPANY

OFF-SITE RADIATION DOSE ASSESSMENT FOR NORTHERN STATES POWER COMPANY

January through December 1999

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
OFF-SITE RADIATION DOSE ASSESSMENT FOR

January through December 1999

An Assessment of the radiation dose due to releases from Prairie Island Nuclear Generating Plant during 1999 was performed in accordance with the Technical Specifications. Computed doses were well below the 40 CFR Part 190 Standards and 10 CFR Part 50 Appendix I Guidelines.

Off-site dose calculation formulas and meteorological data from the Off-site Dose Calculation Manual were used in making this assessment. Source terms were obtained from the Annual Radioactive Effluent and Waste Disposal Report prepared for NRC review for the year of 1999.

Off-site Doses from Gaseous Release

Computed doses due to gaseous releases are reported in Table 1. Critical receptor location and pathways for organ doses are reported in Table 2. Doses are a small percentage of Appendix I Guidelines.

Off-site Doses from Liquid Release

Computed doses due to liquid releases are reported in Table 1. Critical receptor information is reported in Table 2. Doses, both whole body and organ, are a small percentage of Appendix I Guidelines.

Doses to Individuals Due to Activities Inside the Site Boundary

Occasionally sportsmen enter the Prairie Island site for recreational activities. These individuals are not expected to spend more than a few hours per year within the site boundary. Commercial and recreational river traffic exists through this area.

For purposes of estimating the dose due to recreational and river water transportation activities within the site boundary, it is assumed that the limiting dose within the site boundary would be received by an individual who spends a total of seven days per year on the river just off shore from the plant buildings (ESE at 0.2 miles). The gamma dose from noble gas releases and the whole body and organ doses from the inhalation pathway due to Iodine 131, Iodine-133, tritium and long lived particulates were calculated for this location and occupancy time. These doses were reported in Table 1.

Doses to Individuals Due to Effluent Releases from the ISFSI

Two fuel casks were loaded and placed in the storage facility during the 1999 calendar year. The total number of casks in the ISFSI is nine(as of 12/31/99). There has been no release of radioactive effluents from the ISFSI.

Radiation Effluent Monitoring Sampling Deviations

There were no sampling deviations during the reporting period.

CURRENT ODCM REVISION

The Offsite Dose Calculations Manual was revised this year. The current revision is 15. The revision date is September 7, 1999.

AIRBORNE ABNORMAL RELEASE

During the second quarter an unplanned release of radioactive waste gas leaked into Unit I containment and was subsequently released to the environment.

Cause: After maintenance of the 12 Reactor Coolant Pump seal package, #3 seal exhibited excessive leakage. When 12 Reactor Coolant Pump was secured, back leakage through the #3 seal caused the Reactor Coolant Drain Tank Standpipe to drain and allowed leakage of radioactive waste gas through #3 seal.

Corrective Action: It was believed that seal would "run in" with time, which it did. The isolation between the Reactor Coolant Drain Tank and the Waste Gas Vent Header was maintain closed whenever 12 Reactor Coolant Pump was secured.

Direction was added to C47512 and C47012 of the Alarm Response Guide, to close the isolation between the Reactor Coolant Drain Tank and the Waste Gas Vent Header, upon verifying a decreasing standpipe level.

Direction was also added to Operations Manual C1.2 and 2C1.2, the Unit I and Unit II startup procedures.

Result: Gases from the Radioactive Waste Gas Vent Header leaked into Unit I Containment, and a portion of this leakage was subsequently released to the environment via monitored Shield Building Ventilation. Activity of gas samples taken in Unit I Containment, were less than detectable. A small increase in CPM noted on 1R12 (gas monitor), samples of the radioactive waste gas system and the routine radioactive waste gas inventory performed by operations, were used to calculate the volume and activity released.

Activity Released:

Kr-85	2.99E+01 uCi
Xe-133	5.63E-01 uCi

The dose from this release was minimal and posed no concern for the health and safety of the general public.

Table 1

OFF-SITE RADIATION DOSE ASSESSMENT - PRAIRIE ISLAND

PERIOD: JANUARY through DECEMBER 1999

		10 CFR Part 50 Appendix I Guidelines for a 2-unit site per year
Gaseous Releases		
Maximum Site Boundry Gamma Air Dose (mrad)	8.73E-03	20
Maximum Site Boundry Beta Air Dose (mrad)	2.78E-02	40
Maximum Off-site Dose to any organ (mrem)*	8.33E-02	30
Offshore Location		
Gamma Dose (mrad)	6.45E-04	
Total Body (mrem)*	2.38E-03	
Organ (mrad)*	2.49E-03	30
Liquid Releases		
Maximum Off-site Dose Total Body (mrem)	2.31E-03	6
Maximum Off-site Dose Organ - GI TRACT (mrem)	3.89E-03	20
Limiting Organ Dose Organ - TOTAL BODY (mrem)	2.31E-03	6

* Long-Lived Particulate, I-131, I-133 and Tritium

Table 2

OFF-SITE RADIATION DOSE ASSESSMENT - PRAIRIE ISLAND
SUPPLEMENTAL INFORMATION

PERIOD: JANUARY through DECEMBER 1999

Gaseous Releases

Maximum Site Boundary Dose Location (from Building Vents)		
	Sector	WNW
	Distance (miles)	0.4
Offshore Location Within Site Boundary		
	Sector	ESE
	Distance (miles)	0.2
	Pathway	Inhalation
Maximum Off-site		
	Sector	SSE
	Distance (miles)	0.6
	Pathways	Plume, Ground, Inhalation, Vegetables
	Age Group	Child

Liquid Releases

Maximum Off-site Dose Location Downstream		
	Pathway	Fish

Attachment 2

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER COMPANY

ANNUAL RADIOACTIVE EFFLUENT REPORT

January 4, 1999 through January 2, 2000
Supplemental Information

ANNUAL RADIOACTIVE EFFLUENT REPORT

04-JAN-99 THROUGH 02-JAN-00

SUPPLEMENTAL INFORMATION

Facility: Prairie Island Nuclear Generating Plant

Licensee: Northern States Power Company

License Numbers: DPR-42 & DPR-60

A. Regulatory Limits

1. Liquid Effluents:

a. The dose or dose commitment to an individual from radioactive materials in liquid effluents released from the site shall be limited to:

for the quarter	3.0 mrem to the total body 10.0 mrem to any organ
for the year	6.0 mrem to the total body 20.0 mrem to any organ

2. Gaseous Effluents:

a. The dose rate due to radioactive materials released in gaseous effluents from the site shall be limited to:

noble gases	≤ 500 mrem/year total body ≤3000 mrem/year skin
I-131, I-133, H-3, LLP	≤1500 mrem/year to any organ

b. The dose due to radioactive gaseous effluents released from the site shall be limited to:

noble gases	≤10 mrad/quarter gamma ≤20 mrad/quarter beta ≤20 mrad/year gamma ≤40 mrad/year beta
I-131, I-133, H-3, LLP	≤15 mrem/quarter to any organ ≤30 mrem/year to any organ

B. **Maximum Permissible Concentration**

1. Fission and activation gases in gaseous releases:

   OLD 10 CFR 20, Appendix B, Table 2, Column 1

2. Iodine and particulates with half lives greater than 8 days in gaseous releases:

   OLD 10 CFR 20, Appendix B, Table 2, Column 1

3. Liquid effluents for radionuclides other than dissolved or entrained gases:

   OLD 10 CFR 20, Appendix B, Table 2, Column 2

4. Liquid effluent dissolved and entrained gases:

   2.0E-04 uCi/ml Total Activity

C. **Average Energy**

Not applicable to Prairie Island regulatory limits.

D. **Measurements and approximations of total activity**

1.	Fission and activation gases in gaseous releases:	Total Nuclide	GeLi GeLi	±25%
2.	Iodines in gaseous releases:	Total Nuclide	GeLi GeLi	±25%
3.	Particulates in gaseous releases:	Total Nuclide	GeLi GeLi	±25%
4.	Liquid effluents	Total Nuclide	GeLi GeLi	±25%

E. **Manual Revisions**

1. Offsite Dose Calculations Manual latest Revision number: 15

   Revision date : 9-7-99

1.0 BATCH RELEASES (LIQUID)

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
1.1 NUMBER OF BATCH RELEASES	3.40E+01	7.30E+01	2.10E+01	3.20E+01
1.2 TOTAL TIME PERIOD (HRS)	5.79E+01	1.27E+02	3.58E+01	5.60E+01
1.3 MAXIMUM TIME PERIOD (HRS)	2.25E+00	3.57E+00	2.00E+00	2.83E+00
1.4 AVERAGE TIME PERIOD (HRS)	1.70E+00	1.74E+00	1.70E+00	1.75E+00
1.5 MINIMUM TIME PERIOD (HRS)	8.50E-01	1.32E+00	1.42E+00	1.17E+00
1.6 AVERAGE MISSISSIPPI RIVER FLOW (CFS)	1.38E+04	4.14E+04	2.34E+04	1.24E+04

2.0 BATCH RELEASES (AIRBORNE)

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
2.1 NUMBER OF BATCH RELEASES	2.20E+01	2.00E+01	1.00E+00	1.00E+00
2.2 TOTAL TIME PERIOD (HRS)	1.92E+02	3.21E+02	1.25E+00	4.00E+00
2.3 MAXIMUM TIME PERIOD (HRS)	2.40E+01	2.40E+01	1.25E+00	4.00E+00
2.4 AVERAGE TIME PERIOD (HRS)	8.74E+00	1.60E+01	1.25E+00	4.00E+00
2.5 MINIMUM TIME PERIOD (HRS)	5.00E-04	6.80E-01	1.25E+00	4.00E+00

3.0 ABNORMAL RELEASES (LIQUID)

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
3.1 NUMBER OF BATCH RELEASES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.2 TOTAL ACTIVITY RELEASED (CI)	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.3 TOTAL TRITIUM RELEASED (CI)	0.00E+00	0.00E+00	0.00E+00	0.00E+00

4.0 ABNORMAL RELEASES (AIRBORNE)

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
4.1 NUMBER OF BATCH RELEASES	0.00E+00	0.01E+00	0.00E+00	0.00E+00
4.2 TOTAL ACTIVITY RELEASED (CI)	0.00E+00	3.05E-05	0.00E+00	0.00E+00

TABLE 1A
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
5.0 FISSION AND ACTIVATION GASES				
5.1 TOTAL RELEASE (CI)	9.10E-02	3.05E-05	1.16E+01	1.15E+01
5.2 AVERAGE RELEASE RATE (UCI/SEC)	1.16E-02	3.88E-06	1.48E+00	1.46E+00
5.3 GAMMA DOSE (MRAD)	8.09E-06	7.64E-10	4.39E-03	4.33E-03
5.4 BETA DOSE (MRAD)	7.38E-04	6.31E-08	1.34E-02	1.36E-02
5.5 PERCENT OF GAMMA TECH SPEC (%)	8.09E-05	7.64E-09	4.39E-02	4.33E-02
5.6 PERCENT OF BETA TECH SPEC (%)	3.69E-03	3.16E-07	6.70E-02	6.80E-02
6.0 IODINES				
6.1 TOTAL I-131 (CI)	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.2 AVERAGE RELEASE RATE (UCI/SEC)	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.0 PARTICULATES				
7.1 TOTAL RELEASE (CI)	8.42E-07	0.00E+00	6.06E-04	0.00E+00
7.2 AVERAGE RELEASE RATE (UCI/SEC)	1.07E-07	0.00E+00	7.70E-05	0.00E+00
8.0 TRITIUM				
8.1 TOTAL RELEASE (CI)	4.25E+00	6.80E+00	5.47E+00	7.58E+00
8.2 AVERAGE RELEASE RATE (UCI/SEC)	5.41E-01	8.65E-01	6.96E-01	9.65E-01
9.0 TOTAL IODINE, PARTICULATE AND TRITIUM (UCI/SEC)	5.41E-01	8.65E-01	6.96E-01	9.65E-01
10.0 DOSE FROM IODINE, LLP, AND TRITIUM (MREM)	1.23E-02	1.86E-02	3.88E-02	1.36E-02
11.0 PERCENT OF TECH SPEC (%)	8.18E-02	1.24E-01	2.59E-01	9.10E-02
12.0 GROSS ALPHA (CI)	0.00E+00	0.00E+00	0.00E+00	0.00E+00

13.0 FISSION AND ACTIVATION GASES

NUCLIDE	UNITS	CONTINUOUS MODE QTR: 01	QTR: 02	QTR: 03	QTR: 04	BATCH MODE QTR: 01	QTR: 02	QTR: 03	QTR: 04
KR-85	CI		2.99E-05			8.99E-02		4.40E-02	9.14E-02
XE-131M	CI								1.18E-03
XE-133	CI		5.63E-07	1.16E+01	1.14E+01	1.10E-03		1.02E-04	5.13E-03
TOTALS	CI	0.00E+00	3.05E-05	1.16E+01	1.14E+01	9.10E-02	0.00E+00	4.41E-02	9.77E-02

14.0 IODINES

NUCLIDE	UNITS	CONTINUOUS MODE QTR: 01	QTR: 02	QTR: 03	QTR: 04	BATCH MODE QTR: 01	QTR: 02	QTR: 03	QTR: 04
TOTALS	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE 1C

GASEOUS EFFLUENTS - GROUND LEVEL RELEASES (CONTINUED)

15.0 **PARTICULATES**

		CONTINUOUS MODE				BATCH MODE			
NUCLIDE	UNITS	QTR: 01	QTR: 02	QTR: 03	QTR: 04	QTR: 01	QTR: 02	QTR: 03	QTR: 04
CS-137	CI	8.42E-07							
SR-89	CI			6.05E-04					
SR-90	CI			7.96E-07					
TOTALS	CI	8.42E-07	0.00E+00	6.06E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE 1A
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
16.0 VOLUME OF WASTE PRIOR TO DILUTION (LITERS)	6.64E+07	4.18E+07	2.38E+07	3.45E+07
17.0 VOLUME OF DILUTION WATER (LITERS)	1.44E+11	8.87E+10	2.68E+11	2.50E+11
18.0 **FISSION AND ACTIVATION PRODUCTS**				
18.1 TOTAL RELEASES W/O H-3, RADGAS, ALPHA (CI)	4.76E-02	1.87E-01	8.71E-02	2.25E-02
18.2 AVERAGE DILUTION CONCENTRATION (UCI/ML)	3.29E-10	2.11E-09	3.25E-10	8.98E-11
19.0 **TRITIUM**				
19.1 TOTAL RELEASE (CI)	6.85E+01	7.08E+01	1.12E+02	2.94E+02
19.2 AVERAGE DILUTION CONCENTRATION (UCI/ML)	4.74E-07	7.98E-07	4.16E-07	1.17E-06
20.0 **DISSOLVED AND ENTRAINED GASES**				
20.1 TOTAL RELEASE (CI)	7.34E-04	1.91E-04	2.63E-04	5.13E-04
20.2 AVERAGE DILUTION CONCENTRATION (UCI/ML)	5.08E-12	2.15E-12	9.82E-13	2.05E-12
21.0 GROSS ALPHA (CI)	0.00E+00	0.00E+00	0.00E+00	0.00E+00
22.0 TOTAL TRITIUM, FISSION & ACTIVATION PRODUCTS (UCI/ML)	4.75E-07	8.00E-07	4.16E-07	1.17E-06
23.0 TOTAL BODY DOSE (MREM)	7.90E-04	4.77E-04	3.40E-04	6.99E-04
24.0 **CRITICAL ORGAN**				
24.1 DOSE (MREM)	7.90E-04	1.72E-03	3.40E-04	6.99E-04
24.2 ORGAN	TOT BODY	GI TRACT	TOT BODY	TOT BODY
25.0 PERCENT OF TECHNICAL SPECIFICATIONS LIMIT (%)	2.63E-02	1.59E-02	1.13E-02	2.33E-02
26.0 PERCENT OF CRITICAL ORGAN TECH SPEC LIMIT (%)	2.63E-02	1.72E-02	1.13E-02	2.33E-02

TABLE 2A
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES (CI)

27.0 **INDIVIDUAL LIQUID EFFLUENT**

NUCLIDE	UNITS	CONTINUOUS MODE QTR: 01	CONTINUOUS MODE QTR: 02	CONTINUOUS MODE QTR: 03	CONTINUOUS MODE QTR: 04	BATCH MODE QTR: 01	BATCH MODE QTR: 02	BATCH MODE QTR: 03	BATCH MODE QTR: 04
AG-108M	CI					8.60E-06			
AG-110M	CI					3.23E-03	3.49E-03	4.20E-03	1.54E-03
AS-76	CI						3.43E-06		
BE-7	CI					4.52E-05	1.36E-03	1.67E-04	1.00E-04
CE-141	CI						1.16E-06		
CE-144	CI					8.10E-06			
CO-57	CI					1.97E-06	3.77E-07		
CO-58	CI					7.38E-03	1.28E-02	1.28E-03	5.91E-04
CO-60	CI		1.91E-04			2.93E-03	2.36E-03	8.49E-04	7.95E-04
CR-51	CI					6.92E-04	7.35E-03	2.52E-04	1.69E-05
CS-134	CI					4.86E-06			
CS-137	CI	5.91E-05				1.02E-04	3.17E-05	6.38E-07	6.71E-06
FE-55	CI	3.17E-04	2.89E-03	5.69E-03	4.22E-03	2.27E-02	1.23E-01	6.58E-02	1.29E-02
FE-59	CI					5.94E-04	2.21E-03	3.29E-04	1.03E-04
HF-181	CI						4.54E-07		
I-130	CI						1.09E-06		
I-133	CI					1.62E-06			
LA-140	CI					3.41E-06	2.33E-05		
MN-54	CI					1.36E-04	1.65E-04	4.49E-05	2.47E-05
NA-24	CI					1.10E-06	3.97E-06		
NB-95	CI					3.34E-04	7.71E-04	1.85E-04	7.42E-05
NB-97	CI						3.35E-06	1.35E-06	
RH-105	CI								8.66E-06
RU-103	CI						3.41E-06		
SB-122	CI						1.42E-03		

(CONTINUED)

TABLE 2A
LIQUID EFFLUENTS – SUMMATION OF ALL RELEASES (CONTINUED)

27.0 INDIVIDUAL LIQUID EFFLUENT

NUCLIDE	UNITS	CONTINUOUS MODE QTR: 01	CONTINUOUS MODE QTR: 02	CONTINUOUS MODE QTR: 03	CONTINUOUS MODE QTR: 04	BATCH MODE QTR: 01	BATCH MODE QTR: 02	BATCH MODE QTR: 03	BATCH MODE QTR: 04
SB-124	CI					1.74E-03	8.85E-03	1.12E-03	1.93E-04
SB-125	CI					5.62E-03	1.16E-02	4.72E-03	1.36E-03
SB-126	CI						1.83E-05		
SN-113	CI					5.38E-04	2.44E-03	1.03E-03	4.84E-04
SR-89	CI			4.91E-04			1.39E-05	3.34E-06	
SR-92	CI					2.73E-05	5.11E-05	5.62E-05	1.40E-05
TE-123M	CI					1.57E-04	5.04E-04	3.88E-05	2.31E-05
TE-125M	CI					6.91E-04	5.15E-03	7.31E-04	
TE-132	CI						8.85E-07		
W-187	CI					2.79E-05			
ZN-65	CI					1.37E-05	9.88E-06		
ZR-95	CI					1.98E-04	4.38E-04	1.54E-04	4.07E-05
ZR-97	CI					1.56E-06			
TOTALS	CI	3.76E-04	3.08E-03	6.18E-03	4.22E-03	4.72E-02	1.84E-01	8.09E-02	1.83E-02

28.0 DISSOLVED AND ENTRAINED GASES

NUCLIDE	UNITS	CONTINUOUS MODE QTR: 01	CONTINUOUS MODE QTR: 02	CONTINUOUS MODE QTR: 03	CONTINUOUS MODE QTR: 04	BATCH MODE QTR: 01	BATCH MODE QTR: 02	BATCH MODE QTR: 03	BATCH MODE QTR: 04
XE-133	CI					7.02E-04	1.76E-04	2.61E-04	5.13E-04
XE-135	CI					3.18E-05	1.48E-05	1.83E-06	
TOTALS	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.34E-04	1.91E-04	2.63E-04	5.13E-04

Attachment 3

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER COMPANY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

January 1, 1999 through December 31, 1999

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER

Period: 1/01/99-12/31/99
License No. DPR-42/60

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

1. Solid Waste Total Volumes and Total Curie Quantities:

TYPE OF WASTE	UNITS	PERIOD TOTALS (0.00 E00)	EST. TOTAL ERROR, % (0.00 E00)	CONTAINER DISPOSAL VOL (ft^3) (LIST)
A. Resins	m^3 ft^3 Ci	2.88 E+01 1.02 E+03 1.27 E+02	 2.5 E+01	179.4 135.8 163.3
B. Dry-Compacted	m^3 ft^3 Ci	 	 	
C. Non-Compacted	m^3 ft^3 Ci	7.19 E+01 2.54 E+03 9.09 E-01	 2.5 E+01	94
D. Filter Media	m^3 ft^3 Ci	 	 	
S. Other (furnish description)	m^3 ft^3 Ci	 	 	

NOTE:	**The solid waste information provided in this report is the volume and activity of the low-level waste leaving the Prairie Island site. No allowance is made for off-site volume reduction prior to disposal.**

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER

Period: 1/01/99-12/31/99
License No. DPR-42/60

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

2. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL) [continued]

2. Principal Radionuclide Composition by Type of Waste:
(Bold letter designation from Page 1)

TYPE	Nuclide	Percent % Abundance (0.00E0)
A	Mn-54	3.35 E+00
	*Fe-55	5.67 E+00
	Co-58	9.14 E-01
	Co-60	2.49 E+01
	*Ni-63	3.73 E+01
	Cs-134	6.44 E+00
	Cs-137	2.07 E+01
C	*C-14	7.09 E-01
	Mn-54	8.15 E-01
	*Fe-55	6.52 E+01
	Co-58	4.29 E+00
	Co-60	1.24 E+01
	Ni-63	1.29 E+01
	Zr-95	1.08 E+00
	Nb-95	6.05 E-01
	Sb-125	5.21 E-01
	Cs-134	5.80 E-01
	Cs-137	5.96 E-01

* = Inferred - Not Measured on Site

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER

Period: 1/01/99-12/31/99
License No. DPR-42/60

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL) [continued]

2. Principal Radionuclide Composition by Type of Waste (Continuation):
(Bold letter designation from Page 1)

TYPE	**Nuclide**	**Percent % Abundance (0.00E0)**

* = Inferred - Not Measured on Site

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER

Period: 1/01/99-12/31/99
License No. DPR-42/60

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL) [continued]

3. Solid Waste Disposition:

Number of Shipments	Mode	Destination
5	TRUCK	ATG, Inc.
1	TRUCK	BARNWELL
2	TRUCK	GTS Duratek

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER

Period: 1/01/99-12/31/99
License No. DPR-42/60

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL) [continued]

4. Shipping Container and Solidification Method:

	No.	Disposal Volume (Ft^3/m^3)	Activity (Ci)	Type of Waste	Container Code	Solidif. Code
	99-001	135.8/3.9	1.25 E+02	A	L	N/A
	99-008	1316/37.3	5.25 E-01	C	L	N/A
	99-009	1222/34.6	3.85 E-01	C	L	N/A
	99-023	179.4/5.0	1.07 E-01	A	L	N/A
	99-024	179.4/5.0	9.72 E-02	A	L	N/A
	99-025	163.3/4.6	1.73 E-01	A	L	N/A
	99-026	179.4/5.0	2.79 E-01	A	L	N/A
	99-027	179.4/5.0	7.34 E-01	A	L	N/A
TOTALS	8	3555/100.4	1.27 E+02			

CONTAINER CODES: (Shipment type)
- L = LSA
- A = Type A
- B = Type B
- Q = Highway Route Controlled Quantity

SOLIDIFICATION CODES:
- C = Cement

TYPES OF WASTES:
- A = Resins
- B = Dry Compacted
- C = Non-Compacted
- D = Filter Media
- S = Other

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B. IRRADIATED FUEL SHIPMENTS (DISPOSITION)

Number of Shipments	Mode	Destination
0		

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

C. PROCESS CONTROL PROGRAM CHANGES

TITLE: Process Control for Solidification/Dewatering of Radioactive Waste from Liquid Systems

Current Revision Number: 8 Effective Date: 8/25/99

NOTE:	**If the effective date of the PCP is within the period covered by this report, then a description and justification of the changes to the PCP is required (T.S.6.5.D). Attach the sidelined pages to this report.**

Changes/Justification:
Changes made to side-barred sections as follows:

-Section 10.1, second paragraph name change from Westinghouse to ATG, Inc.
-Section 10.1, fourth paragraph name change from SEG/Hittman to ATG.
-Section 10.2, name change from SEG/Hittman to ATG.
-Section 10.3.1, name change from Westinghouse to ATG.
-Section 10.3.2, name change from Westinghouse to ATG.
-Section 10.5, name change from SEG/Hittman to ATG.
-Section 12.3.2, name change from SEG to ATG.

9.4 Dewatering

The dewatering process may vary with type and manufacture of container and with requirements of the disposal facility. Typically, however, the dewatering process consists of the following steps:

9.4.1 Allow wait period (typically 20 to 24 hours) for water if present to migrate to the bottom of the container.

9.4.2 Connect the dewatering pump to the dewatering element hose. Conduct the pump discharge hose to a container to enable monitoring of discharge volume.

9.4.3 Start the dewatering pump. IF no water is found, THEN the container may be considered to be dewatered.

IF water is found, THEN pump until vacuum is lost, THEN stop the pump and begin another wait period.

Repeat the pump/wait cycle until no more water can be removed.

9.5 Verification of Dewatering

Preceding shipment, connect and operate the dewatering pump as before. IF no water is present, THEN the dewatering process is complete.

IF water is found, THEN pump until vacuum is lost. Repeat the pump/wait cycle as required. WHEN no more water can be removed, THEN the dewatering process is complete.

10.0 IN-CONTAINER SOLIDIFICATION OF BEAD RESIN

10.1 Purpose

High level bead resin is normally shipped in the bulk dewatered form in high integrity containers. However, high activity resin may be solidified to comply with the stability requirements of 10CFR Part 61.

The ATG - Nuclear Services, Inc. PCP for Incontainer Solidification of Bead Resin is incorporated as part of the Prairie Island PCP. Topical reports submitted by ATG provide test data that demonstrates waste form stability.

This document is proprietary and may not be reproduced, but may be considered an appendix to the Prairie Island Process Control Program for Solidification/Dewatering of Waste From Liquid Systems.

Certain plant specific exceptions to the ATG document are noted in the system description.

10.2 Applicability

This section of the PCP is applicable to the in-container solidification of bead resin using the ATG PCP and field procedures.

10.3 References

10.3.1 STD-R-05-007 Topical Report Cement Solidified Wastes to Meet the Stability Requirements of 10 CFR 61. ATG - Nuclear Services, Inc.

10.3.2 STD-P-05-004 Process Control Program for Incontainer Solidification of Bead Resin. ATG - Nuclear Services, Inc.

10.3.3 Waste Form Technical Position, Revision 1. United States Nuclear Regulatory Commission.

10.4 System Description

The resin disposal system for the purposes of this PCP consists of 121 Spent Resin Tank, 122 Resin Pump, a portable dewatering pump and related piping, hoses, and valves. In addition are included those items furnished by the resin disposal contractor including a shipping cask, shipping liner, solidification equipment and related controls and appurtenances.

Resin is pumped in a water slurry from the 121 Spent Resin Tank to the shipping liner in the proper amount. The water is then pumped out to the drains system, after which the solidification process will begin in accordance with the contractor's procedures.

Because of the high activity of the resin requiring solidification, sample solidification using non-radioactive resin is normal. References in the PCP to sampling the Spent Resin Tank for solidification test purposes, therefore, do not apply.

NOTE:	**Because of the proprietary nature, the referenced procedures in section 10.3 cannot be reproduced and are retained in the Radiation Protection Files for reference.**

10.5 Sampling

IF in the event solidification of waste is required to ensure Part 61 STABILITY requirements, THEN verification and surveillance test specimens **SHALL** be taken as per ATG PCP for Incontainer Solidification of Bead Resin, STD-P-05-004. In addition, the preparation, examination and testing of the samples **SHALL** comply with Waste Form Technical Position, Revision 1.

12.0 REPORTING REQUIREMENTS

12.1 Purpose

This section of the PCP sets forth the reporting requirements are as they apply to this PCP to ensure that the reports are completed accurately and in a timely manner.

12.2 Applicability

This section of the PCP, in whole or part, applies to all sections of the PCP.

12.3 References

12.3.1 Waste Form Technical Position, Revision 1. United States Nuclear Regulatory Commission.

12.3.2 STD-P-05-004 Process Control Program for Incontainer Solidification of Bead Resin. ATG - Nuclear Servicers, Inc.

12.4 PCP Revisions

Whenever the PCP is revised or changed, a description of the changes AND justifications **SHALL** be included in the Annual Radioactive Effluent Release Report.

12.5 Reports of Mishaps

Waste form mishaps **SHALL** be reported to the NRC (Director of the Division of Low-Level Waste Management and Decommissioning) AND the designated State disposal site regulatory authority within 30 days of knowledge of the incident. Mishaps are defined as failure of misuse of stabilized waste forms or containers that provide stability (HIC's). Such mishaps include, but are not necessarily limited to, the following:

12.5.1 The failure of high integrity containers used to ensure structural stability.

12.5.2 The misuse of high integrity containers, as evidenced by excessive free liquid, or excessive void space within the container.

12.5.3 Production of a solidified Class B or Class C waste form that exhibits any of the characteristics listed in the Waste Form Technical Position, Revision 1.