PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER

Period: 1/1/95-12/31/95
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			
B. Dry-Compacted	m^3			
	ft^3			
	Ci			
C. Non-Compacted	m^3	117		
	ft^3	4136		94
	Ci	5.32E-01	2.50E+01	
D. Filter Media	m^3			
	ft^3			
	Ci			
S. Other (furnish description)	m^3	2.1		
	ft^3	75		7.5
Oil	Ci	1.67E-03	2.50E+01	

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: 1/1/95-12/31/95
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:
(Bold letter designation from Page 1)

TYPE	Nuclide	Percent (%) Abundance (0.00E0)
C	* Fe - 55	4.58E+01
	* Ni - 63	2.57E+01
	Co - 60	1.96E+01
	Cs - 134	2.49E+00
	Co - 58	1.72E+00
	Mn - 54	1.60E+00
	Cs - 137	1.60E+00
	* C - 14	5.14E-01
S	* H - 3	7.80E+01
	Cs - 137	1.[illegible]1E+01
	Co - 60	7.35E+00
	* Ni - 63	3.22E+00

* = Inferred – Not Measured on Site

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER

Period: 1/1/95-12/31/95
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: 1/1/95-12/31/95
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
3	Truck	SEG - Oakridge, TN
1	Truck	DSSI - Oakridge, TN

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER

Period: 1/1/95-12/31/95
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
	95-03	75/2.1	1.67E-03	S	L	N/A
	95-25	1410/39.9	3.01E-01	C	L	N/A
	95-26	1410/39.9	1.27E-01	C	L	N/A
	95-27	1316/37.3	1.03E-01	C	L	N/A
TOTALS	4	4211/119	5.33E-01			

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

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER

Period: 1/1/95-12/31/95
License No. DPR-42/60

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

B. IRRADIATED FUEL SHIPMENTS (DISPOSITION)

Number of Shipments	Mode	Destination
0		

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER

Period: 1/1/95-12/31/95
License No. DPR-42/60

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

C. PROCESS CONTROL PROGRAM CHANGES

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

Current Revision Number: 6 Effective Date: 5/10/95

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: Expand purpose section. Remove/Update Technical Specifications references. Ensure PCP contains information which was previously incorporated in Tech. Specs. Made minor cosmetic changes.

UPDATED P.I. OPNS

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
NORTHERN STATES POWER COMPANY

RADIATION PROTECTION PROCEDURES

D Section	TITLE **PROCESS CONTROL PROGRAM FOR SOLIDIFICATION/DEWATERING OF RADIOACTIVE WASTE FROM LIQUID SYSTEMS**	NUMBER: D59
		REV: 6
		Page 1 of 27

O.C. REVIEW DATE:	REVIEWED BY: D. L. Fimbre	DATE: 5/2/95
5-10-95	APPROVED BY: D.A. Schuelke	DATE: 5-10-95

1.0 GENERAL

1.1 Purpose

The purpose of this Process Control Program (PCP) is to detail the means by which the dewatering and/or solidification of radioactive waste from liquid systems can be assured, in accordance with applicable federal regulations and other requirements governing the disposal of solid radioactive waste.

1.2 Scope

This PCP includes the following processes:

1.2.1 Solidification of liquid waste concentrates.

1.2.2 Manual solidification of waste liquids.

1.2.3 Manual solidification of wet trash by submersion.

1.2.4 Processing of wet trash by compaction/cementation.

1.2.5 Dewatering of bead resin.

1.2.6 Dewatering of powered resin.

1.2.7 Dewatering of spent filter elements.

1.2.8 In–container Solidification of Bead Resin.

1.2.9 Reporting Requirements.

1.3 Definitions

1.3.1 Batch

A quantity of liquid waste concentrates (for example, the contents of 121 Waste Concentrates Tank) to be solidified. A batch of waste concentrates can normally be drummed in not more than two days.

1.3.2 Solidification

The conversion of wet radioactive wastes into a form that meets shipping and disposal requirements.

1.3.3 Dewatering

The process of removing water from a substance to meet specific limits.

2.0 SOLIDIFICATION OF LIQUID WASTE CONCENTRATES

2.1 Purpose

To establish the process parameters which provide reasonable assurance of complete solidification of liquid waste concentrates.

2.2 Applicability

This section of the PCP is applicable to solidification of liquid waste concentrates using the Atcor Solidification System and related equipment.

2.3 References

2.3.1 C21.2.1 Solid Radioactive Waste Operating Procedure

2.3.2 C21.2.2 Trash Compactor Operation Operating Procedure

2.4 System Description

2.4.1 General Description

The solidification system for liquid waste concentrates includes 121 Waste Concentrates Tank (WCT), the Atcor Solidification System and related pumps, piping and equipment. Concentrates are accumulated from the 5 GPM ADT evaporator or the 2 GPM waste evaporator and stored in 121 WCT. When a sufficient quantity exists in 121 WCT, the contents are transferred to the Atcor system for solidification in approved containers. The filled containers are held in the Atcor Drum Storage Aisles until solidification can be confirmed. The containers are then capped, deconned, and surveyed prior to storage for subsequent shipment and disposal. A flow diagram is shown on Figure 1.

5.0 MANUAL SOLIDIFICATION OF WET TRASH BY SUBMERSION

5.1 Purpose

To establish parameters which provide reasonable assurance of complete solidification of liquid contained in wet trash.

5.2 Applicability

This section of the PCP is applicable to solidification of wet trash with masonry cement.

Wet trash includes contaminated material such as mopheads, wet rags, paper towels, etc.

5.3 Sequence of Operation

5.3.1 Place desired amount of liquid in an approved container (normally $^1/_2$ to $^2/_3$ full).

NOTE:	**Contaminated liquids may be used for this purpose.**

5.3.2 Commence mixing.

5.3.3 Add cement while continuing to mix at the rate of 1 cu. ft. (one bag) per 6.25 gal of liquid or until the mixture begins to thicken. Continue to mix until all of the cement is incorporated and the mixture is smooth. Remove the mixer (if applicable).

5.3.4 Immerse items of wet trash into the cemented mass using a stick or similar device. Attempt to put as many items of trash as possible into the container within the limits of ALARA.

5.4 Cure Time

Solidification can normally be expected within two to three days.

11.3 References

11.3.1 T.S.6.5.D Prairie Island Nuclear Plant Technical Specification.

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

11.3.3 STD–P–05–004 Process Control Program for Incontainer Solidification of Bead Resin. Scientific Ecology Group (SEG), Inc.

11.4 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.

11.5 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:

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

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

11.5.3 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.

11.6 PCP Specimen Summary Reports

Whenever cement stabilization (as defined by 10 CFR 61) of low–level waste is necessary, PCP test specimens are required for verification and surveillance. Verification specimens are intended to provide assurance that the formulations used in the qualification testing program correspond to those actually used in the field. Surveillance specimens are intended to provide verification that the waste forms remain stable with time. A summary report **SHALL** be prepared annually and submitted to the NRC (Director, Division of Low–Level Waste Management and Decommissioning) documenting the results of tests performed on the cement–stabilized waste form surveillance specimens during the calendar year.

NORTHERN STATES POWER COMPANY

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

January through December 1995

An Assessment of the radiation dose due to the release from Prairie Island Nuclear Generating Plant during 1995 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 1995.

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. 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

Construction of the ISFSI is completed and the radiation monitors are in place and functional. Three loaded fuel casks were placed in the storage facility during the 1995 calendar year and there has been no release of radioactive effluents from the ISFSI.

Doses to Most Exposed Member of the General Public from Reactor Release and Other Uranium Fuel Cycle Sources

There are no other uranium fuel facilities in the vicinity of the Prairie Island site. The only other artificial source of exposure to the general public in addition to the plant effluent releases is from direct radiation of the reactors. This direct radiation from pressurized water reactors has been shown to be negligible. An array of TLD monitoring stations around the perimeter of the site boundary has consistently indicated that plant operation in the past years has no effect on ambient gamma radiation.

Therefore, the most exposed member of the general public will not receive an annual radiation dose from reactor effluent releases and all other fuel cycle activities in excess of the sum of the liquid and gaseous whole body and organ doses reported in Table 1 for the site boundary and critical receptor, respectively. These doses are well below 40 CFR Part 190 standards of 25 mrem to the whole body, 75 mrem to the thyroid, and 25 mrem to any other organ.

Radiation Environmental Monitoring Program Sampling Deviations

There were no milk or vegetable sampling deviations during this reporting period.

Table 1

OFF-SITE RADIATION DOSE ASSESSMENT - PRAIRIE ISLAND

PERIOD: JANUARY through DECEMBER 1995

		10 CFR Part 50 Appendix I Guidelines per 2-units site per year
Gaseous Releases		
Maximum Site Boundary Gamma Air Dose (mrad)	3.38E-02	20
Maximum Site Boundary Beta Air Dose (mrad)	1.03E-01	40
Maximum Off-site Dose to any organ (mrem)*	1.21E-01	30
Offshore Location		
Gamma Dose (mrad)	1.28E-01	
Total Body (mrem)*	1.85E-01	
Organ (mrem)*	2.24E-01	30
Liquid Releases		
Maximum Off-site Dose Total Body (mrem)	4.39E-03	6
Maximum Off-site Dose Organ - GI-LLI (mrem)	8.60E-03	20
Limiting Organ Dose Organ - Total Body	4.39E-03	6

* Long-Lived Particulate, I-131, I-133 and H-3

Table 2

OFF-SITE RADIATION DOSE ASSESSMENT - PRAIRIE ISLAND
SUPPLEMENTAL INFORMATION

PERIOD: JANUARY through DECEMBER 1995

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

ANNUAL RADIOACTIVE EFFLUENT REPORT

02-JAN-95 THROUGH 31-DEC-95

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	GeHP GeHP	±25%
2. Iodines in gaseous releases:	Total Nuclide	GeHP GeHP	±25%
3. Particulates in gaseous releases:	Total Nuclide	GeHP GeHP	±25%
4. Liquid effluents	Total Nuclide	GeHP GeHP	±25%

E. Manual Revisions

1. Offsite Dose Calculations Manual latest Revision number: 13

   Revision date : 30-JAN-96

1.0 BATCH RELEASES (LIQUID)

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
1.1 NUMBER OF BATCH RELEASES	3.00E+01	8.50E+01	4.90E+01	6.00E+01
1.2 TOTAL TIME PERIOD (HRS)	4.53E+01	1.17E+02	7.00E+01	1.07E+02
1.3 MAXIMUM TIME PERIOD (HRS)	2.98E+00	3.02E+00	2.55E+00	3.42E+00
1.4 AVERAGE TIME PERIOD (HRS)	1.51E+00	1.38E+00	1.43E+00	1.78E+00
1.5 MINIMUM TIME PERIOD (HRS)	8.70E-01	9.20E-01	1.05E+00	1.42E+00
1.6 AVERAGE MISSISSIPPI RIVER FLOW (CFS)	1.69E+04	4.13E+04	2.54E+04	2.64E+04

2.0 BATCH RELEASES (GASEOUS)

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
2.1 NUMBER OF BATCH RELEASES	0.00E+00	3.30E+01	2.00E+00	1.00E+00
2.2 TOTAL TIME PERIOD (HRS)	0.00E+00	4.64E+02	3.00E-02	1.00E-02
2.3 MAXIMUM TIME PERIOD (HRS)	0.00E+00	2.50E+01	2.00E-02	1.00E-02
2.4 AVERAGE TIME PERIOD (HRS)	0.00E+00	1.41E+01	1.50E-02	1.00E-02
2.5 MINIMUM TIME PERIOD (HRS)	0.00E+00	2.00E-02	1.00E-02	1.00E-02

3.0 ABNORMAL RELEASES (LIQUID)

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
3.1 NUMBER OF 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 (GASEOUS)

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
4.1 NUMBER OF RELEASES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.2 TOTAL ACTIVITY RELEASED (CI)	0.00E+00	0.00E+00	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)	2.00E+01	6.40E+01	0.00E+00	0.00E+00
5.2 AVERAGE RELEASE RATE (UCI/SEC)	2.54E+00	8.14E+00	0.00E+00	0.00E+00
5.3 GAMMA DOSE (MRAD)	7.59E-03	2.62E-02	0.00E+00	0.00E+00
5.4 BETA DOSE (MRAD)	2.26E-02	8.00E-02	0.00E+00	0.00E+00
5.5 PERCENT OF GAMMA TECH SPEC (%)	7.59E-02	2.62E-01	0.00E+00	0.00E+00
5.6 PERCENT OF BETA TECH SPEC (%)	1.13E-01	4.00E-01	0.00E+00	0.00E+00
6.0 IODINES				
6.1 TOTAL I-131 (CI)	0.00E+00	5.18E-04	4.83E-06	0.00E+00
6.2 AVERAGE RELEASE RATE (UCI/SEC)	0.00E+00	6.59E-05	6.15E-05	0.00E+00
7.0 PARTICULATES				
7.1 TOTAL RELEASE (CI)	1.90E-08	9.13E-07	4.37E-05	0.00E+00
7.2 AVERAGE RELEASE RATE (UCI/SEC)	2.42E-09	1.16E-07	5.56E-06	0.00E+00
8.0 TRITIUM				
8.1 TOTAL RELEASE (CI)	9.40E+00	1.27E+01	1.18E+01	5.42E+00
8.2 AVERAGE RELEASE RATE (UCI/SEC)	1.20E+00	1.62E+00	1.50E+00	6.90E-01
9.0 TOTAL IODINE, PARTICULATE AND TRITIUM (UCI/SEC)	1.20E+00	1.62E+00	1.50E+00	6.90E-01
10.0 DOSE (MREM)	1.69E-02	7.25E-02	2.17E-02	9.75E-03
11.0 PERCENT OF TECH SPEC (%)	1.13E-02	4.83E-02	1.45E-02	6.50E-03
12.0 GROSS ALPHA (CI)	2.54E-08	0.00E+00	6.46E-09	0.00E+00

TABLE 1C
GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

13.0 FISSION AND ACTIVATION GASES

		CONTINUOUS MODE				BATCH MODE			
NUCLIDE	UNITS	QTR: 01	QTR: 02	QTR: 03	QTR: 04	QTR: 01	QTR: 02	QTR: 03	QTR: 04
AR-41	CI						1.98E-03		
KR-85	CI						5.00E-01		
XE-131M	CI		4.03E-01						
XE-133	CI	2.00E+01	6.14E+01				1.03E+00		
XE-133M	CI		1.79E-01				6.10E-03		
XE-135	CI		5.58E-01				3.64E-03		
TOTAL	CI	2.00E+01	6.25E+01	0.00E+00	0.00E+00	0.00E+00	1.54E+00	0.00E+00	0.00E+00

14.0 IODINES

		CONTINUOUS MODE				BATCH MODE			
NUCLIDE	UNITS	QTR: 01	QTR: 02	QTR: 03	QTR: 04	QTR: 01	QTR: 02	QTR: 03	QTR: 04
I-131	CI		4.92E-04	4.83E-06			2.61E-05		
I-132	CI		7.49E-05						
TOTAL	CI	0.00E+00	5.67E-04	4.83E-06	0.00E+00	0.00E+00	2.61E-05	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
BR-82	CI						1.98E-09		
CO-58	CI		9.13E-07	8.04E-07			1.14E-05		
CS-134	CI						1.31E-05		
CS-137	CI						1.84E-05		
SR-89	CI	1.90E-08							
TOTAL	CI	1.90E-08	9.13E-07	8.04E-07	0.00E+00	0.00E+00	4.29E-05	0.00E+00	0.00E+00

TABLE 2A
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	QTR: 01	QTR: 02	QTR: 03	QTR: 04
16.0 VOLUME OF WASTE PRIOR TO DILUTION (LITERS)	5.16E+07	8.57E+07	5.20E+07	9.40E+07
17.0 VOLUME OF DILUTION WATER (LITERS)	1.83E+11	9.57E+10	2.74E+11	1.83E+11
18.0 **FISSION AND ACTIVATION PRODUCTS**				
18.1 TOTAL RELEASE W/O H-3, RADGAS, ALPHA (CI)	4.38E-02	1.51E-01	1.85E-01	6.63E-02
18.2 AVERAGE DILUTED CONCENTRATION (UCI/ML)	2.39E-10	1.58E-09	6.75E-10	3.62E-10
19.0 **TRITIUM**				
19.1 TOTAL RELEASE (CI)	1.66E+02	2.29E+02	1.54E+02	2.32E+02
19.2 AVERAGE DILUTED CONCENTRATION (UCI/ML)	9.07E-07	2.39E-06	5.62E-07	1.27E-06
20.0 **DISSOLVED AND ENTRAINED GASES**				
20.1 TOTAL RELEASE (CI)	3.82E-02	4.39E-01	1.15E-03	5.55E-04
20.2 AVERAGE DILUTED CONCENTRATION (UCI/ML)	2.09E-10	4.59E-09	4.20E-12	3.03E-12
21.0 GROSS ALPHA (CI)	9.17E-05	3.00E-04	0.00E+00	0.00E+00
22.0 TOTAL TRITIUM, FISSION AND ACTIVATION PRODUCTS (UCI/ML)	9.07E-07	2.40E-06	5.63E-07	1.27E-06
23.0 TOTAL BODY DOSE (MREM)	4.48E-04	1.44E-03	7.21E-04	1.78E-03
24.0 **CRITICAL ORGAN**				
24.1 DOSE (MREM)	4.48E-04	1.44E-03	2.91E-03	1.78E-03
24.2 ORGAN	TOT BODY	TOT BODY	GI TRACT	TOT BODY
25.0 PERCENT OF TOTAL BODY TECH SPEC LIMIT (%)	1.49E-02	4.80E-02	9.70E-02	5.93E-02
26.0 PERCENT OF CRITICAL ORGAN TECH SPEC LIMIT (%)	1.49E-03	4.80E-02	2.91E-02	5.93E-02

TABLE 2A
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

27.0 INDIVIDUAL LIQUID EFFLUENT

		CONTINUOUS MODE				BATCH MODE			
NUCLIDE	UNITS	QTR: 01	QTR: 02	QTR: 03	QTR: 04	QTR: 01	QTR: 02	QTR: 03	QTR: 04
AG-110M	CI					2.57E-03	9.21E-03	2.24E-02	8.88E-03
BE-7	CI							1.78E-04	
BA-139	CI								6.81E-06
BR-92	CI							6.24E-06	
CE-139	CI								1.14E-06
CO-57	CI					2.85E-05	6.77E-05	4.39E-05	6.20E-05
CO-58	CI		1.20E-04		6.43E-04	3.38E-03	6.19E-02	2.66E-02	1.54E-02
CO-60	CI		3.32E-05			7.25E-03	1.27E-02	9.86E-03	8.81E-03
CR-51	CI					6.07E-05	1.42E-02	2.12E-02	1.69E-03
CS-134	CI		7.83E-06				7.44E-06	4.15E-06	7.03E-05
CS-137	CI		1.56E-04				1.84E-05	1.43E-05	2.17E-04
FE-55	CI	1.62E-03		6.56E-03	1.77E-04	2.49E-02	3.65E-02	6.15E-02	1.19E-02
FE-59	CI					8.71E-05	7.09E-04	7.38E-03	7.97E-05
I-131	CI		3.87E-05				5.63E-04	2.64E-05	
LA-140	CI						3.85E-05		
MN-54	CI					2.93E-04	6.62E-04	5.67E-04	5.37E-04
NA-24	CI						2.62E-06	6.87E-06	
NB-95	CI					4.31E-04	1.09E-03	3.82E-03	3.03E-03
NB-97	CI		4.84E-06			4.46E-06	1.51E-05	7.98E-06	6.44E-07
ND-147	CI						1.77E-06		
RU-105	CI						6.01E-05		
SB-124	CI					7.51E-05	5.57E-03	8.14E-03	3.18E-03
SB-125	CI					2.25E-03	5.55E-03	7.81E-03	8.89E-03

CONTINUED

TABLE 2A
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

INDIVIDUAL LIQUID EFFLUENT (CONTINUED)

		CONTINUOUS MODE				BATCH MODE			
NUCLIDE	UNITS	QTR: 01	QTR: 02	QTR: 03	QTR: 04	QTR: 01	QTR: 02	QTR: 03	QTR: 04
SB-126	CI						1.54E-05		
SC-47	CI					4.27E-05	1.53E-04	6.57E-04	2.47E-04
SN-113	CI					4.25E-04	5.69E-04	4.96E-03	5.90E-04
SR-85	CI					2.87E-06	4.45E-06		
SR-90	CI		1.61E-06						
SR-92	CI					3.33E-06	4.22E-05	3.34E-05	1.03E-05
TC-99M	CI						3.59E-05		
W-187	CI					8.49E-05			2.59E-05
ZN-65	CI					9.83E-06	5.57E-05	1.60E-04	1.14E-04
ZR-95	CI					2.37E-04	6.22E-04	2.55E-03	1.75E-03
ZR-97	CI					2.07E-06	4.44E-06	1.54E-06	2.63E-06
TOTAL	CI	1.62E-03	3.62E-04	6.56E-03	8.20E-04	4.22E-02	1.51E-01	1.78E-01	6.55E-02

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

2B.0 DISSOLVED AND ENTRAINED GASES

		CONTINUOUS MODE				BATCH MODE			
NUCLIDE	UNITS	QTR: 01	QTR: 02	QTR: 03	QTR: 04	QTR: 01	QTR: 02	QTR: 03	QTR: 04
KR-85	CI					6.63E-04	1.03E-03		
XE-131M	CI					1.14E-03	1.02E-02	4.28E-04	
XE-133	CI		1.78E-04			3.63E-02	4.14E-01	7.23E-04	5.53E-04
XE-133M	CI					7.30E-05	2.88E-03		
XE-135	CI					2.49E-05	2.07E-04		1.74E-06
XE-135M	CI						1.85E-05		
XE-137	CI						1.06E-02		
TOTAL	CI	0.00E+00	1.78E-04	0.00E+00	0.00E+00	3.82E-02	4.39E-01	1.15E-03	5.55E-04