SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

July - December

1985

Public Service Company of Colorado

Fort St. Vrain Nuclear Generating Station

February 1986

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1.0 Summary

This report summarizes the radiological effluent released from the Fort St. Vrain Nuclear Generating Station for the period July through December, 1985. In addition, Table 3.1 provides a general summary of the plant systems under radiological surveillance, and Table 4.1 summarizes the solid radioactive waste removed from the site during the aforementioned time period. This information is provided pursuant to the requirements of Section 7.5.1 e. of the Fort St. Vrain Technical Specifications.

Tritium activity continues to be the principal radionuclide released to the environment via the liquid pathway. A total of 10.99 curies of tritium was released during this reporting period. The principal radionuclide released via the gaseous pathway was xenon-133 with a total release value of 1.38 curies.

There were no unplanned gaseous or liquid radioactive releases from the site to the unrestricted area during this reporting period.

During the second half of 1985, one revision was made to the Offsite Dose Calculation Manual (SUSMAP-2) which more clearly delineated the sample site descriptions for our Radiological Environmental Surveillance Program. This revision also included one editorial change regarding lower allowable alarm setpoints.

No changes were made to the Process Control Program (SUSMAP-3) during the reporting period.

No license-initiated major changes to the radioactive waste systems were completed during this reporting period. Several design changes are in progress on both the gaseous and liquid waste systems and will be discussed as they are completed in future Semi-Annual Radioactive Effluent Reports.

As per previous Semi-Annual Radioactive Effluent Reports no meteorological data will be submitted. This data is available and will be reported separately upon request.

In accordance with the Fort St. Vrain Offsite Dose Calculation Manual (SUSMAP-2), the dose due to radioactive liquid and gaseous releases made in 1985 was as follows:

Liquid - 10CFR50

Whole Body Organ (Max		1.9E-1 2.2E-1	mrem mrem
Gas - 10CFR50			
Noble Gas	Gamma Beta	7.5E-5 1.3E-4	mrad mrad
Iodine, Particu	lates, Tritium		
Adult			
Whole Bo Organ (1		4.5E-5 4.5E-5	mrem mrem
Teen			
Whole B Organ (1		4.9E-5 4.9E-5	mrem mrem
Child			
Whole Bo Organ (1		7.3E-5 7.3E-5	mrem mrem
Infant			
Whole Bo Organ (6.2E-5 6.2E-5	mrem mrem
Gas - 10CFR20			
Iodine, Particu Tritium	lates,	1.1E-1	mrem

As can be seen, the maximum whole body exposure and the maximum organ exposure to a member of the general public from Fort St. Vrain releases in 1985 were less than 1.0 mrem.

A total of six radioactive waste shipments were made during this reporting period. From a volume standpoint these shipments consisted mainly of dry active waste, de-watered resin, and absorbed oil. All containers used for these waste shipments were type A (L1-13 liners or 17-H drums certified as type A containers.). All oil was absorbed on Floor-dri Superfine, and oil-dri.

TABLE 1.1 - RADIOACTIVE LIQUID EFFLUENT RELEASES FOR 3rd QUARTER, 1985

		UNITS	JUL	AUG	SEP	QUARTERLY TOTAL
1. Gross Beta						
a) Total Re		Curies	6.07E-05	6.24E-05	1.52E-04	2.75E-04
b) Avg. Con	c. before Dilution	μCi/ml	1.54E-06	8.47E-07	2.18E-06	1.47E-06 *
	. Released	μCi/ml				
c) after Di	lution	above bkgd	6.40E-09	3.92E-09	5.64E-09	5.04E-09 *
2. Tritium		1	Ī	I		
a) Total Re	lease	Curies	1.14E+00	2.25E+00	1.52E+00	4.91E+00
b) Avg. Con	c. before Dilution	µCi/ml		2.84E-02		
Avg Conc	. Released	uCi/ml				
c) after Di		above bkgd	1.34E-04	1.39E-04	5.72E-05	1.09E-04 *
3. Dissolved N	oble Gases	1				
a) Total Re		Curies	NSA	2.11E-07	NSA	2.11E-07
	c. before Dilution		NSA	2.84E-08		2.84E-08 *
Ava Conc	. Released	μCi/ml				
c) after Di		above bkgd	NSA	1.35E-10	NSA	1.35E-10 *
1 Cuasa Alaba	Radioactivity					
 Gross Alpha Total Re 		Curies	1.20E-06	2.47E-06	2.53E-06	6.20E-06
5. Total Volum	e of Liquid fore Dilution	Liters	12 015+04	7.51E+04	7 105+04	1.85E+05
veleased be	TOTE DITUCTOR	Liters	3.315+04	7.515.704	7.105+04	1.655+05
6. Total Volum				Filler		
Used for Di	lution	Liters	9.21E+06	1.67E+07	2.39E+07	4.98E+07
7. Estimated T	otal Radioac-					
	ased by Radio-					
	ve Background					
Nuclide	MPCw (µCi/ml)	Curies				
3H	1 3.00E-03	001103	1.14E+00	2.25E+00	1.52F+00	4.91E+00
137Cs	2.00E-05			6.13E-06		
60Co	3.00E-05		8.96E-06	1.33E-05	1.24E-05	3.46E-05
133Xe	2.00E-04		NSA	2.11E-07	NSA	2.11E-07
					11371	
	ST MANUAL CONTRACTOR					
	*Repr	esents a "wi	eighted"	average.		

 $^{4.7}E-05 = 4.7 \times 10^{-6}$

 $^{5.2}E+03 = 5.2 \times 10^{+3}$

TABLE 1.3: LIQUID EFFLUENT RELEASED VIA THE TURBINE BUILDING SUMP AND THE REACTOR BUILDING SUMP (CONTINUOUS RELEASE)

3rd QUARTER 1985

TURBINE BUILDING SUMP

	MONTH	JUL	AUG	SEP	QUARTERLY
VOLUME	LITERS	1.27E+07	1.00E+07	4.64E+06	11 2.73E+07
	AVERAGE µCi/ml	1.16E-06	1.02E-06	8.92E-07	 1.03E-06*
TRITIUM	TOTAL CURIES	1.48E-02	1.02E-02	4.14E-03	 2.91E-02
	AVERAGE µCi/ml	6.81E-08	7.12E-08	7.16E-08	 7.03E-08*
GROSS βα	TOTAL CURIES	8.68E-04	7.12E-04	3.32E-04	11 1.91E-03
GROSS a	AVERAGE µCi/ml	3.51E-08	3.10E-08	3.15E-08	11 3.26E-08*
	TOTAL CURIES	4.48E-04	3.10E-04	1.46E-04	11 11 9.04E-04

REACTOR BUILDING SUMP

	MONTH	JUL	AUG	SEP	QUARTERLY
VOLUME	LITERS	1.20E+06	3.80E+05	5.52E+05	1 2.13E+06
	AVERAGE µCi/ml	8.77E-06	4.11E-05	2.99E-05	11 11 2.54E-05*
TRITIUM	TOTAL CURIES	1.05E-02	1.56E-02	1.65E-02	4.26E-02
	AVERAGE	7.13E-08	7.51E-08	7.34E-08	 7.31E-08*
GROSS βα	TOTAL CURIES	8.52E-05 I	2.86E-05	4.05E-05	 1.54E-04
GROSS α	AVERAGE	3.78E-08	3.42E-08	3.29E-08	 3.51E-08*
	CURIES	4.52E-05	1.30E-05	1.81E-05	7.63E-05

^{*} Represents "weighted" average

TABLE 2.1 - RADIOACTIVE GASEOUS EFFLUENT RELEASES FOR 3rd QUARTER, 1985

			UNITS	JUL	AUG	SEP	QUARTERLY TOTAL
1a.	Total Nobl	e Gases	Curies	14.18E-04	1.33E-01	1.12E-04	1.34E-01
16.	Total Trit	ium	Curies	1.94E-02	6.96E-03	9.97E-03	3.63E-02
1c.	Total Halo	gens	Curies	NSA	I NSA	I NSA	NSA
ld.	The contract of the contract o	iculate Gross vity RT-7325	 Curies	 6.84E-08	5.54E-08	5.35E-08	1.77E-07
le.		iculate Gross vity RT-7325	Curies	1 2.63E-08	1 1.75E-08	 2.14E-08	6.52E-08
3.	Rate for A Period	urly Release ny One Hour Total Radioac-	Ci/hr	2.15E-03	9.96E-02	4.10E-04	9.96E-02
	tivity Rel clide	eased by Nu-					
Part	iculates	MPCa I	Curies	NSA	NSA	NSA	NSA L
Halo	gens	MPCa(µCi/ml)	Curies	I NSA	NSA	NSA	NSA
Gase	3H 135Xe 85Kr 133Xe	MPCa(μCi/m1) 2.00E-07 1.00E-07 3.00E-07 3.00E-07	Curies	1.94E-02 4.18E-04 NSA NSA	6.96E-03 NSA 1.13E-01 2.03E-02	9.97E-03 NSA NSA 1.12E-04	3.63E-02 4.18E-04 1.13E-01 2.04E-02

 $^{4.7}E-05 = 4.7 \times 10^{-6}$

 $^{5.2}E+03 = 5.2 \times 10^{+3}$

SYSTEM	ALPHA	BETA	TRITIUM	
FARM POND	T	1		17:16
TAINT FORD	13.86E-08	17.88E-08	9.33E-06	MAXIMUM
	12.62E-08	16.44E-08	3.21E-07	MINIMUM
		7.07E-08 (9)		AVERAGE
	10.202 00 (3)	17.072 00 (37	12.312 00 (3/1	711 610100
COOLING TOWER B/D-DURING		L		
	1.63E-08	2.08E-08	5.26E-04	MAXIMUM
	4.08E-09	6.90E-09	3.65E-06	MINIMUM
	8.38E-09 (23)	1.24E-08 (23)	9.67E-05 (23)	AVERAGE
COOLING TOWER B/D-WEEKLY	1	1		11.0
STOREST OF THE STOREST	1.67E-08	1.56E-08	5.82E-07	MAXIMUM
	14.35E-09	6.65E-09	3.11E-07 I	MINIMUM
	8.01E-09 (14)			AVERAGE
BELOSAS B/ BA B/WA				
REACTOR BLDG. SUMP	11.07E-07	11.62E-07	2.12E-04	MAVIMIL
	12.10E-08	15.79E-08	3.64E-06	MAXIMUM MINIMUM
	13.51E-08 (85)	7.31E-08 (85)		AVERAGE
	13.316-00 (03)	1,315-00 (03)	[2.546-05 (65)]	AVENAGE
TURBINE BLDG. SUMP				
	4.51E-08	9.86E-08	4.03E-06	MAXIMUM
	2.05E-08	6.14E-08	3.19E-07	MINIMUM
	3.26E-08 (40)	7.03E-08 (40)	1.03E-06 (40)	AVERAGE
SYSTEM 21, LOOP 1				
3131CH 21, COOP 1	3.96E-08	7.60E-08	2.37E-06	MAXIMUM
	12.50E-08	6.54E-08	6.31E-07	MINIMUM
			1.45E-06 (8)	AVERAGE
SYSTEM 21, Loop 2	3.72E-08	17.72E-08	12 005-06	MAXIMUN
	12.50E-08	16.78E-08	2.09E-06 7.76E-07	MINIMUM
	13.36E-08 (7)	17.22E-08 (7)		AVERAGE
	13.300-00 (/)	17.225-00 (7)	1.352-00 (/)	AVENAGE
SYSTEM 31				
	3.96E-08	7.02E-08	2.08E-06	MAXIMUM
	3.96E-08	7.02E-08	2.08E-06	MINIMUM
	3.96E-08 (1)	7.02E-08 (1)	2.08E-06 (1)	AVERAGE
SYSTEM 41				
3131EM 41	13.61E-08	7.58E-08	3.39E-07	MAXIMUN
	3.61E-08 3.04E-08	6.15E-08	3.28E-07	MINIMUM
	13.29E-L (3)	6.91E-08 (3)	3.32E-07 (3)	AVERAGE
VILVE V	100000000000000000000000000000000000000		the state of the second state of the state o	
SYSTEM 42	13 645 00	7 635 00	2 205 67	MANTANIA
	3.64E-08 2.88E-08	17.53E-08	3.39E-07 3.28E-07	MAXIMUM
	12.88E=U8	6.16E-08	3.286-07	MINIMUM
	3.19E-08 (3)	6.88E-08 (3)	3.35E-07 (3)	AVERAGE

NOTES: 1. All activities expressed in units of $\mu\text{Ci/ml}$ 2. () Represents the number of samples represented

by the average value.

SYSTEM	1 ALPHA	BETA	TRITIUM	
SYSTEM 46. LOOP 1		1	1	
	13.72E-08	17.72E-08	12.09E-04	MAXIMUM
	1.68E-08	15.79E-08	12.40E-05	MINIMUM
	[3.15E-08 (8)	7.05E-08 (8)	1.14E-04 (8)	AVERAGE
SYSTEM 46, LOOP 2		T		
	13.96E-08	17.60E-08	4.32E-06	MAXIMUM
	11.68E-08	15.79E-08	1.89E-06	MINIMUM
	3.28E-08 (8)	7.00E-08 (8)	3.14E-06 (8)	AVERAGE
SYSTEM 47, LOOP 1		1	1	
1	13.71E-08	17.72E-08	11.80E-04	MAXIMUM
	12.50E-08	5.79E-08	3.11E-06	MINIMUM
	[3.30E-08 (6)	[6.98E-08 (6)	[6.78E-05 (6)]	AVERAGE
SYSTEM 47, LOOP 2		1		
	13.96E-08	7.61E-08	2.51E-04	MAXIMUM
	1.68E-08	6.92E-08	1.77E-05	MINIMUM
	[3.05E-08 (4)	17.12E-08 (4)	7.97E-05 (4)	AVERAGE

NOTES: 1. All activities expressed in units of $\mu\text{Ci/ml}$ 2. () Represents the number of samples represented by the average value.

	UNITS	OCT	NOV	I DEC	QUARTERLY TOTAL
1. Gross Beta Radioactivity					
a) Total Release	Curies	3.81E-05	4.05E-05	12.30E-05	
b) Avg. Conc. before Dilution	μCi/ml	16.01E-07	14.57E-07	15.67E-07	5.38E-07 *
Avg Conc. Released	µCi/ml				
c) after Dilution	above bkgd	2.34E-09	1.76E-09	2.89E-09	2.25E-09 *
2. Tritium			1		
a) Total Release	Curies	1.17E+00	2.70E+00	12.21E+00	6.08E+00
b) Avg. Conc. before Dilution	uCi/ml	1.84E-02	13.08E-02	15.49E-02	3.18E-02 *
Avg Conc. Released	µCi/ml				
c) after Dilution	above bkgd	8.15E-05	1.22E-04	2.80E-04	1.44E-04 *
3. Dissolved Noble Gases		1	1		
a) Total Release	Curies		12.27E-04		2.92E-04
b) Avg. Conc. before Dilution	uCi/ml	3.09E-06	4.37E-06	17.73E-07	3.16E-06 *
Avg Conc. Released	μCi/ml				
c) after Dilution	above bkgd	1.20E-08	1.44E-08	4.36E-09	1.12E-08 *
4. Gross Alpha Radioactivity					
a) Total Release	Curies	2.09E-06	4.87E-06	1.15E-06	8.11E-06
F + 1 1 W 1 2 1 / / 4					
5. Total Volume of Liquid	Liters	C AAELOA	1.97E+05	14 015+04	3.01E+05
Released before Dilution	Liters	0.445+04	1.9/6+05	4.016+04	3.012+05
6. Total Volume of Liquid					
Used for Dilution	Liters	1.56E+07	2.05E+07	9.53E+06	4.57E+07
7. Estimated Total Radioac-					
tivity Released by Radio-					
Isotope above Background					
Nuclide MPCw (µCi/ml)	Curies				
3H 3.00E-03		1.17E+00	2.70E+00	2.21E+00	6.08E+00
137Cs 2.00E-05		19.39E-06	5.36E-06	7.31E-07	1.55E-05
60Co 3.00E-05		3.44E-06	2.34E-05 2.27E-04	1.04E-06	2.79E-05
133Xe 2.00E-04		4.61E-05	2.27E-04	1.90E-05	2.92E-04
*Repri	esents a "we	eighted"	average		

 $^{4.7}E-05 = 4.7 \times 10^{-6}$

 $^{5.2}E+03 = 5.2 \times 10^{+1}$

TABLE 1.3: LIQUID EFFLUENT RELEASED VIA THE TURBINE BUILDING SUMP AND THE REACTOR BUILDING SUMP (CONTINUOUS RELEASE)

4th QUARTER 1985

TURBINE BUILDING SUMP

	MONTH	ОСТ	NOV	DEC	QUARTERLY
VOLUME	LITERS	6.62E+06	5.12E+06	2.64E+06	1 1.44E+07
	AVERAGE µCi/ml	1.03E-06	1.31E-06	1.64E-06	1.11E-06*
TRITIUM	TOTAL CURIES	6.82E-03	6.71E-03	4.33E-03	 1.79E-02
	AVERAGE µCi/ml	6.85E-08	6.67E-U8	6.87E-08	 7.03E-08*
GROSS BY	TOTAL CURIES	4.53E-04	3.42E-04	1.18E-04	9.13E-04
GROSS α	AVERAGE µCi/ml	2.96E-08	2.35E-08	2.17E-08	 2.38E-08*
	CURIES	1.96E-04	1.20E-04	5.73E-05	3.73E-04

REACTOR BUILDING SUMP

	MONTH	ОСТ	NOV	DEC	QUARTERLY
VOLUME	LITERS	3.67E+05	6.37E+05	8.18E+05	 1.82E+06
	AVERAGE	1.08E-05	7.26E-04	7.75E-04	 1.33E-04*
TRITIUM	TOTAL CURIES	3.96E-03	4.62E-01	6.34E-01	 1.10E+00
	AVERAGE	7.65E-08	7.41E-08	7.07E-08	11 11 7.28E-08*
GROSS BY	TOTAL CURIES	2.80E-05	4.72E-05	5.78E-05	11 1.33E-04
GROSS α	AVERAGE µCi/ml	3.09E-08	2.64E-08	2.13E-08	11 11 2.44E-08*
	CURIES	1.13E-05	1.68E-05	1.74E-05	11 11 4.55E-05

^{*} Represents "weighted" average

TABLE 2.1 - RADIOACTIVE GASEOUS EFFLUENT RELEASES FOR 4th QUARTER, 1985

			UNITS	I OCT	NOV	DEC	QUARTERLY TOTAL
la. Tot	al Noble	Gases	Curies	1.33E+00	5.46E-01	1.98E-02	1.90E+00
1b. Tot	al Triti	um	Curies	16.55E-02	1.68E-02	9.81E-03	9.21E-02
lc. Tot	al Halog	ens	Curies	NSA	NSA	I NSA	l NSA
		culate Gross ity RT-7325	Curies	 6.98E-08	5.24E-08	6.79E-08	1.90E-07
		culate Gross ity RT-7325	 Curies	1 12.32E-08	2.10E-08	 2.26E-08	6.68E-08
Rat	e for An	rly Release y One Hour	 Ci/hr	1.58E-01	 3.50E-02	 	1.58E-01
	ity Rele	otal Radioac- ased by Nu-					
Particul	ates	MPCa I	Curies				
						, ,	
Halogens		MPCa(µC1/m1)	Curies				
Gases		MPCa(uCi/m1)	Curies				
3H 85K 87K 88K	r	2.00E-07 1.00E-07 2.00E-08 2.00E-08		3.43E-02 1.30E-03 2.69E-02	2.35E-02 1.07E-03 1.85E-02	NSA NSA	9.21E-02 5.78E-02 2.36E-03 4.54E-02
133 133 135	Xem	3.00E-07 3.00E-07 1.00E-07		9.99E-01 17.28E-03 12.64E-01	3.38E-01 NSA 1.65E-01	NSA NSA NSA	1.36E+00 7.28E-03 4.29E-01

 $^{4.7}E-05 = 4.7 \times 10^{-8}$

 $^{5.2}E+03 = 5.2 \times 10^{+3}$

SYSTEM	ALPHA	BETA	TRITIUM	
FARM POND	1	1	1	
77.11.7 7 0.10	4.50E-08	17.58E-08	19.32E-06	MAXIMUN
	2.17E-08	6.12E-08	1.11E-06	MINIMUN
	13.08E-08 (11)	6.69E-08 (11)	5.80E-06 (11)	AVERAGE
COOLING TOWER B/D-DURING				
	1.96E-08	12.45E-08	4.80E-04	MAXIMUN
	13.25E-09	17.35E-09	4.69E-06	MINIMUM
	19.06E-09 (23)	11.45E-08 (23)	1.14E-04 (23)	AVERAGE
COOLING TOWER B/D-WEEKLY	1			
	1.53E-08	1.89E-08	5.70E-07	MAXIMUN
	4.18E-09	7.36E-09	3.34E-07	MINIMUM
	19.34E-09 (13)	1.26E-08 (13)	3.80E-07 (13)	AVERAGE
REACTOR BLDG. SUMP	1			
REACTOR BLDG. SUMP	15.00E-08	1.39E-07	15.14E-03	MAXIMUM
	11.23E-08	15.74E-08	13.61E-06	MINIMUN
		7.36E-08(74)	5.50E-04(74)	AVERAGE
TURBINE BLDG. SUMP	12.055.00	105.00	5 065 06	14 A 1/ T 14/ (1
	3.85E-08	18.48E-08	5.96E-06	MAXIMUM
	11.29E-08	5.79E-08	[3.38E-07] [1.33E-06 (39)]	MINIMUM
	[2.49E-08 (39)	6.80E-08 (39)	1.33E-06 (39)	AVERAGE
SYSTEM 21, LOOP 1				
	4.37E-08	7.89E-08	2.66E-06	MAXIMUM
	1.75E-08	5.85E-08	7.32E-07	MINIMUM
The Sale of the Sale of the Sale	[2.68E-08 (7)	6.65E-08 (7)	1.53E-06 (7)	AVERAGE
SYSTEM 21, Loop 2				
3131211 21, 2000 2	4.33E-08	7.94E-08	2.82E-06	MAXIMUM
	2.13E-08	16.08E-08	15.22E-07	MINIMUM
	3.21E-08 (7)	6.82E-08 (7)	1.58E-06 (7)	AVERAGE
CVCTCM 21				
SYSTEM 31	13.84E-08	1.11E-07	3.31E-06	MAXIMUM
	12.20E-08	6.31E-08	15.99E-07	MINIMUM
			11.44E-06 (7)	AVERAGE
	12:22	111111111111111111111111111111111111111	1	
SYSTEM 41	1.			
	4.30E-08	7.75E-08	1.22E-06	MAXIMUM
	3.34E-08	6.58E-08	3.39E-07	MINIMUM
	[3.89E-08 (3)	7.21E-08 (3)	6.36E-07 (3)	AVERAGE
SYSTEM 42	1			
	3.64E-08	7.66E-08	4.20E-07	MAXIMUN
	1.76E-08	6.54E-08	3.39E-07	MINIMUM
	13.00E-08 (3)		[3.69E-07 (3)]	AVERAGE

NOTES: 1. All activities expressed in units of $\mu\text{Ci/ml}$ 2. () Represents the number of samples represented by the average value.

SYSTEM	I ALPHA	BETA	TRITIUM	
SYSTEM 46, LOOP 1				
	3.38E-08	19.95E-08	12.38E-04	MAXIMUM
	11.75E-08	5.98E-08	11.64E-04	MINIMUM
	[2.70E-08 (8)	7.02E-08 (8)	2.25E-04 (8)	AVERAGE
SYSTEM 46, LOOP 2		1	1	
,	13.14E-08	18.33E-08	13.97E-06	MAXIMUM
	11.75E-08	6.09E-08	3.08E-06	MINIMUM
	2.60E-08 (9)	6.84E-08 (9)	3.51E-06 (9)	AVERAGE
SYSTEM 47, LOOP 1			1	
, ===	13.14E-08	18.01E-08	12.23E-04	MAXIMUM
	11.75E-08	5.85E-08	11.74E-04 I	MINIMUM
	2.63E-08 (7)	6.65E-08 (7)	1.89E-04 (7)	AVERAGE
SYSTEM 47, LOOP 2			1	
	13.38E-08	6.70E-08	2.27E-04	MAXIMUM
	1.75E-08	5.95E-08	1.78E-04 I	MINIMUM
	12.44E-08 (7)	6.31E-08 (7)	1.97E-04 (7)	AVERAGE

NOTES: 1. All activities expressed in units of $\mu\text{Ci/ml}$ 2. () Represents the number of samples represented by the average value.

TABLE 4.1 - SOLID WASTE SHIPMENTS FOR 1985

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not Irradiated Fuel)

1. Type of Waste	Unit	6-Month Period	Estimated Total
a. Process Waste	Cubic Meters Curies	6.61E+01 1.78E+01	Error= 5.66E-01 %
b. Dry Active Waste	Cubic Meters Curies	4.31E+01 2.46E+00	Error= 6.94E-01 %
c, Irradiated Comp.	Cubic Meters Curies	7.36E-01 3.99E+02	Error= 4.75E+00 %

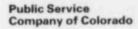
Major Nuclides for a. Process Waste	H3	Curies= 6.71E+00	+/- 3.16E-01 %
	C14	Curies= 6.02E+00	+/- 3.24E-01 %
	FE55	Curies= 3.48E+00	+/- 2.71E+00 %
	S35	Curies= 8.10E-01	+/- 7.21E-01 %
	N163	Curies= 7.19E-01	+/- 2.70E+00 %
Major Nuclides for b. Process Waste	FE55 S35 H3 4G110M	Curies= 1.46E+00 Curies= 7.35E-01 Curies= 7.80E-02 Curies= 3.81E-02 Curies= 2.54E-02	+/- 1.05E+00 % +/- 1.03E+00 % +/- 1.20E+00 % +/- 1.03E+00 % +/- 1.03E+00 %
Major Nuclides for c. Irradiated Comp.	FE55	Curies= 2.04E+02	+/- 6.76E+00 %
	C060	Curies= 1.88E+02	+/- 6.92E+00 %
	N163	Curies= 6.35E+00	+/- 6.97E+00 %
	MN54	Curies= 7.60E-01	+/- 6.81E+00 %
	CS137	Curies= 2.39E-02	+/- 7.07E+00 %

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
1	Truck	Barnwell Waste Management Facility
5	Truck	U. S. Ecology, Inc. (Washington

B. Irradiated Fuel Shipments

Number of Shipments	Mode of Transportation	Destination
0	N/A	N/A





16805 WCR 19 1/2, Platteville, Colorado 80651-9298

February 27, 1986 Fort St. Vrain Unit #1 P-86172

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MAR 4 1986

Regional Administrator, Region IV U. S. Nuclear Regulatory Commission 611 Ryan Plaza Drive, Suite 1000 Arlington, Texas 76011

Attn: Mr. J. E. Gagliardo, Chief Reactor Projects Branch

Docket No. 50-267

SUBJECT: Semi-Annual Radioactive Effluent Release Report

Dear Mr. Gagliardo:

Attached please find the Semi-Annual Radioactive Effluent Release Report for the Fort St. Vrain Nuclear Generating Station.

This report covers the period July 1, 1985 through December 31, 1985, and is submitted pursuant to Section $7.5.1~\rm e.$ of the Fort St. Vrain Technical Specifications.

Please contact Mr. Mike Holmes at (303) 480-6960 it you have any questions regarding this report.

Sincerely,

J. W. Gahm

Manager, Nuclear Production Fort St. Vrain Nuclear Generating Station

J.W. Galun by

JWG: VJM/skd

Attachments

IE25

cc w/attachments:

Dottie Sherman, ANI Library American Nuclear Insurers The Exchange Suite, 270 Farmington Avenue Farmington, Connecticut 06032

Mr. Albert J. Hazle, Director Radiation Control Division Colorado Department of Health 4210 E. 11th Ave. Denver, CO 80220

Mr. Mike Dolphin, Site Manager General Atomic Company P.O. Box 426 Platteville, CO 80651

Mr. Paul B. Smith Regional Representative, Radiation Program U.S. Environmental Protection Agency Region VIII Suite 900, 1860 Lincoln St. Denver, CO 80203

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Dr. James E. Johnson Radiology & Radiation Biology Dept. Colorado State University Fort Collins, CO 80523

Mr. Robert Farrell Senior NRC Resident Inspector Fort St. Vrain Station