

B 09/11/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)  
DISTRIBUTION FOR INCOMING MATERIAL

20-261/2707287

REC: OREILLY J P  
NRC

ORG: PARKER W O  
DUKE PWR

DOC DATE: 08/28/78  
DATE RCVD: 09/11/78

DOCTYPE: LETTER NOTARIZED: NO  
SUBJECT:

COPIES RECEIVED  
LTR 1 ENCL 1

FORWARDING SUBJECT FACILITY'S SEMI ANNUAL RADIOACTIVE EFFLUENT RELEASE AND ENVIRON MONITORING REPT COVERING THE PERIOD JANUARY 1, 1978 THROUGH JUNE 30, 1978.

ENVIRON.

PLANT NAME: OCONEE - UNIT 1  
OCONEE - UNIT 2  
OCONEE - UNIT 3

REVIEWER INITIAL: XJM  
DISTRIBUTER INITIAL: Jgm

\*\*\*\*\* DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS \*\*\*\*\*

NOTES:

1. M. CUNNINGHAM -- ALL AMENDMENTS TO FSAR AND CHANGES TO TECH SPECS

ANNUAL ENVIRONMENTAL RPTS (OL STAGE).  
(DISTRIBUTION CODE A007)

FOR ACTION: BR CHIEF ORB#4 BC\*\*W/7 ENCL

INTERNAL: REG FILE\*\*W/ENCL NRC PDR\*\*W/ENCL  
I & E\*\*W/2 ENCL EEB\*\*W/ENCL  
ENVIRO SPEC BR\*\*W/ENCL EFFLUENT TREAT SYS\*\*W/ENCL  
RAD ASSESSMENT BR\*\*W/ENCL KASTNER\*\*W/ENCL

EXTERNAL: LPDR'S  
WALHALLA, SC\*\*W/ENCL  
TERA\*\*W/ENCL  
NSIC\*\*W/ENCL  
ACRS CAT B\*\*W/ENCL

Emerson I

DISTRIBUTION: LTR 20 ENCL 20  
SIZE: 1P+13P

CONTROL NBR: 782480287

\*\*\*\*\* THE END \*\*\*\*\*

[Handwritten signature]

DUKE POWER COMPANY

POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.  
VICE PRESIDENT  
STEAM PRODUCTION

TELEPHONE: AREA 704  
373-4083

August 28, 1978

REGULATORY DOCKET FILE COPY

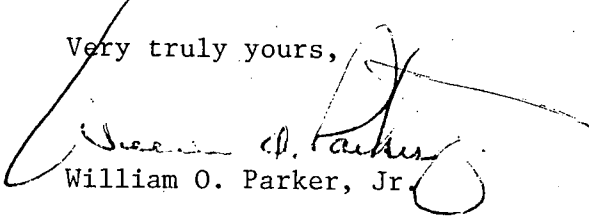
Mr. James P. O'Reilly, Director  
Region II  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Suite 1217  
230 Peachtree Street, Northwest  
Atlanta, Georgia 30303

Reference: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287

Dear Mr. O'Reilly:

Pursuant to 10CFR50, §50.36 and Oconee Nuclear Station Technical Specification 6.6.1.2(c), please find attached data concerning radioactive effluents released from Oconee Nuclear Station. This report covers the period January 1 through June 30, 1978.

Very truly yours,

  
William O. Parker, Jr.

RLG:vr  
Attachment

cc: Director, Office of Inspection and Enforcement

782480287

RECEIVED DISTRIBUTION  
SERVICES UNIT

1978 SEP 11 AM 10 35

A007  
~~A031~~  
S  
1/1

ATTACHMENT 1

RADIOACTIVE EFFLUENT RELEASES  
SOLID WASTE

RADIOACTIVE EFFLUENT RELEASES  
SOLID WASTE

Total volume of solid waste packaged (cubic feet) 26,073.8

Total estimated activity involved (Curies) 752.

Disposal of materials shipped off-site: All shipments to Chem-Nuclear Systems Waste Disposal Facility at Barnwell, South Carolina.

<u>DATE</u>	<u>CUBIC FT.</u>	<u># OF CURIES</u>
1/3/78	185	2.38
1/6/78	185	2.61
1/7/78	238	1.89
1/9/78	238	1.14E+1
1/10/78	130	1.45
1/12/78	377.4	4.16E-1
1/13/78	205	2.10
1/17/78	205	1.25E+1
1/18/78	235	1.50E+1
1/19/78	205	4.07
1/21/78	238	4.78
1/22/78	238	8.93
1/23/78	766.6	6.88E-1
1/24/78	205	1.86E+1
1/25/78	391.4	2.23
1/27/78	185	2.80E+1
1/30/78	357.4	2.82E-1
2/1/78	205	9.23
2/2/78	283	5.08
2/6/78	130	5.10E-4
2/7/78	185	3.74
2/9/78	166	1.40E-2
2/9/78	80	1.20E-4
2/9/78	80	1.29E-4
2/13/78	185	6.04

<u>DATE</u>	<u>CUBIC FT.</u>	<u># OF CURIES</u>
2/15/78	756.2	2.10E-1
2/15/78	60	8.24E-1
2/15/78	60	5.55E-5
2/16/78	185	3.02
2/17/78	185	3.49
2/20/78	657.8	3.32E-1
2/22/78	205	6.21
2/27/78	60	1.94E-2
2/27/78	60	6.78E-2
2/27/78	60	5.39E-2
2/27/78	60	2.25E-2
2/27/78	60	6.20E-2
3/1/78	185	7.29
3/3/78	185	8.44E-2
3/5/78	238	1.71E+1
3/8/78	589	4.17E-1
3/10/78	205	6.79
3/14/78	7.4	5.10
3/14/78	205	1.26E+1
3/15/78	637.8	3.38E-1
3/17/78	205	7.39
3/21/78	205	9.43
3/22/78	74	4.08E+1
3/27/78	205	7.82
3/30/78	7.4	1.19
3/31/78	205	7.91
3/31/78	238	8.23
4/4/78	167	8.10E-1
4/5/78	238	4.23E+1
4/5/78	468.4	5.96E-1
4/7/78	238	7.29
4/7/78	205	1.04E+1
4/11/78	166	3.00E-2
4/11/78	166	7.00E-2
4/12/78	205	1.17E+1
4/14/78	14.8	1.02
4/14/78	205	9.89
4/18/78	205	7.73

<u>DATE</u>	<u>CUBIC FT.</u>	<u># OF CURIES</u>
4/18/78	14.8	5.10E-1
4/20/78	14.8	2.55
4/20/78	238	4.76
4/21/78	170	4.25
4/21/78	14.8	1.70
4/22/78	512	8.00E-2
4/24/78	592	2.90E-1
4/25/78	205	3.38
4/25/78	14.8	5.95
4/28/78	14.8	6.63
5/1/78	205	3.99
5/3/78	7.4	3.40E+1
5/4/78	537.2	1.03
5/5/78	238	1.09E+1
5/5/78	7.4	1.19
5/6/78	205	9.03
5/7/78	7.4	6.80E-1
5/7/78	238	2.24
5/12/78	238	1.73E+1
5/14/78	130	2.06
5/16/78	130	1.07E+1
5/18/78	238	1.14
5/18/78	205	3.16
5/19/78	868	2.19
5/19/78	45	8.73E+1
5/22/78	238	3.06
5/23/78	238	1.04
5/26/78	238	4.00
5/26/78	576.4	1.78E-1
5/26/78	205	3.19
5/28/78	238	2.43
5/31/78	205	2.66
6/3/78	205	3.85
6/4/78	205	2.22
6/5/78	238	6.51
6/6/78	205	1.96

<u>DATE</u>	<u>CUBIC FT.</u>	<u># OF CURIES</u>
6/8/78	205	3.32
6/9/78	81.4	3.04
6/9/78	205	2.50
6/9/78	238	2.05
6/12/78	205	7.37
6/12/78	238	1.16
6/14/78	205	1.06E+1
6/15/78	130	1.03E+1
6/16/78	205	1.43E+1
6/16/78	621.6	7.03E-1
6/17/78	130	1.53E+1
6/20/78	205	1.40E+1
6/26/78	130	4.10E-1
6/28/78	205	3.63
6/28/78	205	1.74E+1
6/30/78	238	7.84
6/30/78	562.4	1.84
6/30/78	<u>205</u>	<u>8.09</u>

TOTAL 26073.8

7.52E+2

ATTACHMENT 2

RADIOACTIVE EFFLUENT RELEASES  
LIQUID RELEASES



## RADIOACTIVE EFFLUENT RELEASES

YEAR 1975

1. LIQUID RELEASES		UNITS	JANUARY	FEBRUARY	MARCH	SUB-TOTAL
1. GROSS RADIOACTIVITY						
A.	TOTAL RELEASE	CURIES	4.48E-01	2.38E-01	2.54E-01	1.04E+00
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	2.37E-09	7.14E-09	2.54E-09	2.97E-09
C.	MAXIMUM CONCENTRATION RELEASED	UCI/ML	1.07E-07	1.52E-07	3.45E-06	1.93E-07
2. TRITIUM						
A.	TOTAL RELEASE	CURIES	3.19E+01	7.84E+01	1.45E+02	3.24E+02
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	3.95E-07	2.39E-06	1.40E-05	7.24E-07
3. DISSOLVED NOBLE GASES						
A.	TOTAL RELEASE	CURIES	4.13E-01	1.79E-01	2.59E-01	3.52E-01
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	2.01E-09	4.45E-09	2.49E-09	2.43E-09
4. GROSS ALPHA RADIOACTIVITY						
A.	TOTAL RELEASE	CURIES	0.	0.	0.	0.
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	0.	0.	0.	0.
5. VOLUME OF LIQUID WASTE TO DISCHARGE CANAL		LITERS	1.59E+07	7.03E+06	1.16E+07	3.55E+07
6. VOLUME OF DILUTION WATER		LITERS	2.06E+11	4.03E+10	1.04E+11	3.50E+11
7. ISOTOPES RELEASED		CURIES				
	1A-LA-140		2.35E-03	5.34E-04	4.03E-04	3.42E-03
	5A-59		1.30E-02	9.14E-03	5.95E-03	2.91E-02
	1-131		7.51E-02	3.94E-02	1.22E-01	2.36E-01
	1-133		3.13E-03	3.14E-03	5.67E-03	1.19E-02
	5E-132		3.17E-01	7.76E-02	2.01E-01	5.95E-01
	1E-135		5.70E-03	1.52E-03	3.67E-03	1.10E-02
	0E-137		1.49E-01	4.57E-02	4.35E-02	2.39E-01
	0E-134		3.37E-02	2.05E-02	2.48E-02	1.29E-01
	0E-131		4.99E-02	2.95E-02	1.36E-02	9.29E-02
	0E-95		5.52E-02	4.62E-02	2.73E-02	1.39E-01
	0E-91		2.24E-03	1.49E-03	2.23E-03	5.95E-03
	0E-94		3.93E-03	3.54E-03	2.93E-03	1.54E-02
	0E-97		0.	1.44E-05	2.16E-05	3.59E-05
	0E-97		1.39E-04	4.20E-06	5.52E-06	2.29E-04
	0E-97		9.22E-03	1.61E-02	5.67E-03	3.10E-02
	0E-133A		3.72E-04	2.73E-04	1.47E-03	2.11E-03
	1-132		8.01E-07	0.	0.	3.01E-07
	0E-135		7.99E-04	7.79E-05	2.41E-04	1.12E-03
	0E-99A		7.32E-04	0.	1.26E-03	2.04E-03
	0E-95		3.34E-04	0.	5.63E-06	3.90E-04
	0E-95		2.22E-05	0.	2.74E-05	4.96E-05
	0E-90		6.12E-04	5.34E-04	3.82E-04	1.73E-03
	0E-92		1.57E-04	0.	0.	1.57E-04
	0E-144		1.12E-03	9.40E-04	6.19E-04	2.63E-03
	0E-98		0.	0.	0.	0.
	0E-99		5.53E-04	0.	0.	5.53E-04
	0E-122		0.	0.	0.	0.
	0E-110		5.06E-03	1.16E-02	4.02E-03	2.07E-02
	0A-139		0.	0.	5.45E-06	5.45E-06
	0E-96		1.26E-03	2.76E-03	7.91E-04	4.31E-03
	0E-89		3.34E-04	3.07E-05	7.10E-05	5.35E-04
	0E-124		0.	0.	0.	0.
	1-135		5.46E-03	1.55E-03	7.79E-04	7.39E-03
	1-137		5.10E-05	2.35E-04	2.30E-04	5.15E-04
	0E-135		0.	0.	0.	0.
	0E-131		5.59E-03	5.37E-03	3.10E-03	1.47E-02
	0E-95		4.08E-05	9.05E-04	4.46E-04	1.39E-03
	1E-239		5.38E-04	7.23E-04	4.35E-04	1.70E-03
	0E-87		2.70E-04	7.26E-05	6.31E-05	3.42E-04
	0E-99A		1.59E-04	0.	1.62E-05	1.55E-04
	0A-24		9.24E-06	0.	2.94E-06	3.36E-06
	0E-115		0.	0.	0.	0.
	7-92		5.96E-04	9.77E-04	2.92E-04	1.37E-03
	0E-115		4.33E-05	0.	2.23E-05	7.05E-05
	0E-115		1.57E-04	4.61E-04	4.40E-05	5.52E-04
	0E-134		0.	0.	0.	0.
	0E-41		3.26E-05	3.42E-06	0.	4.12E-05
	1-134		0.	1.31E-06	0.	1.31E-06
	0E-83		5.31E-03	1.14E-03	2.75E-04	7.23E-03
	0E-125A		2.16E-05	0.	0.	2.16E-05
	0E-135		3.40E-06	0.	0.	3.40E-06
	0E-85		3.40E-02	9.40E-02	4.33E-02	2.25E-01
	0E-103		2.55E-05	1.18E-05	1.00E-04	1.39E-04
	0E-125		1.10E-03	2.02E-04	4.38E-05	1.35E-03
	0E-125		1.42E-03	0.	0.	1.42E-03
	0E-135		0.	1.35E-05	0.	1.35E-05
	0E-123A		0.	0.	0.	0.
	0E-10		0.	0.	0.	0.
	0E-106A		2.57E-05	0.	3.44E-05	5.00E-05
	0E-135A		0.	0.	0.	0.
	0E-91		0.	3.03E-05	0.	3.03E-05
	0E-65		0.	7.03E-05	0.	7.03E-05
8. PERCENT OF TECHNICAL SPECIFICATIONS LIMIT (15 CI) FOR TOTAL ACTIVITY RELEASED			3.26E+00	1.92E+00	1.76E+00	5.93E+00

## RADIOACTIVE EFFLUENT RELEASES

YEAR 1978

1. LIQUID RELEASES		UNITS	APRIL	MAY	JUNE	SUB-TOTAL
<b>1. GROSS RADIOACTIVITY</b>						
A.	TOTAL RELEASE	CURIES	6.56E+01	1.41E+00	4.49E+01	2.52E+02
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	9.29E+09	6.67E+09	3.30E+09	7.49E+09
C.	MAXIMUM CONCENTRATION RELEASED	UCI/ML	2.63E+07	3.71E+07	1.75E+07	2.64E+07
<b>2. TRITIUM</b>						
A.	TOTAL RELEASE	CURIES	1.14E+02	7.13E+01	6.35E+01	2.49E+02
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	1.62E+06	3.36E+07	1.17E+06	7.40E+07
<b>3. DISSOLVED NUBLE GASES</b>						
A.	TOTAL RELEASE	CURIES	1.34E+00	6.91E+01	9.61E+01	3.01E+00
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	1.90E+03	3.26E+09	1.61E+03	8.94E+09
<b>4. GROSS ALPHA RADIOACTIVITY</b>						
A.	TOTAL RELEASE	CURIES	0.	0.	0.	0.
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	0.	0.	0.	0.
<b>5. VOLUME OF LIQUID WASTE TO DISCHARGE...</b>						
	CATAL	LITERS	9.22E+06	1.41E+07	9.48E+06	3.28E+07
<b>6. VOLUME OF DILUTION WATER</b>						
		LITERS	7.06E+10	2.12E+11	5.41E+10	3.37E+11
<b>7. ISOTOPES RELEASED</b>						
		CURIES				
	HA-LA-140		2.58E-03	9.60E-03	1.62E-03	1.38E-02
	SR-90		7.01E-03	2.12E-02	3.60E-03	3.18E-02
	I-131		2.18E-01	6.31E-02	3.74E-02	3.19E-01
	I-133		7.00E-03	4.00E-03	2.36E-03	1.34E-02
	CE-133		1.18E+00	3.99E-01	3.16E-01	2.40E+00
	CE-135		9.05E-03	5.73E-03	1.49E-02	2.97E-02
	CS-137		4.41E-02	3.40E-02	2.22E-02	1.00E-01
	CS-134		2.59E-02	2.14E-02	1.20E-02	5.93E-02
	CE-90		6.90E-02	9.47E-02	1.67E-02	1.30E-01
	CE-95		1.75E-01	3.25E-01	2.91E-01	1.35E+00
	Ca-91		4.19E-02	6.62E-02	5.40E-03	1.13E-01
	Ca-94		5.60E-03	1.69E-02	2.51E-03	2.50E-02
	Ca-97		0.	0.	1.54E-03	1.84E-05
	Zr-97		4.36E-04	1.74E-03	3.49E-03	2.21E-03
	RS-97		1.84E-02	1.17E-01	1.10E-02	1.46E-01
	RS-133		1.05E-02	1.55E-03	7.65E-03	1.97E-02
	I-132		0.	0.	0.	0.
	CS-136		2.35E-03	2.24E-03	1.66E-04	4.75E-03
	SR-90A		0.	0.	2.09E-04	2.09E-04
	Kr-98		0.	0.	2.01E-04	2.61E-04
	Zr-98		7.08E-04	6.54E-04	3.06E-05	1.39E-03
	SR-92		4.52E-04	1.09E-03	3.32E-04	1.37E-03
	RS-92		0.	3.50E-05	2.82E-05	6.32E-05
	RS-124		4.83E-03	1.11E-03	5.06E-04	6.45E-03
	RS-96		0.	0.	0.	0.
	RS-99		0.	0.	0.	0.
	RS-122		0.	0.	0.	0.
	RS-117A		9.78E-03	3.30E-02	3.63E-02	5.13E-02
	RS-139		1.43E-03	1.53E-04	1.73E-02	3.32E-03
	RS-95		7.69E-03	9.19E-03	6.69E-04	1.76E-02
	RS-99		3.32E-04	3.07E-03	3.95E-04	4.80E-03
	RS-124		0.	0.	0.	0.
	I-135		1.70E-04	3.45E-04	2.71E-04	7.85E-04
	I-137		0.	1.88E-03	9.25E-03	1.97E-03
	CS-135		0.	0.	0.	0.
	RS-131		3.35E-02	1.93E-02	6.45E-03	6.43E-02
	RS-96		6.73E-03	6.07E-03	9.94E-05	1.29E-02
	RS-239		4.66E-04	2.54E-04	3.94E-04	1.11E-03
	CS-97		4.69E-04	2.00E-03	2.53E-04	2.72E-03
	RS-99A		7.34E-04	1.72E-03	3.00E-04	2.81E-03
	RS-24		0.	2.32E-05	1.93E-05	4.75E-05
	RS-115A		0.	0.	0.	0.
	Y-92		2.32E-04	1.13E-04	1.56E-04	5.56E-04
	IN-115M		0.	0.	1.64E-05	1.64E-05
	RS-115		6.24E-05	4.45E-05	1.58E-04	2.66E-04
	RS-134		0.	0.	0.	0.
	RS-41		4.91E-05	2.41E-04	9.01E-05	3.80E-04
	I-134		0.	0.	0.	0.
	RS-98		9.26E-04	1.36E-04	3.34E-02	3.45E-02
	RS-126A		0.	0.	0.	0.
	CS-135		0.	6.50E-03	0.	5.50E-03
	RS-95		9.58E-02	2.53E-01	1.36E-01	4.95E-01
	RS-103		3.00E-02	2.60E-03	3.06E-05	5.63E-03
	RS-125		4.97E-04	7.94E-04	3.60E-05	1.35E-03
	RS-125		0.	0.	0.	0.
	RS-135		0.	2.37E-03	0.	2.37E-03
	RS-123M		0.	0.	0.	0.
	RS-12		0.	0.	0.	0.
	AG-103M		0.	2.92E-05	0.	2.92E-05
	RS-135M		0.	0.	0.	0.
	RS-91		4.82E-06	5.04E-06	0.	6.42E-06
	RS-95		0.	3.35E-04	2.39E-05	3.64E-04
	RS-109		0.	0.	0.	0.
	RS-124		0.	0.	0.	0.
	RS-106		0.	0.	0.	0.
<b>8. PERCENT OF TECHNICAL SPECIFICATIONS</b>						
<b>LIMIT (15 CI) FOR TOTAL ACTIVITY-RE-</b>			<b>4.37E+00</b>	<b>9.43E+00</b>	<b>2.99E+00</b>	<b>1.68E+01</b>

RADIOACTIVE EFFLUENT RELEASES

YEAR 1978

I. LIQUID RELEASES

	UNITS	1st QUARTER	2nd QUARTER	SUB-TOTAL
<b>1. GROSS RADIOACTIVITY</b>				
A. TOTAL RELEASE	CURIES	1.04E+00	2.52E+00	3.56E+00
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	2.97E-09	7.48E-09	5.18E-09
C. MAXIMUM CONCENTRATION RELEASED	UCI/ML	1.03E-07	2.34E-07	1.93E-07
<b>2. TRITIUM</b>				
A. TOTAL RELEASE	CURIES	3.24E+02	2.49E+02	5.73E+02
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	9.24E-07	7.40E-07	8.34E-07
<b>3. DISSOLVED NUBLE GASES</b>				
A. TOTAL RELEASE	CURIES	3.52E-01	3.01E+00	3.86E+00
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	2.43E-09	8.94E-09	5.62E-09
<b>4. GROSS ALPHA RADIOACTIVITY</b>				
A. TOTAL RELEASE	CURIES	0.	0.	0.
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	0.	0.	0.
<b>5. VOLUME OF LIQUID WASTE DISCHARGE CANAL</b>				
	LITERS	3.55E+07	3.28E+07	6.83E+07
<b>6. VOLUME OF DILUTION WATER</b>				
	LITERS	3.50E+11	3.37E+11	6.87E+11
<b>7. ISOTOPES RELEASED</b>				
	CURIES			
SA-LA-140		3.42E-03	1.36E-02	1.72E-02
Sr-89		2.91E-02	3.18E-02	6.09E-02
I-131		2.86E-01	3.18E-01	6.05E-01
I-133		1.19E-02	1.34E-02	2.53E-02
XE-133		5.95E-01	2.40E+00	2.99E+00
XE-135		1.10E-02	2.97E-02	4.07E-02
CS-137		2.39E-01	1.00E-01	3.39E-01
CS-134		1.29E-01	5.93E-02	1.88E-01
CO-60		9.29E-02	1.80E-01	2.73E-01
CO-58		1.39E-01	1.35E+00	1.49E+00
CR-51		5.95E-03	1.13E-01	1.19E-01
MN-54		1.54E-02	2.50E-02	4.04E-02
KR-87		3.59E-05	1.84E-05	5.43E-05
ZR-97		2.29E-04	2.21E-03	2.44E-03
NB-97		3.10E-02	1.46E-01	1.77E-01
XE-133M		2.11E-03	1.97E-02	2.18E-02
I-132		3.01E-07	0.	3.01E-07
CS-136		1.12E-03	4.75E-03	5.87E-03
KR-85M		2.04E-03	2.09E-04	2.25E-03
KR-85		3.90E-04	2.61E-04	6.51E-04
ZR-95		4.94E-05	1.39E-03	1.44E-03
Sr-90		1.73E-03	1.37E-03	3.60E-03
Sr-92		1.67E-04	6.32E-05	2.30E-04
CE-144		2.68E-03	6.45E-03	9.13E-03
MO-99		5.53E-04	0.	5.53E-04
TE-122		0.	0.	0.
AG-110M		2.07E-02	5.13E-02	7.20E-02
SA-139		6.45E-06	3.32E-03	3.33E-03
TE-99		4.31E-03	1.76E-02	2.24E-02
FE-59		5.36E-04	4.30E-03	5.33E-03
SE-124		0.	0.	0.
I-135		7.89E-03	7.85E-04	8.68E-03
I-137		5.16E-04	1.97E-03	2.49E-03
CS-135M		0.	0.	0.
TE-131M		1.47E-02	6.43E-02	7.90E-02
ZR-95		1.39E-03	1.29E-02	1.43E-02
TP-239		1.70E-03	1.11E-03	2.81E-03
CS-57		3.42E-04	2.72E-03	3.06E-03
TC-99M		1.85E-04	2.31E-03	2.99E-03
TA-24		3.84E-05	4.75E-05	8.61E-05
CO-113M		0.	0.	0.
Y-92		1.37E-03	5.56E-04	2.42E-03
IN-115M		7.04E-05	1.64E-05	8.70E-05
CS-115		6.62E-04	2.65E-04	9.27E-04
CE-134		0.	0.	0.
SR-41		4.12E-05	3.30E-04	4.21E-04
I-134		1.31E-06	0.	1.31E-06
RS-86		7.23E-03	3.45E-02	4.17E-02
SN-125M		2.13E-05	0.	2.16E-05
CS-133		3.40E-06	5.50E-03	5.51E-03
KR-86		2.26E-01	4.93E-01	7.21E-01
RU-103		1.39E-04	5.63E-03	5.77E-03
SE-125		1.35E-03	1.36E-03	2.72E-03
SE-126		1.42E-03	0.	1.42E-03
XE-134		1.35E-05	2.37E-03	2.38E-03
SR-125M		0.	0.	0.
TE-131		0.	0.	0.
AG-108		6.00E-05	2.92E-05	8.92E-05
XE-135M		0.	0.	0.
SR-91		3.03E-05	6.42E-05	1.44E-04
NI-65		7.03E-05	3.64E-04	4.34E-04
Y-88		0.	0.	0.
CO-109		0.	0.	0.
FR-104		0.	0.	0.
RU-106		0.	0.	0.

8. PERCENT OF TECHNICAL SPECIFICATIONS LIMIT (15 CI) FOR TOTAL ACTIVITY RELEASED

6.93E+00

1.45E+01

8.37E+01

ATTACHMENT 3

RADIOACTIVE EFFLUENT RELEASES  
AIRBORNE RELEASES

II. AIRBORNE RELEASES		RADIOACTIVE EFFLUENT RELEASES				
	UNITS	JANUARY	FEBRUARY	MARCH	SUB-TOTAL	
1.	TOTAL NOBLE GASES	CURIES	4.71E+02	3.54E+02	1.75E+03	3.08E+03
2.	TOTAL HALOGENS	CURIES	5.94E-03	2.06E-02	4.34E-03	3.09E-02
3.	TOTAL PARTICULATE GROSS BETA-GAMMA	CURIES	5.16E-04	3.45E-03	9.97E-04	4.96E-03
4.	TOTAL TRITIUM	CURIES	2.61E-01	1.57E-01	1.64E-03	4.19E-01
5.	TOTAL PARTICULATE GROSS ALPHA ACTIVITY	CURIES	0.	0.	0.	0.
6.	MAXIMUM NOBLE GAS RELEASE RATE	UCI/SEC	1.60E+03	1.60E+03	1.60E+03	1.60E+03
7.	PERCENT OF APPLICABLE LIMIT FOR:					
A.	NOBLE GASES	%	9.23E-01	1.67E+00	3.43E+00	6.03E+00
B.	HALOGENS	%	1.56E+00	5.41E+00	1.14E+00	8.12E+00
C.	PARTICULATES	%	4.69E-02	3.14E-01	9.06E-02	4.51E-01
8.	ISOTOPES RELEASED	CURIES				
	PARTICULATES					
	CS-137		1.84E-07	1.78E-07	3.88E-06	9.24E-06
	SA-LA-140		0.	4.13E-08	8.08E-08	1.22E-07
	SR-90		7.99E-05	5.70E-05	6.38E-05	2.01E-04
	CS-134		1.29E-08	1.86E-05	2.77E-06	2.14E-05
	SR-89		3.76E-04	2.58E-04	3.01E-04	9.45E-04
	CO-58		1.61E-06	3.38E-06	2.14E-06	7.14E-06
	CS-136		1.56E-06	0.	0.	1.56E-06
	CS-135		1.77E-06	1.25E-05	2.30E-05	3.73E-05
	MN-54		0.	3.65E-08	3.23E-07	3.60E-07
	MO-99		0.	0.	0.	0.
	NE-95		0.	5.60E-09	0.	5.60E-09
	CO-60		5.39E-06	1.39E-05	1.40E-06	2.57E-05
	NA-24		0.	0.	0.	0.
	AG-110A		1.39E-06	3.02E-08	1.54E-07	1.62E-06
	CR-51		0.	0.	2.85E-07	2.85E-07
	SN-123A		0.	0.	0.	0.
	TC-99A		0.	0.	3.33E-08	3.33E-08
	AG-108A		0.	0.	0.	0.
	RB-85		3.91E-05	3.07E-03	5.93E-04	3.70E-03
	NP-239		0.	0.	0.	0.
	CD-115		3.90E-06	0.	0.	3.90E-06
	CE-144		0.	0.	0.	0.
	SR-91		0.	0.	0.	0.
	Y-91A		0.	0.	0.	0.
	RU-103		0.	0.	4.74E-08	4.74E-08
	NR-96		0.	1.34E-08	0.	1.34E-08
	SA-139		0.	0.	0.	0.
	SN-125A		0.	0.	0.	0.
	SR-92		0.	0.	0.	0.
	CO-57		0.	0.	0.	0.
	FE-59		0.	0.	0.	0.
	ZR-96		0.	0.	0.	0.
	NR-97		0.	0.	4.17E-07	4.17E-07
	ZR-97		0.	0.	0.	0.
	Y-92		0.	0.	0.	0.
	SR-125		0.	0.	0.	0.
	ZR-96		0.	0.	0.	0.
	U-137		0.	0.	0.	0.
	IN-115A		0.	0.	0.	0.
	BA-22		0.	0.	0.	0.
	NI-55		0.	0.	0.	0.
	HALOGENS					
	I-131		5.44E-03	2.01E-02	3.83E-03	2.94E-02
	I-133		1.89E-04	7.34E-05	4.51E-04	1.03E-03
	I-135		5.53E-05	0.	3.53E-05	4.09E-05
	I-132		0.	3.08E-05	9.15E-06	9.23E-06
	I-134		0.	7.73E-07	0.	7.73E-07
	F-19		0.	3.51E-04	0.	3.51E-04
	GASES					
	KR-85		0.	2.32E+01	3.05E+02	3.29E+02
	XE-133		4.39E+02	6.26E+02	1.29E+03	2.35E+03
	NR-86		3.34E+00	0.	0.	3.34E+00
	NP-87		0.	0.	0.	0.
	KR-85M		0.	0.	0.	0.
	XE-135		0.	0.	0.	0.
	XE-135M		0.	0.	0.	0.
	XE-135B		1.70E+01	1.70E+02	5.31E-01	1.53E+02
	AR-41		3.20E+00	3.01E+01	0.	3.33E+01
	XE-133B		2.75E+00	2.31E+00	6.70E-02	5.14E+00
	XE-131B		3.94E-02	3.59E-01	1.52E+02	1.53E+02

II. AIRBORNE RELEASES

	UNITS	APRIL	MAY	JUNE	SUB-TOTAL
1. TOTAL NUBLE GASES	CURIES	8.98E+03	7.50E+02	3.33E+03	1.31E+04
2. TOTAL HALOGENS	CURIES	5.93E-02	6.93E-03	1.18E-02	7.81E-02
3. TOTAL PARTICULATE GROSS BETA-GAMMA	CURIES	8.40E-04	1.05E-03	6.99E-03	8.38E-03
4. TOTAL TRITIUM	CURIES	3.08E+01	4.52E-01	9.13E+01	1.23E+02
5. TOTAL PARTICULATE GROSS ALPHA ACTIVITY	CURIES	0.	0.	0.	0.
6. MAXIMUM NUBLE GAS RELEASE RATE	UCI/SEC	1.60E+03	1.60E+03	1.60E+03	1.60E+03
7. PERCENT OF APPLICABLE LIMIT FOR:					
A. NUBLE GASES	%	1.76E+01	1.47E+00	6.53E+00	2.56E+01
B. HALOGENS	%	1.56E+01	1.82E+00	3.12E+00	2.05E+01
C. PARTICULATES	%	7.63E-02	9.55E-02	6.35E-01	8.07E-01

3. ISOTOPES RELEASED

PARTICULATES

CS-137	2.33E-05	2.62E-05	7.23E-05	1.22E-04
SA-LA-140	1.09E-05	1.29E-05	2.62E-05	5.00E-05
SR-90	2.16E-07	2.25E-07	2.09E-07	6.50E-07
CS-134	8.78E-06	3.77E-06	3.06E-05	4.32E-05
SR-90	2.92E-06	3.04E-06	2.82E-06	8.78E-06
CJ-58	7.84E-07	7.15E-05	4.72E-05	1.19E-04
CS-136	3.95E-06	1.98E-07	2.18E-06	6.34E-06
CS-138	9.17E-06	2.66E-06	5.70E-05	6.89E-05
SR-90	1.11E-07	1.85E-07	1.70E-07	4.67E-07
CJ-59	4.82E-11	2.68E-07	2.22E-08	2.91E-07
RS-92	1.27E-08	1.03E-07	1.28E-08	1.29E-07
CJ-60	3.04E-06	2.71E-06	7.84E-06	1.36E-05
NA-24	0.	1.07E-07	3.50E-06	8.60E-06
AG-110M	2.08E-05	2.18E-05	5.40E-05	9.66E-05
CR-51	1.01E-04	8.33E-05	1.42E-04	3.26E-04
SR-123M	0.	0.	0.	0.
TC-99M	9.13E-07	4.04E-07	1.45E-06	2.77E-06
AG-110M	1.52E-06	3.38E-07	2.85E-08	1.89E-06
RS-96	3.39E-04	5.25E-04	3.07E-03	3.93E-03
NP-239	6.72E-05	5.23E-05	9.50E-05	2.15E-04
CD-115	2.35E-05	2.40E-05	5.28E-05	1.05E-04
CE-144	7.26E-05	4.92E-05	9.91E-05	2.21E-04
SR-91	1.49E-05	1.56E-05	4.11E-05	7.16E-05
Y-91M	0.	0.	0.	0.
RU-103	6.39E-11	1.22E-07	1.20E-08	1.34E-07
MI-96	9.23E-07	2.82E-07	2.66E-08	1.23E-06
SA-139	2.44E-06	1.68E-05	1.26E-06	2.04E-05
SR-125M	0.	0.	0.	0.
SR-92	0.	1.16E-07	1.33E-05	1.34E-05
CJ-57	4.41E-11	4.09E-07	2.45E-08	4.33E-07
FE-59	9.56E-07	1.68E-06	7.00E-06	9.63E-06
ZR-95	1.62E-05	6.47E-06	1.56E-05	3.83E-05
RS-97	6.71E-11	1.21E-07	4.55E-07	5.76E-07
ZR-97	4.81E-11	1.22E-07	2.20E-08	1.44E-07
Y-92	6.50E-05	6.34E-05	3.03E-03	3.16E-03
SB-125	1.71E-05	2.27E-05	4.05E-05	8.03E-05
ZR-95	1.54E-06	5.59E-06	1.56E-05	2.27E-05
N-187	1.02E-05	1.38E-05	2.38E-05	4.79E-05
IN-115M	6.46E-06	8.16E-06	5.17E-06	1.98E-05
NA-22	0.	1.02E-07	1.32E-09	1.03E-07
NI-65	9.63E-06	1.40E-05	3.02E-05	5.38E-05
PR-144	0.	0.	0.	0.
CJ-109	0.	0.	0.	0.
TE-134	0.	0.	0.	0.
RU-106	0.	0.	0.	0.
TE-132	0.	0.	0.	0.

HALOGENS

I-131	5.54E-02	4.33E-03	9.00E-03	6.87E-02
I-133	3.34E-03	5.92E-05	2.05E-03	5.45E-03
I-135	4.21E-04	2.24E-04	6.97E-04	1.34E-03
I-132	2.94E-05	5.65E-05	5.54E-05	1.41E-04
I-134	4.57E-10	1.59E-05	2.56E-07	1.62E-05
F-18	1.39E-04	2.46E-03	5.14E-05	2.65E-03

GASES

KR-85	6.29E+01	7.29E+01	1.49E+01	1.51E+02
XE-133	8.76E+03	6.44E+02	3.15E+03	1.25E+04
KR-88	1.83E-01	2.24E+00	5.31E+00	7.74E+00
KR-87	9.83E-02	3.37E-01	3.84E-01	8.19E-01
KR-85M	2.69E-01	5.57E-01	5.86E+00	6.69E+00
XE-133	5.54E-01	4.09E-02	3.40E-02	6.29E-01
XE-135M	1.42E-01	6.46E-02	1.13E-01	3.20E-01
XE-135	4.91E+01	2.81E+00	1.00E+02	1.43E+02
AR-41	4.43E-02	2.38E+00	2.39E+01	2.63E+01
XE-133M	8.07E+01	1.10E+00	2.65E+01	1.08E+02
XE-131M	3.97E+01	2.45E+01	3.87E+00	7.31E+01

## II. AIRBORNE RELEASES

	UNITS	1st QUARTER	2nd QUARTER	SUB-TOTAL
1. TOTAL NOBLE GASES	CURIES	3.08E+03	1.31E+04	1.61E+04
2. TOTAL HALOGENS	CURIES	3.09E-02	7.81E-02	1.09E-01
3. TOTAL PARTICULATE GROSS BETA-GAMMA	CURIES	4.96E-03	8.88E-03	1.38E-02
4. TOTAL TRITIUM	CURIES	4.19E-01	1.23E+02	1.23E+02
5. TOTAL PARTICULATE GROSS ALPHA ACTIVITY	CURIES	0.	0.	0.
6. MAXIMUM NOBLE GAS RELEASE RATE	UCI/SEC	1.60E+03	1.60E+03	1.60E+03
7. PERCENT OF APPLICABLE LIMIT FOR:				
A. NOBLE GASES	%	6.03E+00	2.56E+01	3.16E+01
B. HALOGENS	%	9.12E+00	2.05E+01	2.87E+01
C. PARTICULATES	%	4.51E-01	8.07E-01	1.26E+00

## 8. ISOTOPES RELEASED

## PARTICULATES

	UNITS	1st QUARTER	2nd QUARTER	SUB-TOTAL
CS-137	CURIES	9.24E-06	1.22E-04	1.31E-04
SA-LA-140	CURIES	1.22E-07	5.00E-05	5.01E-05
SR-90	CURIES	2.01E-04	6.50E-07	2.01E-04
CS-134	CURIES	2.14E-05	4.32E-05	6.45E-05
SR-89	CURIES	9.45E-04	8.78E-06	9.54E-04
CU-58	CURIES	7.14E-06	1.19E-04	1.27E-04
CS-136	CURIES	1.56E-06	6.34E-06	7.90E-06
CS-138	CURIES	3.73E-05	6.89E-05	1.06E-04
AN-24	CURIES	3.60E-07	4.67E-07	8.27E-07
AU-99	CURIES	0.	2.91E-07	2.91E-07
RB-95	CURIES	6.60E-09	1.29E-07	1.35E-07
CU-60	CURIES	2.57E-05	1.36E-05	3.93E-05
HA-24	CURIES	0.	8.60E-06	8.60E-06
AG-110M	CURIES	1.62E-06	9.66E-05	9.82E-05
CR-51	CURIES	2.85E-07	3.26E-04	3.26E-04
SN-123M	CURIES	0.	0.	0.
TC-99M	CURIES	3.83E-08	2.77E-06	2.80E-06
AG-108M	CURIES	0.	1.89E-06	1.89E-06
RB-88	CURIES	3.70E-03	3.93E-03	7.64E-03
NP-239	CURIES	0.	2.15E-04	2.15E-04
CD-115	CURIES	9.90E-06	1.05E-04	1.14E-04
CE-144	CURIES	0.	2.21E-04	2.21E-04
SR-91	CURIES	0.	7.16E-05	7.16E-05
Y-91M	CURIES	0.	0.	0.
RU-103	CURIES	4.74E-08	1.34E-07	1.81E-07
AM-243	CURIES	1.84E-08	1.23E-06	1.25E-06
SA-139	CURIES	0.	2.04E-05	2.04E-05
SN-125M	CURIES	0.	0.	0.
SR-92	CURIES	0.	1.34E-05	1.34E-05
CU-57	CURIES	0.	4.33E-07	4.33E-07
FE-59	CURIES	0.	9.63E-06	9.63E-06
ZR-95	CURIES	0.	3.83E-05	3.83E-05
IS-97	CURIES	4.17E-07	5.76E-07	9.93E-07
ZR-97	CURIES	0.	1.44E-07	1.44E-07
Y-92	CURIES	0.	3.16E-03	3.16E-03
SB-125	CURIES	0.	8.03E-05	8.03E-05
Zn-65	CURIES	0.	2.27E-05	2.27E-05
IN-187	CURIES	0.	4.79E-05	4.79E-05
IN-113M	CURIES	0.	1.98E-05	1.98E-05
HA-22	CURIES	0.	1.03E-07	1.03E-07
NI-65	CURIES	0.	5.38E-05	5.38E-05
PR-144	CURIES	0.	0.	0.
CD-109	CURIES	0.	0.	0.
TE-134	CURIES	0.	0.	0.
RU-106	CURIES	0.	0.	0.
TE-132	CURIES	0.	0.	0.

## HALOGENS

	UNITS	1st QUARTER	2nd QUARTER	SUB-TOTAL
I-131	CURIES	2.94E-02	6.87E-02	9.81E-02
I-133	CURIES	1.03E-03	5.45E-03	6.48E-03
I-135	CURIES	4.09E-05	1.34E-03	1.38E-03
I-132	CURIES	9.23E-06	1.41E-04	1.50E-04
I-134	CURIES	7.73E-07	1.62E-05	1.69E-05
F-18	CURIES	3.61E-04	2.65E-03	3.01E-03

## GASES

	UNITS	1st QUARTER	2nd QUARTER	SUB-TOTAL
KR-85	CURIES	3.29E+02	1.51E+02	4.80E+02
XE-133	CURIES	2.36E+03	1.25E+04	1.49E+04
KR-83	CURIES	8.34E+00	7.74E+00	1.61E+01
KR-87	CURIES	0.	9.19E-01	9.19E-01
KR-85M	CURIES	0.	6.69E+00	6.69E+00
XE-138	CURIES	0.	6.29E-01	6.29E-01
XE-135M	CURIES	0.	3.20E-01	3.20E-01
XE-135	CURIES	1.88E+02	1.43E+02	3.31E+02
AR-41	CURIES	3.33E+01	2.53E+01	5.96E+01
XE-133M	CURIES	5.14E+00	1.08E+02	1.13E+02
XE-131M	CURIES	1.53E+02	7.31E+01	2.26E+02
XE-137	CURIES	0.	1.41E-01	1.41E-01