

1300/11/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)  
DISTRIBUTION FOR INCOMING MATERIAL

50-269.270/287

REC: OREILLY J P  
NRC

ORG: PARKER W O  
DUKE PWR

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

DOCTYPE: LETTER NOTARIZED: NO

COPIES RECEIVED  
LTR 1 ENCL 1

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

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

REVIEWER INITIAL: XJM  
DISTRIBUTER INITIAL: J8m

\*\*\*\*\* 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

*Amv/Kon I*

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

CONTROL NBR: 782480287

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

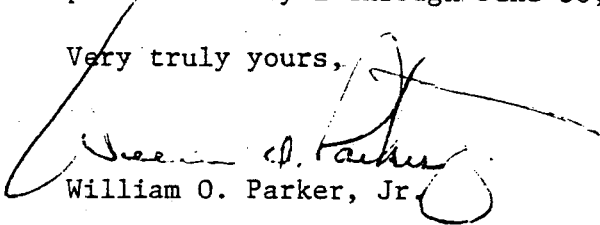
Mr. James P. O'Reilly, Director  
Region II  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Suite 1217  
230 Peachtree Street, Northwest  
Atlanta, Georgia 30303

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

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	7.38E-01	2.64E-01	1.74E+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	1.97E-07	1.52E-07	3.45E-06	1.05E-07
2. IRRADIATION					
A. TOTAL RELEASE	CURIES	3.19E+01	7.64E+01	1.45E+02	3.24E+02
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	3.95E-07	2.39E-06	1.40E-05	9.24E-07
3. DISSOLVED SOLUBLE GASES					
A. TOTAL RELEASE	CURIES	4.13E-01	1.79E-01	2.59E-01	3.52E-01
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	2.71E-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 DRAIN					
	LITERS	1.69E+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. ISOTOPE RELEASED					
HA-140	CURIES	2.36E-03	5.34E-04	4.03E-04	3.42E-03
HA-141		1.30E-02	9.14E-03	5.95E-03	2.71E-02
HA-142		7.51E-02	3.94E-02	1.22E-01	2.35E-01
HA-143		3.13E-03	3.14E-03	5.67E-03	1.19E-02
HA-144		3.17E-01	7.76E-02	2.01E-01	3.95E-01
HA-145		5.70E-03	1.52E-03	3.67E-03	1.10E-02
HA-146		1.49E-01	4.57E-02	4.35E-02	2.39E-01
HA-147		3.37E-02	2.04E-02	2.48E-02	1.29E-01
HA-148		4.99E-02	2.95E-02	1.36E-02	9.29E-02
HA-149		5.52E-02	4.52E-02	2.73E-02	1.39E-01
HA-150		2.24E-03	1.49E-03	2.23E-03	5.95E-03
HA-151		3.93E-03	3.54E-03	2.93E-03	1.54E-02
HA-152		0.	1.44E-05	2.16E-05	3.59E-05
HA-153		1.39E-04	4.20E-05	5.52E-05	2.29E-04
HA-154		9.22E-03	1.51E-02	5.57E-03	3.10E-02
HA-155		3.72E-04	2.73E-04	1.47E-03	2.11E-03
HA-156		8.01E-07	0.	0.	3.01E-07
HA-157		7.99E-04	7.79E-05	2.41E-04	1.12E-03
HA-158		7.32E-04	0.	1.26E-03	2.04E-03
HA-159		3.34E-04	0.	5.63E-05	3.90E-04
HA-160		2.22E-05	0.	2.74E-05	4.96E-05
HA-161		8.12E-04	5.34E-04	3.82E-04	1.73E-03
HA-162		1.57E-04	0.	0.	1.57E-04
HA-163		1.12E-03	9.40E-04	6.19E-04	2.53E-03
HA-164		0.	0.	0.	0.
HA-165		5.53E-04	0.	0.	5.53E-04
HA-166		0.	0.	0.	0.
HA-167		5.06E-03	1.16E-02	4.02E-03	2.07E-02
HA-168		0.	0.	5.45E-05	5.45E-05
HA-169		1.26E-03	2.76E-03	7.21E-04	4.31E-03
HA-170		3.34E-04	5.07E-05	7.10E-05	5.35E-04
HA-171		0.	0.	0.	0.
HA-172		5.46E-03	1.55E-03	7.79E-04	7.39E-03
HA-173		5.10E-05	2.35E-04	2.30E-04	5.15E-04
HA-174		0.	0.	0.	0.
HA-175		5.59E-03	5.37E-03	3.10E-03	1.47E-02
HA-176		4.08E-05	9.05E-04	4.46E-04	1.39E-03
HA-177		5.38E-04	7.23E-04	4.36E-04	1.70E-03
HA-178		2.70E-04	7.26E-05	5.31E-05	3.42E-04
HA-179		1.59E-04	0.	1.62E-05	1.55E-04
HA-180		9.24E-06	0.	2.94E-05	3.86E-05
HA-181		0.	0.	0.	0.
HA-182		5.96E-04	9.77E-04	2.92E-04	1.37E-03
HA-183		4.33E-05	0.	2.23E-05	7.05E-05
HA-184		1.57E-04	4.51E-04	4.40E-05	5.52E-04
HA-185		0.	0.	0.	0.
HA-186		3.20E-05	3.42E-06	0.	4.12E-05
HA-187		0.	1.31E-06	0.	1.31E-06
HA-188		5.31E-03	1.14E-03	2.76E-04	7.23E-03
HA-189		2.15E-05	0.	0.	2.15E-05
HA-190		3.40E-06	0.	0.	3.40E-06
HA-191		3.40E-02	9.40E-02	4.33E-02	2.25E-01
HA-192		2.55E-05	1.13E-05	1.00E-04	1.39E-04
HA-193		1.10E-03	2.02E-04	4.36E-05	1.35E-03
HA-194		1.42E-03	0.	0.	1.42E-03
HA-195		0.	1.35E-05	0.	1.35E-05
HA-196		0.	0.	0.	0.
HA-197		0.	0.	0.	0.
HA-198		2.57E-05	0.	3.44E-05	5.00E-05
HA-199		0.	0.	0.	0.
HA-200		0.	3.03E-05	0.	3.03E-05
HA-201		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

YEAR: 1978

LIQUID RELEASES		UNITS	APRIL	MAY	JUNE	SUB-TOTAL
1. GROSS RADIOACTIVITY						
A. TOTAL RELEASE	CURIES	6.56E-01	1.41E+00	4.49E-01	2.52E+00	
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	9.29E-09	6.57E-09	3.30E-09	7.49E-09	
C. MAXIMUM CONCENTRATION RELEASED	UCI/ML	2.53E-07	3.71E-07	1.75E-07	2.54E-07	
2. TRITIUM						
A. TOTAL RELEASE	CURIES	1.14E+02	7.13E+01	5.35E+01	2.49E+02	
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	1.52E-06	3.36E-07	1.17E-06	7.49E-07	
3. DISSOLVED NUCLE GASES						
A. TOTAL RELEASE	CURIES	1.34E+00	6.91E-01	9.51E-01	3.01E+00	
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	1.90E-09	3.26E-09	1.51E-09	3.94E-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						
GALL	LITERS	9.22E+06	1.41E+07	9.48E+06	3.28E+07	
6. VOLUME OF DILUTION WATER						
	LITERS	7.06E+10	2.12E+11	5.41E+10	3.37E+11	
7. ISOTOPES RELEASED						
HA-235	CURIES	2.58E-03	9.60E-03	1.62E-03	1.38E-02	
HA-238		7.01E-03	2.12E-02	3.60E-03	3.18E-02	
HA-239		2.18E-01	6.31E-02	3.74E-02	3.19E-01	
HA-240		7.00E-03	4.00E-03	2.36E-03	1.34E-02	
HA-241		1.18E+00	3.99E-01	3.16E-01	2.40E+00	
HA-242		9.05E-03	5.73E-03	1.49E-02	2.97E-02	
HA-243		4.41E-02	3.40E-02	2.22E-02	1.00E-01	
HA-244		2.59E-02	2.14E-02	1.20E-02	5.93E-02	
HA-245		6.90E-02	9.47E-02	1.67E-02	1.30E-01	
HA-246		1.75E-01	3.33E-01	2.91E-01	1.35E+00	
HA-247		4.19E-02	6.62E-02	5.40E-02	1.13E-01	
HA-248		5.60E-03	1.69E-02	2.31E-02	2.50E-02	
HA-249		0.	0.	1.34E-03	1.34E-03	
HA-250		4.36E-04	1.74E-03	3.49E-03	2.21E-03	
HA-251		1.34E-02	1.17E-01	1.10E-02	1.46E-01	
HA-252		1.05E-02	1.55E-03	7.65E-03	1.97E-02	
HA-253		0.	0.	0.	0.	
HA-254		2.35E-03	2.24E-03	1.66E-04	4.75E-03	
HA-255		0.	0.	2.09E-04	2.09E-04	
HA-256		0.	0.	2.01E-04	2.01E-04	
HA-257		7.08E-04	6.34E-04	3.06E-05	1.39E-03	
HA-258		4.52E-04	1.09E-03	3.32E-04	1.37E-03	
HA-259		0.	3.50E-05	2.32E-05	6.22E-05	
HA-260		4.33E-03	1.11E-03	5.06E-04	6.45E-03	
HA-261		0.	0.	0.	0.	
HA-262		0.	0.	0.	0.	
HA-263		9.73E-03	3.30E-02	3.33E-02	5.13E-02	
HA-264		1.43E-03	1.53E-04	1.73E-03	3.32E-03	
HA-265		7.59E-03	9.19E-03	5.69E-04	1.76E-02	
HA-266		3.32E-04	3.27E-03	3.95E-04	4.30E-03	
HA-267		0.	0.	0.	0.	
HA-268		1.70E-04	3.45E-04	2.71E-04	7.85E-04	
HA-269		0.	1.88E-03	9.25E-03	1.97E-03	
HA-270		0.	0.	0.	0.	
HA-271		3.95E-02	1.93E-02	5.48E-03	5.43E-02	
HA-272		5.73E-03	6.07E-03	9.74E-03	1.29E-02	
HA-273		4.56E-04	2.34E-04	3.94E-04	1.11E-03	
HA-274		4.59E-04	2.00E-03	2.53E-04	2.72E-03	
HA-275		7.34E-04	1.72E-03	3.00E-04	2.51E-03	
HA-276		0.	2.32E-05	1.93E-05	4.75E-05	
HA-277		0.	0.	0.	0.	
HA-278		2.32E-04	1.13E-04	1.56E-04	5.56E-04	
HA-279		0.	0.	1.64E-05	1.64E-05	
HA-280		6.24E-05	4.45E-05	1.55E-04	2.65E-04	
HA-281		0.	0.	0.	0.	
HA-282		4.91E-05	2.41E-04	9.01E-05	3.30E-04	
HA-283		0.	0.	0.	0.	
HA-284		9.26E-04	1.36E-04	3.34E-02	3.45E-02	
HA-285		0.	0.	0.	0.	
HA-286		0.	2.50E-03	0.	2.50E-03	
HA-287		9.53E-02	2.53E-01	1.36E-01	4.95E-01	
HA-288		3.00E-03	2.50E-03	3.53E-03	5.03E-03	
HA-289		4.97E-04	7.94E-04	5.60E-05	1.33E-03	
HA-290		0.	0.	0.	0.	
HA-291		0.	2.37E-03	0.	2.37E-03	
HA-292		0.	0.	0.	0.	
HA-293		0.	0.	0.	0.	
HA-294		0.	2.92E-05	0.	2.92E-05	
HA-295		0.	0.	0.	0.	
HA-296		4.52E-06	5.04E-06	0.	6.42E-06	
HA-297		0.	3.35E-04	2.39E-05	3.54E-04	
HA-298		0.	0.	0.	0.	
HA-299		0.	0.	0.	0.	
HA-300		0.	0.	0.	0.	

## 1. LIQUID RELEASES

	UNITS	1st QUARTER	2nd QUARTER	SUB-TOTAL
1. GROSS RADIOACTIVITY				
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	1.08E-07	2.34E-07	1.93E-07
2. TRITIUM				
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
3. DISSOLVED NITRILE GASES				
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
4. GROSS ALPHA RADIOACTIVITY				
A. TOTAL RELEASE	CURIES	0.	0.	0.
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	0.	0.	0.
5. VOLUME OF LIQUID WASTE DISCHARGE, CANAL				
	LITERS	3.55E+07	3.28E+07	6.83E+07
6. VOLUME OF DILUTION WATER				
	LITERS	3.50E+11	3.37E+11	6.87E+11
7. ISOTOPES RELEASED				
SA-140	CURIES	3.42E-03	1.38E-02	1.72E-02
SR-90		2.91E-02	3.18E-02	6.09E-02
I-131		2.84E-01	3.18E-01	6.05E-01
I-133		1.19E-02	1.34E-02	2.53E-02
KE-133		5.95E-01	2.40E+00	2.99E+00
KE-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
WH-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
NS-97		3.10E-02	1.46E-01	1.77E-01
KE-132M		2.11E-03	1.97E-02	2.18E-02
I-132		8.01E-07	0.	8.01E-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		4.96E-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		2.48E-03	6.45E-03	9.13E-03
CO-56		0.	0.	0.
CO-59		5.33E-04	0.	5.33E-04
SE-124		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
KE-95		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	7.35E-04	8.62E-03
I-137		5.16E-04	1.97E-03	2.49E-03
CS-135M		0.	0.	0.
KE-131M		1.47E-02	6.43E-02	7.90E-02
ZR-95		1.39E-03	1.29E-02	1.43E-02
NP-239		1.70E-02	1.11E-03	2.61E-03
KE-97		3.42E-04	2.72E-03	3.06E-03
CO-59M		1.85E-04	2.31E-03	2.99E-03
IA-24		3.36E-05	4.75E-05	8.61E-05
CO-115M		0.	0.	0.
Y-92		1.37E-03	5.56E-04	2.42E-03
IN-115M		7.06E-05	1.54E-05	2.70E-05
IN-115		6.62E-04	2.65E-04	9.27E-04
CS-134		0.	0.	0.
IA-41		4.12E-05	3.30E-04	4.21E-04
I-134		1.31E-06	0.	1.31E-06
KE-95		7.23E-03	3.45E-02	4.17E-02
SN-125M		2.15E-05	0.	2.15E-05
CS-135		3.40E-06	5.50E-03	5.51E-03
KR-85		2.26E-01	4.95E-01	7.21E-01
CO-123		1.39E-04	5.63E-03	5.77E-03
SE-125		1.35E-03	1.35E-03	2.72E-03
SN-125		1.42E-03	0.	1.42E-03
KE-135		1.35E-05	2.37E-03	2.38E-03
SN-123M		0.	0.	0.
FE-55		0.	0.	0.
AG-108		5.00E-05	2.92E-05	8.92E-05
KE-135M		0.	0.	0.
FE-55		5.03E-05	5.42E-05	1.41E-04
NI-63		7.03E-05	2.54E-04	4.34E-04
Y-93		0.	0.	0.
CO-109		0.	0.	0.
FE-144		0.	0.	0.
AG-106		0.	0.	0.

## 8. PERCENT OF TECHNICAL SPECIFICATIONS

LIMIT (15.0) FOR TOTAL ACTIVITY AND

ATTACHMENT 3

RADIOACTIVE EFFLUENT RELEASES  
AIRBORNE RELEASES

## II. AIRBORNE 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	3.94E-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	5.03E+00
B. HALOGENS	%	1.36E+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. ISOTOPPES RELEASED	CURIES				
PARTICULATES					
CS-137		1.84E-07	1.78E-07	3.88E-06	9.24E-06
BA-LA-140		0.	4.13E-08	3.09E-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-60		1.61E-06	3.38E-06	2.14E-06	7.14E-06
CS-136		1.54E-06	0.	0.	1.56E-06
CS-135		1.77E-06	1.25E-05	2.30E-05	3.73E-05
KN-94		0.	3.65E-08	3.23E-07	3.60E-07
NO-99		0.	0.	0.	0.
NE-95		0.	3.60E-09	0.	3.60E-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
AO-108A		0.	0.	0.	0.
RE-88		3.91E-05	3.07E-03	5.93E-04	3.70E-03
NP-239		0.	0.	0.	0.
OD-115		3.90E-06	0.	0.	3.90E-06
CE-144		0.	0.	0.	0.
SR-91		0.	0.	0.	0.
Y-214		0.	0.	0.	0.
PO-103		0.	0.	4.74E-08	4.74E-08
MO-98		0.	1.34E-08	0.	1.34E-08
BA-139		0.	0.	0.	0.
SN-125A		0.	0.	0.	0.
SR-92		0.	0.	0.	0.
CO-67		0.	0.	0.	0.
FE-59		0.	0.	0.	0.
CR-96		0.	0.	0.	0.
SR-97		0.	0.	4.17E-07	4.17E-07
SR-97		0.	0.	0.	0.
Y-92		0.	0.	0.	0.
SR-125		0.	0.	0.	0.
SR-98		0.	0.	0.	0.
LA-157		0.	0.	0.	0.
IR-115A		0.	0.	0.	0.
BA-22		0.	0.	0.	0.
SI-35		0.	0.	0.	0.
HALOGENS					
I-131		5.44E-03	2.01E-02	3.63E-03	2.94E-02
I-133		4.39E-04	7.34E-05	4.51E-04	1.03E-03
I-135		5.53E-06	0.	3.53E-05	4.09E-05
I-132		0.	3.08E-03	9.15E-06	3.23E-03
I-134		0.	7.73E-07	0.	7.73E-07
I-135		0.	3.51E-04	0.	3.51E-04
NOBLES					
AR-39		0.	2.32E+01	3.06E+02	3.29E+02
KE-133		4.39E+02	6.24E+02	1.29E+03	2.35E+03
KE-35		3.34E+00	0.	0.	3.34E+00
KE-37		0.	0.	0.	0.
KE-38A		0.	0.	0.	0.
KE-136		0.	0.	0.	0.
KE-136A		0.	0.	0.	0.
KE-135		1.77E+01	1.70E+02	3.31E+01	1.88E+02
KE-135		3.20E+00	3.01E+01	0.	3.33E+01
AR-41		2.75E+00	2.71E+00	5.70E+02	5.14E+02
KE-133A		3.72E+00	3.69E+01	1.02E+02	1.09E+02
KE-131A		0.	0.	0.	0.

II. AIRBORNE RELEASES

	UNITS	APRIL	MAY	JUN	SUB-TOTAL
1. TOTAL NOBLE 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	8.35E-03
4. TOTAL TRITIUM	CURIES	3.09E+01	4.52E-01	9.13E+01	1.23E+02
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	%	1.76E+01	1.47E+00	6.53E+00	2.56E+01
B. HALOGENS	%	1.36E+01	1.82E+00	3.12E+00	2.05E+01
C. PARTICULATES	%	7.63E-02	9.55E-02	6.35E-01	9.07E-01

3. ISOTOPES RELEASED CURIES

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
SH-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
SH-99	2.92E-06	3.04E-06	2.82E-06	8.78E-06
CU-68	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
AM-24	1.11E-07	1.85E-07	1.70E-07	4.67E-07
RU-99	4.32E-11	2.68E-07	2.22E-08	2.91E-07
RU-98	1.27E-08	1.03E-07	1.28E-08	1.29E-07
CU-60	3.04E-06	2.71E-06	7.34E-06	1.36E-05
NA-24	0.	1.07E-07	3.50E-06	3.60E-06
AG-110m	2.08E-05	2.18E-05	3.40E-05	9.66E-05
CR-51	1.01E-04	8.33E-05	1.42E-04	3.26E-04
SH-123m	0.	0.	0.	0.
TC-99a	9.13E-07	4.04E-07	1.45E-06	2.77E-06
AG-108m	1.52E-06	3.38E-07	2.85E-08	1.89E-06
RS-98	3.39E-04	5.25E-04	3.07E-03	3.93E-03
HP-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
RU-96	9.23E-07	2.32E-07	2.66E-08	1.23E-06
SA-139	2.44E-06	1.68E-05	1.26E-06	2.04E-05
SH-123m	0.	0.	0.	0.
SR-92	0.	1.16E-07	1.33E-05	1.34E-05
CU-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	6.54E-05	3.03E-03	3.16E-03
SB-125	1.71E-05	2.27E-05	4.05E-05	3.03E-05
Zr-95	1.54E-06	5.59E-06	1.56E-05	2.27E-05
IN-115m	1.02E-05	1.38E-05	2.38E-05	4.79E-05
IN-115m	6.46E-06	3.16E-06	3.17E-06	1.98E-05
HA-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.
CU-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	5.34E-02	4.33E-03	9.00E-03	6.37E-02
I-133	3.34E-03	5.92E-05	2.05E-03	5.45E-03
I-135	4.21E-04	2.24E-04	5.91E-04	1.24E-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	3.76E+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	3.19E-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	4.01E+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	2.45E+01	1.08E+02

## 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	UCL/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

CURIES

## PARTICULATES

CS-137	9.24E-06	1.22E-04	1.31E-04
SA-LA-140	1.22E-07	5.00E-05	5.01E-05
SR-90	2.01E-04	6.50E-07	2.01E-04
CS-134	2.14E-05	4.32E-05	6.45E-05
SR-89	9.45E-04	8.78E-06	9.54E-04
CU-64	7.14E-06	1.19E-04	1.27E-04
CS-136	1.56E-06	6.34E-06	7.90E-06
CS-138	3.73E-05	6.89E-05	1.06E-04
AN-24	3.60E-07	4.67E-07	8.27E-07
RU-99	0.	2.91E-07	2.91E-07
RB-93	6.60E-09	1.29E-07	1.35E-07
CU-60	2.57E-05	1.36E-05	3.93E-05
HA-24	0.	8.60E-06	8.60E-06
AG-110M	1.62E-06	9.66E-05	9.82E-05
CR-51	2.85E-07	3.26E-04	3.26E-04
SN-123M	0.	0.	0.
TC-99M	3.83E-08	2.77E-06	2.80E-06
AG-108M	0.	1.89E-06	1.89E-06
RB-83	3.70E-03	3.93E-03	7.64E-03
IP-23M	0.	2.15E-04	2.15E-04
CD-113	9.30E-06	1.05E-04	1.14E-04
CE-144	0.	2.21E-04	2.21E-04
SM-91	0.	7.16E-05	7.16E-05
Y-91M	0.	0.	0.
RU-103	4.74E-08	1.34E-07	1.81E-07
AN-26	1.84E-08	1.23E-06	1.25E-06
SA-139	0.	2.04E-05	2.04E-05
SH-125M	0.	0.	0.
SR-92	0.	1.34E-05	1.34E-05
CU-67	0.	4.33E-07	4.33E-07
FE-59	0.	9.63E-06	9.63E-06
ZR-95	0.	3.83E-05	3.83E-05
IS-47	4.17E-07	5.76E-07	9.93E-07
ZR-97	0.	1.44E-07	1.44E-07
Y-92	0.	3.16E-03	3.16E-03
SB-125	0.	8.03E-05	8.03E-05
LI-63	0.	2.27E-05	2.27E-05
NI-187	0.	4.79E-05	4.79E-05
IT-113M	0.	1.98E-05	1.98E-05
HA-22	0.	1.03E-07	1.03E-07
NI-63	0.	5.38E-05	5.38E-05
PR-144	0.	0.	0.
CD-109	0.	0.	0.
TE-134	0.	0.	0.
RU-106	0.	0.	0.
TE-132	0.	0.	0.

## HALOGENS

I-131	2.94E-02	6.87E-02	9.81E-02
I-133	1.03E-03	5.45E-03	6.48E-03
I-135	4.09E-05	1.34E-03	1.38E-03
I-132	9.23E-06	1.41E-04	1.50E-04
I-134	7.73E-07	1.62E-05	1.69E-05
F-18	3.61E-04	2.65E-03	3.01E-03

## GASES

KR-85	3.29E+02	1.51E+02	4.80E+02
XE-133	2.36E+03	1.25E+04	1.49E+04
KR-83	3.34E+00	7.74E+00	1.61E+01
KR-87	0.	3.19E-01	3.19E-01
KR-85M	0.	6.69E+00	6.69E+00
AE-138	0.	6.29E-01	6.29E-01
XE-135M	0.	3.20E-01	3.20E-01
XE-135	1.38E+02	1.43E+02	3.31E+02
AR-41	3.33E+01	2.63E+01	5.96E+01
AE-133M	5.14E+00	1.06E+02	1.13E+02
XE-131M	1.53E+02	7.31E+01	2.26E+02