

DUKE POWER COMPANY

POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28202

WILLIAM O. PARKER, JR.  
VICE PRESIDENT  
STEAM PRODUCTION

February 23, 1977

TELEPHONE: AREA 704  
373-4083

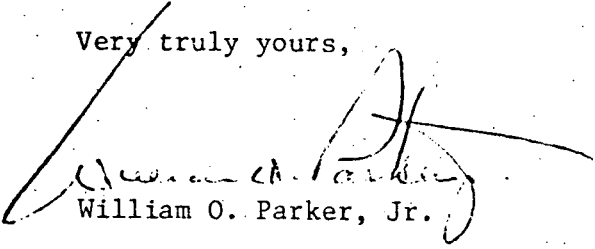
Mr. Norman C. Moseley, Director  
U. S. Nuclear Regulatory Commission  
Suite 818  
230 Peachtree Street, Northwest  
Atlanta, Georgia 30303

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

Dear Mr. Moseley:

Pursuant to 10CFR50.36a and Oconee Technical Specifications 6.6.1.2(c), please find attached data concerning radioactive effluents released from Oconee Nuclear Station. This information is reported on a semi-annual basis for the last six months of 1976.

Very truly yours,



William O. Parker, Jr.

LJB:ge  
Attachment

cc: Mr. Ernst Volgenau

7 0162

269  
- ENW, 1

FROM: POWER COMPANY  
PARKER, JR.

DATE OF DOCUMENT  
2/23/77

DATE RECEIVED  
2/28/77

NO.: 7 01682

LTR:

MEMO:

REPORT:

OTHER:

TO: NORMAN C. MOSELEY, REGION II  
GEORGIA

ORIG.:

CC:

OTHER:

ACTION NECESSARY

CONCURRENCE

DATE ANSWERED:

NO ACTION NECESSARY

COMMENT

BY:

CLASSIF.: U POST OFFICE

FILE CODE:

REG. NO:

DESCRIPTION: (Must Be Unclassified)  
RE: RADIOACTIVE EFFLUENT RELEASE  
RPT.

REFERRED TO

DATE

RECEIVED BY

DATE

THORNBURG

2/28

THOMPSON

IE FILES

~~U. GROW INDEX 306-86 (CY TO BE SENT TO SDA FILES  
AFTER USE.)~~

ASSESSIONS UNIT

NRC PDR P-010

LOCAL PDR

ENCLOSURES:

REMARKS:

## 2.7 RADIOACTIVE EFFLUENT RELEASES

### 2.7.1 LIQUID AND AIRBORNE RELEASES

Liquid and airborne releases are reported in Table 2.7-1.

### 2.7.2 SOLID WASTES

Total volume of solid waste packaged (cubic feet) 41,257 (78,480 for year).

Total estimated activity involved (curies) 246,039 (782.695 for year).

\*Disposal of materials shipped off-site:

<u>DATE</u>	<u>CUBIC FEET</u>	<u>CURIES</u>
7/06/76	480	.958
7/08/76	870	1.3282
7/09/76	480	.8555
7/12/76	480	.943
7/13/76	480	.754
7/14/76	480	.6795
7/15/76	480	.712
7/16/76	795	3.426
7/19/76	480	.552
7/21/76	480	.668
7/23/76	480	.7105
7/28/76	480	.654
7/30/76	480	.696
8/02/76	480	1.305
8/02/76	742.5	3.7802
8/06/76	480	1.102
8/09/76	480	.683
8/12/76	480	.871
8/16/76	480	.3555
8/19/76	750	.6480
8/20/76	480	1.5225
8/24/76	480	1.104
8/25/76	672.5	3.003
9/01/76	480	1.6385
9/02/76	480	1.712
9/03/76	480	2.046
9/08/76	480	4.034
9/10/76	547.5	3.1386
9/14/76	112.5	17.602
9/14/76	480	3.103
9/21/76	480	.871
9/22/76	480	.696
9/23/76	480	2.6825
9/27/76	480	.9425

<u>DATE</u>	<u>CUBIC FEET</u>	<u>CURIES</u>
9/28/76	705	.7905
9/30/76	480	1.044
10/04/76	480	1.67
10/04/76	480	1.6
10/07/76	607.5	.431
10/08/76	480	1.49
10/12/76	80	15.0
10/13/76	480	.6235
10/14/76	480	.899
10/15/76	517.5	.47922
10/19/76	480	1.451
10/20/76	480	1.3775
10/22/76	550	1.741
10/27/76	480	1.392
10/29/76	787.5	1.4924
11/09/76	750	1.0814
11/10/76	480	1.579
11/10/76	480	1.261
11/11/76	480	1.537
11/12/76	480	1.348
11/15/76	327.4	4.9285
11/15/76	480	2.9725
11/18/76	480	1.595
11/19/76	480	1.52
11/22/76	480	4.205
11/22/76	150	1.71 x 10 <sup>-5</sup>
11/23/76	480	2.175
11/23/76	682.5	1.1735
11/24/76	327.4	10.03
11/30/76	480	3.613
12/01/76	480	3.33
12/02/76	480	1.379
12/03/76	327.4	8.83
12.04/76	480	1.886
12/07/76	480	1.07
12/09/76	480	2.25
12/09/76	600	.3273
12/10/76	327.4	12.6
12/13/76	1232	.0802
12/13/76	320	4.9
12/14/76	452.5	5.06
12/15/76	263.4	10.95
12/16/76	160	4.06
12/16/76	112	3.099 x 10 <sup>-5</sup>
12/18/76	160	3.85
12/20/76	240	3.99
12/20/76	160	1.31
12/21/76	160	2.75
12/21/76	160	3.99

<u>DATE</u>	<u>CUBIC FEET</u>	<u>CURIES</u>
12/22/76	160	3.27
12/22/76	160	2.03
12/23/76	160	2.537
12/23/76	80	1.305
12/23/76	547.5	0.899
12/28/76	240	6.453
12/29/76	160	4.72
12/29/76	320	6.02
12/30/76	240	5.4206
12/30/76	160	4.495

\* Disposition: All shipments to Chem-Nuclear Systems  
Waste Disposal Facility at Barnwell, South Carolina.

### 2.7.3 LIQUID WASTE

Total volume of liquid waste shipped (gallons) 0.0.

Total estimated activity involved (curies) 0.0.

No liquid waste was shipped during this reporting period.

1. Liquid Releases

	Units	1976		
		Jan.-June	July-Dec.	
		1st 6 months	2nd 6 months	TOTAL
1. Gross radioactivity (Bq)				
a. total release	Curies	5.24	1.43	6.67
b. average concentration released	μCi/ml	$7.72 \times 10^{-9}$	$9.34 \times 10^{-9}$	$8.53 \times 10^{-9}$
c. maximum concentration released	μCi/ml	$2.09 \times 10^{-6}$	$1.27 \times 10^{-3}$	$1.28 \times 10^{-3}$
2. Tritium				
a. total release	Curies	$1.27 \times 10^3$	$9.20 \times 10^2$	$2.19 \times 10^3$
b. average concentration released	μCi/ml	$1.84 \times 10^{-6}$	$8.03 \times 10^{-6}$	$4.94 \times 10^{-6}$
3. Dissolved noble gases				
a. total release	Curies	1.08	$1.88 \times 10^{-1}$	1.27
b. average concentration released	μCi/ml	$1.61 \times 10^{-9}$	$1.39 \times 10^{-9}$	$1.50 \times 10^{-9}$
4. Gross alpha radioactivity				
a. total release	Curies	0	0	0
b. average concentration released	μCi/ml	0	0	0
5. Volume of liquid waste to discharge canal	Liters	$9.38 \times 10^6$	$1.01 \times 10^7$	$1.95 \times 10^7$
6. Volume of dilution water	Liters	$7.46 \times 10^{11}$	$4.62 \times 10^{11}$	$1.21 \times 10^{12}$
7. Isotopes released	Curies			
Ba-La-140		$1.51 \times 10^{-2}$	$3.10 \times 10^{-3}$	$1.82 \times 10^{-2}$
Sr-89		$7.76 \times 10^{-3}$	$2.44 \times 10^{-3}$	$1.04 \times 10^{-2}$
I-131		1.33	$5.75 \times 10^{-1}$	1.91
I-133		$6.02 \times 10^{-2}$	$2.05 \times 10^{-2}$	$8.07 \times 10^{-2}$
Xe-133		1.05	$1.76 \times 10^{-2}$	1.07
Xe-135		$2.94 \times 10^{-2}$	$1.02 \times 10^{-2}$	$3.96 \times 10^{-2}$
Cs-137		$9.04 \times 10^{-1}$	$1.40 \times 10^{-1}$	1.04
Cs-134		$5.97 \times 10^{-1}$	$3.85 \times 10^{-2}$	$6.36 \times 10^{-1}$
Co-60		$3.04 \times 10^{-1}$	$6.38 \times 10^{-2}$	$3.68 \times 10^{-1}$
Co-58		1.76	$2.51 \times 10^{-1}$	2.01
Cr-51		$5.46 \times 10^{-2}$	$2.18 \times 10^{-2}$	$7.64 \times 10^{-2}$
Mn-54		$8.03 \times 10^{-2}$	$1.51 \times 10^{-1}$	$2.31 \times 10^{-1}$
Kr-87		$2.48 \times 10^{-5}$	0	$2.48 \times 10^{-5}$
Zr-97		$2.22 \times 10^{-5}$	$1.18 \times 10^{-4}$	$1.40 \times 10^{-4}$
Nb-97		$1.20 \times 10^{-2}$	$9.03 \times 10^{-3}$	$2.10 \times 10^{-2}$
Na-24		$5.86 \times 10^{-3}$	$1.42 \times 10^{-3}$	$7.28 \times 10^{-3}$
Xe-133m		$3.12 \times 10^{-3}$	$4.71 \times 10^{-4}$	$3.59 \times 10^{-3}$
I-132		$3.24 \times 10^{-4}$	0	$3.24 \times 10^{-4}$
Cs-136		$3.61 \times 10^{-2}$	$1.06 \times 10^{-2}$	$4.67 \times 10^{-2}$
Kr-85m		$3.31 \times 10^{-6}$	$3.45 \times 10^{-4}$	$3.48 \times 10^{-4}$
Kr-85		$2.10 \times 10^{-3}$	$8.63 \times 10^{-4}$	$2.96 \times 10^{-3}$
Zn-65		$1.95 \times 10^{-5}$	0	$1.95 \times 10^{-5}$
Sr-90		$4.85 \times 10^{-4}$	$1.65 \times 10^{-4}$	$6.50 \times 10^{-4}$
Sr-92		-	$3.28 \times 10^{-4}$	$3.28 \times 10^{-4}$
Ce-144		$1.29 \times 10^{-4}$	0	$1.29 \times 10^{-4}$
Mn-56		$2.80 \times 10^{-4}$	$1.91 \times 10^{-5}$	$2.99 \times 10^{-4}$
Mo-99		$2.16 \times 10^{-3}$	$3.77 \times 10^{-3}$	$5.93 \times 10^{-3}$
Y-92		-	$1.18 \times 10^{-5}$	$1.18 \times 10^{-5}$
Ac-110m		$1.99 \times 10^{-2}$	$1.31 \times 10^{-2}$	$3.30 \times 10^{-2}$
Ba-139		$3.42 \times 10^{-4}$	0	$3.42 \times 10^{-4}$
Nb-95		$1.22 \times 10^{-3}$	$1.02 \times 10^{-3}$	$2.24 \times 10^{-3}$
Fe-59		$2.18 \times 10^{-3}$	$3.94 \times 10^{-3}$	$6.12 \times 10^{-3}$
Co-57		$7.82 \times 10^{-4}$	$4.01 \times 10^{-4}$	$1.18 \times 10^{-3}$
Xe-131m		$3.97 \times 10^{-4}$	0	$3.97 \times 10^{-4}$
Zr-95		$2.23 \times 10^{-4}$	$1.52 \times 10^{-3}$	$1.74 \times 10^{-3}$
I-134		$2.44 \times 10^{-5}$	$1.42 \times 10^{-4}$	$1.66 \times 10^{-4}$
In-115m		$4.69 \times 10^{-4}$	$2.79 \times 10^{-5}$	$5.00 \times 10^{-4}$
Tc-99m		$4.65 \times 10^{-2}$	$5.87 \times 10^{-3}$	$5.24 \times 10^{-2}$
Cd-115		$2.35 \times 10^{-3}$	$1.80 \times 10^{-3}$	$4.15 \times 10^{-3}$
Sn-125m		$2.98 \times 10^{-3}$	$1.21 \times 10^{-2}$	$1.51 \times 10^{-2}$
Ru-103		$4.79 \times 10^{-5}$	0	$4.79 \times 10^{-5}$
I-135		-	$5.45 \times 10^{-4}$	$5.45 \times 10^{-4}$
W-187		-	$1.08 \times 10^{-4}$	$1.08 \times 10^{-4}$
Cd-115m		-	$5.01 \times 10^{-4}$	$5.01 \times 10^{-4}$
Ce-134		-	$3.17 \times 10^{-3}$	$3.17 \times 10^{-3}$
Ar-41		-	$2.06 \times 10^{-5}$	$2.06 \times 10^{-5}$
Rh-88		-	$2.95 \times 10^{-2}$	$2.95 \times 10^{-2}$
8. Percent of Technical Specifications limit (15 Ci) for total activity released.		34.94	9.43	44.37

Table 2.7-1  
Radioactive Effluent Releases

Year 1976

Airborne Releases		Units	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	SUB. TOTAL	TOTAL
Total noble gases	Curies	$5.24 \times 10^{-2}$	$3.21 \times 10^{-3}$	$5.09 \times 10^{-3}$	$3.60 \times 10^{-3}$	$5.70 \times 10^{-3}$	$1.08 \times 10^{-4}$	$3.55 \times 10^{-4}$	$4.42 \times 10^{-4}$	$1.56 \times 10^{-1}$
Total halogens	Curies	$1.31 \times 10^{-3}$	$2.01 \times 10^{-3}$	$5.92 \times 10^{-3}$	$1.20 \times 10^{-5}$	$6.94 \times 10^{-3}$	$7.85 \times 10^{-2}$	$1.52 \times 10^{-1}$	$1.52 \times 10^{-1}$	$1.56 \times 10^{-1}$
Total particulate gross radioactive (r.a.)	Curies	$3.73 \times 10^{-5}$	$5.64 \times 10^{-6}$	$4.05 \times 10^{-6}$	$9.75 \times 10^{-4}$	$3.08 \times 10^{-1}$	$1.06 \times 10^{-3}$	$3.10 \times 10^{-1}$	$3.10 \times 10^{-1}$	$3.10 \times 10^{-1}$
Total tritium	Curies	3.71	$6.02 \times 10^0$	$2.92 \times 10^0$	$1.31 \times 10^0$	$1.00 \times 10^0$	$1.80 \times 10^0$	$1.35 \times 10^0$	$1.35 \times 10^0$	$5.02 \times 10^0$
Total particulate gross alpha radioactivity	Curies	0	0	0	0	0	0	0	0	0
Maximum noble-gas release rate	µCi/sec	$1.60 \times 10^3$	$1.60 \times 10^3$	$1.60 \times 10^3$	$1.60 \times 10^3$	$1.60 \times 10^3$	$1.60 \times 10^3$	$1.60 \times 10^3$	$1.60 \times 10^3$	$1.60 \times 10^3$
Percent of applicable limit for:										
a. noble gases	%	1.03	6.30	$1.12 \times 10^0$	7.06	$1.12 \times 10^0$	$3.29 \times 10^0$	$6.88 \times 10^0$	$6.88 \times 10^0$	$8.62 \times 10^0$
b. halogens	%	$3.45 \times 10^{-1}$	$5.30 \times 10^{-1}$	$1.60 \times 10^{-1}$	$3.16 \times 10^{-2}$	$1.83 \times 10^0$	$2.07 \times 10^0$	$3.29 \times 10^0$	$3.29 \times 10^0$	$3.29 \times 10^0$
c. particulates	%	$3.39 \times 10^{-3}$	$5.13 \times 10^{-4}$	$3.68 \times 10^{-4}$	$8.86 \times 10^{-2}$	$2.80 \times 10^0$	$9.60 \times 10^{-2}$	$2.82 \times 10^0$	$2.82 \times 10^0$	$2.82 \times 10^0$
Isotopes released	Curies									
Particulates										
Cs-137		$5.22 \times 10^{-7}$	$3.83 \times 10^{-7}$	$6.74 \times 10^{-7}$	$9.04 \times 10^{-9}$				$1.59 \times 10^{-3}$	$1.06 \times 10^{-3}$
Ea-134		$1.18 \times 10^{-6}$	$1.25 \times 10^{-6}$						$2.46 \times 10^{-3}$	$1.17 \times 10^{-4}$
Sr-90					$2.48 \times 10^{-6}$	$2.48 \times 10^{-6}$	$2.48 \times 10^{-6}$	$7.43 \times 10^{-6}$	$9.96 \times 10^{-6}$	$5.51 \times 10^{-5}$
Cs-134		$1.78 \times 10^{-7}$	$1.95 \times 10^{-7}$	$5.94 \times 10^{-7}$	$1.15 \times 10^{-8}$				$9.96 \times 10^{-6}$	$9.31 \times 10^{-6}$
Sr-90					$3.24 \times 10^{-4}$	$3.24 \times 10^{-4}$	$3.24 \times 10^{-4}$	$9.73 \times 10^{-4}$	$9.73 \times 10^{-4}$	$9.73 \times 10^{-4}$
Co-58		$1.08 \times 10^{-5}$	$7.18 \times 10^{-7}$	$1.56 \times 10^{-6}$				$2.73 \times 10^{-4}$	$2.87 \times 10^{-4}$	$3.15 \times 10^{-4}$
Cs-136								$5.12 \times 10^{-8}$	$5.12 \times 10^{-8}$	$3.06 \times 10^{-7}$
Cs-138					$2.04 \times 10^{-4}$	$1.60 \times 10^{-2}$		$8.53 \times 10^{-5}$	$1.63 \times 10^{-1}$	$1.63 \times 10^{-1}$
Mn-54			$9.55 \times 10^{-7}$	$3.28 \times 10^{-7}$				$2.76 \times 10^{-6}$	$4.04 \times 10^{-1}$	$5.47 \times 10^{-5}$
Mo-99					$4.15 \times 10^{-8}$				$4.15 \times 10^{-1}$	$4.15 \times 10^{-8}$
Nb-95										
Co-60		$6.92 \times 10^{-7}$	$1.83 \times 10^{-6}$	$8.96 \times 10^{-7}$	$5.64 \times 10^{-9}$				$3.44 \times 10^{-1}$	$1.09 \times 10^{-5}$
Na-24										
Ag-110m		$9.19 \times 10^{-8}$	$2.63 \times 10^{-7}$		$5.96 \times 10^{-6}$			$2.13 \times 10^{-6}$	$8.44 \times 10^{-1}$	$9.11 \times 10^{-6}$
Cr-51										$1.24 \times 10^{-5}$
Sn-123c					$3.62 \times 10^{-5}$				$3.69 \times 10^{-1}$	$4.23 \times 10^{-5}$
Ic-99m										$1.73 \times 10^{-3}$
Np-239		$2.01 \times 10^{-5}$							$2.01 \times 10^{-1}$	$2.01 \times 10^{-5}$
Ce-144		$1.00 \times 10^{-7}$							$1.00 \times 10^{-1}$	$1.00 \times 10^{-7}$
Zr-97		$3.62 \times 10^{-6}$							$3.62 \times 10^{-1}$	$3.62 \times 10^{-6}$
Rb-88						$7.27 \times 10^{-4}$	$2.92 \times 10^{-1}$	$6.87 \times 10^{-4}$	$2.93 \times 10^{-1}$	$2.93 \times 10^{-1}$
Mn-56					$1.20 \times 10^{-5}$			$3.34 \times 10^{-5}$	$1.53 \times 10^{-1}$	$1.53 \times 10^{-5}$
Ag-108m								$1.63 \times 10^{-7}$	$1.63 \times 10^{-1}$	$1.63 \times 10^{-7}$
Ba-139								$2.93 \times 10^{-6}$	$2.93 \times 10^{-1}$	$2.93 \times 10^{-6}$
Halogens										
I-131		$1.30 \times 10^{-3}$	$1.11 \times 10^{-3}$	$5.03 \times 10^{-4}$	$3.53 \times 10^{-5}$	$5.79 \times 10^{-2}$	$6.12 \times 10^{-2}$	$1.22 \times 10^{-1}$	$1.22 \times 10^{-1}$	$1.25 \times 10^{-1}$
I-133		$1.09 \times 10^{-5}$	$9.04 \times 10^{-4}$	$8.92 \times 10^{-5}$	$3.76 \times 10^{-5}$	$1.16 \times 10^{-2}$	$1.75 \times 10^{-2}$	$3.01 \times 10^{-1}$	$3.01 \times 10^{-1}$	$3.14 \times 10^{-2}$
I-135					$4.01 \times 10^{-6}$		$6.64 \times 10^{-6}$	$1.07 \times 10^{-3}$	$1.07 \times 10^{-3}$	$1.25 \times 10^{-5}$
I-132					$2.06 \times 10^{-5}$		$6.01 \times 10^{-5}$	$8.07 \times 10^{-3}$	$8.07 \times 10^{-3}$	$3.62 \times 10^{-5}$
I-134					$2.28 \times 10^{-5}$		$4.60 \times 10^{-6}$	$2.74 \times 10^{-1}$	$2.74 \times 10^{-1}$	$2.74 \times 10^{-5}$
Gases										
Kr-85		$5.13 \times 10^{-2}$	$7.95 \times 10^{-1}$	1.70	3.01	$5.58 \times 10^{-1}$	$1.96 \times 10^0$	$2.57 \times 10^0$	$2.57 \times 10^0$	$3.47 \times 10^0$
Kr-133		$4.73 \times 10^{-2}$	$3.07 \times 10^{-3}$	$5.41 \times 10^{-3}$	$3.44 \times 10^{-3}$	$5.29 \times 10^{-3}$	$1.64 \times 10^{-4}$	$3.41 \times 10^{-4}$	$3.41 \times 10^{-4}$	$4.21 \times 10^{-4}$
Kr-88		$3.44 \times 10^{-2}$	3.53	$2.55 \times 10^0$	2.57	$2.99 \times 10^0$	1.12	$8.58 \times 10^0$	$8.58 \times 10^0$	$1.13 \times 10^{-1}$
Kr-87		$2.42 \times 10^{-1}$	$3.62 \times 10^{-1}$	2.41	$7.67 \times 10^{-1}$	$2.29 \times 10^0$	$1.04 \times 10^{-1}$	$2.68 \times 10^0$	$2.68 \times 10^0$	$2.68 \times 10^0$
Kr-81m		$7.50 \times 10^{-1}$	7.07	$1.37 \times 10^0$	5.50	$4.27 \times 10^0$	1.60	$7.13 \times 10^0$	$7.13 \times 10^0$	$3.73 \times 10^0$
Xe-138		4.30			$8.43 \times 10^{-2}$		$7.54 \times 10^{-2}$	4.46	4.46	4.46
Xe-135m			1.30		$2.39 \times 10^{-1}$		$8.26 \times 10^{-2}$	1.62	1.62	1.62
Xe-135		$2.77 \times 10^0$		$1.77 \times 10^2$	$1.12 \times 10^2$	$2.68 \times 10^2$	$1.62 \times 10^2$	$8.48 \times 10^2$	$8.48 \times 10^2$	$2.77 \times 10^2$
Ar-41		$1.01 \times 10^0$	$1.01 \times 10^2$	2.61	$2.22 \times 10^{-2}$	3.62	$2.38 \times 10^{-2}$	$1.80 \times 10^0$	$1.80 \times 10^0$	$2.51 \times 10^0$
Xe-133m		7.97	1.63	$5.49 \times 10^0$	$3.45 \times 10^0$	$4.31 \times 10^0$	$1.39 \times 10^2$	$3.10 \times 10^2$	$3.10 \times 10^2$	$5.41 \times 10^2$
Xe-131m		$3.27 \times 10^{-2}$	$3.03 \times 10^0$	$4.31 \times 10^{-1}$			$2.01 \times 10^{-2}$	$4.74 \times 10^{-1}$	$4.74 \times 10^{-1}$	2.01
Xe-137							$5.05 \times 10^{-4}$	$5.05 \times 10^{-1}$	$5.05 \times 10^{-1}$	$5.05 \times 10^{-4}$

PLEASE ENTER HYDRO FLUX, SR-89, AND SR-90 ENTRIES THAT ORDER FOR THE THREE MONTHS IN QUESTION  
 3.96E+10, 7.70E-09, 1.70E-08  
 2.88E+10, 6.00E-09, 2.00E-08  
 4.12E+10, 9.60E-08, 1.40E-08

		RADIOACTIVE EFFLUENT RELEASES				YEAR 1976
1. LIQUID RELEASES		UNITS	JULY	AUGUST	SEPTEMBER	SUB-TOTAL
GROSS RADIOACTIVITY						
A.	TOTAL RELEASE	CURIES	1.75E-01	8.79E-02	1.27E-01	3.89E-01
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	1.95E-09	3.05E-09	3.07E-09	2.69E-09
C.	MAXIMUM CONCENTRATION RELEASED	UCI/ML	1.44E-04	5.46E-05	9.72E-05	9.86E-05
TRITIUM						
A.	TOTAL RELEASE	CURIES	8.27E+01	1.46E+02	2.30E+02	4.59E+02
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	9.23E-07	5.08E-06	5.58E-06	3.86E-06
DISSOLVED NOBLE GASES						
A.	TOTAL RELEASE	CURIES	1.91E-02	1.20E-02	4.30E-02	7.41E-02
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	2.13E-10	4.18E-10	1.04E-09	5.58E-10
GROSS ALPHA RADIOACTIVITY						
A.	TOTAL RELEASE	CURIES	0.	0.	0.	0.
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	0.	0.	0.	0.
VOLUME OF LIQUID WASTE TO DISCHARGE CANAL		LITERS	1.70E+06	2.26E+06	1.83E+06	5.78E+06
VOLUME OF DILUTION WATER		LITERS	8.96E+10	2.88E+10	4.12E+10	1.60E+11
ISOTOPES RELEASED		CURIES				
BA-LA-140						
SR-89		5.13E-05	9.95E-05	0.	1.51E-04	
I-131		1.65E-04	1.35E-04	1.75E-04	4.75E-04	
I-133		2.79E-02	2.25E-02	5.91E-02	1.09E-01	
XE-133		3.75E-03	2.46E-03	7.69E-03	1.39E-02	
XE-135		1.79E-02	1.07E-02	3.87E-02	6.73E-02	
CS-137		5.48E-04	1.25E-03	3.93E-03	5.73E-03	
CS-134		1.55E-02	4.83E-03	1.44E-03	2.18E-02	
CU-60		7.86E-03	2.82E-03	7.43E-04	1.14E-02	
CU-68		2.55E-02	7.09E-03	1.19E-02	4.45E-02	
CR-51		7.33E-02	3.07E-02	3.04E-02	1.34E-01	
MN-54		6.19E-03	2.19E-03	8.50E-04	9.24E-03	
KR-87		7.14E-03	3.56E-03	2.96E-03	1.37E-02	
ZR-97		0.	0.	0.	0.	
NB-97		0.	0.	6.85E-05	6.85E-05	
XE-133M		2.94E-04	3.73E-03	4.72E-03	8.74E-03	
I-132		0.	8.58E-05	1.84E-04	2.70E-04	
CS-136		0.	0.	0.	0.	
KR-85M		1.07E-04	1.54E-04	4.97E-05	3.11E-04	
KR-88		0.	0.	7.87E-05	7.87E-05	
ZN-65		6.22E-04	0.	5.44E-05	6.76E-04	
SR-90		0.	0.	0.	0.	
SR-92		2.89E-05	4.51E-05	2.56E-05	9.96E-05	
CE-144		0.	4.86E-05	4.61E-05	9.47E-05	
MN-56		0.	0.	0.	0.	
MO-99		0.	0.	1.91E-05	1.91E-05	
SB-122		0.	0.	0.	0.	
AG-110M		0.	0.	0.	0.	
BA-139		2.96E-03	2.47E-03	3.99E-03	9.43E-03	
NB-95		0.	0.	0.	0.	
FE-59		1.46E-05	7.55E-05	6.18E-05	1.52E-04	
SB-124		2.83E-03	5.28E-04	1.65E-04	3.52E-03	
I-135		0.	0.	0.	0.	
N-187		2.41E-05	0.	0.	0.	
CS-135M		0.	0.	4.69E-05	7.11E-05	
XE-131M		0.	0.	0.	0.	
ZR-95		0.	0.	0.	0.	
NP-239		3.87E-06	5.21E-04	1.81E-04	7.06E-04	
CJ-57		0.	0.	0.	0.	
TC-99M		1.34E-04	7.01E-05	1.12E-04	3.16E-04	
NA-24		1.68E-04	7.12E-05	0.	2.39E-04	
CU-115M		1.84E-04	7.86E-05	0.	2.62E-04	
Y-92		5.01E-04	0.	0.	5.01E-04	
IN-115M		1.18E-06	0.	0.	1.18E-06	
CD-115		0.	2.79E-05	0.	2.79E-05	
CE-134		0.	5.19E-04	9.32E-04	1.45E-03	
AR-41		0.	3.17E-03	0.	3.17E-03	
I-134		0.	2.06E-05	0.	2.06E-05	
RB-88		0.	0.	1.42E-04	1.42E-04	
SN-125M		0.	0.	6.78E-04	6.78E-04	
CS-138		0.	0.	1.71E-04	1.71E-04	

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



WHAT IS THE INITIAL MONTH  
710

PLEASE ENTER HYDRO FLOW, SR-89, AND SR-90 ENTRIES  
IN THAT ORDER FOR THE THREE MONTHS IN QUESTION  
71.09E+11, 8.00E-08, 1.00E-08  
71.17E+11, 4.00E-07, 1.50E-08  
78.02E+10, 0.0, 0.0

RADIOACTIVE EFFLUENT RELEASES

YEAR 1976

1. LIQUID RELEASES		UNITS	OCTOBER	NOVEMBER	DECEMBER	SUB-TOTAL
1. GROSS RADIOACTIVITY						
A.	TOTAL RELEASE	CURIES	1.79E-01	4.14E-01	4.33E-01	1.03E+00
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	1.70E-09	3.54E-09	5.40E-09	3.55E-09
C.	MAXIMUM CONCENTRATION RELEASED	UCI/ML	2.15E-04	3.29E-04	4.34E-04	3.26E-04
2. TRITIUM						
A.	TOTAL RELEASE	CURIES	1.58E+02	2.12E+02	9.06E+01	4.61E+02
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	1.51E-06	1.81E-06	1.13E-06	1.48E-06
3. DISSOLVED NOBLE GASES						
A.	TOTAL RELEASE	CURIES	2.07E-02	6.48E-02	2.88E-02	1.14E-01
B.	AVERAGE CONCENTRATION RELEASED	UCI/ML	1.97E-10	5.54E-10	3.59E-10	3.70E-10
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	1.17E+06	1.77E+06	1.40E+06	4.33E+06
6. VOLUME OF DILUTION WATER		LITERS	1.05E+11	1.17E+11	8.02E+10	3.02E+11
7. ISOTOPES RELEASED		CURIES				
BA-LA-140						
	SR-89		0.	2.44E-03	5.04E-04	2.95E-03
	I-131		9.33E-05	8.12E-04	1.26E-03	2.17E-03
	I-133		9.47E-02	2.15E-01	1.56E-01	4.66E-01
	XE-133		1.51E-03	5.05E-03	4.54E-05	6.61E-03
	XE-135		1.84E-02	6.22E-02	2.86E-02	1.09E-01
	CS-137		2.21E-03	2.10E-03	1.24E-04	4.44E-03
	CS-134		2.35E-02	5.13E-02	4.35E-02	1.18E-01
	CO-60		1.39E-02	3.12E-02	3.19E-02	7.71E-02
	CO-58		7.15E-03	7.56E-03	4.62E-03	1.93E-02
	CR-51		2.48E-02	4.07E-02	5.13E-02	1.17E-01
	MN-54		2.65E-04	1.22E-02	1.72E-04	1.26E-02
	KR-87		2.21E-03	2.84E-03	1.32E-01	1.37E-01
	ZR-97		0.	0.	0.	0.
	NB-97		4.99E-05	0.	0.	4.99E-05
	XE-133M		1.06E-04	1.88E-04	0.	2.94E-04
	I-132		0.	2.01E-04	0.	2.01E-04
	CS-136		0.	0.	0.	0.
	KR-85M		1.69E-03	2.66E-03	5.95E-03	1.03E-02
	KR-88		5.28E-05	2.13E-04	0.	2.66E-04
	ZN-65		1.28E-05	1.34E-04	4.01E-05	1.87E-04
	SR-90		0.	0.	0.	0.
	SR-92		1.17E-05	2.65E-05	2.66E-05	6.48E-05
	CE-144		2.17E-04	1.51E-05	0.	2.32E-04
	MN-56		0.	0.	0.	0.
	MO-99		0.	0.	0.	0.
	SB-122		0.	1.65E-03	2.12E-03	3.77E-03
	AG-110M		0.	0.	0.	0.
	BA-139		2.47E-03	9.56E-04	2.85E-04	3.71E-03
	NB-95		0.	0.	0.	0.
	FE-59		1.46E-04	7.15E-04	7.77E-06	8.69E-04
	SB-124		1.87E-04	1.71E-04	6.14E-05	4.20E-04
	I-135		0.	0.	0.	0.
	M-187		4.65E-04	9.02E-06	0.	4.74E-04
	CS-135M		1.08E-04	0.	0.	1.08E-04
	XE-131M		0.	0.	0.	0.
	ZR-95		0.	0.	0.	0.
	NP-239		3.02E-04	5.14E-04	0.	8.16E-04
	CU-67		0.	0.	0.	0.
	TC-99M		7.04E-05	1.49E-05	0.	8.53E-05
	NA-24		1.34E-04	9.17E-04	4.31E-03	5.36E-03
	CO-115M		0.	1.16E-03	0.	1.16E-03
	Y-92		0.	0.	0.	0.
	IN-115M		0.	0.	0.	0.
	CO-115		0.	0.	0.	0.
	CE-134		0.	0.	3.51E-04	3.51E-04
	AR-41		0.	0.	0.	0.
	I-134		0.	0.	0.	0.
	NB-88		0.	0.	0.	0.
	SN-125M		4.36E-03	2.44E-02	0.	2.88E-02
	CS-138		0.	1.19E-02	0.	1.19E-02
			0.	0.	0.	0.

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