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OCONEE UNITS 1 - 3

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ENCLOSURE: License No. DPR-38, -47, & -55
Appl for Amend: tech specs proposed change concerning deleting the Appendix B Tech Specs in their entirely and revising Appendix A Tech Specs 3.9 "Release of Liquid Radioactive Waste" to incorp- limits on the low level radwaste discharge point... w/att Oconee Nuclear Station Environmental Summary Report 1971-1976, Volume 1 & 2...

2p + 1-3/4"

See Rpts

38 ENCL.

FOR ACTION/INFORMATION

BRANCH CHIEF: (7) SCHWENCER

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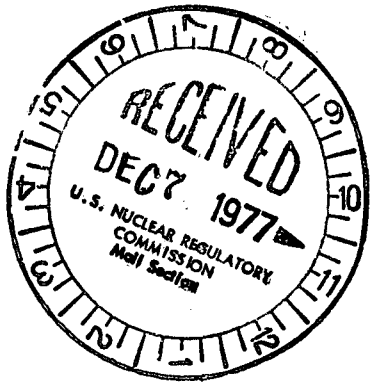
NRC FORM 195 (2-76)

DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

December 2, 1977

TELEPHONE: AREA 704
373-4083



Mr. Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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

Dear Sir:

The Oconee Nuclear Station Facility Operating Licenses DPR-38, -47, and -55 Appendix B "Non-Radiological Environmental Technical Specifications" were established to provide operational limits, programs for environmental surveillance, special studies and reporting requirements. The operational limits were to be in effect for the operating lifetime of the station. The surveillance programs and special studies were to continue in effect for the period of time necessary to determine the environmental impact of the station. A report summarizing the results of the environmental surveillance and study program was required to be submitted following the third anniversary of the last unit of Oconee Nuclear Station which was licensed to operate.

The attached "Oconee Nuclear Station Environmental Summary Report, 1971-1976" is provided to meet the requirements of Appendix B Technical Specifications 1.0.B. Based on the attached and semi-annual and annual reports submitted covering the period since 1973, it is our conclusion that no major adverse environmental impact has resulted or is likely to result from continued operation of the Oconee Nuclear Station. It is our conclusion that the degree of impact that has occurred has stabilized and is not likely to change significantly. The recommendations for continued surveillance contained in the summary report are considered to be within Duke's scope to obtain further refinements in the environmental effects on Lake Keowee. Technical Specifications are not considered necessary nor desirable, therefore, the requirements for environmental surveillance and study programs should be terminated.

Also, the South Carolina Department of Health and Environmental Control NPDES permit now establishes appropriate limits and monitoring requirements on all effluent points with the exception of the liquid radwaste discharge point.

In consideration of the above discussion and pursuant to the provisions of 10CFR 50.90, an amendment is requested to the Oconee Technical Specifications which will delete the Appendix B Technical Specifications in their entirely. In order to incorporate appropriate limits on the low level radwaste discharge point, changes are also requested to Appendix A Technical Specification 3.9 "Release of Liquid Radioactive Waste" as indicated on the attached Technical Specification revision page.

Very truly yours,

William O. Parker, Jr.

MST:ge
Attachment

cc: Mr. J. P. O'Reilly (2)

WILLIAM O. PARKER, JR., being duly sworn, states that he is Vice President of Duke Power Company; that he is authorized on the part of said Company to sign and file with the Nuclear Regulatory Commission this request for amendment of the Oconee Nuclear Station Facility Operating Licenses DPR-38, DPR-47, and DPR-55; and that all statements and matters set forth therein are true and correct to the best of his knowledge.

William O. Parker, Jr., Vice President

Subscribed and sworn to before me this 2nd day of December, 1977.

Notary Public

My Commission Expires:

Feb 15, 1982

3.9.3 The rate of release of radioactive materials in liquid waste from the station shall be controlled such that the instantaneous concentrations of radioactivity in liquid waste upon release from the Restricted Area, does not exceed the values listed in 10CFR20, Appendix B, Table II, Column 2.

3.9.4 The equipment installed in the liquid radioactive waste system shall be maintained and operated for the purposes of keeping releases within the objectives of these specifications and shall process all liquids prior to their discharge in order to limit the activity, excluding tritium and dissolved noble gases, released during any calendar quarter to 1.25 curies or less per unit.

3.9.5 As far as practicable, the releases of liquid waste shall be coordinated with the operation of the Keowee hydro unit.

3.9.6 Liquid waste discharged from the liquid waste disposal system shall be continuously monitored during release. The liquid effluent monitor reading shall be compared with the expected reading of each discharge batch. The monitor shall be tested daily or prior to releases and calibrated at refueling intervals. The calibration procedure shall consist of exposing the detector to a referenced calibration source in a controlled, reproductible geometry. The sources and geometry shall be referenced to the original monitor calibration which provides the applicable calibration curves.

3.9.7 The effluent control monitor shall be set to alarm and automatically close the waste discharge valve such that the appropriate requirements of the specification are met.

In the event that the effluent control monitor is inoperable or cannot be calibrated to perform this function, the following will be performed to assure that prescribed release limits are not exceeded: A redundant valve lineup check of the effluent pathway and redundant sample analyses will be performed prior to each liquid effluent release.

These additional actions will be applicable until December 1, 1976.

3.9.8 In addition to the continuous monitoring requirements, liquid radioactive waste sampling and activity analysis shall be performed in accordance with Table 4.1.3. Records shall be maintained and reports of the sampling and analysis shall be submitted in accordance with Section 6.6 of these Technical Specifications.

3.9.9 The rate of release of liquid waste shall be such that downstream incremental increases in concentration in the Hartwell Reservoir following dilution in the Keowee Tailrace do not exceed 1.0 ppm for boron.

Bases

It is expected that the releases of radioactive materials and liquid wastes will be kept within the design objective levels and will not exceed the concentration limits specified in 10CFR20. These levels provide the reasonable assurance that the resulting annual exposure to the whole body or any individual body organ will not exceed 5 millirem per year. At the same time, the licensee is permitted the flexibility of operation compatible with considerations of health and safety to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than design objective levels but still within the concentration limits specified in 10CFR20. It is expected that when using this operational flexibility under unusual operating conditions, the licensee shall exert every effort to keep the levels of radioactive materials and liquid wastes as low as practicable and that annual releases will not exceed a small fraction of the annual average concentration limits specified in 10CFR20.

The anticipated annual releases from the three Oconee units have been developed taking into account a combination of variables including fuel failures, primary system leakage, primary-to-secondary leakage, and the performance of the various waste treatment systems. The actual magnitude of these parameters are as follows:

a. Maximum expected reactor coolant corrosion product concentrations.
b. Reactor coolant fission product concentration corresponding to 0.25 percent fuel cladding defects.
c. Steam generator primary-to-secondary leakage rate of 20 gpd.
d. 255,160 gallons per year processed by the waste disposal system in a 30-day hold-up.
e. 1,060,800 gallons per year processed by the reactor coolant bleed treatment system.
f. A decontamination factor of 10^4 for all radionuclides except tritium for the coolant bleed and waste evaporators and a decontamination factor of 10 for the demineralizers except for tritium which had an assumed decontamination factor of 1 for evaporation-demineralization.
g. No removal by demineralization for Cs, Mo, and Y. A decontamination factor of 10^3 was used for the evaporation of iodine.
h. The decay time of the reactor coolant bleed system was 30 days.

The application of the above estimates results in the radionuclide discharge concentrations and rates shown in Table III-12 of the "Final Environmental Statement Related to Operation of Oconee Nuclear Station Units 1, 2, and 3". These concentrations are based on an annual average flow in the Keowee River of 1,100 cfs.

Operating procedures will identify all equipment installed in the liquid waste handling and treatment systems and will specify detailed procedures for operating and maintaining this equipment.

The lowest practicable liquid release objectives expressed in this specification are based on the guidelines contained in the proposed Appendix I of 10CFR50. Since these guidelines have not been adopted as yet, the release objectives of this specification will be reviewed at the time Appendix I becomes a regulation to assure that this specification is based upon the guidelines contained therein.

DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

Central Files
50-269
270
287

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

August 29, 1977

TELEPHONE: AREA 704
373-4083

Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Suite 1217
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

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

Dear Mr. O'Reilly:

Pursuant to 10CFR50.36a and Oconee Technical Specification 6.6.1.2(c), please find attached the Liquid and Gaseous Radioactive Effluent Summaries for the first half of 1977. Additionally, revised Liquid and Gaseous Effluent Summaries for 1976 are also provided.

Very truly yours,

William O. Parker, Jr.

MST:ge
Attachment

cc: Mr. Ernst Volgenau

EC
1
B

Table 2.7-1

Radioactive Effluent Releases

YEAR 1976

II. Airborne Releases

	Units	January	February	March	April	May	June	Sub-Total
1. Total noble gases	Curies	1.15×10^{3}	2.51×10^{3}	9.62×10^{2}	1.08×10^{3}	1.93×10^{3}	8.21×10^{2}	8.45×10^{3}
2. Total halogens	Curies	1.91×10^{-1}	1.15×10^{-2}	4.33×10^{-3}	6.85×10^{-3}	1.20×10^{-3}	1.43×10^{-3}	2.16×10^{-1}
3. Total particulate gross radioactive (β,γ)	Curies	1.02×10^{-3}	6.95×10^{-4}	1.21×10^{-3}	5.36×10^{-4}	2.20×10^{-4}	1.44×10^{-4}	3.83×10^{-3}
4. Total tritium	Curies	1.11×10^{2}	3.15×10	3.68×10	8.08×10	8.80×10	1.86×10	3.67×10^{2}
5. Total particulate gross alpha radioactivity	Curies	0	0	0	0	0	0	0
6. Maximum noble-gas release-rate	uCi/sec	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}
7. Percent of applicable limit for:								
a. noble gases	%	2.26	4.92	1.89	2.11	3.79	1.61	1.66×10
b. halogens	%	25.83	2.56	1.11	1.63	3.16×10^{-1}	2.43×10^{-1}	31.69
c. particulates	%	9.27×10^{-2}	6.32×10^{-2}	1.10×10^{-1}	4.87×10^{-2}	2.00×10^{-2}	1.31×10^{-2}	3.48×10^{-1}
8. Isotopes released Particulates	Curies							
Cs-137		2.12×10^{-4}	3.51×10^{-5}	3.25×10^{-4}	1.39×10^{-5}	1.47×10^{-5}		6.01×10^{-4}
Ba-La-140		1.86×10^{-4}	2.15×10^{-4}	2.20×10^{-4}	2.83×10^{-5}	2.95×10^{-5}	2.64×10^{-5}	7.05×10^{-4}
Sr-90		1.75×10^{-7}	1.75×10^{-7}	1.75×10^{-7}	1.85×10^{-7}	1.85×10^{-7}	1.85×10^{-7}	1.08×10^{-6}
Cs-134		1.42×10^{-4}	1.80×10^{-5}	1.93×10^{-4}	6.05×10^{-6}	2.56×10^{-6}		3.62×10^{-4}
Sr-89		1.79×10^{-6}	1.79×10^{-6}	1.79×10^{-6}				5.37×10^{-6}
Co-58		2.54×10^{-4}	1.61×10^{-4}	2.07×10^{-4}	2.79×10^{-4}	7.65×10^{-5}	5.59×10^{-5}	1.03×10^{-3}
Cs-136		1.46×10^{-5}	4.02×10^{-6}	1.59×10^{-5}				3.45×10^{-5}
Cs-138								
Mn-54		1.99×10^{-5}	3.96×10^{-5}	3.55×10^{-5}	2.35×10^{-5}	1.86×10^{-5}	5.44×10^{-6}	1.43×10^{-4}
Mo-99								
Nb-95								
Co-60		9.78×10^{-5}	2.20×10^{-4}	1.77×10^{-4}	1.39×10^{-4}	6.72×10^{-6}	4.69×10^{-5}	7.48×10^{-4}
Na-24								
Ag-110m		3.46×10^{-6}		3.02×10^{-5}	1.30×10^{-5}	1.10×10^{-6}	9.50×10^{-6}	6.72×10^{-5}
Cr-51		9.16×10^{-5}			3.27×10^{-5}			1.24×10^{-4}
Sn-123m								
Tc-99m								
Up-239								
Ce-144								
Zr-97								
Mn-56								
Ag-108								
Sr-91								
Cd-115								
Rb-88								
Halogens								
I-131		6.80×10^{-2}	9.15×10^{-3}	4.18×10^{-3}	5.99×10^{-3}	1.20×10^{-3}	7.59×10^{-4}	8.93×10^{-2}
I-133		1.23×10^{-1}	2.38×10^{-3}	1.53×10^{-4}	8.61×10^{-4}		6.69×10^{-4}	1.27×10^{-1}
I-135		1.65×10^{-4}	1.28×10^{-5}					1.78×10^{-4}
I-132		2.70×10^{-5}						2.70×10^{-7}
Gases								
Kr-85		5.47×10^{-1}	1.94	7.01	3.83×10^{-1}			8.97
Xe-133		1.05×10^{3}	2.38×10^{3}	8.41×10^{2}	1.05×10^{3}	1.92×10^{3}	7.52×10^{2}	7.99×10^{3}
Kr-88		1.69×10	4.91×10^{-1}	2.44×10^{-1}	7.33×10^{-2}	8.45	1.34	2.75×10
Kr-87		7.74×10^{-2}						7.74×10^{-2}
Kr-85m		1.90	2.70	3.22×10^{-1}	1.15×10^{-1}	1.28×10^{-1}	5.82	1.10×10
Xe-138			1.96×10^{-2}		9.52×10^{-3}			2.91×10^{-2}
Xe-135m		5.56×10^{-2}						5.56×10^{-2}
Xe-135		3.01 x 10	3.75 x 10	9.68	8.19	1.67×10^{-2}	4.19 x 10	1.27×10^{2}
Ar-41		4.13 x 10	7.03 x 10	1.02×10^{2}	1.66×10	3.71×10^{-1}	5.98	2.37×10^{2}
Xe-133m		9.53	9.75	1.77	1.28	3.09×10^{-1}	1.35×10	3.61×10
Xe-131m		7.12×10^{-1}	4.75×10^{-1}	2.75×10^{-1}	8.25×10^{-2}	2.79×10^{-2}		1.57

Table 2.7-1

Radioactive Effluent Releases

Year 1976

orne Releases

	Units	July	August	September	October	November	December	Sub-Total	Total
noble gases	Curies	5.24×10^{2}	3.21×10^{3}	5.69×10^{3}	3.60×10^{3}	5.70×10^{3}	1.68×10^{4}	3.55×10^{4}	4.40×10^{4}
halogens	Curies	3.06×10^{-3}	9.64×10^{-2}	2.11×10^{-2}	5.89×10^{-2}	4.95×10^{-2}	7.92×10^{-2}	3.08×10^{-1}	5.24×10^{-1}
particulate gross activity (β,γ)	Curies	7.37×10^{-4}	5.64×10^{-4}	4.05×10^{-4}	8.47×10^{-4}	4.48×10^{-2}	3.56×10^{-1}	4.03×10^{-1}	4.07×10^{-1}
tritium	Curies	3.71	6.04×10	2.92×10	1.21×10	1.09×10	1.89×10	1.35×10^{2}	5.02×10^{2}
particulate gross radioactivity	Curies	0	0	0	0	0	0	0	0
ium noble-gas ase-rate	μCi/sec	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}	1.60×10^{3}
nt of applicable for:									
oble gases	%	1.03	6.30	1.12×10	7.06	1.12×10	3.29×10	6.88×10	8.62×10
alogens	%	6.01×10^{-4}	7.39	3.79	14.68	10.50	17.14	54.23	85.92
articulates	%	6.70×10^{-2}	5.13×10^{-2}	3.68×10^{-2}	7.70×10^{-2}	4.07	3.24×10	3.67×10	3.71×10
pes released iculates	Curies								
s-137		5.22×10^{-5}	3.83×10^{-5}	6.74×10^{-5}	6.73×10^{-5}	2.72×10^{-4}	1.36×10^{-4}	1.04×10^{-3}	1.64×10^{-3}
a-La-140		1.18×10^{-4}	1.28×10^{-4}		8.54×10^{-6}	2.48×10^{-6}		2.57×10^{-4}	9.62×10^{-4}
r-90					2.48×10^{-6}	2.48×10^{-6}	2.48×10^{-6}	7.44×10^{-6}	8.52×10^{-6}
s-134		1.78×10^{-5}	1.95×10^{-5}	5.94×10^{-5}	4.66×10^{-5}	1.45×10^{-4}	1.14×10^{-4}	4.02×10^{-4}	7.64×10^{-4}
r-89					3.24×10^{-4}	3.24×10^{-4}	3.24×10^{-4}	9.72×10^{-4}	9.77×10^{-4}
o-58		7.82×10^{-5}	7.18×10^{-5}	1.56×10^{-4}	8.23×10^{-5}	4.97×10^{-4}	1.54×10^{-4}	1.04×10^{-3}	2.07×10^{-3}
s-136							5.12×10^{-8}	5.12×10^{-8}	3.46×10^{-5}
s-138					9.27×10^{-5}	1.60×10^{-2}	8.53×10^{-5}	1.62×10^{-2}	1.62×10^{-2}
n-54			9.55×10^{-5}	3.28×10^{-5}	1.82×10^{-5}	8.55×10^{-5}	2.76×10^{-6}	2.35×10^{-4}	3.78×10^{-4}
o-99							9.73×10^{-6}	9.73×10^{-6}	9.73×10^{-6}
b-95									
o-60		6.92×10^{-5}	1.85×10^{-4}	8.96×10^{-5}	7.47×10^{-5}	3.20×10^{-4}	6.36×10^{-5}	8.02×10^{-4}	1.55×10^{-3}
a-24									
g-110m		9.19×10^{-6}	2.63×10^{-5}		5.96×10^{-6}		2.13×10^{-6}	4.36×10^{-5}	1.11×10^{-4}
r-51							3.66×10^{-5}	3.66×10^{-5}	1.61×10^{-4}
n-123m									
c-99m							3.54×10^{-1}	3.54×10^{-1}	3.54×10^{-1}
p-239		2.01×10^{-5}						2.01×10^{-5}	2.01×10^{-5}
e-144		1.00×10^{-5}						1.00×10^{-5}	1.00×10^{-5}
r-97		3.62×10^{-4}						3.62×10^{-4}	3.62×10^{-4}
n-56							3.34×10^{-6}	3.34×10^{-6}	3.34×10^{-6}
g-108m							1.63×10^{-7}	1.63×10^{-7}	1.63×10^{-7}
r-91						2.56×10^{-2}		2.56×10^{-2}	2.56×10^{-2}
d-115						1.51×10^{-3}		1.51×10^{-3}	1.51×10^{-3}
b-88					1.24×10^{-4}	2.99×10^{-5}	6.87×10^{-4}	8.41×10^{-4}	8.41×10^{-4}
a-139							2.93×10^{-6}	2.93×10^{-6}	2.93×10^{-6}
gens									
-131		2.03×10^{-3}	5.95×10^{-3}	1.22×10^{-2}	5.48×10^{-2}	3.77×10^{-2}	6.06×10^{-2}	1.73×10^{-1}	2.62×10^{-1}
-133		1.03×10^{-3}	9.04×10^{-2}	8.92×10^{-3}	4.02×10^{-3}	1.18×10^{-2}	1.85×10^{-2}	1.35×10^{-1}	2.62×10^{-1}
-135					4.01×10^{-6}		6.64×10^{-6}	1.07×10^{-5}	1.89×10^{-4}
-132					2.06×10^{-5}		6.01×10^{-5}	8.07×10^{-5}	2.70×10^{-4}
-134					2.28×10^{-5}		4.60×10^{-6}	2.74×10^{-5}	2.74×10^{-5}
e									
Kr-85		5.13×10^{-2}	7.95×10^{-1}	1.70	3.01	5.58×10^{-1}	1.96×10	2.57×10	3.47×10
Xe-133		4.73×10^{2}	3.07×10^{3}	5.41×10^{3}	3.44×10^{3}	5.29×10^{3}	1.64×10^{4}	3.41×10^{4}	4.21×10^{4}
Kr-88		3.44×10^{-2}	3.53	2.55 x 10	2.57	2.99 x 10	1.12	8.58 x 10	1.13×10^{2}
Kr-87		2.42×10^{-1}	3.69×10^{-1}	2.41	7.67×10^{-1}	2.29 x 10	1.04×10^{-1}	2.68 x 10	2.69 x 10
Kr-85m		7.50×10^{-1}	7.07	1.37 x 10	5.50	4.27 x 10	1.60	7.13 x 10	8.23 x 10
Xe-138		4.30			8.43×10^{-2}		7.54×10^{-2}	4.46	4.49
Xe-135m			1.30		2.39×10^{-1}		8.26×10^{-2}	1.62	1.68
Xe-135		2.77 x 10		1.77×10^{2}	1.12×10^{2}	2.68×10^{2}	1.62×10^{2}	8.48×10^{2}	9.77×10^{2}
Ar-41		1.01 x 10	1.01×10^{2}	2.61	2.22×10^{-2}	3.62	2.38×10^{-2}	1.80 x 10	2.55 x 10
Xe-133m		7.97	1.63	5.49 x 10	3.45 x 10	4.31 x 10	1.39×10^{2}	3.10×10^{2}	4.61×10^{2}
Xe-131m		3.27×10^{-2}	3.09 x 10	4.31×10^{-1}			2.01×10^{-2}	4.74×10^{-1}	2.04
Xe-137							5.05×10^{-4}	5.05×10^{-4}	5.05×10^{-4}

Radioactive Effluent Releases

I. Liquid Releases

	Units	Jan.-June 1st 6 months	July-Dec. 2nd 6 months	1976 TOTAL
1. Gross radioactivity (β,γ)				
a. total release	Curies	6.33	1.60	7.93
b. average concentration released	μCi/ml	7.72×10^{-9}	9.34×10^{-9}	8.53×10^{-9}
c. maximum concentration released	μCi/ml	2.09×10^{-6}	5.24×10^{-7}	1.27×10^{-6}
2. Tritium				
a. total release	Curies	1.27×10^{3}	9.20×10^{2}	2.19×10^{3}
b. average concentration released	μCi/ml	1.84×10^{-6}	1.99×10^{-6}	1.81×10^{-6}
3. Dissolved noble gases				
a. total release	Curies	1.08	1.88×10^{-1}	1.27
b. average concentration released	μCi/ml	1.61×10^{-9}	4.07×10^{-10}	1.05×10^{-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	9.38×10^{6}	1.01×10^{7}	1.95×10^{7}
6. Volume of dilution water	Liters	7.46×10^{11}	4.62×10^{11}	1.21×10^{12}
7. Isotopes released	Curies			
Ba-La-140		1.51×10^{-2}	3.10×10^{-3}	1.82×10^{-2}
Sr-89		7.76×10^{-3}	2.64×10^{-3}	1.04×10^{-2}
I-131		1.33	5.75×10^{-1}	1.91
I-133		6.02×10^{-2}	2.05×10^{-2}	8.07×10^{-2}
Xe-133		1.05	1.76×10^{-1}	1.23
Xe-135		2.94×10^{-2}	1.02×10^{-2}	3.96×10^{-2}
Cs-137		9.04×10^{-1}	1.40×10^{-1}	1.04
Cs-134		5.97×10^{-1}	8.85×10^{-2}	6.86×10^{-1}
Co-60		3.04×10^{-1}	6.38×10^{-2}	3.68×10^{-1}
Co-58		1.76	2.51×10^{-1}	2.01
Cr-51		5.46×10^{-2}	2.18×10^{-2}	7.64×10^{-2}
Mn-54		8.03×10^{-2}	1.51×10^{-1}	2.31×10^{-1}
Ag-108m		2.48×10^{-5}	0	2.48×10^{-5}
Zr-97		3.81×10^{-6}	1.18×10^{-4}	1.22×10^{-4}
Nb-97		1.20×10^{-2}	9.03×10^{-3}	2.10×10^{-2}
Na-24		5.86×10^{-3}	1.42×10^{-3}	7.28×10^{-3}
Xe-133m		3.12×10^{-3}	4.71×10^{-4}	3.59×10^{-3}
I-132		3.24×10^{-4}	0	3.24×10^{-4}
Cs-136		3.61×10^{-2}	1.06×10^{-2}	4.67×10^{-2}
Kr-85m		3.31×10^{-6}	3.45×10^{-4}	3.48×10^{-4}
Kr-88		2.10×10^{-3}	8.63×10^{-4}	2.96×10^{-3}
Zn-65		1.95×10^{-5}	0	1.95×10^{-5}
Sr-90		4.85×10^{-4}	1.65×10^{-4}	6.50×10^{-4}
Sr-92		-	3.28×10^{-4}	3.28×10^{-4}
Ce-144		1.29×10^{-4}	0	1.29×10^{-4}
Mn-56		2.80×10^{-4}	1.91×10^{-5}	2.99×10^{-4}
Mo-99		2.16×10^{-3}	3.77×10^{-3}	5.93×10^{-3}
Y-92		-	1.18×10^{-6}	1.18×10^{-6}
Ag-110m		1.99×10^{-2}	1.31×10^{-2}	3.30×10^{-2}
Ba-139		3.42×10^{-4}	0	3.42×10^{-4}
Nb-95		1.22×10^{-3}	1.02×10^{-3}	2.24×10^{-3}
Fe-59		2.18×10^{-3}	3.94×10^{-3}	6.12×10^{-3}
Co-57		7.82×10^{-4}	4.01×10^{-4}	1.18×10^{-3}
Xe-131m		3.97×10^{-4}	0	3.97×10^{-4}
Zr-95		2.23×10^{-4}	1.52×10^{-3}	1.74×10^{-3}
I-134		2.44×10^{-5}	1.42×10^{-4}	1.66×10^{-4}
In-115m		4.69×10^{-4}	2.79×10^{-5}	5.00×10^{-4}
Tc-99m		4.65×10^{-2}	5.60×10^{-3}	5.21×10^{-2}
Cd-115		2.35×10^{-3}	1.80×10^{-3}	4.15×10^{-3}
Sn-125m		2.98×10^{-3}	1.21×10^{-2}	1.51×10^{-2}
Ru-103		4.79×10^{-5}	0	4.79×10^{-5}
I-135		-	5.45×10^{-4}	5.45×10^{-4}
W-187		-	1.08×10^{-4}	1.08×10^{-4}
Cd-115m		-	5.01×10^{-4}	5.01×10^{-4}
Ce-134		-	3.17×10^{-3}	3.17×10^{-3}
Ar-41		-	2.06×10^{-5}	2.06×10^{-5}
Rb-88		-	2.95×10^{-2}	2.95×10^{-2}
Ni-65		1.84×10^{-5}		
Np-239		1.95×10^{-5}		
8. Percent of Technical Specifications limit (15 Ci) for total activity released.		**42.2**	**10.71**	**52.9**

RADIOACTIVE EFFLUENT RELEASES — YEAR 1977

LIQUID RELEASES

	UNITS	JANUARY	FEBRUARY	MARCH	SUB-TOTAL
GROSS RADIOACTIVITY					
A. TOTAL RELEASE	CURIES	3.39E+00	3.03E-01	3.68E-01	4.06E+00
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	2.71E-08	5.74E-08	3.07E-09	4.62E-08
C. MAXIMUM CONCENTRATION RELEASED	UCI/ML	5.96E-08	5.74E-08	5.78E-08	3.35E-08
TRITIUM					
A. TOTAL RELEASE	CURIES	2.27E+02	1.87E+02	3.09E+02	7.23E+02
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	1.81E-06	3.55E-05	2.57E-06	2.89E-06
DISSOLVED NOBLE GASES					
A. TOTAL RELEASE	CURIES	1.79E+00	1.87E-01	3.49E-02	2.01E+00
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	1.43E-08	3.53E-08	2.91E-10	8.02E-09
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	2.11E+08	2.15E+08	2.36E+07	4.49E+08
VOLUME OF DILUTION WATER	LITERS	1.25E+11	5.28E+09	1.20E+11	2.50E+11
ISOTOPES RELEASED	CURIES				
BA-LA-140		7.76E-04	2.93E-04	5.46E-04	1.61E-03
SR-89		1.62E-01	1.08E-01	3.54E-03	2.73E-01
I-131		2.66E+00	1.47E-01	1.14E-01	2.92E+00
I-133		5.74E-03	2.32E-03	5.57E-03	1.36E-02
XE-133		1.53E+00	1.68E-01	3.32E-02	1.74E+00
XE-135		1.88E-01	1.59E-02	1.66E-03	2.05E-01
CS-137		3.20E-01	2.13E-02	1.17E-01	4.58E-01
CS-134		2.16E-01	1.22E-02	5.94E-02	2.87E-01
CO-60		3.03E-03	3.28E-03	6.76E-03	1.31E-02
CO-58		1.58E-02	4.12E-03	5.00E-02	7.00E-02
CR-51		2.15E-04	7.08E-05	3.63E-03	3.92E-03
MN-54		1.45E-03	5.54E-04	2.22E-03	4.23E-03
KR-87		0.	1.57E-05	0.	1.57E-05
ZR-97		0.	0.	0.	0.
NB-97		0.	1.84E-04	1.13E-03	1.31E-03
XE-133M		0.	0.	0.	0.
I-132		0.	0.	0.	0.
CS-136		2.36E-03	3.87E-04	3.96E-04	3.14E-03
KR-85M		2.20E-03	6.10E-06	0.	2.21E-03
KR-88		1.01E-03	0.	0.	1.01E-03
ZN-65		0.	0.	0.	0.
SR-90		4.63E-03	2.80E-03	0.	7.43E-03
SR-92		0.	0.	0.	0.
CE-144		0.	0.	0.	0.
MN-56		0.	0.	0.	0.
MO-99		0.	7.70E-06	0.	7.70E-06
SB-122		0.	0.	0.	0.
AG-110M		3.13E-04	2.18E-04	9.82E-04	1.51E-03
BA-139		0.	0.	0.	0.
NB-95		0.	1.48E-05	1.21E-07	1.49E-05
FE-59		9.62E-06	0.	3.30E-04	3.39E-04
SB-124		0.	0.	0.	0.
I-135		0.	0.	0.	0.
W-187		0.	0.	0.	0.
XE-131M		5.98E-02	2.40E-03	0.	6.22E-02
ZR-95		0.	1.41E-05	1.70E-04	1.85E-04
NP-239		0.	0.	0.	0.
CO-57		3.58E-04	0.	1.25E-04	4.83E-04
TC-99M		1.90E-04	6.19E-05	6.35E-05	3.15E-04
NA-24		5.10E-04	6.48E-05	0.	5.75E-04
CD-115M		0.	0.	0.	0.
Y-92		0.	0.	0.	0.
IN-115M		0.	0.	0.	0.
CD-115		6.61E-04	7.10E-04	7.46E-04	2.12E-03
CE-134		0.	0.	7.50E-04	7.50E-04
AR-41		0.	1.63E-05	0.	1.63E-05
I-134		0.	0.	0.	0.
RB-88		3.45E-03	3.47E-04	1.34E-03	5.14E-03
SN-125M		0.	0.	0.	0.
CS-138		0.	0.	1.56E-04	1.56E-04
PERCENT OF TECHNICAL SPECIFICATIONS LIMIT (15 CI) FOR TOTAL ACTIVITY RELEASED		2.26E+01	2.02E+00	2.45E+00	2.71E+01

LIQUID RELEASES

	UNITS	APRIL	MAY	JUNE	SUB-TOTAL
GROSS RADIOACTIVITY					
A. TOTAL RELEASE	CURIES	3.72E-01	2.58E+00	1.73E+00	3.67E+00
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	2.35E-09	2.50E-08	2.31E-08	1.24E-08
C. MAXIMUM CONCENTRATION RELEASED	UCI/ML	4.62E-07	1.09E-07	9.14E-09	7.80E-08
TRITIUM					
A. TOTAL RELEASE	CURIES	2.19E+02	1.33E+02	2.03E+02	5.54E+02
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	1.39E-06	2.11E-06	2.71E-06	1.88E-06
DISSOLVED NOBLE GASES					
A. TOTAL RELEASE	CURIES	8.93E-02	3.72E-01	1.12E+01	1.17E+01
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	5.65E-10	5.92E-09	1.50E-07	3.95E-08
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	2.98E+06	5.37E+07	7.00E+08	7.56E+08
VOLUME OF DILUTION WATER	LITERS	1.58E+11	6.29E+10	7.47E+10	2.96E+11
ISOTOPES RELEASED	CURIES				
BA-LA-140		1.32E-04	4.97E-03	4.44E-03	9.54E-03
SR-89		8.93E-04	7.52E-02	3.08E-01	3.84E-01
I-131		9.95E-02	5.41E-01	1.59E-01	8.00E-01
I-133		1.11E-02	3.53E-02	1.76E-02	6.39E-02
XE-133		8.58E-02	3.67E-01	1.09E+01	1.13E+01
XE-135		2.43E-03	2.98E-03	1.61E-01	1.67E-01
CS-137		1.38E-01	4.72E-01	3.87E-01	9.97E-01
CS-134		8.92E-02	3.04E-01	2.58E-01	6.52E-01
CO-60		5.02E-03	1.91E-02	6.36E-02	8.77E-02
CO-58		2.21E-02	7.19E-02	3.04E-01	3.98E-01
CR-51		2.74E-04	8.26E-03	2.26E-02	3.11E-02
MN-54		1.49E-03	3.91E-03	1.39E-02	1.93E-02
KR-87		0.	0.	0.	0.
ZR-97		0.	3.00E-05	0.	3.00E-05
NB-97		0.	1.49E-03	4.51E-03	6.01E-03
XE-133M		6.49E-04	8.87E-04	1.01E-01	1.03E-01
I-132		0.	5.54E-04	1.74E-04	7.28E-04
CS-136		1.51E-03	7.85E-03	6.97E-03	1.63E-02
KR-85M		2.34E-04	1.09E-04	1.84E-03	2.18E-03
KR-88		2.91E-05	0.	9.94E-04	1.02E-03
ZN-65		0.	0.	0.	0.
SR-90		3.28E-05	3.11E-03	1.68E-02	1.99E-02
SR-92		0.	0.	0.	0.
CE-144		0.	3.05E-05	2.49E-02	2.49E-02
MN-56		4.10E-06	0.	0.	4.10E-06
MO-99		0.	3.16E-03	1.71E-02	2.03E-02
SB-122		0.	0.	0.	0.
AG-110M		5.81E-04	3.50E-03	8.44E-03	1.25E-02
BA-139		0.	0.	0.	0.
NB-95		1.46E-05	8.98E-05	0.	1.04E-04
FE-59		0.	1.32E-05	2.17E-02	2.17E-02
SB-124		0.	0.	0.	0.
I-135		1.56E-04	0.	1.30E-03	1.46E-03
W-187		0.	0.	0.	0.
XE-131M		0.	1.15E-03	4.00E-02	4.12E-02
ZR-95		3.06E-05	3.78E-04	3.82E-04	7.90E-04
NP-239		0.	0.	0.	0.
CO-57		0.	5.40E-06	8.94E-04	9.00E-04
TC-99M		2.81E-04	7.70E-03	1.45E-03	9.43E-03
NA-24		0.	0.	1.10E-03	1.10E-03
CD-115M		0.	0.	2.35E-04	2.35E-04
Y-92		0.	0.	0.	0.
IN-115M		0.	2.60E-05	0.	2.60E-05
CD-115		3.82E-04	4.69E-04	0.	8.51E-04
CE-134		0.	0.	0.	0.
AR-41		0.	0.	2.14E-03	2.14E-03
I-134		5.46E-06	0.	0.	5.46E-06
RB-88		6.83E-04	9.26E-04	5.00E-02	5.16E-02
SN-125M		0.	0.	4.51E-05	4.51E-05
CS-138		0.	0.	0.	0.
KR-85		0.	9.20E-03	1.61E-02	2.53E-02
RU-103		0.	0.	6.46E-06	6.46E-06
SB-125		0.	3.62E-05	1.29E-02	1.29E-02
SN-125		0.	6.21E-05	2.21E-02	2.22E-02
PERCENT OF TECHNICAL SPECIFICATIONS LIMIT (15 CI) FOR TOTAL ACTIVITY RELEASED		2.48E+00	1.05E+01	1.15E+01	2.45E+01

RADIOACTIVE EFFLUENT RELEASES — YEAR 1977

LIQUID RELEASES

	UNITS	1st QUARTER	2nd QUARTER	SUB-TOTAL
GROSS RADIOACTIVITY				
A. TOTAL RELEASE	CURIES	4.06E+00	3.67E+00	7.73E+00
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	1.62E-08	1.24E-08	1.42E-08
C. MAXIMUN CONCENTRATION RELEASED	UCI/ML	3.35E-08	1.80E-08	2.38E-08
TRITIUM				
A. TOTAL RELEASE	CURIES	7.23E+02	5.54E+02	1.28E+03
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	2.89E-06	1.88E-06	2.34E-06
DISOLVED NOBLE GASES				
A. TOTAL RELEASE	CURIES	2.01E+00	1.17E+01	1.37E+01
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	8.02E-09	3.95E-08	2.51E-08
GROSS ALPHA RADIOACTIVITY				
A. TOTAL RELEASE	CURIES	0.	0.	0.
B. AVERAGE CONCENTRATION RELEASED	UCI/ML	0.	0.	0.
VOLUME OF LIQUID WASTE DISCHARGE CANAL	LITERS	4.49E+08	7.56E+08	1.21E+09
VOLUME OF DILUTION WATER	LITERS	2.50E+11	2.96E+11	5.46E+11
ISOTOPES RELEASED	CURIES			
BA-LA-140		1.61E-03	9.54E-03	1.12E-02
SR-89		2.73E-01	3.84E-01	6.57E-01
I-131		2.92E+00	8.00E-01	3.72E+00
I-133		1.36E-02	6.39E-02	7.75E-02
XE-133		1.74E+00	1.13E+01	1.30E+01
XE-135		2.05E-01	1.67E-01	3.72E-01
CS-137		4.58E-01	9.97E-01	1.45E+00
CS-134		2.87E-01	6.52E-01	9.39E-01
CO-60		1.31E-02	8.77E-02	1.01E-01
CO-58		7.00E-02	3.98E-01	4.68E-01
CR-51		3.92E-03	3.11E-02	3.50E-02
MN-54		4.23E-03	1.93E-02	2.35E-02
KR-87		1.57E-05	0.	1.57E-05
ZR-97		0.	3.00E-05	3.00E-05
NB-97		1.31E-03	6.01E-03	7.32E-03
XE-133M		0.	1.03E-01	1.03E-01
I-132		0.	7.28E-04	7.28E-04
CS-136		3.14E-03	1.63E-02	1.94E-02
KR-85M		2.21E-03	2.18E-03	4.39E-03
KR-88		1.01E-03	1.02E-03	2.03E-03
ZN-65		0.	0.	0.
SR-90		7.43E-03	1.99E-02	2.73E-02
SR-92		0.	0.	0.
CE-144		0.	2.49E-02	2.49E-02
MN-56		0.	4.10E-06	4.10E-06
MO-99		7.70E-06	2.03E-02	2.03E-02
SB-122		0.	0.	0.
AG-110M		1.51E-03	1.25E-02	1.40E-02
BA-139		0.	0.	0.
NB-95		1.49E-05	1.04E-04	1.19E-04
FE-59		3.39E-04	2.17E-02	2.20E-02
SB-124		0.	0.	0.
I-135		0.	1.46E-03	1.46E-03
W-187		0.	0.	0.
XE-131M		6.22E-02	4.12E-02	1.03E-01
ZR-95		1.85E-04	7.90E-04	9.75E-04
NP-239		0.	0.	0.
CO-57		4.83E-04	9.00E-04	1.38E-03
TC-99M		3.15E-04	9.43E-03	9.74E-03
NA-24		5.75E-04	1.10E-03	1.67E-03
CD-115M		0.	2.35E-04	2.35E-04
Y-92		0.	0.	0.
IN-115M		0.	2.60E-05	2.60E-05
CD-115		2.12E-03	8.51E-04	2.97E-03
CE-134		7.50E-04	0.	7.50E-04
AR-41		1.63E-05	2.14E-03	2.16E-03
I-134		0.	5.46E-06	5.46E-06
RB-88		5.14E-03	5.16E-02	5.67E-02
SN-125M		0.	4.51E-05	4.51E-05
CS-138		1.56E-04	0.	1.56E-04
KR-85		0.	2.53E-02	2.53E-02
RU-103		0.	6.46E-06	6.46E-06
SB-125		0.	1.29E-02	1.29E-02
SN-125		0.	2.22E-02	2.22E-02

3. PERCENT OF TECHNICAL SPECIFICATIONS

RADIOACTIVE EFFLUENT RELEASES

YEAR 1977

AIRBORNE RELEASES	UNITS	JANUARY	FEBRUARY	MARCH	SUB-TOTAL
TOTAL NOBLE GASES	CURIES	4.53E+03	2.63E+03	8.27E+03	1.54E+04
TOTAL HALOGENS	CURIES	6.98E-03	1.83E-02	1.62E-02	4.15E-02
TOTAL PARTICULATE GROSS BETA-GAMMA	CURIES	2.12E-03	1.18E-04	9.91E-05	2.34E-03
TOTAL TRITIUM	CURIES	3.45E+00	8.21E+00	3.15E+00	1.48E+01
TOTAL PARTICULATE GROSS ALPHA ACTIVITY	CURIES	0.	0.	0.	0.
MAXIMUM NOBLE GAS RELEASE RATE	UCI/SEC	1.60E+03	1.60E+03	1.60E+03	1.60E+03
PERCENT OF APPLICABLE LIMIT FOR:					
A. NOBLE GASES	%	8.88E+00	5.16E+00	1.62E+01	3.02E+01
B. HALOGENS	%	1.84E+00	4.82E+00	4.27E+00	1.09E+01
C. PARTICULATES	%	1.93E-01	1.07E-02	9.01E-03	2.12E-01
ISOTOPES RELEASED	CURIES				
PARTICULATES					
CS-137		2.43E-07	5.97E-09	6.56E-07	9.05E-07
BA-LA-140		6.02E-07	0.	0.	6.02E-07
SR-90		8.17E-08	5.96E-08	7.39E-08	2.15E-07
CS-134		1.63E-07	0.	3.28E-07	4.91E-07
SR-89		3.10E-06	2.75E-06	7.62E-07	6.61E-06
CO-58		0.	0.	6.72E-07	6.72E-07
CS-136		0.	0.	0.	0.
CS-138		3.65E-04	2.19E-05	2.80E-05	4.15E-04
MN-54		1.44E-07	0.	0.	1.44E-07
MO-99		0.	0.	0.	0.
NB-95		0.	0.	0.	0.
CO-60		1.21E-06	0.	0.	1.21E-06
NA-24		0.	5.97E-08	0.	5.97E-08
AG-110M		0.	0.	0.	0.
CR-51		0.	0.	0.	0.
SN-123M		0.	0.	0.	0.
TC-99M		2.70E-07	0.	0.	2.70E-07
AG-108M		0.	0.	0.	0.
RB-88		1.73E-03	9.41E-05	6.63E-05	1.89E-03
NP-239		0.	0.	0.	0.
CD-115		5.39E-07	8.34E-08	0.	6.22E-07
CE-144		0.	0.	0.	0.
SR-91		0.	0.	0.	0.
Y-91M		0.	0.	0.	0.
RU-103		0.	0.	0.	0.
MN-56		0.	0.	0.	0.
BA-139		9.20E-06	0.	2.26E-06	1.15E-05
SN-125M		1.96E-06	0.	0.	1.96E-06
SR-92		1.12E-06	0.	0.	1.12E-06
HALOGENS					
I-131		6.95E-03	1.83E-02	1.60E-02	4.13E-02
I-133		4.63E-06	2.94E-06	1.07E-05	1.82E-05
I-135		0.	0.	0.	0.
I-132		2.35E-05	8.72E-07	1.79E-04	2.03E-04
GASES					
KR-85		3.80E+00	3.42E+00	3.05E+00	1.03E+01
XE-133		4.37E+03	2.55E+03	8.06E+03	1.50E+04
KR-88		1.85E+01	5.76E+00	5.45E-01	2.48E+01
KR-87		2.55E+00	3.78E+00	2.27E-01	6.56E+00
KR-85M		6.82E+00	4.07E+00	6.73E-01	1.16E+01
XE-138		3.79E-01	3.53E-03	1.46E-01	5.29E-01
XE-135M		8.97E-01	1.30E+00	1.60E-01	2.36E+00
XE-135		8.15E+01	4.94E+01	1.03E+02	2.34E+02
AR-41		1.20E+00	5.10E+00	2.33E-02	6.31E+00
XE-133M		4.30E+01	1.01E+01	9.80E+01	1.51E+02
XE-131M		9.20E-03	6.91E-01	0.	7.00E-01

AIRBORNE RELEASES — YEAR 1977

	UNITS	APRIL	MAY	JUNE	SUB-TOTAL
TOTAL NOBLE GASES	CURIES	2.87E+03	2.50E+03	5.55E+03	1.09E+04
TOTAL HALOGENS	CURIES	3.55E-03	5.90E-02	9.49E-04	6.35E-02
TOTAL PARTICULATE GROSS BETA-GAMMA	CURIES	6.24E-04	1.16E-03	7.70E-04	2.55E-03
TOTAL TRITIUM	CURIES	1.67E-01	3.11E+01	5.69E+00	3.70E+01
TOTAL PARTICULATE GROSS ALPHA ACTIVITY	CURIES	0.	0.	0.	0.
MAXIMUM NOBLE GAS RELEASE RATE	UCI/SEC	1.60E+03	1.60E+03	1.60E+03	1.60E+03
PERCENT OF APPLICABLE LIMIT FOR:					
A. NOBLE GASES	%	5.62E+00	4.90E+00	1.09E+01	2.15E+01
B. HALOGENS	%	9.34E-01	1.55E+01	2.50E-01	1.67E+01
C. PARTICULATES	%	5.68E-02	1.05E-01	7.00E-02	2.32E-01
ISOTOPES RELEASED	CURIES				
PARTICULATES					
CS-137		2.78E-08	4.67E-05	1.32E-02	1.33E-02
BA-LA-140		0.	0.	0.	0.
SR-90		1.86E-04	2.21E-04	2.22E-04	6.29E-04
CS-134		0.	1.49E-05	7.65E-03	7.87E-03
SR-89		4.38E-04	5.22E-04	5.23E-04	1.48E-03
CO-58		0.	1.53E-05	5.50E-03	5.51E-03
CS-136		0.	0.	0.	0.
CS-138		1.31E-08	2.31E-05	5.83E-08	2.32E-05
MN-54		0.	0.	2.77E-06	2.77E-06
MO-99		0.	0.	0.	0.
NB-95		0.	0.	0.	0.
CO-60		0.	6.92E-05	2.08E-02	2.08E-02
NA-24		0.	0.	0.	0.
AG-110M		0.	1.58E-05	4.46E-06	2.03E-05
CR-51		0.	0.	1.37E-04	1.37E-04
SN-123M		0.	0.	0.	0.
TC-99M		2.39E-09	1.35E-04	0.	1.35E-04
AG-108M		0.	0.	0.	0.
RB-88		3.08E-07	9.62E-05	2.14E-05	1.18E-04
NP-239		0.	0.	0.	0.
CD-115		0.	0.	0.	0.
CE-144		0.	0.	4.96E-04	4.96E-04
SR-91		0.	0.	0.	0.
Y-91M		0.	0.	0.	0.
RU-103		0.	0.	0.	0.
MN-56		0.	0.	3.10E-11	3.10E-11
BA-139		0.	0.	0.	0.
SN-125M		0.	0.	0.	0.
SR-92		0.	0.	0.	0.
CO-57		1.23E-09	0.	0.	1.23E-09
HALOGENS					
I-131		3.55E-03	5.65E-02	9.63E-01	1.02E+00
I-133		8.33E-09	2.46E-03	1.42E-01	1.44E-01
I-135		0.	0.	0.	0.
I-132		0.	4.29E-05	1.74E-09	4.29E-05
I-134		0.	0.	4.65E-10	4.65E-10
F-18		0.	0.	3.75E-07	3.75E-07
GASES					
KR-85		3.14E+01	1.95E+00	5.44E+01	5.81E+01
XE-133		2.81E+03	2.45E+03	4.62E+03	7.93E+03
KR-88		1.45E-02	1.41E+00	1.47E-02	1.44E+00
KR-87		5.21E-03	7.27E-01	1.42E-02	7.47E-01
KR-85M		2.07E-02	1.36E+00	8.90E-01	2.29E+00
XE-138		0.	1.00E-02	7.74E-01	7.84E-01
XE-135M		1.14E-03	4.11E-01	1.07E-02	4.23E-01
XE-135		6.32E+00	1.16E+01	8.44E+01	1.02E+02
AR-41		1.10E-02	1.16E+00	1.02E-01	1.27E+00
XE-133M		1.68E+01	2.35E+01	1.35E+01	5.35E+01
XE-131M		0.	4.24E-01	1.06E+01	1.10E+01

AIRBORNE RELEASES

RADIOACTIVE EFFLUENT RELEASES

YEAR 1977

	UNITS	1st QUARTER	2nd QUARTER	SUB-TOTAL
TOTAL NOBLE GASES	CURIES	1.54E+04	1.09E+04	2.63E+04
TOTAL HALOGENS	CURIES	4.15E-02	6.35E-02	1.05E-01
TOTAL PARTICULATE GROSS BETA-GAMMA	CURIES	2.34E-03	2.55E-03	4.89E-03
TOTAL TRITIUM	CURIES	1.48E+01	3.70E+01	5.18E+01
TOTAL PARTICULATE GROSS ALPHA ACTIVITY	CURIES	0.	0.	0.
MAXIMUM NOBLE GAS RELEASE RATE	UCI/SEC	1.60E+03	1.60E+03	1.60E+03
PERCENT OF APPLICABLE LIMIT FOR:				
A. NOBLE GASES	%	3.02E+01	2.15E+01	5.17E+01
B. HALOGENS	%	1.09E+01	1.67E+01	2.76E+01
C. PARTICULATES	%	2.12E-01	2.32E-01	4.44E-01
ISOTOPES RELEASED	CURIES			
PARTICULATES				
CS-137		9.05E-07	1.33E-02	1.33E-02
BA-LA-140		6.02E-07	0.	6.02E-07
SR-90		2.15E-07	6.29E-04	6.29E-04
CS-134		4.91E-07	7.87E-03	7.87E-03
SR-89		6.61E-06	1.48E-03	1.49E-03
CO-58		6.72E-07	5.51E-03	5.51E-03
CS-136		0.	0.	0.
CS-138		4.15E-04	2.32E-05	4.38E-04
MN-54		1.44E-07	2.77E-06	2.91E-06
MO-99		0.	0.	0.
NB-95		0.	0.	0.
CO-60		1.21E-06	2.08E-02	2.08E-02
NA-24		5.97E-08	0.	5.97E-08
AG-110M		0.	2.03E-05	2.03E-05
CR-51		0.	1.37E-04	1.37E-04
SN-123M		0.	0.	0.
TC-99M		2.70E-07	1.35E-04	1.35E-04
AG-108M		0.	0.	0.
RB-88		1.89E-03	1.18E-04	2.01E-03
NP-239		0.	0.	0.
CD-115		6.22E-07	0.	6.22E-07
CE-144		0.	4.96E-04	4.96E-04
SR-91		0.	0.	0.
Y-91M		0.	0.	0.
RU-103		0.	0.	0.
MN-56		0.	3.10E-11	3.10E-11
BA-139		1.15E-05	0.	1.15E-05
SN-125M		1.96E-06	0.	1.96E-06
SR-92		1.12E-06	0.	1.12E-06
CO-57		0.	1.23E-09	1.23E-09
HALOGENS				
I-131		4.13E-02	1.02E+00	1.06E+00
I-133		1.82E-05	1.44E-01	1.44E-01
I-135		0.	0.	0.
I-132		2.03E-04	4.29E-05	2.46E-04
I-134		0.	4.65E-10	4.65E-10
F-18		0.	3.75E-07	3.75E-07
GASES				
KR-85		1.03E+01	8.81E+01	9.84E+01
XE-133		1.50E+04	9.88E+03	2.49E+04
KR-88		2.48E+01	1.44E+00	2.62E+01
KR-87		6.56E+00	7.47E-01	7.31E+00
KR-85M		1.16E+01	2.29E+00	1.39E+01
XE-138		5.29E-01	7.84E-01	1.31E+00
XE-135M		2.36E+00	4.23E-01	2.78E+00
XE-135		2.34E+02	1.02E+02	3.36E+02
AR-41		6.31E+00	1.27E+00	7.58E+00
XE-133M		1.51E+02	5.88E+01	2.10E+02
XE-131M		7.00E-01	1.10E+01	1.17E+01

DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

Central Files
50-269
270
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WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

August 26, 1977

TELEPHONE: AREA 704
373-4083

Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Suite 1217
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

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

Dear Mr. O'Reilly:

Oconee Technical Specification Appendix B 1.B provides for the submittal of a summary environmental report for Oconee Nuclear Station. It is expected that this report will be submitted on November 1, 1977.

Very truly yours,

William O. Parker, Jr.

LJB:ge

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