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Radioactive Materials Released from Nuclear Power Plants

Annual Report 1989

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Prepared by J. Tichler, K. Norden, J. Congemi

Brookhaven National Laboratory

Prepared for
U.S. Nuclear Regulatory Commission

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Radioactive Materials Released from Nuclear Power Plants

Annual Report 1989

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PREVIOUS REPORTS IN THIS SERIES

1. "Report on Releases of Radioactivity in Effluents and Solid Wastes from Nuclear Power Plants for 1972," Directorate of Regulatory Operations, August 1973.
2. "Summary of Radioactivity Releases in Effluents from Nuclear Power Plants During 1973," NUREG-75/001, January 1975.
3. "Radioactive Materials Released from Nuclear Power Plants, 1974," NUREG-0077, June 1976.
4. "Radioactive Materials Released from Nuclear Power Plants, 1975," NUREG-0218, March 1977.
5. "Radioactive Materials Released from Nuclear Power Plants, 1976," NUREG-0367, March 1978.
6. "Radioactive Materials Released from Nuclear Power Plants, 1977," NUREG-0521, January 1979.
7. "Radioactive Materials Released from Nuclear Power Plants, 1978," NUREG/CR-1497, BNL-NUREG-51192, March 1981.
8. "Radioactive Materials Released from Nuclear Power Plants, 1979," NUREG/CR-2227, BNL-NUREG-51416, November 1981.
9. "Radioactive Materials Released from Nuclear Power Plants, 1980," NUREG/CR-2907, BNL-NUREG-51581, Vol. 1, January 1983.
10. "Radioactive Materials Released from Nuclear Power Plants, 1981," NUREG/CR-2907, BNL-NUREG-51581, Vol. 2, June 1984.
11. "Radioactive Materials Released from Nuclear Power Plants, 1982," NUREG/CR-2907, BNL-NUREG-51581, Vol. 3, February 1986.
12. "Radioactive Materials Released from Nuclear Power Plants, 1983," NUREG/CR-2907, BNL-NUREG-51581, Vol. 4, August 1986.
13. "Radioactive Materials Released from Nuclear Power Plants, 1984," NUREG/CR-2907, BNL-NUREG-51581, Vol. 5, August 1987.
14. "Radioactive Materials Released from Nuclear Power Plants, 1985," NUREG/CR-2907, BNL-NUREG-51581, Vol. 6, January 1988.
15. "Radioactive Materials Released from Nuclear Power Plants, 1986," NUREG/CR-2907, BNL-NUREG-51581, Vol. 7, November 1988.
16. "Radioactive Materials Released from Nuclear Power Plants, 1987," NUREG/CR-2907, BNL-NUREG-51581, Vol. 8, October 1989.
17. "Radioactive Materials Released from Nuclear Power Plants, 1988," NUREG/CR-2907, BNL-NUREG-51581, Vol. 9, July 1991.

ABSTRACT

Releases of radioactive materials in airborne and liquid effluents from commercial light water reactors during 1989 have been compiled and reported. The summary data for the years 1970 through 1988 are included for comparison. Data on solid waste shipments as well as selected operating information have been included. This report supplements earlier annual reports issued by the former Atomic Energy Commission and the Nuclear Regulatory Commission. The 1989 release data are summarized in tabular form. Data covering specific radionuclides are summarized.

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Carmen Benkovitz was responsible for the original design of the computer data base in which the effluent data, beginning with the 1978 data, is stored. She was involved in the redesign of the data base when, in 1982, the decision was made to transfer the data base from one computer to another and to change the data base management system being used.

1.0 Introduction

1.1 Purpose

This report, prepared annually for the staff of the U.S. Nuclear Regulatory Commission, presents measured data on radioactive materials in effluents released from licensed commercial reactor power plants. These data were reported by licensees for plant operations during 1989. This information supplements earlier annual reports issued by the former Atomic Energy Commission and Nuclear Regulatory Commission.¹

1.2 Scope

Releases of radioactive materials are governed by 10 CFR Part 20 and 50 and by limits established in the Technical Specifications for each facility. The requirement for reporting effluent releases by nuclear power plant operators is described in 10 CFR 50.36a. Through its Office of Nuclear Reactor Regulation, the Nuclear Regulatory Commission maintains a knowledge of radioactive releases from licensed nuclear reactors to ensure that they are within regulatory requirements. This report summarizes data from the licensed nuclear power plants that were declared by the utilities to be in commercial operation as of December 31, 1989. Data are included for several licensed facilities which are permanently or indefinitely shut down (Browns Ferry 1,2,3, Dresden 1, Humboldt Bay, Indian Point 1, LaCrosse and Three Mile Island 2), as well as some plants which were not yet in commercial operation in 1989 (Shoreham and Seabrook).

1.3 Source of Data

The information included in this report was obtained from data reported by the licensees. Individual licensee reports are available in the NRC Public Document Room, Gelman Building, 2120 L Street, Washington, D.C. 20555 and in local Public Document Rooms located near each licensed facility. Licensee reports varied in the format and extent of information provided.

Data from prior years used in the comparison tables were obtained from the seventeen previous annual summaries.

2.0 Tabulated Data

2.1 Airborne and Liquid Effluents

Tables 1 through 4 list for each reactor, the measured quantities of total noble gases and of I-131 and particulates (with half lives greater than 8 days) released in effluents to the atmosphere during each of the years 1970 through 1989. Tables 5 and 6 list the total measured quantities of tritium released in liquid effluents in each of the years. Tables 7 and 8 list the mixed fission and activation products not including noble gases, tritium and alpha released in liquid effluents in each of the years.

¹ Previous reports in this series are listed on page ii.

2.2 Solid Waste

The total volumes, activity and the number of shipments of solid waste for each plant during 1989 are summarized in Tables 9 and 10. A comparison for the years 1977 through 1989 is made in Tables 11 and 12.

2.3 Energy Generation

Tables 13 and 14 present a summary of net electrical energy generated by each plant during 1978-1989. Tables 15 and 16 present a summary of the thermal energy generated by each plant during 1989 and previous years from 1972. The reader is cautioned against making simplistic comparisons of radioactive releases with the energy generated because of the many factors which affect the amount of radioactive materials released; factors include the condition of the fuel, primary system integrity, effluent and radioactive waste treatment systems, and the extent to which these systems are used.

2.4 Individual Plant Summaries

Individual plant summaries are presented in alphabetical order. The summaries include general plant information, power production, effluent and solid waste data, and a summary of specific radionuclides measured in effluents. When the only type of solid waste reported is type "A", this may be because the plant did not break solid waste into different types but reported all types together. The activity released for each nuclide for the year for both airborne and liquid effluents is calculated by summing releases for each quarter. More detailed summaries in the format of Regulatory Guide 1.21 such as were used in the 1978 report² can be made available since all the data for 1978-1989 are stored in a computerized data base.

A wide variation exists in the lists of specific radionuclides reported by utilities (licensees). Individual licensee Technical Specifications require the measurement and reporting of specific sets of radionuclides and "any others identified." The disparities result because of differing analytical methods used by various licensees for their measurements, and their differing operating histories and effluent and emission control methods.

Copies of the summaries included in this report as well as the more detailed summaries maintained in the computer data base were submitted to the licensees for verification before publication. In most cases, the licensees responded either verifying the included data for their plants or providing corrections. Individuals interested in obtaining the more detailed summaries should contact the Office of Information Resources Management of the Nuclear Regulatory Commission.

²"Radioactive Materials Released from Nuclear Power Plants, 1978", NUREG/CR-1497, BNL-NUREG-51192, March, 1981.

2.5 Notation

The following notation is used:

$$1.86\text{E}+06 = 1.86 \times 10^6$$

$$1.86\text{E}-03 = 1.86 \times 10^{-3}$$

N/R = Not Reported

N/D = Not Detected

N/A = Not Applicable

< may actually mean $\leq$

3.0 Summary

Nearly all of the radioactive material reported as being released in effluents are from planned releases. Planned releases result from normal operation or from anticipated operational occurrences. The latter include unplanned releases of radioactive materials from miscellaneous actions such as equipment failure, operator error or procedure error; these releases are not of such consequence as to be considered an accident.

At present, it is difficult to compare effluent releases with those of previous years due to, among other contributors, variability in reporting structure and release requirements. Comparisons with respect to power generation are similarly difficult due to factors which strongly affect the releases such as level of fuel cladding defects, design features of plant radioactive waste treatment systems, operational occurrences and equipment performance.

Though perhaps not identifiable as an important factor at any specific plant from the data in this report, the generic improvement in fuel performance over the last several years has either reduced or has had the potential to reduce the amount of radioactive material released in effluents from most plants. In addition, at Boiling Water Reactors (BWRs), the reduction in the amount of airborne radioactive materials being released at some plants since the early and mid-1970s is due in large part to the installation of augmented offgas (AOG) systems, many of which were required to be installed to meet the provisions of Appendix I to 10CFR Part 50, which was promulgated by the NRC in May 1975.

TABLES

Table 1

Airborne Effluents Comparison By Year

Fission and Activation Gases (Total Curies)

Boiling Water Reactors

Facility	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Big Rock Point 1	2.80E+05	2.84E+05	2.58E+05	2.30E+05	1.88E+05	5.06E+04	1.52E+04	1.34E+04	1.89E+04	6.67E+03
Browns Ferry 1,2,& 3					6.40E+04	9.24E+04	< 8.05E+04	< 1.66E+05	1.57E+05	< 2.71E+05
Brunswick 1&2						1.90E+02	1.90E+04	2.46E+05	9.14E+04	1.16E+05
Clinton 1										
Cooper					2.00E+03	1.98E+04	3.80E+04	1.27E+03	4.09E+03	3.04E+04
Dresden 1	9.00E+05	7.53E+05	8.77E+05	8.40E+05	9.80E+04	5.20E+05	4.52E+05	5.20E+05	8.50E+05	1.83E+02
Dresden 2-3		5.80E+05	4.29E+05	8.80E+05	6.27E+05	3.69E+05	3.23E+04	3.13E+05	4.06E+04	6.91E+04
Duane Arnold						1.58E+03	5.26E+03	3.87E+03	1.56E+03	8.71E+03
Fermi 2										
James A. Fitzpatrick						4.08E+03	4.41E+04	2.33E+04	5.88E+03	3.38E+03
Grand Gulf 1										
Edwin I. Hatch 1						2.70E+02	2.80E+03	1.90E+03	1.62E+03	1.71E+03
Edwin I. Hatch 2										
Hope Creek 1										
Humboldt Bay 3	5.40E+05	5.14E+05	4.30E+05	3.50E+05	5.72E+05	2.97E+05	9.30E+04	4.40E-05	4.40E-05	< 4.40E-05
LaCrosse	1.00E+03	1.00E+03	3.10E+04	9.10E+04	4.90E+04	5.71E+04	1.24E+05	4.25E+04	8.45E+03	1.04E+04
LaSalle 1&2										
Limerick 1&2										
Millstone 1		2.76E+05	7.26E+05	7.90E+04	9.12E+05	2.97E+06	5.07E+05	6.20E+05	5.66E+05	2.06E+04
Monticello		7.60E+04	7.51E+05	8.70E+05	1.57E+06	1.55E+05	1.14E+04	6.87E+03	6.42E+03	4.03E+03
Nine Mile Point 1	1.00E+04	2.53E+05	5.17E+05	8.72E+05	5.58E+05	1.30E+06	1.76E+05	3.53E+03	3.02E+03	1.04E+03
Nine Mile Point 2										
Oyster Creek 1	1.10E+05	5.16E+05	8.66E+05	8.10E+05	2.79E+05	2.06E+05	1.67E+05	1.77E+05	9.98E+05	1.01E+06
Peach Bottom 2&3				< 1.00E+03	< 1.00E+00	1.30E+04	2.09E+05	7.11E+04	3.85E+04	1.90E+05
Perry 1										
Pilgrim 1			1.80E+04	2.30E+05	5.46E+05	4.60E+04	1.83E+05	4.13E+05	3.27E+04	1.39E+04
Quad-Cities 1&2			1.32E+05	9.00E+05	9.50E+05	1.10E+05	3.36E+04	2.56E+04	3.24E+04	3.48E+04
River Bend 1										
Shoreham 1										
Susquehanna 1&2										
Vermont Yankee 1			5.50E+04	1.80E+05	6.40E+04	4.08E+03	3.03E+03	3.35E+03	4.94E+03	< 8.08E+03
WNP-2										
Total	1.84E+06	3.25E+06	5.09E+06	< 6.33E+06	< 6.48E+06	6.22E+06	< 2.20E+06	< 2.65E+06	2.86E+06	< 1.80E+06

* Fort St. Vrain

9.30E+01

* High temperature gas cooled reactor

Table 1

Airborne Effluents Comparison By Year

Fission and Activation Gases (Total Curies)

Boiling Water Reactors

Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Big Rock Point 1	2.15E+04	1.97E+04	1.29E+04	1.10E+04	1.41E+05	6.26E+04	6.79E+04	8.35E+03	7.77E+03	7.08E+03
Browns Ferry 1,2,& 3	< 1.66E+05	4.52E+04	2.76E+05	4.79E+05	< 6.64E+05	< 2.64E+04	< 2.26E+03	3.22E-01	N/D	N/D
Brunswick 1&2	6.93E+04	5.22E+05	4.65E+05	4.87E+05	1.67E+05	1.75E+04	4.51E+04	2.64E+04	1.58E+03	1.36E+03
Clinton 1								6.83E+00	4.34E+00	1.29E+01
Cooper	5.03E+03	2.48E+03	1.42E+04	1.54E+03	< 1.44E+03	< 1.39E+03	1.72E+03	1.20E+03	1.81E+03	3.44E+02
Dresden 1	7.03E+01	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Dresden 2-3	4.30E+04	3.74E+04	1.04E+04	8.43E+03	1.81E+03	2.94E+03	4.38E+02	2.77E+02	1.68E+02	3.67E+01
Duane Arnold	2.70E+03	< 4.87E+02	9.99E+01	4.81E+02	4.16E+02	2.51E+02	3.10E+02	2.19E+02	7.06E+02	4.38E+01
Fermi 2							N/D	N/D	1.11E+00	1.64E+02
James A. Fitzpatrick	7.68E+04	2.00E+05	2.11E+05	8.57E+04	3.41E+04	1.46E+04	2.65E+03	4.72E+03	3.89E+03	5.60E+02
Grand Gulf 1				4.51E+01	1.14E+02	1.51E+02	1.34E+02	2.08E+02	9.44E+01	1.44E+02
Edwin I. Hatch 1	3.82E+04	2.77E+04	4.23E+03	1.96E+04	1.02E+04	9.86E+03	8.95E+03	7.40E+03	**	**
Edwin I. Hatch 2	2.95E+02	2.06E+02	1.04E+03	1.28E+04	2.36E+03	2.76E+03	1.09E+04	1.37E+04	3.46E+03	5.02E+02
Hope Creek 1							3.80E+01	1.19E+03	1.76E+02	3.34E+02
Humboldt Bay 3	< 4.40E-05	< 4.40E-05	N/D	N/D	N/D	N/D	N/D	N/D	< 6.48E+01	< 6.40E+01
LaCrosse	4.71E+03	5.03E+03	4.26E+03	7.08E+03	1.09E+04	8.58E+03	3.53E+03	2.33E+03	N/D	N/D
LaSalle 1&2			3.46E+00	1.17E+01	5.66E+02	1.95E+02	2.98E+03	6.51E+03	3.79E+03	1.08E+03
Limerick 1&2					N/D	N/D	3.70E-01	2.41E+01	1.69E+02	2.58E+02
Millstone 1	1.19E+04	1.43E+04	8.33E+03	6.34E+03	2.80E+03	1.11E+03	3.31E+03	5.84E+03	8.76E+02	1.81E+02
Monticello	3.83E+03	3.74E+03	7.22E+03	3.21E+03	5.15E+02	2.72E+03	2.53E+03	3.95E+03	5.88E+03	3.98E+03
Nine Mile Point 1	5.87E+02	6.10E+02	5.11E+01	2.68E+02	1.02E+03	9.84E+02	4.92E+02	1.97E+02	1.80E+01	1.52E-04
Nine Mile Point 2								6.00E+00	4.03E+01	8.42E+01
Oyster Creek 1	3.12E+04	5.28E+04	2.29E+04	2.14E+03	3.93E+03	4.15E+04	7.67E+04	3.39E+03	5.05E+03	3.24E+02
Peach Bottom 2&3	1.53E+04	1.58E+04	1.31E+04	3.48E+04	8.09E+04	1.29E+05	2.78E+04	1.15E+04	1.19E+03	2.64E+03
Perry 1							1.23E+00	1.06E+01	1.25E+03	1.92E+02
Pilgrim 1	2.62E+04	< 5.30E+03	< 1.94E+04	2.01E+04	< 1.84E+01	3.26E+03	1.26E+02	N/D	N/D	6.78E+02
Quad-Cities 1&2	2.15E+04	3.20E+04	1.17E+04	1.20E+04	6.02E+03	2.95E+03	1.48E+03	3.73E+02	3.77E+00	2.87E+02
River Bend 1							1.70E+03	1.39E+00	2.05E+00	8.31E-01
Shoreham 1							N/D	N/D	N/D	N/D
Susquehanna 1&2			< 5.61E+02	1.03E+02	1.18E+02	5.15E+02	2.35E+02	1.23E+02	7.25E+01	1.19E+02
Vermont Yankee 1	1.63E+03	< 3.17E+03	< 3.07E+03	< 3.13E+03	< 3.18E+03	< 3.44E+03	< 1.56E+03	N/D	N/D	1.03E+03
WNP-2					2.28E+02	2.12E+02	1.66E+02	5.35E+02	9.03E+02	5.46E+03
Total	< 5.40E+05	< 9.88E+05	< 1.09E+06	< 1.19E+06	< 1.13E+06	< 3.33E+05	< 2.63E+05	9.85E+04	< 3.90E+04	< 2.70E+04
* Fort St. Vrain	9.13E+01	4.34E+01	2.96E+02	1.51E+02	1.17E+02	2.03E+00	5.57E+01	2.03E+02	2.60E+02	1.96E+02

* High temperature gas cooled reactor

** Included with Edwin I. Hatch 2 total

N/D = Not Detectable

Table 2

Airborne Effluents Comparison By Year

Fission and Activation Gases (Total Curies)

Pressurized Water Reactors

Facility	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Arkansas One 1					1.96E+02	1.03E+03	5.69E+03	1.39E+04	7.50E+03	8.51E+03
Arkansas One 2										4.53E+03
Beaver Valley 1&2							1.07E+00	4.73E+01	3.90E+02	1.75E+03
Braidwood 1										
Braidwood 2										
Byron 1&2										
Callaway 1										
Calvert Cliffs 1&2						7.72E+03	9.40E+03	2.23E+04	2.76E+04	1.02E+04
Catawba 1										
Catawba 2										
Donald C. Cook 1&2						2.64E+00	9.75E+02	3.80E+03	4.85E+04	1.09E+04
Crystal River 3								3.35E+03	6.86E+03	7.26E+04
Davis-Besse 1								1.27E+03	2.10E+03	< 1.68E+03
Diablo Canyon 1&2										
Joseph M. Farley 1									3.53E+03	3.18E+03
Joseph M. Farley 2										
Fort Calhoun 1				6.70E+01	3.03E+02	4.29E+02	1.94E+03	3.81E+03	1.36E+03	7.06E+02
R. E. Ginna	1.00E+01	3.20E+01	1.20E+01	5.76E+02	7.57E+02	1.04E+04	5.52E+03	3.20E+03	9.72E+02	7.62E+02
Haddam Neck	1.00E+00	3.00E+00	1.00E+00	3.20E+01	7.00E+00	4.80E+02	4.52E+02	3.12E+03	2.14E+03	5.53E+03
Harris 1										
Indian Point 1&2				1.50E+01	5.58E+03	8.20E+03	1.16E+04	1.60E+04	1.41E+04	9.03E+03
Indian Point 3							Shown with	Other Unit	8.09E+02	2.47E+02
Kewaunee					3.35E+03	2.45E+03	1.40E+03	2.43E+03	4.44E+02	1.52E+02
Maine Yankee			< 1.00E+00	1.61E+02	6.36E+03	4.09E+03	1.30E+03 **	3.57E+03 **	1.55E+03 **	2.09E+03
McGuire 1										
McGuire 2										
Millstone 2							1.57E+03	2.28E+03	7.64E+02	3.59E+02
Millstone 3										
North Anna 1&2									1.51E+04	6.28E+03
Oconee 1,2,& 3				9.30E+03	1.94E+04	1.51E+04	4.39E+04	3.56E+04	4.33E+04	4.79E+04
Palisades			1.00E+00	4.54E+02	< 1.00E+00	2.61E+03	2.99E+01	5.99E+01	3.23E+02	6.84E+01
Palo Verde 1										
Palo Verde 2										
Palo Verde 3										
Point Beach 1&2		< 1.00E+00	3.00E+00	5.75E+03	9.74E+03	4.45E+04	1.91E+03	1.13E+03	5.16E+02	9.68E+02
Prairie Island 1&2				8.72E+00	3.62E+02	2.17E+03	1.74E+03	6.73E+02	1.26E+03	6.97E+02
Rancho Seco 1						1.18E+02	1.27E+02	2.00E+03	7.10E+03	8.81E+03
H. B. Robinson 2		1.00E+00	< 1.00E+00	3.10E+03	2.31E+03	1.17E+03	6.40E+02	4.76E+02	8.84E+02	1.52E+03
Salem 1							< 1.00E-02	1.96E+01	1.02E+01	2.49E+02
Salem 2										
San Onofre 1	< 1.00E+00	8.00E+00	1.90E+01	1.10E+04	1.78E+03	1.11E+03	4.16E+02	1.54E+02	1.81E+03	6.37E+02
San Onofre 2-3										
Seabrook 1										
Sequoyah 1&2										
South Texas 1										
South Texas 2										
St. Lucie 1							1.72E+03	2.54E+04	2.93E+04	1.54E+04
St. Lucie 2										
Summer 1										
Surry 1&2			< 1.00E+00	8.66E+02	6.86E+03	8.04E+03	1.91E+04	1.90E+04	4.36E+03	1.78E+03
Three Mile Island 1					9.16E+02	3.63E+03	2.76E+03	1.66E+04	1.57E+04	2.24E+03
Three Mile Island 2									8.73E+00	9.97E+06
TMI 2/Epicor										
* Trojan							7.66E+02	4.45E+03	3.26E+02	9.47E+02

* Changes to the entries for Trojan for 1976 - 1987 represent corrections which were reported and explained in the Trojan July-December 1990 Effluent and Waste Disposal Report.

** Changes to the entries for Maine Yankee for 1977 - 1988 represent corrections which were reported and explained in the Maine Yankee report "Revised Semiannual Effluent Release Report for 770131 - 901231" Docket Date 92/01/08.

Table 2

Airborne Effluents Comparison By Year

Fission and Activation Gases (Total Curies)

Pressurized Water Reactors

<u>Facility</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Turkey Point 3&4				5.30E+02	4.66E+03	1.34E+04	1.56E+04	2.33E+04	2.35E+04	1.06E+04
Turkey Point 3										
Turkey Point 4										
Vogtle 1&2										
Waterford 3										
Wolf Creek 1										
Yankee Rowe 1	< 1.00E+00	< 1.00E+00	< 1.00E+00	3.50E+01	4.00E+01	2.24E+01	2.57E+01	1.25E+02	6.56E+02	1.82E+02
Zion 1&2				4.00E+00	2.99E+03	4.88E+04	1.14E+05	3.22E+04	6.77E+04	3.41E+04
Total	< 1.30E+01	< 4.60E+01	< 4.00E+01	3.19E+04	< 6.56E+04	1.75E+05	< 2.43E+05	2.40E+05	3.30E+05	< 1.02E+07

Table 2

Airborne Effluents Comparison By Year

Fission and Activation Gases (Total Curies)

Pressurized Water Reactors										
Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Arkansas One 1	3.80E+04	3.73E+03	2.10E+03	9.83E+02	2.90E+03	8.10E+03	1.71E+03	3.26E+02	1.24E+03	2.33E+03
Arkansas One 2	9.37E+03	4.35E+03	9.78E+03	1.34E+03	3.26E+03	8.91E+03	3.46E+03	2.08E+02	2.16E+03	2.76E+03
Beaver Valley 1&2	8.64E+01	8.06E+02	1.31E+02	1.98E+02	1.16E+03	3.92E+01	7.57E+01	2.25E+02	9.41E+01	1.57E+02
Braidwood 1								2.81E-01	4.19E+01	1.17E+03
Braidwood 2									3.82E+01	5.07E+02
Byron 1&2						2.79E+02	6.36E+02	1.30E+03	1.78E+03	8.16E+02
Callaway 1					2.00E+02	1.67E+03	5.19E+03	2.90E+03	6.89E+02	7.22E+02
Calvert Cliffs 1&2	2.96E+03	2.18E+03	8.00E+03	9.75E+03	3.83E+03	3.98E+03	7.65E+03	4.55E+03	5.70E+03	3.28E+03
Catawba 1						2.77E+02	1.36E+03	2.41E+03	1.56E+03	3.15E+02
Catawba 2							1.36E+03	2.41E+03	1.56E+03	3.15E+02
Donald C. Cook 1&2	3.76E+03	5.42E+03	3.88E+03	3.28E+02	3.50E+03	4.94E+03	3.29E+02	8.75E+02	2.58E+02	1.15E+02
Crystal River 3	3.65E+04	3.96E+04	6.85E+03	3.38E+03	1.96E+03	1.05E+03	2.76E+03	1.10E+03	3.41E+03	4.54E+03
Davis-Besse 1	< 3.35E+03	1.01E+03	5.35E+02	9.15E+02	5.02E+02	1.18E+02	5.09E-04	3.80E+02	1.09E+02	3.78E+02
Diablo Canyon 1&2					5.66E-02	5.72E+02	2.32E+03	7.14E+02	3.27E+02	3.35E+02
Joseph M. Farley 1	1.92E+04	2.21E+02	3.81E+04	2.20E+04	3.73E+03	1.70E+03	1.28E+03	1.30E+03	9.60E+02	9.92E+01
Joseph M. Farley 2		2.60E+00	3.54E+03	8.47E+02	3.99E+03	6.63E+02	1.84E+03	7.22E+02	5.92E+02	1.60E+02
Fort Calhoun 1	2.97E+02	1.22E+03	3.46E+02	8.79E+02	1.52E+03	1.48E+03	5.68E+02	4.23E+02	7.85E+02	1.64E+02
R. E. Ginna	8.61E+02	5.46E+02	1.95E+03	7.12E+02	2.96E+02	4.06E+02	2.09E+02	1.77E+02	5.17E+01	5.11E+02
Haddam Neck	2.68E+03	1.83E+03	7.54E+02	2.76E+03	7.52E+03	2.76E+03	2.33E+03	3.58E+03	2.55E+03	1.71E+04
Harris 1								1.71E+03	2.25E+03	1.15E+03
Indian Point 1&2	9.38E+03	9.13E+03	7.27E+03	9.58E+03	3.78E+03	1.88E+03	2.05E+03	4.68E+03	2.27E+02	8.77E+01
Indian Point 3	1.11E+03	6.57E+03	2.58E+03	5.60E+02	1.88E+03	1.54E+03	1.93E+03	1.82E+03	3.10E+02	3.14E+02
Kewaunee	1.22E+02	1.18E+02	1.66E+02	< 2.25E+02	< 4.04E+01	< 4.97E+01	< 6.55E+01	< 3.19E+01	< 2.91E+01	6.52E+01
Maine Yankee	** 4.07E+03	3.28E+02	1.53E+03	** 5.07E+01	** 1.54E+02	4.41E+02	1.07E+03	** 8.34E+02	** 9.19E+01	2.02E+01
McGuire 1		1.58E-01	1.65E-03	1.60E+03	2.28E+03	1.93E+03	1.05E+03	2.04E+03	1.95E+03	7.19E+02
McGuire 2				1.60E+03	2.28E+03	1.93E+03	1.05E+03	2.04E+03	1.95E+03	7.19E+02
Millstone 2	1.33E+03	2.24E+03	9.09E+03	9.06E+03	4.19E+03	4.00E+02	1.02E+02	3.97E+02	6.34E+02	2.46E+02
Millstone 3							2.39E+01	1.05E+02	8.44E+01	2.96E+02
North Anna 1&2	3.50E+03	5.30E+03	4.34E+03	2.22E+04	1.76E+04	8.05E+03	5.71E+03	1.05E+03	4.83E+02	1.44E+03
Oconee 1,2,& 3	1.92E+04	1.63E+04	2.41E+04	2.40E+04	2.28E+04	2.35E+04	2.43E+04	1.05E+04	2.59E+04	8.97E+03
Palisades	1.40E+02	3.00E+03	7.38E+03	3.00E+03	2.84E+01	3.68E+03	1.73E+02	1.75E+03	2.43E+03	1.52E+02
Palo Verde 1						2.53E+02	2.67E+03	1.27E+03	1.84E+03	6.41E+02
Palo Verde 2							1.97E+03	5.47E+03	2.97E+03	4.29E+02
Palo Verde 3								2.52E-02	1.36E+02	8.34E+02
Point Beach 1&2	6.41E+02	6.11E+02	9.93E+02	7.68E+02	9.30E+01	1.16E+02	2.78E+01	4.82E+01	8.08E+01	1.50E+01
Prairie Island 1&2	2.60E+02	4.65E+01	5.47E+02	2.76E+02	7.58E+01	4.59E+01	3.03E+01	8.77E-01	1.42E-01	1.73E+02
Rancho Seco 1	1.58E+03	1.37E+03	1.48E+03	6.89E+02	3.83E+03	4.67E+03	9.30E+01	2.16E-02	1.52E+03	2.00E+03
H. B. Robinson 2	5.82E+02	5.13E+02	1.75E+02	2.93E+02	4.90E+01	2.14E+03	6.59E+02	7.70E+02	1.04E+03	2.79E+01
Salem 1	7.82E+01	1.06E+03	2.34E+02	1.25E+02	1.95E+02	1.68E+03	1.39E+03	3.64E+03	5.29E+02	1.39E+03
Salem 2	7.74E+00	6.09E+02	1.11E+03	7.44E+02	1.81E+03	1.15E+03	8.56E+02	1.06E+03	1.18E+03	7.30E+01
San Onofre 1	1.05E+03	4.17E+02	8.61E+01	1.06E+01	8.62E+01	3.83E+03	4.11E+02	9.81E+02	2.99E+03	9.05E+02
San Onofre 2-3			6.40E+00	7.43E+03	4.00E+04	2.53E+04	8.25E+03	2.18E+04	5.12E+03	2.46E+03
Seabrook 1										N/D
Sequoyah 1&2	3.01E+03	9.03E+03	5.74E+03	3.92E+03	6.68E+03	4.57E+03	1.21E+00	N/D	2.25E+02	3.85E+03
South Texas 1									8.64E+02	4.45E+02
South Texas 2										1.16E+02
St. Lucie 1	8.97E+03	2.30E+04	2.33E+04	2.16E+04	3.53E+04	5.08E+04	3.33E+04	6.21E+03	1.42E+03	4.53E+03
St. Lucie 2				1.25E+03	7.68E+03	9.55E+03	9.98E+03	8.60E+03	9.16E+03	2.22E+03
Summer 1			1.40E+02	3.88E+02	1.64E+01	1.40E+02	1.39E+01	6.34E+02	3.32E+02	1.82E+03
Surry 1&2	6.17E+03	1.41E+04	2.11E+04	5.49E+03	6.95E+03	2.07E+03	1.99E+03	3.08E+02	3.66E+02	1.37E+02
Three Mile Island 1	4.64E-03	5.81E-02	7.56E-03	2.01E+01	3.62E-01	1.08E+02	3.80E+03	7.89E+02	1.87E+03	2.10E+03
Three Mile Island 2	4.72E+04	2.88E+02	4.89E+02	1.73E+02	2.07E+02	N/D	2.80E-01	N/D	4.40E-01	N/D
TMI 2/Epicor	2.16E+00	1.84E+02	4.26E+02	3.61E+01	3.99E+01	*+	*+	*+	*+	*+
* Trojan	4.10E+02	1.24E+03	9.02E+02	2.29E+02	8.98E+02	1.10E+03	9.42E+02	2.55E+02	4.25E+02	5.94E+02

* Changes to the entries for Trojan for 1976-1987 are corrections which were reported and explained in the Trojan July-December 1990 Effluent and Waste Disposal Report.

** Changes to the entries for Maine Yankee for 1977 - 1988 are corrections which were reported and explained in the Main Yankee report "Revised Semiannual Effluent and Release Reports for 770131 - 901231" Docket Date 92/01/08.

*+ Included with Three Mile Island 2 total

N/D = Not Detectable

Table 2

Airborne Effluents Comparison By Year

Fission and Activation Gases (Total Curies)

Pressurized Water Reactors

Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Turkey Point 3&4	4.24E+03	4.33E+03	2.00E+04	1.61E+04	1.16E+04					
Turkey Point 3						1.32E+03	3.64E+03	9.38E+02	1.25E+03	1.70E+03
Turkey Point 4						1.80E+03	1.01E+03	7.86E+02	1.31E+03	1.71E+03
Vogtle 1&2								1.07E+02	1.15E+02	5.46E+02
Waterford 3						8.21E+03	1.12E+04	5.63E+03	5.30E+03	5.59E+02
Wolf Creek 1						1.72E+02	3.15E+01	1.73E+02	7.92E+02	6.40E+02
Yankee Rowe 1	7.07E+01	1.72E+02	1.55E+02	7.51E+02	1.74E+03	1.47E+03	5.11E+02	3.84E+02	2.06E+02	1.21E+02
Zion 1&2	5.78E+03	6.91E+03	1.61E+04	6.34E+03	3.61E+03	3.88E+03	3.18E+03	1.18E+02	1.39E+03	1.12E+03
Total	< 2.36E+05	1.68E+05	2.25E+05	< 1.83E+05	< 2.10E+05	< 2.05E+05	< 1.57E+05	< 1.11E+05	< 1.03E+05	8.11E+04

Table 3

Airborne Effluents Comparison By Year

I-131 and Particulates (Curies)

(Half-Life Equal To or Greater Than 8 Days)

Boiling Water Reactors

Facility	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Big Rock Point 1	1.30E-01	6.10E-01	1.50E-01	4.60E+00	1.60E-01	1.20E-01	5.00E-02	1.00E-02	8.91E-03	1.90E-03
Browns Ferry 1,2,& 3					1.20E-01	2.70E-01	< 7.00E-02	1.04E-01	2.27E-01	5.03E-02
Brunswick 1&2						< 1.00E-02	4.60E-01	9.32E-01	4.07E-01	9.52E-01
Clinton 1										
Cooper					2.40E-01	5.00E-02	< 4.00E-02	< 1.91E-02	5.41E-03	< 1.79E-01
Dresden 1	3.30E+00	6.70E-01	2.75E+00	4.00E-02	6.80E-01	9.60E-01	8.40E-01	4.93E+00	2.28E+00	2.38E-02
Dresden 2-3	1.60E+00	8.68E+00	5.89E+00	6.70E+00	6.50E+00	4.31E+00	5.49E+00	6.86E+00	3.13E+00	6.97E+00
Duane Arnold						1.10E-03	8.18E-02	2.29E-02	3.65E-02	3.35E-02
Fermi 2										
James A. Fitzpatrick						< 4.00E-02	6.80E-01	1.73E-01	2.79E-01	1.42E-02
Grand Gulf 1										
Edwin I. Hatch 1						< 1.00E-02	< 1.00E-02	5.67E-03	4.13E-03	2.59E-02
Edwin I. Hatch 2										
Hope Creek 1										
Humboldt Bay 3	3.50E-01	3.00E-01	4.80E-01	2.90E-01	8.40E-01	1.06E+00	8.36E-02	4.04E-03	7.26E-04	1.07E-04
LaCrosse	< 6.00E-02	< 1.00E-02	7.10E-01	2.00E-01	4.00E-02	1.00E-01	< 7.06E-02	1.67E-01	2.79E-02	2.53E-02
LaSalle 1&2										
Limerick 1&2										
Millstone 1		4.00E+00	1.32E+00	2.00E-01	3.26E+00	9.98E+00	2.33E+00	4.86E+00	4.55E+00	5.90E-01
Monticello		3.60E-02	5.78E-01	1.20E+00	5.70E+00	3.71E+00	1.71E-01	8.51E-02	5.49E-02	3.39E-02
Nine Mile Point 1	< 1.00E-02	6.00E-02	9.70E-01	1.98E+00	8.90E-01	2.78E+00	2.20E+00	1.99E-01	1.35E-01	4.71E-02
Nine Mile Point 2										
Oyster Creek 1	3.20E-01	2.14E+00	6.48E+00	7.02E+00	3.51E+00	5.64E+00	6.39E+00	9.05E+00	1.81E+01	9.32E+00
Peach Bottom 2&3				< 1.00E-02	1.00E-02	4.00E-02	9.75E-01	2.73E-01	9.62E-02	2.58E-01
Perry 1										
Pilgrim 1			3.00E-02	4.70E-01	1.45E+00	2.58E+00	6.74E-01	6.90E-01	1.81E-01	1.45E-01
Quad-Cities 1&2			7.50E-01	5.50E+00	8.88E+00	1.31E+00	1.33E+00	1.69E+00	2.15E+00	1.57E+00
River Bend 1										
Shoreham 1										
Susquehanna 1&2										
Vermont Yankee 1			1.70E-01	7.00E-02	3.60E-01	1.00E-02	< 1.00E-02	1.44E-02	2.18E-01	4.43E-01
WNP-2										
Total	< 5.77E+00 < 1.65E+01		2.03E+01 < 2.83E+01		3.26E+01 < 3.30E+01		< 2.20E+01 < 3.01E+01		3.19E+01 < 2.07E+01	

* Fort St. Vrain

6.89E-07

* High temperature gas cooled reactor

Table 3

Airborne Effluents Comparison By Year

I-131 and Particulates (Curies)

(Half-Life Equal To or Greater Than 8 Days)

Boiling Water Reactors

Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Big Rock Point 1	2 94E-02	6 10E-03	4 71E-03	3 35E-03	1 32E-01	8 25E-02	7 56E-02	2 94E-02	5 07E-02	4 87E-03
Browns Ferry 1,2,& 3	1 05E-01	N/D	1 89E-01	2 83E-01	< 1 72E-01	< 2 49E-02	< 2 73E-03	1 78E-03	1 76E-03	1 86E-04
Brunswick 1&2	2 12E+00	8 89E-01	1 99E+00	6 25E+00	3 49E-01	6 32E-02	4 69E-02	1 82E-01	1 77E-01	4 84E-02
Clinton 1								2 58E-04	5 94E-02	9 52E-03
Cooper	< 1 52E-01	< 1 09E-02	< 1 55E-01	< 2 30E-02	< 1 15E-02	< 2 29E-02	< 1 16E-02	2 67E-02	2 04E-02	5 26E-03
Dresden 1	1 46E-02	9 94E-03	3 36E-04	7 56E-04	1 69E-03	9 23E-05	+	+	+	1 07E-04
Dresden 2-3	1 10E+01	9 87E+00	9 50E-01	6 32E-01	1 30E-01	1 56E-01	7 11E-02	1 45E-01	2 35E-01	1 15E+00
Duane Arnold	8 50E-02	3 25E-02	1 03E-02	1 50E-02	1 53E-02	8 89E-03	7 32E-02	1 37E-01	1 55E-02	3 16E-03
Fermi 2							2 68E-07	8 56E-03	2 78E-03	1 67E-02
James A. Fitzpatrick	1 25E-01	2 80E-01	7 71E-01	3 80E-01	2 10E-01	1 67E-01	8 66E-02	1 36E-01	7 00E-02	7 12E-02
Grand Gulf 1				4 50E-05	1 86E-04	7 53E-04	4 85E-04	4 28E-03	4 90E-04	1 08E-03
Edwin I. Hatch 1	4 29E-01	2 12E-01	1 84E-01	6 96E-02	6 57E-02	3 98E-02	1 50E-02	2 54E-01	**	**
Edwin I. Hatch 2	1 33E-02	9 42E-03	6 83E-02	1 95E-02	1 15E-02	3 47E-02	1 79E-02	1 16E-01	4 29E-02	5 73E-03
Hope Creek 1							N/D	N/D	N/D	N/D
Humboldt Bay 3	5 11E-04	< 3 82E-04	1 09E-04	2 68E-04	2 68E-04	7 62E-05	1 64E-04	6 78E-05	1 49E-04	3 67E-05
LaCrosse	1 32E-02	1 69E-02	8 35E-03	1 08E-02	6 90E-03	9 62E-03	5 91E-03	2 31E-03	1 11E-05	1 29E-05
LaSalle 1&2			4 16E-03	1 80E-02	1 06E-02	2 32E-02	7 09E-02	4 97E-02	1 34E-02	8 23E-03
Limerick 1&2					N/D	N/D	7 45E-03	1 17E-03	6 67E-03	7 60E-03
Millstone 1	3 32E-01	1 48E-01	2 09E-01	6 25E-02	6 24E-02	5 20E-02	4 71E-02	2 50E-02	7 60E-03	9 35E-03
Monticello	2 83E-02	3 45E-02	8 85E-02	4 10E-02	2 93E-02	9 95E-02	6 86E-02	1 73E-01	7 90E-02	1 14E-01
Nine Mile Point 1	2 55E-02	1 49E-02	2 71E-02	1 07E-02	1 75E-02	3 46E-02	1 75E-02	1 61E-02	1 89E-03	3 02E-03
Nine Mile Point 2								5 17E+00	6 90E-04	5 04E-03
Oyster Creek 1	1 25E+00	2 24E+00	1 04E+00	1 90E-02	4 37E-01	3 04E+00	7 00E-01	1 04E-01	6 35E-02	5 08E-02
Peach Bottom 2&3	2 94E-02	< 4 19E-02	3 90E-02	4 60E-02	1 02E-01	6 88E-02	5 20E-02	2 00E-02	1 50E-03	3 45E-03
Perry 1							1 13E-06	4 87E-05	4 62E-02	8 54E-03
Pilgrim 1	1 04E-01	< 6 87E-02	< 4 44E-02	< 4 69E-02	< 5 17E-03	< 5 68E-02	< 1 24E-02	< 8 43E-04	3 82E-04	5 62E-03
Quad-Cities 1&2	5 90E-01	1 27E+00	4 12E-01	4 36E-01	8 86E-02	6 06E-01	1 11E-01	9 40E-02	2 46E-02	4 06E-02
River Bend 1							4 62E-05	4 03E-04	9 66E-04	4 13E-04
Shoreham 1							N/D	N/D	N/D	N/D
Susquehanna 1&2			< 8 70E-04	9 43E-04	1 48E-02	2 66E-02	3 39E-03	6 08E-03	1 82E-03	1 11E-03
Vermont Yankee 1	1 70E-02	4 53E-03	1 45E-03	4 14E-03	6 87E-03	< 5 87E-03	< 1 29E-02	1 27E-02	6 58E-03	8 92E-03
WNP-2					3 77E-01	2 43E-01	7 00E-02	7 71E-02	4 96E-01	1 17E-01
Total	< 1 65E+01	< 1 52E+01	< 6 20E+00	< 8 37E+00	< 2 26E+00	< 4 87E+00	< 1 58E+00	< 6 79E+00	1 43E+00	1 70E+00
* Fort St. Vrain	1 25E-06	1 40E-06	2 61E-01	7 40E-07	2 78E-06	6 31E-07	N/D	N/D	< 1 79E-05	N/D

+ Included with Dresden 2-3 total

* High temperature gas cooled reactor

** Included with Edwin I. Hatch 2 total

N/D = Not Detectable

Table 4

Airborne Effluents Comparison By Year

I-131 and Particulates (Curies)

(Half-Life Equal To or Greater Than 8 Days)

Pressurized Water Reactors

Facility	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Arkansas One 1					5.00E-02	7.40E-01	5.73E-02	9.04E-03	3.19E-03	4.47E-03
Arkansas One 2										4.65E-03
Beaver Valley 1&2							#< 1.00E-02	1.52E-04	7.21E-02	4.07E-04
Braidwood 1										
Braidwood 2										
Byron 1&2										
Callaway 1										
Calvert Cliffs 1&2						7.00E-02	1.38E-01	3.07E-01	1.35E-01	2.05E+00
Catawba 1										
Catawba 2										
Donald C. Cook 1&2					< 1.00E-02	< 1.00E-02	7.45E-02	1.10E-01	7.36E-02	
Crystal River 3								2.53E-03	1.05E-03	1.88E-02
Davis-Besse 1								2.57E-04	4.30E-04	5.69E-03
Diablo Canyon 1&2										
Joseph M. Farley 1									4.11E-02	2.20E-02
Joseph M. Farley 2										
Fort Calhoun 1				< 1.00E-02	< 1.00E-02	< 1.00E-02	< 2.04E-02	1.34E-02	8.30E-03	1.58E-03
R. E. Ginna	5.00E-02	1.70E-01	4.00E-02	< 1.00E-02	< 1.00E-02	2.00E-02	3.17E-02	2.55E-02	1.04E-02	1.88E-02
Haddam Neck	< 1.00E-02		2.00E-02	5.00E-02	< 1.00E-02	< 1.00E-02	< 1.00E-02	1.74E-03	5.21E-03	4.77E-02
Harris 1										
Indian Point 1&2				< 1.00E-02	4.30E-01	1.62E+00	2.42E-01	5.59E-02	2.05E-01	4.50E-01
Indian Point 3							Shown With Other Unit		1.29E-02	3.89E-03
Kewaunee					2.00E-02	6.60E-01	< 1.00E-02	2.40E-02	5.48E-03	6.18E-04
** Maine Yankee			< 1.00E-02	9.40E-01	5.00E-02	< 1.00E-02	< 1.00E-02	1.07E-02	4.39E-03	1.16E-01
McGuire 1										
McGuire 2										
Millstone 2						1.00E-02	1.25E-02	4.47E-03	2.97E-03	9.79E-03
Millstone 3										
North Anna 1&2									3.19E-02	5.71E-02
Oconee 1,2,& 3				1.00E-02	3.00E-02	1.00E-02	2.72E-01	5.35E-01	2.22E-01	2.28E-01
Palisades			< 1.00E-02	3.10E-01	1.00E-02	3.80E-01	4.16E-02	1.63E-02	2.07E-02	2.46E-02
Palo Verde 1										
Palo Verde 2										
Palo Verde 3										
Point Beach 1&2		< 1.00E-02	3.00E-02	5.50E-01	1.60E-01	7.00E-02	1.85E-02	5.02E-03	2.88E-02	1.35E-02
Prairie Island 1&2				< 1.00E-02	< 1.00E-02	2.12E-02	1.14E-02	7.56E-03	8.96E-04	3.86E-03
Rancho Seco 1						< 1.00E-02	< 1.00E-02	5.02E-03	3.21E-02	5.75E-03
H. B. Robinson 2			3.00E-02	3.00E-01	5.00E-02	2.00E-02	9.96E-02	3.88E-03	9.26E-04	4.10E-04
Salem 1							N/D	2.34E-07	4.01E-02	7.68E-03
Salem 2										
San Onofre 1	< 1.00E-02	< 1.00E-02	< 1.00E-02	1.61E+00	< 1.00E-02	4.00E-02	< 1.00E-02	1.86E-04	2.71E-03	1.43E-04
San Onofre 2-3										
Seabrook 1										
Sequoyah 1&2										
South Texas 1										
South Texas 2										
St. Lucie 1							< 1.00E-02	1.48E-01	5.17E-01	2.02E-01
St. Lucie 2										
Summer 1										
Surry 1&2			< 1.00E-02	4.00E-02	1.40E-01	5.00E-02	3.46E-01	1.20E-01	6.49E-02	7.61E-03
Three Mile Island 1					< 1.00E-02	< 1.00E-02	1.07E-02	3.39E-02	1.35E-01	1.24E-02
Three Mile Island 2									2.30E-03	1.42E+01
TMI 2/Epicor										
* Trojan							2.84E-02	3.56E-02	8.28E-03	2.48E-02

* Changes to the entries for Trojan for 1976-1987 are corrections which were reported and explained in the Trojan July-December 1990 Effluent and Waste Disposal Report.

I-131 not included

** Changes to the entries for Maine Yankee for 1977 - 1988 are corrections which were reported and explained in the Maine Yankee report "Revised Semiannual Effluent Release Reports for 770131 - 901231" Docket Date 92/01/08.

N/D = Not Detectable

Table 4

Airborne Effluents Comparison By Year

I-131 and Particulates (Curies)

(Half-Life Equal To or Greater Than 8 Days)

Pressurized Water Reactors

<u>Facility</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Turkey Point 3&4				6.00E-02	3.63E+00	4.30E-01	4.22E-01	1.04E+00	4.59E-01	7.91E-02
Turkey Point 3										
Turkey Point 4										
Vogtle 1&2										
Waterford 3										
Wolf Creek 1										
Yankee Rowe 1	< 1.00E-02	< 1.00E-02	< 1.00E-02	1.90E-01	5.30E-01	1.00E-02	< 1.00E-02	8.70E-05	2.25E-04	2.49E-04
Zion 1&2				< 1.00E-02	1.00E-02	1.40E-01	9.00E-02	5.38E-02	8.91E-02	6.74E-02
Total	< 8.00E-02	< 2.00E-01	< 1.70E-01	< 4.11E+00	< 5.17E+00	< 4.35E+00	< 1.93E+00	2.53E+00	2.27E+00	1.78E+01

Table 4

Airborne Effluents Comparison By Year

I-131 and Particulates (Curies)

(Half-Life Equal To or Greater Than 8 Days)

Pressurized Water Reactors

Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Arkansas One 1	1.66E-01	5.58E-03	9.07E-04	1.15E-03	1.14E-03	3.50E-03	4.01E-03	3.05E-04	1.03E-03	8.17E-04
Arkansas One 2	6.90E-03	1.41E-02	4.92E-03	5.78E-03	2.54E-04	3.27E-03	2.36E-04	5.12E-05	4.21E-04	5.87E-04
Beaver Valley 1&2	1.91E-03	6.85E-03	4.56E-03	5.25E-02	6.21E-03	1.58E-03	7.83E-03	1.36E-02	3.54E-03	1.11E-02
Braidwood 1								1.34E-05	2.44E-02	2.54E-04
Braidwood 2									9.52E-05	2.86E-04
Byron 1&2						2.18E-03	5.45E-02	9.45E-03	1.28E-02	7.93E-04
Callaway 1					9.41E-07	3.23E-04	1.18E-03	4.46E-04	3.36E-04	1.66E-04
Calvert Cliffs 1&2	7.44E-02	4.69E-02	1.84E-01	1.02E-01	6.02E-02	5.36E-02	8.73E-02	9.18E-02	1.36E-01	4.81E-02
Catawba 1						5.71E-04	6.69E-03	7.42E-03	4.05E-03	7.46E-04
Catawba 2							6.69E-03	7.42E-03	4.05E-03	7.46E-04
Donald C. Cook 1&2	6.88E-02	3.55E-01	1.28E-01	5.75E-02	2.09E-02	1.78E-01	2.29E-02	6.44E-02	8.92E-03	3.44E-02
Crystal River 3	6.77E-03	1.78E-02	3.22E-03	1.58E-03	2.07E-04	7.31E-04	1.02E-03	3.49E-03	1.25E-03	2.02E-03
Davis-Besse 1	2.01E-03	5.79E-02	5.28E-03	7.37E-03	1.66E-03	5.13E-04	N/D	1.24E-03	4.76E-04	3.06E-03
Diablo Canyon 1&2					1.20E-05	2.40E-04	1.44E-03	2.36E-03	1.29E-03	9.75E-04
Joseph M. Farley 1	2.37E-03	6.24E-01	9.09E-02	4.60E-02	5.87E-03	5.60E-03	7.96E-04	3.81E-04	1.60E-03	3.64E-05
Joseph M. Farley 2		3.22E-03	6.51E-05	5.06E-05	1.54E-03	2.97E-04	1.35E-03	1.49E-04	2.51E-06	7.89E-07
Fort Calhoun 1	2.42E-03	3.63E-03	1.59E-03	9.32E-04	1.25E-02	7.29E-03	1.48E-03	5.11E-03	3.10E-04	1.27E-04
R. E. Ginna	9.00E-03	5.88E-03	1.36E-02	1.53E-02	1.62E-03	9.74E-04	4.04E-04	8.71E-03	5.69E-05	8.38E-04
Haddam Neck	8.01E-03	< 1.28E-02	< 5.41E-04	< 1.02E-02	5.72E-02	1.13E-03	9.36E-03	1.35E-03	3.69E-02	1.50E-02
Harris 1								4.43E-06	4.59E-05	1.79E-06
Indian Point 1&2	6.42E-02	4.42E-02	4.17E-02	2.06E-02	< 1.51E-01	1.44E+00	4.59E-01	1.57E-02	9.18E-03	3.88E-03
Indian Point 3	2.53E-02	3.63E-03	< 4.28E-03	< 1.53E-04	2.04E-02	1.90E-03	4.01E-03	2.07E-03	3.42E-03	1.36E-03
Kewaunee	2.61E-04	1.21E-04	5.97E-05	< 2.16E-04	< 4.05E-03	2.77E-04	< 5.58E-03	< 1.23E-02	< 1.05E-02	1.75E-02
** Maine Yankee	3.67E-03	1.21E-03	2.55E-04	1.48E-04	7.14E-03	8.17E-04	4.60E-03	5.05E-03	5.10E-04	2.39E-04
McGuire 1		1.21E-11	9.51E-04	1.89E-03	1.25E-02	1.29E-02	3.03E-02	6.08E-02	6.14E-03	3.76E-03
McGuire 2				1.89E-03	1.25E-02	1.29E-02	3.03E-02	6.08E-02	6.14E-03	3.76E-03
Millstone 2	1.94E-02	1.06E-01	3.19E-01	5.73E-02	3.71E-02	6.48E-03	5.37E-03	6.51E-03	5.13E-02	3.78E-02
Millstone 3							< 3.69E-04	5.09E-03	9.89E-03	1.28E-02
North Anna 1&2	1.26E-02	4.81E-01	3.49E-02	3.28E-01	8.65E-02	8.57E-02	2.27E-02	1.73E-02	2.30E-03	4.33E-03
Oconee 1,2,& 3	1.33E-01	3.24E-01	2.55E-01	1.13E-01	1.07E-01	4.92E-03	4.34E-02	1.46E-01	1.63E-01	3.56E-02
Palisades	2.76E-02	4.15E-02	2.30E-02	3.44E-02	9.92E-04	4.92E-02	3.03E-03	2.77E-02	2.65E-02	1.73E-02
Palo Verde 1							1.43E-03	7.78E-03	1.82E-03	7.58E-04
Palo Verde 2							3.49E-03	1.34E-02	4.67E-02	3.03E-03
Palo Verde 3								N/D	1.24E-04	6.45E-03
Point Beach 1&2	1.28E-03	2.03E-01	8.46E-03	1.82E-02	1.25E-03	9.05E-03	1.69E-03	3.08E-03	2.23E-03	3.27E-03
Prairie Island 1&2	1.83E-03	4.49E-04	3.74E-03	1.40E-02	1.44E-03	7.35E-03	2.22E-03	2.33E-04	7.74E-05	2.10E-05
Rancho Seco 1	9.96E-03	4.65E-03	2.62E-02	2.26E-03	2.37E-02	7.84E-03	1.49E-03	1.54E-06	4.74E-04	2.76E-04
H. B. Robinson 2	1.13E-03	3.32E-04	5.70E-04	1.31E-02	2.47E-04	1.37E-02	9.92E-03	2.08E-02	1.10E-03	1.41E-04
Salem 1	2.17E-01	4.84E-01	7.85E-03	6.25E-02	5.16E-04	4.45E-02	1.17E-03	1.66E-03	2.13E-03	3.62E-03
Salem 2	5.44E-05	6.31E-03	4.54E-03	3.53E-02	5.41E-03	8.95E-02	3.23E-03	1.52E-03	9.91E-04	8.70E-04
San Onofre 1	8.41E-01	1.18E-02	4.66E-07	5.44E-06	9.49E-06	1.17E-03	2.09E-04	4.17E-04	1.08E-02	2.22E-03
San Onofre 2-3			3.35E-05	1.56E-01	4.12E-01	4.47E-01	1.62E-01	4.20E-01	7.75E-02	4.73E-01
Seabrook 1									N/D	
Sequoyah 1&2	2.57E-03	1.30E-02	1.23E-01	2.22E-03	2.12E-02	3.17E-03	1.56E-03	5.04E-04	1.90E-04	4.22E-04
South Texas 1									8.26E-04	4.02E-03
South Texas 2										1.42E-03
St. Lucie 1	6.20E-02	7.69E-02	4.15E-01	2.13E-01	2.60E-01	7.91E-01	2.69E-01	3.95E-02	6.40E-03	5.75E-03
St. Lucie 2				1.27E-02	2.84E-01	1.92E-01	4.20E-02	5.51E-02	2.86E-02	8.27E-03
Summer 1			N/D	4.74E-05	9.00E-06	2.55E-05	2.99E-05	7.04E-04	2.33E-03	1.61E-03
Surry 1&2	1.85E-02	6.53E-02	5.96E-02	8.34E-02	5.87E-02	2.67E-02	2.09E-02	2.09E-02	2.02E-02	2.37E-03
Three Mile Island 1	2.93E-04	5.05E-04	1.65E-04	6.55E-05	1.27E-09	2.86E-05	3.97E-04	1.28E-04	1.26E-03	8.22E-03
Three Mile Island 2	5.67E-04	3.69E-05	6.46E-05	2.79E-05	1.61E-05	4.59E-05	1.67E-04	7.27E-05	6.78E-05	3.50E-06
TMI 2/Epicor	6.83E-06	2.63E-06	3.71E-06	1.80E-06	7.93E-07	*+	*+	*+	*+	*+
* Trojan	1.84E-02	4.97E-02	1.09E-02	5.57E-03	4.65E-03	5.75E-03	8.62E-03	2.61E-03	3.97E-03	4.30E-03

* Changes to the entries for Trojan for 1976-1987 are corrections which were reported and explained in the Trojan July-December 1990 Effluent and Waste Disposal Report.

** Changes to the entries for Maine Yankee for 1977 - 1988 are corrections which are reported and explained in the Maine Yankee report "Revised Semiannual Effluent Release Reports for 770131 - 901231" Docket Date 92/01/08.

*+ Included with Three Mile Island 2 total

N/D = Not Detectable

Table 4

Airborne Effluents Comparison By Year

I-131 and Particulates (Curies)

(Half-Life Equal To or Greater Than 8 Days)

Pressurized Water Reactors

Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Turkey Point 3&4	7.05E-02	2.94E-02	2.20E-01	1.44E-01	2.77E-02					
Turkey Point 3						7.98E-03	1.93E-02	1.24E-02	4.83E-03	3.10E-03
Turkey Point 4						7.88E-03	2.45E-03	1.38E-02	4.78E-03	2.99E-04
Vogtle 1&2								1.99E-05	1.75E-05	1.25E-03
Waterford 3						3.48E-03	5.30E-03	1.02E-03	1.24E-03	7.62E-04
Wolf Creek 1						1.67E-06	2.11E-04	2.14E-04	8.36E-05	2.31E-05
Yankee Rowe 1	9.56E-05	2.13E-04	5.75E-04	3.11E-03	6.49E-03	7.61E-04	2.02E-04	4.10E-05	5.89E-05	1.82E-04
Zion 1&2	3.00E-03	1.25E-02	8.57E-02	2.28E-02	4.27E-02	2.55E-02	4.48E-02	4.07E-03	1.40E-02	2.39E-03
Total	1.88E+00	< 3.11E+00	< 2.08E+00	< 1.65E+00	< 1.76E+00	< 3.56E+00	< 1.42E+00	< 1.25E+00	< 7.59E-01	< 7.96E-01

Table 5

Liquid Effluents Comparison By Year

Tritium (Curies)

Boiling Water Reactors										
Facility	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Big Rock Point 1	5.40E+01	1.03E+01	1.04E+01	1.97E+01	5.10E+00	5.73E+00	2.41E+00	8.83E+00	4.05E+00	5.45E+00
Browns Ferry 1,2,& 3					2.80E+00	1.04E+01	< 4.02E+00	2.40E+01	3.08E+01	1.32E+01
Brunswick 1&2						3.20E+00	5.90E+00	8.93E+00	1.41E+01	3.09E+01
Clinton 1										
Cooper					1.70E+00	8.25E+00	8.43E+00	9.04E+00	7.51E+00	6.63E+00
Dresden 1	5.00E+00	8.70E+00	4.33E+01	1.85E+01	1.88E+01	2.70E-01	2.00E-02	8.90E-02	1.31E+01	1.50E+00
Dresden 2-3	3.10E+01	3.85E+01	2.59E+01	2.58E+01	2.26E+01	5.40E+01	1.97E+01	5.00E+00	1.92E+01	1.93E+01
Duane Arnold						3.30E-01	3.40E-01	2.13E-01	1.19E+02	2.90E-01
Fermi 2										
James A. Fitzpatrick						5.03E+00	4.20E+00	3.35E+00	1.90E+00	1.52E+00
Grand Gulf 1										
Edwin I. Hatch 1						6.12E+00	8.98E+00	1.20E+01	9.00E+00	1.23E+01
Edwin I. Hatch 2										
Hope Creek 1										
Humboldt Bay 3	7.00E+00	7.50E+00	1.30E+01	5.13E+01	3.17E+01	2.01E+01	1.30E+01	5.26E-01	3.63E-02	3.91E-02
LaCrosse	2.00E+01	9.14E+01	1.20E+02	1.03E+02	1.15E+02	1.27E+02	4.10E+01	4.86E+01	4.72E+01	3.54E+01
LaSalle 1&2										
Limerick 1&2										
Millstone 1		1.27E+01	2.09E+01	3.70E+00	2.41E+01	8.03E+01	2.01E+01	4.41E+00	3.20E+00	7.92E+00
Monticello		5.92E-01	< 1.00E-01	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Nine Mile Point 1	2.00E+01	1.24E+01	2.78E+01	4.65E+01	1.87E+01	2.81E+01	2.46E+00	2.49E+00	N/D	6.78E+00
Nine Mile Point 2										
Oyster Creek 1	2.20E+01	2.15E+01	6.16E+01	3.59E+01	1.41E+01	1.79E+01	3.86E+01	1.88E+01	1.96E+01	1.40E+00
Peach Bottom 2&3				< 1.00E-01	1.00E+01	3.08E+01	7.37E+01	7.09E+01	3.24E+01	4.28E+01
Perry 1										
Pilgrim 1			4.20E+00	4.00E-01	1.05E+01	1.82E+01	4.67E+01	3.27E+01	2.98E+00	1.34E+01
Quad-Cities 1&2			4.70E+00	2.45E+01	3.40E+01	5.37E+01	4.98E+01	2.64E+01	1.72E+01	1.76E+01
River Bend 1										
Shoreham 1										
Susquehanna 1&2										
Vermont Yankee 1				1.00E-01	N/D	N/D	1.60E+00	8.44E-01	N/D	4.04E+00
WNP-2										
Total	1.59E+02	2.04E+02	< 3.32E+02	< 3.30E+02	3.09E+02	4.69E+02	< 3.41E+02	2.77E+02	3.41E+02	2.20E+02
* Fort St. Vrain										1.23E+02

* High temperature gas cooled reactor

N/D = Not Detectable

Table 5

Liquid Effluents Comparison By Year

Tritium (Curies)

Boiling Water Reactors

Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Big Rock Point 1	6.18E+00	3.13E+00	2.98E+00	2.22E+01	1.11E+00	1.27E+00	3.51E-01	5.85E-01	3.47E-01	6.39E-01
Browns Ferry 1,2,&3	2.18E+01	2.42E+01	2.39E+01	3.20E+01	3.18E+01	3.31E+01	7.93E+00	2.03E+00	1.46E+00	7.01E-01
Brunswick 1&2	1.28E+01	2.26E+01	4.88E+01	1.04E+02	3.37E+01	9.88E+00	5.78E+00	1.93E+01	3.10E+01	1.79E+01
Clinton 1								1.87E+00	2.90E+00	1.49E+00
Cooper	8.77E+00	< 8.37E+00	< 9.08E+00	< 7.60E+00	< 7.20E+00	< 5.05E+00	< 5.56E+00	5.02E+00	4.17E+00	5.45E+00
Dresden 1	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	**	**
Dresden 2-3	6.20E+01	6.05E+00	1.36E+00	1.45E-03	3.93E+01	7.45E+00	1.27E+01	2.23E+01	1.72E+01	1.83E+01
Duane Arnold	N/D	N/D	2.25E-05	N/D	1.41E-06	3.57E-02	N/D	N/D	N/D	N/D
Fermi 2							3.00E-01	1.05E+00	9.33E-01	1.30E+00
James A. Fitzpatrick	2.81E+00	4.11E+00	6.55E-01	2.72E+00	4.77E+00	4.20E+00	4.99E+00	2.48E+00	8.87E+00	7.32E-01
Grand Gulf 1				3.89E-03	7.27E-01	5.17E+00	1.47E+01	1.83E+01	1.34E+01	1.32E+01
Edwin I. Hatch 1	1.42E+01	1.16E+01	1.03E+02	9.47E+01	8.02E+01	3.93E+01	1.85E+01	2.01E+01	+	+
Edwin I. Hatch 2	1.07E+01	9.28E+00	3.68E+01	3.40E+01	2.13E+01	1.81E+01	1.01E+01	8.10E+00	4.40E+01	4.57E+01
Hope Creek 1							6.91E-03	9.53E+00	9.36E+00	2.35E+01
Humboldt Bay 3	9.70E-02	< 1.62E-01	5.99E-02	5.38E-02	2.93E-02	1.08E+00	6.67E-02	6.98E-04	9.44E-04	1.14E-03
LaCrosse	7.20E+01	7.74E+01	5.92E+01	1.24E+02	1.25E+02	1.28E+02	5.75E+01	4.66E+01	4.60E+00	2.79E+00
LaSalle 1&2			9.26E-01	4.25E+00	1.10E+00	3.89E-01	1.37E-01	1.10E+00	1.76E+00	1.07E+00
Limerick 1&2					N/D	1.15E+00	2.06E+00	6.02E+00	N/D	2.70E+01
Millstone 1	2.73E+01	2.62E+00	6.21E+00	8.38E+00	8.58E+00	1.79E+01	5.33E+00	1.78E+01	3.78E+01	4.58E+01
Monticello	N/D	4.17E-03	2.70E-05	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Nine Mile Point 1	N/D	5.05E+00	5.82E+00	7.89E+00	N/D	N/D	2.19E+00	N/D	N/D	N/D
Nine Mile Point 2								4.63E-01	7.92E+00	8.10E+00
Oyster Creek 1	1.54E+02	2.67E+01	4.95E+00	8.76E+00	1.03E+01	N/D	1.07E+00	1.96E+00	1.62E+01	3.96E+00
Peach Bottom 2&3	3.73E+01	3.68E+01	2.37E+01	2.02E+01	3.58E+01	5.04E+01	4.46E+01	4.64E+01	9.69E+00	2.00E+01
Perry 1							2.67E-03	3.49E+00	7.34E+00	6.96E+00
Pilgrim 1	4.00E+01	3.41E+01	5.91E+00	1.56E+01	1.47E+01	7.81E+00	1.00E+01	3.21E+00	5.73E-01	2.37E+00
Quad-Cities 1&2	1.03E+01	1.19E+01	7.80E+00	3.88E+00	5.42E+00	3.41E+00	6.43E+00	6.92E+00	7.28E+00	2.91E+01
River Bend 1							4.56E+00	6.92E+00	9.65E+00	1.60E+01
Shoreham 1							3.80E-03	6.04E-03	N/D	N/D
Susquehanna 1&2			< 8.55E-01	8.98E+00	1.12E+01	9.14E+00	1.54E+01	1.87E+01	1.45E+01	2.74E+01
Vermont Yankee 1	N/D	3.70E-01	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
WNP-2					5.40E-01	1.50E+00	3.29E+00	1.21E+00	1.38E+00	2.03E+00
Total	4.80E+02	< 2.84E+02	< 3.42E+02	< 4.99E+02	< 4.33E+02	< 3.44E+02	< 2.34E+02	2.71E+02	2.52E+02	3.21E+02
* Fort St. Vrain	2.06E+02	2.19E+02	2.62E+02	3.69E+02	1.24E+02	1.53E+01	1.27E+02	5.61E+01	1.61E+02	1.12E+02

* High temperature gas cooled reactor

** Included with Dresden 2-3 total

+ Included with Edwin I. Hatch 2 total

N/D = Not Detectable

Table 6

Liquid Effluents Comparison By Year

Tritium (Curies)										
Pressurized Water Reactors										
Facility	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Arkansas One 1					2.56E+01	4.60E+02	2.12E+02	2.45E+02	2.94E+02	1.68E+02
Arkansas One 2										5.27E+01
Beaver Valley 1&2							8.60E+00	1.08E+02	3.49E+02	9.59E+01
Braidwood 1										
Braidwood 2										
Byron 1&2										
Callaway 1										
Calvert Cliffs 1&2						2.63E+02	2.74E+02	5.75E+02	4.56E+02	5.14E+02
Catawba 1										
Catawba 2										
Donald C. Cook 1&2						5.64E+01	1.92E+02	2.86E+02	6.24E+02	1.22E+03
Crystal River 3								1.66E+02	1.54E+02	1.66E+02
Davis-Besse 1								9.01E+00	2.15E+02	2.45E+02
Diablo Canyon 1&2										
Joseph M. Farley 1									5.91E+01	9.40E+01
Joseph M. Farley 2										
Fort Calhoun 1				1.58E+01	1.24E+02	1.11E+02	1.22E+02	1.57E+02	1.50E+02	2.58E+02
R. E. Ginna	1.10E+02	1.54E+02	1.19E+02	2.86E+02	1.95E+02	2.60E+02	2.42E+02	1.19E+02	2.42E+02	2.40E+02
Haddam Neck	7.40E+03	5.83E+03	5.89E+03	3.90E+03	2.24E+03	5.67E+03	4.85E+03	6.67E+03	3.94E+03	3.55E+03
Harris 1										
Indian Point 1&2				2.75E+01	4.79E+01	7.94E+01	3.32E+02	3.71E+02	5.12E+02	3.75E+02
Indian Point 3							Shown With	Other Unit	2.56E+02	1.15E+02
Kewaunee					9.24E+01	2.77E+02	1.80E+02	2.95E+02	2.96E+02	2.49E+02
Maine Yankee			9.20E+00	1.54E+02	2.19E+02	1.77E+02	3.67E+02	1.53E+02	3.15E+02	2.02E+02
McGuire 1										
McGuire 2										
Millstone 2						7.60E+00	2.77E+02	2.11E+02	2.01E+02	2.54E+02
Millstone 3										
North Anna 1&2									2.82E+02	3.13E+02
Oconee 1,2,& 3				7.07E+01	3.50E+02	3.55E+03	2.19E+03	1.92E+03	1.17E+03	8.94E+02
Palisades			2.08E+02	1.85E+02	8.10E+00	4.16E+01	9.63E+00	5.58E+01	1.01E+02	1.26E+02
Palo Verde 1										
Palo Verde 2										
Palo Verde 3										
Point Beach 1&2		2.66E+02	5.63E+02	5.56E+02	8.33E+02	8.85E+02	6.94E+02	9.99E+02	1.29E+03	8.92E+02
Prairie Island 1&2				< 1.00E-01	1.42E+02	4.54E-01	1.00E-01	1.35E+03	5.51E+02	6.25E+02
Rancho Seco 1						1.32E+02	N/D	8.55E-02	N/D	N/D
H. B. Robinson 2		1.18E+02	4.05E+02	4.32E+02	4.49E+02	6.24E+02	9.80E+02	6.85E+02	4.73E+02	4.29E+02
Salem 1							4.00E-02	2.96E+02	4.46E+02	7.26E+02
Salem 2										
San Onofre 1	4.80E+03	4.57E+03	3.48E+03	4.07E+03	3.81E+03	4.00E+03	3.39E+03	1.79E+03	2.50E+03	2.32E+03
San Onofre 2-3										
Seabrook 1										
Sequoyah 1&2										
South Texas 1										
South Texas 2										
St. Lucie 1							1.33E+01	2.42E+02	1.28E+02	1.28E+02
St. Lucie 2										
Summer 1										
Surry 1&2			5.00E+00	4.88E+02	2.45E+02	4.42E+02	7.82E+02	4.08E+02	7.47E+02	3.57E+02
Three Mile Island 1					1.30E+02	4.63E+02	1.89E+02	1.92E+02	1.55E+02	5.59E+01
Three Mile Island 2									3.83E+01	7.81E+01
TMI 2/Epicor										
Trojan							3.60E+01	3.11E+02	1.59E+02	6.80E+01

N/D = Not Detectable

Table 6

Liquid Effluents Comparison By Year

Tritium (Curies)										
Pressurized Water Reactors										
Facility	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Turkey Point 3&4				3.29E+02	5.80E+02	7.97E+02	7.71E+02	9.24E+02	1.17E+03	9.40E+02
Turkey Point 3										
Turkey Point 4										
Vogtle 1&2										
Waterford 3										
Wolf Creek 1										
Yankee Rowe 1	1.50E+03	1.68E+03	8.03E+02	6.94E+02	3.14E+02	2.47E+02	1.56E+02	1.39E+02	1.96E+02	1.75E+02
Zion 1				1.00E-01	2.74E+02	1.03E+03	7.47E+02	7.24E+02	7.25E+02	6.01E+02
Zion 2										
Total	1.38E+04	1.26E+04	1.15E+04	< 1.12E+04	1.01E+04	1.96E+04	1.70E+04	1.94E+04	1.82E+04	1.65E+04

Table 6

Liquid Effluents Comparison By Year

Tritium (Curies)										
Pressurized Water Reactors										
Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Arkansas One 1	2.12E+02	4.42E+02	2.06E+02	1.09E+02	3.05E+02	3.27E+02	2.12E+02	1.50E+02	2.50E+02	3.81E+02
Arkansas One 2	2.89E+02	2.44E+02	1.39E+02	2.38E+02	3.09E+02	2.41E+02	2.30E+02	3.52E+02	2.44E+02	4.40E+02
Beaver Valley 1&2	3.98E+01	1.40E+02	1.84E+02	4.60E+02	4.12E+02	1.50E+02	2.06E+02	5.72E+02	4.09E+02	6.21E+02
Braidwood 1								4.12E+01	2.74E+02	5.58E+02
Braidwood 2									2.44E+02	5.58E+02
Byron 1&2						2.61E+02	6.70E+01	4.10E+02	1.01E+03	1.29E+03
Callaway 1					2.90E+01	5.88E+02	4.35E+02	4.48E+02	8.93E+02	6.09E+02
Calvert Cliffs 1&2	4.91E+02	1.00E+03	4.35E+02	7.56E+02	7.87E+02	4.83E+02	7.35E+02	7.38E+02	6.24E+02	2.36E+02
Catawba 1						1.75E+02	1.18E+02	3.64E+02	3.53E+02	4.45E+02
Catawba 2							1.18E+02	3.64E+02	3.53E+02	4.45E+02
Donald C. Cook 1&2	7.82E+02	9.15E+02	1.23E+03	8.85E+02	1.37E+03	1.14E+03	6.95E+02	1.97E+03	1.10E+03	8.74E+02
Crystal River 3	1.95E+02	2.71E+02	1.82E+02	1.99E+02	4.20E+02	1.76E+02	1.73E+02	3.56E+02	5.11E+02	3.44E+02
Davis-Besse 1	1.08E+02	1.57E+02	5.68E+01	1.14E+02	1.22E+02	6.74E+01	2.09E+01	2.46E+02	3.50E+01	2.39E+02
Diablo Canyon 1&2					1.07E+00	4.28E+02	6.98E+02	6.91E+02	4.29E+02	9.35E+02
Joseph M. Farley 1	5.70E+02	1.65E+02	3.37E+02	4.12E+02	4.23E+02	6.03E+02	7.14E+02	6.37E+02	5.16E+02	6.99E+02
Joseph M. Farley 2		6.34E+02	3.59E+02	3.17E+02	3.56E+02	5.02E+02	6.22E+02	5.05E+02	7.53E+02	6.08E+02
Fort Calhoun 1	5.44E+01	2.42E+02	3.08E+02	1.53E+02	2.35E+02	1.67E+02	1.84E+02	2.28E+02	2.32E+02	2.28E+02
R. E. Ginna	1.60E+02	2.40E+02	3.08E+02	3.50E+02	4.59E+02	5.01E+02	3.57E+02	5.64E+02	3.47E+02	5.92E+02
Haddam Neck	3.29E+03	5.29E+03	4.05E+03	3.90E+03	3.66E+03	5.76E+03	2.58E+03	3.17E+03	1.18E+03	4.81E+03
Harris 1								2.48E+02	4.01E+02	4.58E+02
Indian Point 1&2	2.76E+02	2.41E+02	1.72E+02	3.43E+02	2.22E+02	3.51E+02	3.36E+02	5.63E+02	4.39E+02	5.60E+02
Indian Point 3	4.27E+02	6.42E+02	1.94E+02	3.19E+01	5.87E+02	3.40E+02	5.67E+02	3.40E+02	5.73E+02	3.51E+02
Kewaunee	2.33E+02	2.51E+02	3.18E+02	2.92E+02	4.40E+02	3.79E+02	2.94E+02	3.51E+02	3.32E+02	3.41E+02
Maine Yankee	2.18E+02	2.16E+02	1.85E+02	2.87E+02	1.72E+02	1.84E+02	3.50E+02	1.18E+02	2.91E+02	4.22E+02
McGuire 1		6.25E+00	1.60E+02	1.49E+02	3.23E+02	4.02E+02	4.58E+02	4.92E+02	5.29E+02	4.23E+02
McGuire 2				1.49E+02	3.23E+02	4.02E+02	4.58E+02	4.92E+02	5.29E+02	4.23E+02
Millstone 2	2.68E+02	3.71E+02	2.91E+02	1.21E+02	3.97E+02	1.66E+02	2.80E+02	2.86E+02	2.59E+02	3.66E+02
Millstone 3							5.41E+02	5.90E+02	5.47E+02	6.97E+02
North Anna 1&2	4.03E+02	1.28E+03	5.71E+02	1.61E+03	6.20E+02	1.48E+03	1.56E+03	8.36E+02	1.94E+03	1.40E+03
Oconee 1,2,& 3	7.12E+02	5.07E+02	3.54E+02	1.28E+03	1.28E+03	1.24E+03	1.34E+03	9.49E+02	7.10E+02	1.02E+03
Palisades	7.47E+01	2.78E+02	1.79E+02	2.35E+02	6.95E+01	4.29E+02	6.32E+01	1.19E+02	2.83E+02	8.06E+01
Palo Verde 1						N/D	N/D	N/D	N/D	N/D
Palo Verde 2							N/D	N/D	N/D	N/D
Palo Verde 3								N/D	N/D	N/D
Point Beach 1&2	7.61E+02	6.52E+02	5.03E+02	5.39E+02	2.10E+03	8.05E+02	8.11E+02	7.09E+02	3.57E+02	5.59E+02
Prairie Island 1&2	5.43E+02	5.62E+02	6.00E+02	5.20E+02	6.41E+02	6.96E+02	6.70E+02	4.49E+02	4.05E+02	4.64E+02
Rancho Seco 1	1.47E-02	8.35E+01	6.46E+01	7.43E+01	2.97E+02	9.00E+01	6.50E+01	1.83E+01	1.01E+02	7.29E+01
H. B. Robinson 2	1.89E+02	1.86E+02	9.51E+01	2.40E+02	1.34E+01	3.09E+02	3.42E+02	2.74E+02	5.36E+02	1.64E+02
Salem 1	N/D	4.93E+02	7.22E+02	2.08E+02	3.30E+02	9.23E+02	4.10E+02	3.79E+02	6.35E+02	6.09E+02
Salem 2	N/R	8.42E+02	5.25E+02	2.23E+02	3.08E+02	5.77E+02	4.38E+02	6.61E+02	3.68E+02	5.11E+02
San Onofre 1	1.03E+03	2.97E+02	5.45E+02	1.57E+01	3.39E+01	2.38E+03	4.53E+02	2.27E+03	1.53E+03	9.62E+02
San Onofre 2-3			8.92E+00	2.38E+02	4.55E+02	4.75E+02	7.41E+02	8.20E+02	6.43E+02	1.30E+03
Seabrook 1										1.33E-03
Sequoyah 1&2	3.23E-01	7.65E+01	9.34E+02	7.35E+02	1.82E+03	6.33E+02	2.46E+02	1.19E+02	2.01E+02	1.15E+03
South Texas 1									1.99E+02	3.17E+02
South Texas 2										2.72E+02
St. Lucie 1	2.72E+02	3.25E+02	3.21E+02	3.46E+02	2.21E+02	2.86E+02	2.78E+02	3.38E+02	2.75E+02	4.05E+02
St. Lucie 2				3.77E+01	2.21E+02	3.64E+02	2.78E+02	3.38E+02	2.75E+02	4.05E+02
Summer 1			3.19E-01	2.27E+02	2.25E+02	3.11E+02	3.75E+02	7.36E+02	7.55E+02	6.85E+02
Surry 1&2	3.85E+02	5.31E+02	9.10E+02	7.17E+02	8.12E+02	7.50E+02	8.73E+02	8.15E+02	4.94E+02	4.29E+02
Three Mile Island 1	3.26E+01	7.11E+00	3.91E+00	3.09E+00	1.72E+00	9.06E+00	1.69E+02	1.97E+02	3.02E+02	3.73E+02
Three Mile Island 2	6.10E-04	5.06E-02	7.20E-02	3.75E-04	1.56E-04	2.22E-03	1.60E-03	1.48E-03	5.49E-03	9.76E-04
TMI 2/Epicor	N/D	N/D	N/D	N/D	N/D	**	**	**	**	**
Trojan	1.24E+02	1.03E+02	2.00E+02	2.34E+02	1.87E+02	2.65E+02	2.43E+02	1.75E+02	3.75E+02	3.18E+02

** Included with Three Mile Island 2 total

N/R = Not Reported

N/D = Not Detectable

Table 6

Liquid Effluents Comparison By Year

Tritium (Curies)										
Pressurized Water Reactors										
Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Turkey Point 3&4	7.49E+02	1.95E+02	6.27E+02	7.12E+02	8.91E+02					
Turkey Point 3						4.33E+02	3.64E+02	2.69E+02	2.99E+02	2.29E+02
Turkey Point 4						4.33E+02	3.64E+02	2.69E+02	2.99E+02	2.29E+02
Vogtle 1&2								3.21E+02	3.90E+02	9.18E+02
Waterford 3						2.54E+01	4.31E+02	5.25E+02	5.03E+02	3.58E+02
Wolf Creek 1						1.83E+02	3.77E+02	3.17E+02	4.06E+02	5.88E+02
Yankee Rowe 1	5.84E+01	1.03E+02	1.86E+02	1.68E+02	1.64E+02	2.28E+02	1.76E+02	2.19E+02	1.96E+02	1.68E+02
Zion 1	7.45E+02	6.04E+02	6.76E+02	1.74E+02	1.74E+02	1.35E+02	2.67E+02	2.16E+02	4.11E+02	1.81E+02
Zion 2		2.66E+02	3.77E+02	2.56E+02	5.11E+02	5.21E+02	4.46E+02	4.40E+02	5.58E+02	8.66E+02
Total	1.37E+04	1.89E+04	1.75E+04	1.81E+04	2.27E+04	2.78E+04	2.32E+04	2.81E+04	2.71E+04	3.40E+04

Table 7

Liquid Effluents Comparison By Year

Mixed Fission and Activation Products (Curies)

Boiling Water Reactors

Facility	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Big Rock Point 1	4.70E+00	3.50E+00	1.10E+00	2.70E+00	1.10E+00	2.02E+00	7.70E-01	3.92E-01	2.74E-01	9.03E-01
Browns Ferry 1,2,& 3					8.00E-01	2.70E+00	3.95E+00	1.19E+00	1.32E+01	1.02E+01
Brunswick 1&2						1.89E+00	3.29E+00	6.22E+00	3.48E+00	5.10E+00
Clinton 1										
Cooper					1.40E+00	1.74E+00	7.00E-02	7.50E-01	3.05E+00	< 2.48E+00
Dresden 1	8.20E+00	6.20E+00	6.80E+00	9.20E+00	6.90E+00	8.40E-01	3.60E-01	6.00E-01	3.26E-01	2.65E-02
Dresden 2-3		2.30E+01	2.20E+01	2.59E+01	3.31E+01	8.10E-01	1.21E+00	4.40E-01	3.99E-01	2.65E-01
Duane Arnold						< 1.00E-02	< 1.00E-02	2.32E-03	2.73E-01	5.10E-04
Fermi 2										
James A. Fitzpatrick						5.32E+00	6.01E+00	8.85E-01	1.58E+00	6.46E-01
Grand Gulf 1										
Edwin I. Hatch 1						6.00E-02	4.00E-02	2.50E+01	4.03E-02	4.82E-02
Edwin I. Hatch 2										
Hope Creek 1										
Humboldt Bay 3	2.40E+00	1.80E+00	1.40E+00	2.40E+00	4.40E+00	3.79E+00	9.90E-01	9.17E-01	1.95E-01	9.55E-02
LaCrosse	6.40E+00	1.71E+01	4.85E+01	3.59E+01	1.31E+01	1.42E+01	< 5.78E+00	2.13E+01	8.86E+00	1.67E+00
LaSalle 1&2										
Limerick 1&2										
Millstone 1		1.97E+01	5.15E+01	3.34E+01	1.98E+02	1.99E+02	9.65E+00	5.27E-01	1.75E-01	2.10E-01
Monticello		< 1.00E-01	< 1.00E-01	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Nine Mile Point 1	2.80E+01	3.22E+01	3.46E+01	4.08E+01	2.56E+01	2.10E+01	2.14E+00	3.03E-01	N/D	1.89E+00
Nine Mile Point 2										
Oyster Creek 1	1.85E+01	1.20E+01	1.00E+01	4.20E+00	7.00E-01	4.10E-01	2.20E-01	9.81E-02	1.53E-02	6.59E-03
Peach Bottom 2&3				< 1.00E-01	9.00E-01	9.30E-01	3.38E+00	2.23E+00	5.11E+00	1.95E+01
Perry 1										
Pilgrim 1			1.50E+00	9.00E-01	4.20E+00	8.01E+00	2.33E+00	3.41E+00	1.77E+00	5.12E-01
Quad-Cities 1&2			2.40E+00	2.14E+01	3.88E+01	1.71E+01	6.99E+00	1.34E+00	2.24E+00	1.31E+00
River Bend 1										
Shorcham 1										
Susquehanna 1&2										
Vermont Yankee 1				< 1.00E-01	N/D	< 1.00E-02	< 1.00E-02	1.55E-01	N/D	2.40E-04
WNP-2										
Total	6.82E+01	< 1.16E+02	< 1.80E+02	< 1.77E+02	3.29E+02	< 2.80E+02	< 4.72E+01	6.58E+01	4.10E+01	< 4.49E+01

* Fort St. Vrain

1.89E-04

* High temperature gas cooled reactor

N/D = Not Detectable

Table 7

Liquid Effluents Comparison By Year

Mixed Fission and Activation Products (Curies)

Boiling Water Reactors

Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Big Rock Point 1	7.82E-01	3.91E-01	2.60E-01	7.82E-02	1.48E-01	1.53E-01	7.09E-02	2.73E-01	2.18E-01	2.32E-01
Browns Ferry 1,2,& 3	9.38E+00	2.24E+00	5.36E+01	1.28E+01	6.30E+00	1.34E+00	5.39E-01	3.25E-01	2.42E-01	1.71E-01
Brunswick 1&2	1.26E+00	2.20E+00	2.32E+00	1.08E+00	5.65E-01	1.15E-01	1.26E-01	7.15E-01	8.32E-01	1.56E+00
Clinton 1								1.54E-02	1.10E-01	1.74E-02
Cooper	< 1.10E+01	< 3.61E+00	< 5.44E+00	< 1.23E+01	< 6.30E+00	< 1.30E+01	< 7.40E+00	2.25E+00	2.33E+00	2.19E+00
Dresden 1	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	+	+
Dresden 2-3	7.16E-01	6.12E-02	1.91E-02	1.24E-02	1.15E-01	2.03E+00	2.14E-01	3.78E-01	1.16E-01	6.53E-01
Duane Arnold	N/D	N/D	4.16E-06	N/D	1.90E-09	8.24E-04	N/D	N/D	N/D	N/D
Fermi 2							3.67E-03	2.10E-02	7.41E-02	1.68E-01
James A. Fitzpatrick	1.51E+00	2.51E+00	6.50E-01	7.71E-01	9.79E-02	1.80E-01	1.92E-02	7.84E-02	4.86E-02	5.46E-02
Grand Gulf 1				4.42E-03	3.16E-02	2.13E-01	3.01E-01	3.64E-01	3.96E-01	3.20E-01
Edwin I. Hatch 1	6.83E-02	3.73E-01	7.00E-01	9.09E-01	1.05E+00	4.80E-01	4.88E-01	6.85E-01	**	**
Edwin I. Hatch 2	4.57E-02	1.63E-01	1.83E-01	3.29E-01	2.67E-01	2.63E-01	3.02E-01	1.30E-01	9.83E-01	2.48E-01
Hope Creek 1							7.56E-01	1.62E+00	7.24E-01	1.05E+00
Humboldt Bay 3	1.39E-01	1.55E-01	3.46E-01	9.89E-02	1.64E-01	1.25E-01	4.69E-02	1.19E-02	7.60E-03	8.42E-03
LaCrosse	2.13E+00	2.26E-01	5.83E+00	3.75E+00	3.26E+00	1.83E+00	5.00E+00	1.16E+00	4.47E-01	1.69E-01
LaSalle 1&2			9.82E-01	8.60E+00	8.48E-02	3.84E+00	1.78E-02	8.89E-01	1.10E+01	4.01E-01
Limerick 1&2					6.45E-04	2.18E-02	5.74E-03	7.45E-02	N/D	1.12E-01
Millstone 1	7.24E-01	3.94E-01	1.15E+00	8.08E-01	3.78E-02	4.66E-01	7.73E-01	1.14E+00	1.08E+00	9.06E-01
Monticello	N/D	3.11E-06	5.80E-07	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Nine Mile Point 1	N/D	5.35E+00	2.51E-03	1.11E-02	N/D	N/D	< 6.70E-04	N/D	N/D	N/D
Nine Mile Point 2								1.30E+00	3.08E+00	2.20E-01
Oyster Creek 1	5.06E-01	2.48E-01	8.10E-02	3.63E-03	6.84E-03	N/D	N/D	6.63E-03	2.68E-02	5.01E-02
Peach Bottom 2&3	1.90E+00	1.97E+00	9.33E+00	2.24E+00	6.15E+00	2.16E+00	4.59E-01	3.31E-01	2.02E-01	1.13E-01
Perry 1							3.67E-03	1.47E-02	2.50E-01	1.16E+00
Pilgrim 1	2.73E+00	1.94E+00	8.72E-01	9.35E-01	4.75E+00	1.06E+00	< 2.11E-01	< 1.47E+00	3.56E-02	2.49E-02
Quad-Cities 1&2	1.31E+01	3.27E+00	4.03E-01	1.37E-01	7.23E-02	1.46E+00	2.36E-01	7.10E-02	5.60E-02	4.84E-01
River Bend 1							1.06E-01	7.96E-02	5.58E-01	1.11E+00
Shoreham 1							7.17E-03	3.41E-03	1.98E-05	1.78E-05
Susquehanna 1&2			< 1.99E-01	2.49E+00	1.45E-01	6.35E-01	7.92E-01	3.12E-01	9.48E-02	1.02E-01
Vermont Yankee 1	N/D	1.02E-02	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
WNP-2					2.74E-02	1.09E-02	2.32E-02	1.21E-02	6.10E-03	5.04E-02
Total	< 4.60E+01	< 2.51E+01	< 8.24E+01	< 4.74E+01	< 2.96E+01	< 2.94E+01	< 1.79E+01	< 1.37E+01	2.29E+01	1.16E+01
* Fort St. Vrain	6.37E-05	3.64E-04	4.34E-04	1.73E-02	1.27E-03	1.84E-03	2.30E-05	1.18E-06	1.69E-04	1.22E-05

* High temperature gas cooled reactor

** Included with Edwin I. Hatch 2 total

+ Included with Dresden 2-3 total

N/D = Not Detectable

Table 8

Liquid Effluents Comparison By Year

Mixed Fission and Activation Products (Curies)

Pressurized Water Reactors

Facility	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Arkansas One 1					6.50E+00	3.11E+00	1.31E+01	4.50E+00	6.05E+00	3.09E+00
Arkansas One 2										1.30E+00
Beaver Valley 1&2							1.70E-01	6.52E-01	2.63E-01	1.21E-01
Braidwood 1										
Braidwood 2										
Byron 1&2										
Callaway 1										
Calvert Cliffs 1&2						1.44E+00	1.18E+00	3.48E+00	6.13E+00	7.80E+00
Catawba 1										
Catawba 2										
Donald C. Cook 1&2						2.60E-01	1.87E+00	1.52E+00	1.48E+00	2.58E+00
Crystal River 3								1.54E-02	2.96E-02	4.16E-01
Davis-Besse 1								2.60E-02	9.01E-02	4.28E-02
Diablo Canyon 1&2										
Joseph M. Farley 1									1.03E-01	5.86E-02
Joseph M. Farley 2										
Fort Calhoun 1				< 1.00E-01	2.30E+00	3.60E-01	5.50E-01	3.63E-01	5.95E-01	2.45E-01
R. E. Ginna	1.00E+01	9.00E-01	3.00E-01	1.00E-01	1.00E-01	4.20E-01	6.90E-01	6.47E-02	6.07E-02	8.63E-02
Haddam Neck	6.70E+00	5.90E+00	4.80E+00	3.00E+00	2.20E+00	1.20E+00	1.30E-01	1.71E+00	9.50E-01	8.67E-01
Harris 1										
Indian Point 1&2				2.20E+00	4.20E+00	4.93E+00	< 4.98E+00	3.02E+00	1.99E+00	1.94E+00
Indian Point 3							Shown With	Other Unit	1.03E+00	4.02E-01
Kewaunee					4.00E-01	7.20E-01	2.83E+00	1.26E+00	6.99E-01	8.94E-01
Maine Yankee			< 1.00E-01	< 1.00E-01	4.00E+00	3.21E+00	< 2.84E+00	4.42E-01	1.04E-01	4.63E-01
McGuire 1										
McGuire 2										
Millstone 2						2.00E-02	2.60E-01	1.56E+00	2.79E+00	4.87E+00
Millstone 3										
North Anna 1&2									2.68E-01	5.89E-01
Oconee 1,2,& 3				2.80E+00	1.90E+00	5.05E+00	7.93E+00	3.62E+01	6.51E+00	9.24E-01
Palisades			6.80E+00	2.78E+01	5.90E+00	3.45E+00	4.40E-01	9.29E-02	9.65E-02	1.28E-01
Palo Verde 1										
Palo Verde 2										
Palo Verde 3										
Point Beach 1&2		1.00E-01	1.50E+00	8.00E-01	2.00E-01	2.34E+00	3.24E+00	1.50E+00	6.86E-01	7.25E-01
Prairie Island 1&2				< 1.00E-01	< 1.00E-01	4.50E-01	1.00E-01	1.33E-02	4.94E-03	9.00E-03
Rancho Seco 1						< 1.00E-02	N/D	N/D	N/D	N/D
H. B. Robinson 2		7.00E-01	8.00E-01	6.00E-01	2.50E+00	4.50E-01	3.80E-01	3.29E-01	1.78E-01	2.99E-01
Salem 1							< 1.00E-02	2.88E+00	4.02E+00	3.98E+00
Salem 2										
San Onofre 1	7.60E+00	1.50E+00	3.03E+01	1.60E+01	5.00E+00	1.22E+00	7.43E+00	9.84E+00	1.18E+01	1.10E+01
San Onofre 2-3										
Seabrook 1										
Squoyah 1&2										
South Texas 1										
South Texas 2										
St. Lucie 1							8.00E-02	5.80E+00	2.80E+00	2.67E+00
St. Lucie 2										
Summer 1										
Surry 1&2			2.00E-01	1.00E-01	3.80E+00	9.27E+00	3.37E+01	6.55E+01	2.41E+00	2.53E+00
Three Mile Island 1					1.30E+00	7.00E-02	1.00E-01	1.94E-01	6.14E-01	4.91E-01
Three Mile Island 2									3.92E-01	3.31E-01
TMI 2/Epicor										
Trojan							2.77E+00	4.19E+00	7.07E-01	5.55E-01

N/D = Not Detectable

Table 8

Liquid Effluents Comparison By Year

Mixed Fission and Activation Products (Curies)

Pressurized Water Reactors

Facility	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Turkey Point 3&4				< 1.00E-01	1.60E+00	3.07E+00	< 8.65E+00	8.90E+00	3.32E+00	4.10E-01
Turkey Point 3										
Turkey Point 4										
Yankee Rowe 1	< 1.00E-01	< 1.00E-01	< 1.00E-01	< 1.00E-01	< 1.00E-01	2.00E-02	< 1.00E-02	1.80E-02	8.14E-02	1.17E-02
Zion 1				< 1.00E-01	< 1.00E-01	< 1.00E-02	1.60E-01	9.50E-01	9.51E-01	7.00E-01
Zion 2										
Total	< 2.44E+01	< 9.20E+00	< 4.49E+01	< 5.40E+01	< 4.22E+01	< 4.11E+01	< 9.36E+01	1.55E+02	5.72E+01	5.05E+01

Table 8

Liquid Effluents Comparison By Year

Mixed Fission and Activation Products (Curies)

Pressurized Water Reactors

Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Arkansas One 1	3.42E+00	7.50E+00	5.80E+00	4.30E+00	4.10E+00	3.53E+00	5.09E+00	2.45E+00	3.73E+00	2.04E+00
Arkansas One 2	4.13E+00	2.95E+00	5.90E+00	3.70E+00	2.48E+00	4.36E+00	3.43E+00	1.85E+00	4.46E+00	2.65E+00
Beaver Valley 1&2	1.04E-01	1.44E-01	1.47E-01	6.09E-02	2.03E-01	1.13E-01	1.19E-01	6.69E-01	1.02E-01	5.45E-01
Braidwood 1								5.00E-02	8.57E+00	2.50E+00
Braidwood 2									3.04E+00	2.52E+00
Byron 1&2						1.63E+01	4.05E+00	2.48E+00	1.40E+00	6.35E-01
Callaway 1					1.07E-03	4.97E-03	3.83E-02	4.92E-01	7.74E-02	1.01E-02
Calvert Cliffs 1&2	4.53E+00	2.68E+00	5.26E+00	2.24E+00	1.64E+00	2.38E+00	1.79E+00	5.19E+00	2.64E+00	2.07E+00
Catawba 1						1.26E+00	3.82E-01	6.53E-01	5.42E-01	3.42E-01
Catawba 2							3.82E-01	6.53E-01	5.42E-01	3.42E-01
Donald C. Cook 1&2	1.37E+00	1.86E+00	1.90E+00	6.83E-01	1.19E+00	2.26E+00	3.34E-01	2.00E+00	4.44E-01	8.06E-01
Crystal River 3	1.46E-01	1.29E-01	1.07E-01	1.50E-01	2.34E-01	1.51E+00	8.12E-01	9.55E-01	2.31E-01	2.36E-01
Davis-Besse 1	2.07E-01	7.92E-01	2.19E-01	5.39E-01	1.89E-01	1.85E-01	6.15E-02	6.51E-02	1.68E-01	1.84E-01
Diablo Canyon 1&2					1.18E-02	3.20E+00	1.11E+01	2.86E+00	2.00E+00	1.61E+00
Joseph M. Farley 1	6.18E-02	1.31E-01	5.94E-02	5.75E-02	6.34E-02	6.72E-02	1.02E-01	5.09E-02	7.97E-02	7.31E-02
Joseph M. Farley 2		2.69E-02	2.90E-02	2.04E-02	8.63E-02	3.77E-02	8.28E-02	4.63E-02	8.53E-02	7.34E-02
Fort Calhoun 1	5.33E-01	1.75E-01	2.03E-01	1.44E-01	2.91E+00	2.88E-01	8.37E-02	2.03E-01	3.08E-01	5.62E-01
R. E. Ginna	1.96E-02	3.85E-02	6.17E-01	1.93E-01	1.69E-01	5.22E-01	6.47E-02	5.88E-02	3.43E-02	8.12E-02
Haddam Neck	2.76E-01	7.12E-01	6.93E-02	4.80E-01	2.63E-01	8.44E-02	3.10E-01	4.26E-01	6.87E-01	3.90E-01
Harris 1								9.08E-01	8.04E-02	2.42E-01
Indian Point 1&2	1.26E+00	5.67E+00	2.41E+00	4.02E+00	2.67E+00	1.85E+00	3.61E+00	6.02E+00	2.84E+00	6.38E-01
Indian Point 3	2.90E+00	2.62E+00	5.46E-01	5.44E-01	1.26E+00	4.18E-01	1.95E-01	3.47E-01	3.22E-01	5.92E-01
Kewaunee	6.17E-01	8.15E-01	1.52E+00	5.43E-01	1.01E+00	1.35E+00	5.33E-01	1.29E+00	5.01E-01	1.22E+00
Maine Yankee	2.97E-01	4.36E-01	7.03E-01	1.99E-01	8.62E-02	3.11E-02	2.99E-01	8.81E-01	3.49E-01	1.83E-01
McGuire 1		3.94E-01	1.75E+00	1.87E+00	1.51E+00	6.21E-01	7.73E-01	1.57E+00	2.57E+00	1.54E+00
McGuire 2				1.87E+00	1.51E+00	6.21E-01	7.73E-01	1.57E+00	2.57E+00	1.54E+00
Millstone 2	2.81E+00	4.18E+00	1.39E+01	7.81E+00	3.55E+00	4.60E+00	4.49E+00	4.07E+00	8.89E+00	1.06E+01
Millstone 3							3.01E+00	5.40E+00	3.15E+00	5.94E+00
North Anna 1&2	1.05E+00	6.76E-01	1.32E+00	5.88E+00	4.51E+00	5.07E+00	9.41E-01	1.33E+00	4.32E-01	1.16E+00
Oconee 1,2,& 3	1.54E+00	1.75E+00	1.04E+00	1.43E+00	1.58E+00	4.16E+00	3.02E+00	2.90E+00	3.10E+00	3.82E+00
Palisades	8.73E-03	3.31E-02	1.27E-01	7.48E-02	3.68E-02	5.83E-02	1.40E-01	9.23E-02	3.43E-02	3.75E-03
Palo Verde 1						N/D	N/D	N/D	N/D	N/D
Palo Verde 2							N/D	N/D	N/D	N/D
Palo Verde 3								N/D	N/D	N/D
Point Beach 1&2	6.29E-01	1.01E+00	2.95E+00	1.27E+00	1.22E+01	1.90E+00	1.60E+01	7.55E-01	9.58E-02	5.58E-02
Prairie Island 1&2	1.32E-02	9.12E-03	2.23E-03	3.16E-02	1.91E-02	2.75E-02	6.01E-01	6.04E-02	2.55E-01	1.73E-01
Rancho Seco 1	3.78E-03	5.92E-01	2.16E-01	2.81E-01	6.33E-01	7.39E-03	1.45E-03	5.78E-04	5.79E-03	2.15E-03
H. B. Robinson 2	3.58E-01	1.84E+00	1.20E+00	8.23E-01	3.90E-01	9.41E-02	2.61E-01	7.36E-01	9.64E-01	2.82E-01
Salem 1	2.65E+00	2.80E+00	3.22E+00	2.97E+00	3.31E+00	2.88E+00	4.35E+00	3.33E+00	3.21E+00	3.11E+00
Salem 2	3.89E-01	1.51E+00	3.21E+00	2.85E+00	2.75E+00	2.80E+00	6.11E+00	4.07E+00	3.23E+00	3.56E+00
San Onofre 1	1.12E+01	3.64E+00	2.15E+00	1.22E+00	2.74E+00	7.79E+00	8.51E-01	8.42E-01	7.11E-01	6.87E-01
San Onofre 2-3			6.32E-01	2.79E+00	1.30E+01	1.12E+01	8.20E-01	5.37E-01	1.16E+00	9.19E-01
Seabrook 1										1.09E-04
Sequoyah 1&2	N/R	2.76E+00	9.82E+00	4.61E+00	3.23E+00	1.45E+00	1.65E-01	4.66E-01	4.48E-01	3.54E-01
South Texas 1									2.24E-01	3.02E+00
South Texas 2										1.17E-02
St. Lucie 1	2.36E+00	2.46E+00	3.07E+00	2.99E+00	1.93E+00	2.72E+00	2.53E+00	5.95E-01	2.64E-01	2.56E-01
St. Lucie 2				4.37E-01	1.93E+00	2.75E+00	2.43E+00	5.42E-01	2.59E-01	2.53E-01
Summer 1			1.24E-04	1.47E+00	4.54E+00	7.09E-01	3.26E-01	4.88E-01	7.55E-01	1.37E+00
Surry 1&2	3.85E+00	6.11E+00	6.68E+00	1.45E+01	9.73E+00	8.55E+00	8.77E+00	5.17E+00	2.41E+00	3.87E+00
Three Mile Island 1	1.83E-01	8.69E-02	5.29E-02	8.12E-02	3.41E-02	6.30E-03	1.41E-02	4.41E-02	4.68E-02	1.61E-02
Three Mile Island 2	1.45E-05	2.22E-05	4.25E-05	9.03E-05	6.46E-04	1.77E-04	1.87E-04	1.16E-04	1.12E-03	3.15E-04
TMI 2/Eplicor	N/D	N/D	N/D	N/D	N/D	**	**	**	**	**
Trojan	7.87E-01	9.94E-01	8.56E-01	3.10E-01	3.49E-01	4.65E-01	2.64E-01	2.09E-01	2.01E-01	1.61E-01

** Included with Three Mile Island 2 total

N/D = Not Detectable

N/R = Not Reported

Table 8

Liquid Effluents Comparison By Year

Mixed Fission and Activation Products (Curies)

Pressurized Water Reactors

Facility	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Turkey Point 3&4	6.78E-01	3.03E-01	1.68E+00	1.13E+00	2.27E-01					
Turkey Point 3						4.48E-01	2.53E-01	3.74E-01	3.27E-01	1.58E-01
Turkey Point 4						4.48E-01	2.53E-01	3.74E-01	3.26E-01	1.58E-01
Vogtle 1&2								5.77E-01	1.66E+00	4.03E-01
Waterford 3						2.88E-01	4.02E+00	1.28E+00	1.41E+00	1.28E+00
Wolf Creek 1						6.35E-01	2.26E+00	2.90E-01	3.79E-01	7.23E-01
Yankee Rowe 1	1.75E-02	1.43E-02	9.53E-03	1.30E-02	3.06E-02	1.69E-02	1.36E-02	1.56E-02	7.10E-02	4.88E-03
Zion 1	4.74E-01	1.61E+00	7.22E-01	1.50E+00	6.82E+00	3.24E-01	5.57E-01	7.53E-01	1.61E+00	9.07E-01
Zion 2		1.05E+00	1.65E+00	1.15E+00	7.06E+00	2.05E+00	1.04E+00	8.20E-01	1.97E+00	2.57E+00
Total	4.89E+01	6.05E+01	8.17E+01	7.72E+01	1.02E+02	1.02E+02	9.79E+01	6.99E+01	7.60E+01	6.95E+01

Table 9

Solid Waste Summary 1989

Boiling Water Reactors			
<u>Facility</u>	<u>Volume (Cubic Meters)</u>	<u>Activity (Curies)</u>	<u>No. Of Shipments</u>
Big Rock Point 1	7.35E+01	3.71E+02	12
Browns Ferry 1,2,&3	5.84E+02	2.95E+02	45
Brunswick 1&2	6.20E+02	6.06E+03	91
Clinton 1	3.99E+02	1.89E+03	48
Cooper	2.92E+02	3.06E+02	31
Dresden 1,2,&3	2.24E+03	2.54E+03	112
Duane Arnold	1.46E+02	1.69E+04	17
Fermi 2	3.66E+02	7.01E+02	39
James A. Fitzpatrick	2.50E+02	9.39E+04	39
Grand Gulf 1	2.72E+02	2.06E+02	45
Edwin I. Hatch 1&2	8.53E+02	1.91E+03	109
Hope Creek 1	1.67E+02	5.27E+02	28
Humboldt Bay 3	0.00E+00	0.00E+00	0
LaCrosse	6.74E+00	3.21E+01	5
LaSalle 1&2	8.80E+02	4.36E+03	136
Limerick 1&2	5.76E+02	3.40E+04	183
Millstone 1	4.28E+02	1.99E+04	52
Monticello	2.48E+02	5.97E+04	23
Nine Mile Point 1	2.37E+02	2.48E+02	176
Nine Mile Point 2	4.22E+02	4.89E+02	33
Oyster Creek 1	4.20E+02	2.33E+05	71
Peach Bottom 2&3	8.92E+02	1.73E+03	238
Perry 1	9.68E+02	9.18E+02	39
Pilgrim 1	2.02E+02	2.76E+02	42
Quad-Cities 1&2	9.79E+02	1.33E+05	93
River Bend 1	5.16E+02	8.41E+02	67
Shoreham 1	1.79E+01	3.51E-02	1
Susquehanna 1&2	4.28E+02	1.34E+03	45
Vermont Yankee 1	4.84E+00	2.15E+00	1
WNP-2	3.64E+02	1.10E+03	36
Total	1.39E+04	6.17E+05	1857
• Fort St. Vrain	4.57E+00	1.08E+03	3

• High temperature gas cooled reactor

Table 10

Solid Waste Summary 1989

Pressurized Water Reactors			
Facility	Volume (Cubic Meters)	Activity (Curies)	No. Of Shipments
Arkansas One 1&2	2.22E+02	2.96E+02	32
Beaver Valley 1&2	1.96E+03	1.35E+03	43
Braidwood 1&2	3.10E+02	3.89E+02	17
Byron 1&2	3.65E+02	1.28E+03	52
Callaway 1	2.09E+02	6.00E+02	22
Calvert Cliffs 1&2	2.07E+02	4.14E+02	10
Catawba 1&2	2.16E+02	3.17E+02	16
Donald C. Cook 1&2	3.88E+02	1.17E+03	130
Crystal River 3	3.47E+02	2.40E+03	24
Davis-Besse 1	1.18E+02	2.08E+02	8
Diablo Canyon 1&2	1.87E+02	4.29E+02	45
Joseph M. Farley 1&2	4.85E+02	4.00E+02	30
Fort Calhoun 1	1.75E+02	8.76E+00	10
R.E.Ginna	2.33E+02	7.99E+01	24
Haddam Neck	1.53E+02	6.55E+02	24
Harris 1	1.60E+02	2.54E+01	43
Indian Point 1&2	4.78E+02	3.60E+02	41
Indian Point 3	5.77E+02	3.50E+02	27
Kewaunee	7.00E+01	7.74E+02	6
Maine Yankee	1.95E+02	2.36E+02	71
McGuire 1&2	4.36E+02	6.32E+02	16
Millstone 2	2.47E+02	5.55E+02	18
Millstone 3	1.47E+02	7.37E+02	12
North Anna 1&2	6.77E+02	1.72E+03	44
Oconee 1,2,&3	4.25E+02	1.46E+03	80
Palisades	2.19E+02	8.32E+03	28
Palo Verde 1,2,&3	8.74E+02	6.74E+02	66
Point Beach 1&2	1.06E+02	2.54E+02	27
Prairie Island 1&2	1.25E+02	1.03E+02	19
Rancho Seco 1	2.44E+02	3.27E+02	22
H.B.Robinson 2	9.69E+01	1.86E+02	47
Salem 1&2	1.22E+02	5.65E+04	43
* San Onofre	0.00E+00	0.00E+00	61
San Onofre 1	1.19E+02	1.72E+03	0
San Onofre 2-3	3.28E+02	2.72E+03	0
Seabrook 1	0.00E+00	0.00E+00	0
Sequoyah 1&2	4.65E+02	2.64E+03	91
South Texas 1&2	5.03E+01	7.24E+00	9
St. Lucie 1&2	3.18E+02	1.69E+02	72
Summer 1	1.40E+02	3.76E+02	60
Surry 1&2	5.38E+02	1.31E+03	34
Three Mile Island 1	3.32E+02	5.05E+01	24
Three Mile Island 2	1.18E+03	1.39E+04	54
TMI 2/Epicor	**	**	**
Trojan	2.59E+02	4.47E+02	18
Turkey Point 3&4	3.46E+02	2.26E+00	35
Vogtle 1&2	1.00E+02	1.51E+01	13
Waterford 3	7.61E+02	4.07E+02	19
Wolf Creek 1	1.51E+02	1.26E+03	11
Yankee Rowe 1	2.98E+02	1.78E+01	19
Zion 1&2	2.14E+02	3.58E+03	35
Total	1.64E+04	1.12E+05	1652

* Represents solid waste shipped by plant but not broken down into units 1, 2, & 3

** Included with Three Mile Island 2 totals

Table 11

Solid Waste Comparison By Year

Boiling Water Reactors

Volume (Cubic Meters) - Activity (Curies)

Facility	1977		1978		1979		1980	
Big Rock Point 1	7.22E+01	9.68E+02	3.10E+01	2.56E+01	8.99E+01	2.77E+02	4.20E+01	3.09E+01
Browns Ferry 1,2,&3	1.82E+03	1.10E+04	2.90E+03	1.33E+03	2.29E+03	4.17E+03	2.49E+03	6.46E+03
Brunswick 1&2	2.47E+03	3.24E+03	2.02E+03	2.14E+03	3.09E+03	4.29E+03	6.73E+03	7.55E+03
Clinton 1								
Cooper	2.83E+02	2.85E+02	3.29E+02	3.84E+02	5.65E+02	9.69E+01	4.35E+02	7.05E+02
Dresden 1,2,& 3	2.25E+03	1.13E+04	1.77E+03	1.88E+03	1.04E+03	8.45E+02	1.16E+03	4.46E+03
Duane Arnold	5.45E+02	4.98E+02	1.10E+03	1.86E+03	7.99E+02	8.01E+02	7.35E+02	7.00E+02
Fermi 2								
James A. Fitzpatrick	1.23E+03	6.17E+03	8.70E+02	3.19E+02	8.04E+02	1.06E+03	7.50E+02	8.86E+02
Grand Gulf 1								
Edwin I. Hatch 1	5.39E+02	3.81E+02	7.50E+02	1.09E+04	9.78E+02	2.70E+02	4.64E+02	9.62E+02
Edwin I. Hatch 2							2.59E+02	8.27E+01
Hope Creek 1								
Humboldt Bay 3	3.77E+02	2.00E+01	1.78E+02	7.91E-01	9.06E+01	3.35E+03	8.20E+01	6.95E+01
LaCrosse	4.65E+00	5.88E+02	3.80E+01	6.18E+01	5.09E+00	1.25E+02	4.32E+01	2.02E+01
LaSalle 1&2								
Limerick 1&2								
Millstone 1	1.77E+03	3.03E+03	2.00E+03	8.15E+04	2.11E+03	1.16E+03	2.30E+03	2.36E+03
Monticello	5.73E+02	2.91E+04	4.99E+02	6.35E+04	4.74E+02	1.31E+04	7.42E+02	7.57E+02
Nine Mile Point 1	6.65E+02	2.51E+04	3.85E+02	2.24E+04	4.97E+02	1.52E+03	8.14E+02	2.32E+04
Nine Mile Point 2								
Oyster Creek 1	1.74E+03	2.73E+02	1.54E+03	1.15E+03	1.13E+03	1.34E+03	2.03E+03	1.32E+03
Peach Bottom 2&3	2.52E+03	1.82E+03	1.96E+03	4.97E+03	2.40E+03	8.03E+03	2.64E+03	6.69E+03
Perry 1								
Pilgrim 1	5.84E+02	5.70E+03	1.97E+03	4.92E+04	3.03E+03	2.22E+04	2.94E+03	1.60E+03
Quad-Cities 1&2	1.20E+03	7.53E+03	1.34E+03	3.27E+03	7.82E+02	4.26E+03	1.67E+03	4.07E+03
River Bend 1								
Shoreham 1								
Susquehanna 1&2								
Vermont Yankee 1	1.08E+02	1.76E+02	3.99E+02	5.39E+04	2.71E+02	9.99E+02	4.84E+02	9.20E+02
WNP-2								
Total	1.88E+04	1.07E+05	2.01E+04	2.99E+05	2.04E+04	6.79E+04	2.68E+04	6.28E+04
* Fort St. Vrain					0.00E+00	0.00E+00	0.00E+00	0.00E+00

* High temperature gas cooled reactor

Table 11

Solid Waste Comparison By Year

Boiling Water Reactors

Volume (Cubic Meters) - Activity (Curies)

Facility	1981		1982		1983		1984	
Big Rock Point 1	1.44E+02	3.17E+02	1.09E+02	4.33E+00	1.01E+02	2.74E+02	3.67E+01	2.13E+00
Browns Ferry 1,2,& 3	2.23E+03	4.78E+03	5.91E+03	5.51E+03	3.72E+03	6.90E+03	1.92E+03	2.15E+03
Brunswick 1&2	4.30E+03	7.47E+03	3.53E+03	5.50E+03	3.51E+03	8.36E+03	1.37E+03	3.45E+03
Clinton 1								
Cooper	4.99E+02	4.43E+02	4.45E+02	4.27E+02	5.03E+02	8.53E+02	4.37E+02	4.91E+02
Dresden 1,2,& 3	1.14E+03	4.59E+03	8.99E+02	1.66E+05 +	1.42E+03	2.91E+03	1.26E+03	4.37E+03
Duane Arnold	6.97E+02	1.07E+03	4.57E+02	1.27E+03	6.81E+02	1.44E+03	2.68E+02	9.13E+02
Fermi 2								
James A. Fitzpatrick	8.61E+02	1.63E+03	1.64E+03	7.89E+02	7.11E+02	7.03E+02	4.31E+02	1.26E+03
Grand Gulf 1					3.12E+02	7.21E+00	4.31E+02	9.09E+00
Edwin I. Hatch 1	1.29E+03	4.46E+03	9.13E+02	3.10E+03	1.87E+03	2.27E+03	2.50E+03	2.58E+03
Edwin I. Hatch 2	1.40E+03	3.05E+02	7.79E+02	9.40E+02	**	**	**	**
Hope Creek 1								
Humboldt Bay 3	8.43E+01	5.46E-01	7.71E+01	1.34E+00	2.78E+01	1.75E+04	6.56E+01	7.29E+00
LaCrosse	4.82E+00	6.11E+01	3.53E+01	5.26E+01	1.20E+01	1.88E+02	4.22E+01	1.93E+02
LaSalle 1&2			0.00E+00	0.00E+00	6.83E+02	3.01E+01	8.40E+02	1.80E+02
Limerick 1&2							0.00E+00	0.00E+00
Millstone 1	1.96E+03	1.82E+03	9.77E+02	1.08E+03	6.93E+02	6.81E+02	9.40E+02	1.97E+03
Monticello	5.54E+02	4.42E+02	7.50E+02	3.89E+03	3.57E+02	4.43E+04	1.24E+03	5.73E+02
Nine Mile Point 1	5.31E+02	1.72E+03	5.76E+02	7.07E+03	7.21E+02	5.42E+04	6.29E+02	1.34E+04
Nine Mile Point 2								
Oyster Creek 1	1.78E+03	4.21E+02	9.96E+02	4.67E+03	1.00E+03	5.61E+02	1.39E+03	4.39E+04
Peach Bottom 2&3	2.34E+03	5.33E+03	3.23E+03	4.51E+03	2.68E+03	2.24E+04	2.26E+03	9.22E+04
Perry 1								
Pilgrim 1	1.06E+03	9.38E+02	2.28E+03	9.59E+02	6.65E+02	1.48E+03	3.12E+03	1.54E+03
Quad-Cities 1&2	1.72E+03	5.16E+03	1.46E+03	3.98E+03	1.58E+03	5.85E+03	1.35E+03	4.06E+04
River Bend 1								
Shoreham 1								
Susquchanna 1&2			4.51E+01	6.52E-02	1.26E+03	2.84E+02	1.30E+03	9.27E+02
Vermont Yankee 1	4.39E+02	1.11E+03	4.51E+02	2.09E+02	4.15E+02	5.75E+04	3.48E+02	2.85E+02
WNP-2							3.87E+02	3.58E+01
Total	2.30E+04	4.21E+04	2.56E+04	2.10E+05	2.29E+04	2.29E+05	2.26E+04	2.11E+05
* Fort St. Vrain	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.39E+01	1.84E+01	0.00E+00	0.00E+00

* High temperature gas cooled reactor

+ Includes 12 shipments of poison curtains (irradiated components) to Barnwell, SC

* * Included with Edwin I. Hatch 1 totals

Table 11

Solid Waste Comparison By Year

Boiling Water Reactors		Volume (Cubic Meters) - Activity (Curies)						
Facility	1985	1986	1987	1988	1989	1990	1991	1992
Big Rock Point 1	5.22E+01	1.14E+02	9.46E+00	2.52E+02	7.40E+01	2.30E+03	4.44E+01	7.28E+02
Browns Ferry 1,2,& 3	2.30E+03	3.08E+03	1.36E+03	1.49E+03	1.32E+03	6.44E+02	7.81E+02	5.72E+02
Brunswick 1&2	1.32E+03	2.50E+03	9.35E+02	9.83E+03	8.43E+02	4.48E+04	6.89E+02	3.07E+03
Clinton 1					5.10E+01	1.41E-01	2.87E+02	6.14E+01
Cooper	6.35E+02	2.98E+04	4.49E+02	5.83E+02	3.41E+02	3.60E+02	3.09E+02	1.47E+02
Dresden 1,2,& 3	1.05E+04	6.63E+04	2.14E+03	3.74E+04	1.80E+03	8.26E+02	2.35E+03	1.54E+03
Duane Arnold	7.93E+02	5.24E+02	2.17E+02	2.15E+04	4.94E+02	2.62E+02	2.12E+02	4.06E+02
Fermi 2			1.48E+02	2.12E+01	2.36E+02	9.37E+01	2.38E+02	2.81E+02
James A. Fitzpatrick	7.77E+02	7.79E+02	4.62E+02	7.21E+02	5.13E+02	6.44E+02	3.81E+02	1.32E+04
Grand Gulf 1	6.02E+02	2.60E+02	4.39E+02	1.36E+03	3.92E+02	1.65E+03	4.99E+02	7.15E+02
Edwin I. Hatch 1	2.04E+03	3.83E+04	1.36E+03	8.82E+02	7.78E+02	1.82E+03	8.36E+02	2.02E+03
Edwin I. Hatch 2	**	**	**	**	**	**	**	**
Hope Creek 1			8.45E+01	5.14E+00	4.21E+02	3.63E+02	2.91E+02	3.23E+03
Humboldt Bay 3	8.31E+02	2.60E+02	5.99E+02	3.50E+02	0.00E+00	0.00E+00	3.99E+01	9.91E-02
LaCrosse	6.30E+01	2.35E+02	4.81E+00	7.78E+01	2.93E+01	2.86E-03	6.52E+00	7.03E+01
LaSalle 1&2	1.21E+03	4.87E+02	8.02E+02	1.20E+03	7.66E+02	2.30E+03	9.25E+02	3.38E+03
Limerick 1&2	3.06E+02	2.06E+01	5.76E+02	7.53E+02	3.81E+02	2.15E+03	8.95E+02	9.70E+02
Millstone 1	1.17E+03	9.36E+04	7.00E+02	7.85E+02	6.66E+02	5.05E+02	2.79E+02	9.54E+04
Monticello	5.44E+02	4.87E+03	2.94E+02	2.81E+04	2.19E+02	5.66E+02	1.48E+02	2.93E+02
Nine Mile Point 1	5.75E+02	6.80E+03	1.08E+03	7.27E+02	5.07E+02	2.30E+02	2.72E+02	3.07E+02
Nine Mile Point 2					9.89E+01	1.14E+01	3.78E+02	3.88E+02
Oyster Creek 1	4.62E+02	6.30E+02	5.92E+02	7.96E+02	2.36E+02	3.48E+04	1.81E+02	6.29E+03
Peach Bottom 2&3	2.33E+03	1.21E+05	1.49E+03	1.88E+04	1.58E+03	3.89E+03	8.38E+02	1.19E+03
Perry 1			0.00E+00	0.00E+00	4.89E+02	4.52E+01	4.95E+02	5.59E+02
Pilgrim 1	1.41E+03	7.48E+04	6.01E+02	4.38E+02	5.27E+02	3.15E+02	2.72E+02	2.19E+02
Quad-Cities 1&2	1.33E+03	5.53E+04	1.32E+03	2.14E+03	9.19E+02	2.90E+04	9.25E+02	6.26E+02
River Bend 1			4.63E+02	7.99E+01	4.07E+02	3.45E+02	3.06E+02	3.50E+02
Shoreham 1			4.47E+01	1.47E-01	6.26E+01	9.57E-02	6.26E+01	1.86E-02
Susquehanna 1&2	1.13E+03	2.07E+03	8.68E+02	2.53E+03	7.18E+02	2.11E+03	1.33E+03	2.65E+03
Vermont Yankee 1	5.43E+02	1.73E+04	3.10E+02	3.33E+02	2.23E+02	1.19E+04	1.73E+02	4.25E+02
WNP-2	4.02E+02	2.96E+02	3.02E+02	5.07E+02	3.75E+02	1.09E+03	4.70E+02	1.01E+03
Total	3.13E+04	5.19E+05	1.77E+04	1.32E+05	1.55E+04	1.43E+05	1.49E+04	1.40E+05
* Fort St. Vrain	1.10E+02	4.19E+02	0.00E+00	0.00E+00	3.02E+01	1.03E+02	7.00E+00	3.10E-01

* High temperature gas cooled reactor

** Included with Edwin I. Hatch 1 totals

Table 11

Solid Waste Comparison By Year

Boiling Water Reactors

Volume (Cubic Meters) - Activity (Curies)

Facility	1989	
Big Rock Point 1	7.35E+01	3.71E+02
Browns Ferry 1,2,& 3	5.84E+02	2.95E+02
Brunswick 1&2	6.20E+02	6.06E+03
Clinton 1	3.99E+02	1.89E+03
Cooper	2.92E+02	3.06E+02
Dresden 1,2,& 3	2.24E+03	2.54E+03
Duane Arnold	1.46E+02	1.69E+04
Fermi 2	3.66E+02	7.01E+02
James A. Fitzpatrick	2.50E+02	9.39E+04
Grand Gulf 1	2.72E+02	2.06E+02
Edwin I. Hatch 1	8.53E+02	1.91E+03
Edwin I. Hatch 2	**	**
Hope Creek 1	1.67E+02	5.27E+02
Humboldt Bay 3	0.00E+00	0.00E+00
LaCrosse	6.74E+00	3.21E+01
LaSalle 1&2	8.80E+02	4.36E+03
Limerick 1&2	5.76E+02	3.40E+04
Millstone 1	4.28E+02	1.99E+04
Monticello	2.48E+02	5.97E+04
Nine Mile Point 1	2.37E+02	2.48E+02
Nine Mile Point 2	4.22E+02	4.89E+02
Oyster Creek 1	4.20E+02	2.33E+05
Peach Bottom 2&3	8.92E+02	1.73E+03
Perry 1	9.68E+02	9.18E+02
Pilgrim 1	2.02E+02	2.76E+02
Quad-Cities 1&2	9.79E+02	1.33E+05
River Bend 1	5.16E+02	8.41E+02
Shoreham 1	1.79E+01	3.51E-02
Susquehanna 1&2	4.28E+02	1.34E+03
Vermont Yankee 1	4.84E+00	2.15E+00
WNP-2	3.64E+02	1.10E+03
Total	1.39E+04	6.17E+05
* Fort St. Vrain	4.57E+00	1.08E+03

* High temperature gas cooled reactor

** Included with Edwin I. Hatch 1 totals

Table 12

Solid Waste Comparison By Year

Pressurized Water Reactors		Volume (Cubic Meters) - Activity (Curies)						
Facility	1977	1978	1979	1980				
Arkansas One 1&2	3.17E+02	1.26E+02	N/R	N/R	N/R	N/R	N/R	N/R
Beaver Valley 1&2	2.67E+02	8.18E+00	4.39E+02	2.25E+02	2.44E+02	2.95E+02	2.84E+02	5.34E+02
Braidwood 1&2								
Byron 1&2								
Callaway 1								
Calvert Cliffs 1&2	3.09E+02	9.83E+02	6.03E+02	1.12E+03	4.32E+02	9.71E+02	2.51E+02	1.48E+04
Catawba 1&2								
Donald C. Cook 1&2	6.84E+02	8.28E+01	1.28E+03	2.25E+02	1.09E+03	3.37E+02	2.10E+03	1.04E+03
Crystal River 3	4.48E+02	3.48E+00	6.87E+02	2.72E+04	1.24E+03	1.20E+03	9.27E+02	2.05E+03
Davis-Besse 1	0.00E+00	0.00E+00	3.40E+02	3.30E+00	2.60E+02	2.86E+00	3.30E+02	3.00E+01
Diablo Canyon 1&2								
Joseph M. Farley 1&2			2.69E+02	5.72E+00	1.11E+03	2.32E+02	4.41E+02	2.26E+02
Fort Calhoun 1	5.97E+02	6.46E+02	5.84E+02	1.06E+02	2.44E+02	2.99E+01	4.06E+02	1.32E+03
R. E. Ginna	3.49E+02	6.90E+02	5.96E+01	6.27E+02	3.08E+02	1.53E+02	4.00E+02	4.60E+02
Haddam Neck	1.68E+03	8.41E+02	2.29E+02	1.44E+02	1.29E+03	3.05E+02	1.26E+03	4.89E+02
Harris 1								
Indian Point 1&2	1.06E+03	1.45E+03	8.43E+03	2.37E+03	1.17E+03	2.16E+03	1.03E+03	3.32E+02
Indian Point 3	Shown With Other Unit		5.94E+02	6.49E+01	2.25E+02	1.63E+02	3.47E+02	2.02E+02
Kewaunee	3.37E+01	3.66E+02	7.98E+01	1.50E+03	1.70E+02	3.54E+02	1.03E+02	1.37E+03
Maine Yankee	1.84E+02	1.53E+04	5.81E+02	4.14E+03	3.63E+02	2.77E+03	4.57E+02	4.79E+03
McGuire 1&2								
Millstone 2	9.35E+01	5.80E+01	1.55E+02	1.70E+01	2.46E+02	1.78E+03	7.51E+00	2.28E+02
Millstone 3								
North Anna 1&2			2.14E+01	3.59E+00	2.95E+02	5.89E+01	2.64E+02	1.54E+02
Oconee 1,2,& 3	1.07E+03	7.37E+03	1.58E+03	5.93E+03	1.63E+03	2.59E+03	1.32E+03	2.91E+03
Palsades	4.43E+02	8.71E+01	7.17E+02	3.40E+03	6.84E+02	3.92E+02	7.31E+02	1.18E+02
Palo Verde 1,2,&3								
Point Beach 1&2	6.84E+03	5.68E+02	1.61E+02	1.51E+03	2.69E+02	1.22E+03	4.49E+02	9.35E+02
Prairie Island 1&2	6.43E+02	2.46E+02	1.95E+02	1.53E+02	1.99E+01	8.83E+01	5.25E+02	1.98E+02
Rancho Seco 1	5.06E+01	1.21E+03	1.29E+02	1.27E+03	1.01E+02	4.03E+00	4.60E+02	1.12E+02
H. B. Robinson 2	2.59E+02	1.24E+03	8.22E+02	2.40E+02	8.34E+02	8.72E+01	3.99E+03	3.08E+02
Salem 1&2	4.25E+02	2.20E+00	2.27E+02	1.94E+02	6.86E+02	1.28E+02	1.01E+03	4.59E+02
* San Onofre								
San Onofre 1	3.68E+02	6.02E+01	1.31E+02	7.17E+00	8.35E+01	9.24E+01	7.12E+02	4.35E+02
San Onofre 2-3								
Scabrook 1								
Sequoyah 1&2							N/R	N/R
South Texas 1&2								
St. Lucie 1&2	3.85E+02	3.27E+03	3.58E+02	1.26E+04	3.08E+02	1.79E+02	3.12E+02	7.46E+02
Summer 1								
Surry 1&2	7.93E+02	6.10E+02	6.03E+02	5.66E+02	2.74E+03	3.45E+02	2.01E+03	7.06E+02
Three Mile Island 1	2.18E+02	4.73E+01	3.89E+02	2.34E+02	7.51E+02	3.12E+01	4.62E+02	2.30E+02
Three Mile Island 2			Shown With	Other Unit	Shown With	Other Unit	7.67E+02	1.26E+02
TMI 2/Epicor							0.00E+00	0.00E+00
Trojan	1.01E+02	8.31E+01	2.26E+02	4.48E+02	6.37E+02	3.30E+02	5.14E+02	4.59E+01
Turkey Point 3&4	1.07E+03	4.26E+02	1.75E+03	1.72E+03	9.20E+02	2.48E+02	7.24E+02	1.61E+02
Vogtle 1&2								
Waterford 3								
Wolf Creek 1								
Yankee Rowe 1	2.81E+02	3.54E+00	2.60E+02	9.75E+00	2.36E+02	1.63E+02	2.07E+02	9.57E+01
Zion 1&2	1.97E+03	2.25E+02	1.63E+03	1.86E+03	5.97E+02	2.69E+03	1.64E+03	2.55E+03
Total	2.09E+04	3.60E+04	2.35E+04	6.79E+04	1.92E+04	1.94E+04	2.44E+04	3.82E+04

* Represents solid waste shipped by plant but not broken down into units 1, 2, & 3

N/R = Not Reported

Table 12

Solid Waste Comparison By Year

Pressurized Water Reactors

Volume (Cubic Meters) Activity (Curies)

Facility	1981		1982		1983		1984	
Arkansas One 1&2	N/R	N/R	N/R	N/R	7 06E+02	2 09E+03	8 10E+02	1 46E+03
Beaver Valley 1&2	2 13E+02	9 30E+01	2 94E+02	3 83E+02	2 19E+02	4 75E+02	1 56E+02	7 11E+02
Braidwood 1&2								
Byron 1&2								
Callaway 1							0 00E+00	0 00E+00
Calvert Cliffs 1&2	5 00E+02	9 86E+01	1 57E+02	9 16E+02	5 06E+02	1 07E+02	5 28E+02	3 77E+04
Catawba 1&2								
Donald C. Cook 1&2	9 63E+02	1 43E+03	7 14E+02	8 45E+02	6 68E+02	2 01E+03	4 94E+02	6 69E+02
Crystal River 3	1 27E+03	1 38E+03	6 62E+02	6 28E+02	5 40E+02	1 55E+03	4 11E+02	1 15E+03
Davis Besse 1	3 25E+02	3 95E+01	0 00E+00	0 00E+00	1 13E+02	6 37E+02	1 51E+02	4 73E+02
Diablo Canyon 1&2							0 00E+00	0 00E+00
Joseph M. Farley 1&2	5 64E+02	7 20E+02	3 46E+02	1 03E+02	4 41E+02	1 05E+03	5 62E+02	2 98E+02
Fort Calhoun 1	2 53E+02	1 01E+02	3 42E+02	3 54E+01	4 65E+02	7 00E+02	3 93E+02	7 17E+01
R. E. Ginna	3 76E+02	6 35E+02	4 89E+02	2 02E+02	3 36E+02	5 21E+02	2 52E+02	3 23E+02
Haddam Neck	4 38E+02	6 61E+02	3 12E+02	2 57E+02	6 52E+02	1 52E+03	4 28E+02	3 75E+02
Harris 1								
Indian Point 1&2	1 58E+03	1 71E+03	1 17E+03	6 46E+03	1 29E+03	2 12E+03	9 81E+02	2 03E+03
Indian Point 3	3 17E+02	6 40E+01	3 79E+02	6 14E+01	3 16E+02	7 32E+02	1 53E+02	4 12E+02
Kewaunee	7 38E+01	1 98E+02	6 73E+01	2 74E+02	5 52E+01	6 85E+02	6 32E+01	1 60E+03
Maine Yankee	4 14E+02	1 67E+03	2 20E+02	3 09E+01	3 37E+02	1 03E+02	3 49E+02	3 59E+02
McGuire 1&2	1 98E+01	1 31E+01	9 91E+01	6 43E+00	2 44E+02	2 82E+01	4 14E+02	1 89E+03
Millstone 2	1 63E+01	3 21E+02	6 85E+00	4 84E+02	4 48E+01	2 58E+02	6 08E+01	1 10E+05
Millstone 3								
North Anna 1&2	3 02E+02	2 62E+03	4 21E+02	3 05E+02	5 39E+02	1 87E+03	9 00E+02	9 53E+02
Oconee 1,2 & 3	2 48E+03	1 12E+04	3 06E+03	1 09E+04	1 16E+03	2 84E+03	9 36E+02	6 17E+03
Palisades	8 54E+02	1 57E+04	7 08E+02	7 98E+01	5 75E+02	2 56E+04	4 48E+02	2 58E+02
Palo Verde 1,2 & 3								
Point Beach 1&2	1 77E+02	4 87E+02	2 52E+02	9 46E+02	7 11E+02	1 12E+03	7 12E+02	1 64E+03
Prairie Island 1&2	2 97E+02	5 64E+01	9 91E+01	3 64E+02	2 39E+02	1 92E+02	4 19E+01	1 19E+01
Rancho Seco 1	2 31E+02	1 44E+02	2 40E+02	4 66E+02	2 72E+02	2 25E+02	4 25E+02	4 60E+01
H. B. Robinson 2	9 02E+02	1 88E+01	1 38E+03	6 38E+01	1 09E+03	4 62E+01	3 05E+03	1 95E+02
Salem 1&2	9 36E+02	1 14E+03	1 91E+03	3 19E+02	2 07E+03	2 99E+02	1 52E+03	6 23E+02
* San Onofre								
San Onofre 1	1 62E+03	1 26E+03	9 27E+02	7 52E+01	3 33E+02	2 27E+02	2 91E+02	1 54E+01
San Onofre 2 & 3			0 00E+00	0 00E+00	1 89E+02	7 98E+00	2 02E+02	5 49E+02
Seabrook 1								
Sequoyah 1&2	1 61E+02	2 92E+01	3 58E+02	2 28E+02	6 93E+02	2 30E+03	9 67E+02	2 43E+03
South Texas 1&2								
St. Lucie 1&2	2 50E+02	2 96E+02	3 07E+02	7 95E+02	6 20E+02	9 39E+04	1 22E+03	6 36E+04
Summer 1			0 00E+00	0 00E+00	9 25E+01	1 37E+01	4 80E+02	1 55E+02
Surry 1&2	2 80E+03	1 36E+03	2 17E+03	9 89E+02	3 08E+03	3 56E+03	9 45E+02	1 16E+03
Three Mile Island 1	7 98E+02	2 34E+02	5 32E+02	8 91E+00	6 05E+02	6 84E+02	4 34E+02	4 18E+02
Three Mile Island 2	2 74E+02	5 11E+01	1 80E+02	1 22E+01	3 16E+02	5 17E+05	2 56E+02	9 89E+03
TMI 2/Epikor	1 51E+02	3 50E+02	0 00E+00	0 00E+00	2 23E+02	4 62E+04	4 53E+00	2 35E-01
Trojan	3 75E+02	1 04E+03	2 17E+01	2 87E+02	2 28E+02	1 67E+03	2 30E+02	5 85E+01
Turkey Point 3&4	1 25E+03	1 17E+02	1 01E+03	1 13E+03	1 21E+03	9 26E+02	8 50E+02	1 91E+03
Vogtle 1&2								
Waterford 3								
Wolf Creek 1								
Yankee Rowe 1	3 08E+02	6 79E+01	2 09E+02	2 81E+01	1 58E+02	5 12E+00	2 00E+02	1 63E+02
Zion 1&2	1 53E+03	3 44E+03	8 82E+02	2 17E+03	9 21E+02	2 97E+03	6 43E+02	2 62E+03
Total	2 30E+04	4 87E+04	1 99E+04	2 99E+04	2 23E+04	7 16E+05	2 10E+04	2 52E+05

* Represents solid waste shipped by plant but not broken down into units 1, 2, & 3

N/R = Not Reported

Table 12

Solid Waste Comparison By Year

Pressurized Water Reactors

Volume (Cubic Meters) - Activity (Curies)

Facility	1985		1986		1987		1988	
Arkansas One 1&2	6.88E+02	1.75E+03	1.21E+02	2.18E+02	5.23E+02	1.63E+03	1.97E+02	8.22E+02
Beaver Valley 1&2	1.56E+02	9.71E+01	9.49E+01	4.45E+02	7.65E+01	3.22E+01	2.33E+02	4.29E+02
Braidwood 1&2					0.00E+00	0.00E+00	8.32E+01	3.51E+00
Byron 1&2	1.78E+02	1.39E+01	3.18E+02	9.90E+01	3.06E+02	8.65E+02	3.09E+02	5.09E+02
Callaway 1	1.39E+02	6.29E+00	1.68E+02	1.91E+01	1.98E+02	3.13E+02	9.58E+01	9.46E+02
Calvert Cliffs 1&2	3.89E+02	1.51E+04	2.12E+02	4.51E+02	2.44E+02	6.41E+02	5.25E+01	1.12E+03
Catawba 1&2	3.48E+01	6.90E-02	1.93E+02	1.33E+01	2.73E+02	2.79E+02	2.56E+02	7.05E+02
Donald C. Cook 1&2	8.28E+02	2.00E+03	5.28E+02	1.59E+03	4.63E+02	2.30E+03	2.46E+02	5.58E+02
Crystal River 3	4.98E+02	4.60E+03	3.64E+02	1.35E+03	2.90E+02	6.75E+02	2.26E+02	1.07E+03
Davis-Besse 1	1.97E+02	9.58E+01	1.40E+02	2.19E+00	8.48E+01	3.20E+00	1.72E+02	1.76E+02
Diablo Canyon 1&2	3.11E+01	4.40E+01	9.06E+01	6.97E+00	1.65E+02	1.21E+02	2.10E+02	3.92E+02
Joseph M. Farley 1&2	4.95E+02	8.20E+02	2.45E+02	1.80E+03	5.32E+02	3.34E+02	4.96E+02	1.47E+03
Fort Calhoun 1	3.43E+02	2.24E+02	1.16E+02	2.82E+01	1.26E+02	5.47E+02	4.87E+01	1.75E+01
R. E. Ginna	2.23E+02	1.19E+02	1.12E+02	1.39E+02	1.65E+02	2.16E+02	1.67E+02	3.80E+02
Haddam Neck	1.73E+02	5.33E+01	4.14E+02	5.86E+02	3.20E+02	5.45E+02	1.31E+02	3.37E+02
Harris 1					1.05E+02	2.61E+00	1.50E+02	1.05E+01
Indian Point 1&2	6.89E+02	5.75E+02	5.30E+02	2.52E+02	2.30E+02	8.34E+02	2.41E+02	4.67E+02
Indian Point 3	2.39E+02	5.49E+02	8.29E+01	2.58E+01	3.17E+02	3.33E+02	1.82E+02	3.57E+02
Kewaunee	7.77E+01	9.56E+02	5.31E+01	1.33E+02	8.25E+01	4.58E+02	7.49E+01	4.83E+02
Maine Yankee	3.59E+02	1.11E+02	1.96E+02	1.64E+02	7.50E+01	1.90E+02	1.37E+02	4.36E+02
McGuire 1&2	6.60E+02	1.97E+02	7.83E+02	6.73E+02	6.92E+02	3.23E+02	5.16E+02	6.49E+02
Millstone 2	2.87E+01	6.16E+03	8.85E+01	6.17E+03	1.38E+02	2.13E+04	1.59E+02	5.06E+01
Millstone 3			5.47E+00	5.17E-01	9.95E+01	5.91E+01	1.63E+02	5.34E+02
North Anna 1&2	6.50E+02	2.90E+02	5.30E+02	7.97E+02	4.89E+02	1.64E+03	2.95E+02	7.71E+02
Oconee 1,2,& 3	4.33E+02	1.41E+03	7.60E+02	8.51E+02	8.53E+02	2.01E+03	7.23E+02	1.42E+04
Palisades	4.76E+02	1.83E+02	2.39E+02	2.65E+02	2.23E+02	1.06E+02	1.87E+02	1.38E+03
Palo Verde 1,2,&3	8.42E+01	6.80E+01	1.16E+02	4.22E+01	4.63E+02	9.76E+02	7.78E+02	7.78E+02
Point Beach 1&2	2.81E+02	1.25E+03	1.08E+02	1.35E+03	1.55E+02	1.43E+03	1.95E+02	6.61E+02
Prairie Island 1&2	1.73E+02	4.02E+02	1.28E+02	1.55E+02	1.42E+02	4.30E+02	5.68E+01	1.38E+02
Rancho Seco 1	9.76E+02	1.57E+03	1.56E+02	1.00E+03	1.59E+02	3.51E+00	3.46E+02	6.25E+01
H. B. Robinson 2	6.42E+02	3.35E+03	4.53E+02	1.58E+02	1.01E+02	2.59E+02	8.42E+01	3.76E+02
Salem 1&2	4.55E+02	2.02E+03	4.71E+02	4.53E+02	3.29E+02	9.69E+02	3.59E+02	3.80E+02
* San Onofre	1.56E+01	8.96E-01	2.33E+00	4.65E-01	4.04E+00	4.32E-01	4.24E-01	1.63E-01
San Onofre 1	1.80E+02	6.04E+00	2.51E+02	3.82E+02	3.69E+01	4.98E+01	3.08E+01	4.06E+00
San Onofre 2-3	5.45E+02	1.72E+03	2.94E+02	1.93E+02	2.45E+02	2.71E+02	2.60E+02	2.55E+03
Seabrook 1								
Squoyah 1&2	7.52E+02	2.45E+03	4.27E+02	1.33E+04	4.12E+02	9.78E+02	6.07E+02	2.92E+02
South Texas 1&2							0.00E+00	0.00E+00
St. Lucie 1&2	5.45E+02	1.59E+03	4.60E+02	2.13E+03	3.53E+02	1.05E+03	4.67E+02	1.29E+04
Summer 1	4.46E+02	1.30E+02	1.12E+02	1.50E+01	3.80E+02	6.76E+02	1.61E+02	1.22E+02
Surry 1&2	2.02E+03	1.21E+03	6.39E+02	1.16E+03	5.15E+02	2.94E+04	7.30E+02	1.94E+02
Three Mile Island 1	4.69E+02	1.94E+01	2.13E+02	7.70E+00	2.49E+02	2.38E+02	2.37E+02	6.92E+02
Three Mile Island 2	4.83E+02	6.35E+03	3.29E+02	5.81E+01	6.59E+02	3.18E+02	9.17E+02	7.18E+03
TMI 2/Epicor	**	**	**	**	**	**	**	**
Trojan	3.09E+02	3.52E+03	2.49E+02	6.25E+02	3.31E+02	4.09E+02	2.48E+02	4.33E+02
Turkey Point 3&4	6.08E+02	1.50E+03	3.23E+02	8.87E+01	3.07E+02	9.32E+02	1.07E+02	7.05E+02
Vogtle 1&2					0.00E+00	0.00E+00	4.72E+01	2.55E+01
Waterford 3	2.82E+02	3.39E+01	1.74E+02	3.75E+01	3.83E+02	1.78E+02	2.81E+02	4.43E+03
Wolf Creek 1	0.00E+00	0.00E+00	1.73E+02	1.48E+02	1.28E+02	1.15E+01	1.24E+02	1.27E+03
Yankee Rowe 1	2.00E+02	2.68E+02	1.12E+02	5.21E+00	1.86E+02	8.83E+00	1.22E+02	8.85E+03
Zion 1&2	6.73E+02	2.69E+03	3.31E+02	6.74E+02	4.11E+02	7.13E+02	3.59E+02	2.50E+03
Total	1.81E+04	6.55E+04	1.19E+04	3.81E+04	1.30E+04	7.51E+04	1.23E+04	7.28E+04

* Represents solid waste shipped by plant but not broken down into units 1, 2, & 3

** Included with Three Mile Island 2 totals

Table 12

Solid Waste Comparison By Year

Pressurized Water Reactors Volume (Cubic Meters) - Activity (Curies)

Facility	1989	
Arkansas One 1&2	2 22E+02	2 96E+02
Beaver Valley 1&2	1 96E+03	1 35E+03
Braidwood 1&2	3 10E+02	3 89E+02
Byron 1&2	3 65E+02	1 28E+03
Callaway 1	2 09E+02	6 00E+02
Calvert Cliffs 1&2	2 07E+02	4 14E+02
Catawba 1&2	2 16E+02	3 17E+02
Donald C Cook 1&2	3 88E+02	1 17E+03
Crystal River 3	3 47E+02	2 40E+03
Davis-Besse 1	1 18E+02	2 08E+02
Diablo Canyon 1&2	1 87E+02	4 29E+02
Joseph M Farley 1&2	4 85E+02	4 00E+02
Fort Calhoun 1	1 75E+02	8 76E+00
R E Ginna	2 33E+02	7 99E+01
Haddam Neck	1 53E+02	6 55E+02
Harris 1	1 60E+02	2 54E+01
Indian Point 1&2	4 78E+02	3 60E+02
Indian Point 3	5 77E+02	3 50E+02
Kewaunee	7 00E+01	7 74E+02
Maine Yankee	1 95E+02	2 36E+02
McGuire 1&2	4 36E+02	6 32E+02
Millstone 2	2 47E+02	5 55E+02
Millstone 3	1 47E+02	7 37E+02
North Anna 1&2	6 77E+02	1 72E+03
Oconee 1,2,& 3	4 25E+02	1 46E+03
Paisades	2 19E+02	8 32E+03
Palo Verde 1,2,&3	8 74E+02	6 74E+02
Point Beach 1&2	1 06E+02	2 54E+02
Prairie Island 1&2	1 25E+02	1 03E+02
Rancho Seco 1	2 44E+02	3 27E+02
H B Robinson 2	9 69E+01	1 86E+02
Salem 1&2	1 22E+02	5 65E+04
* San Onofre	0 00E+00	0 00E+00
San Onofre 1	1 19E+02	1 72E+03
San Onofre 2 3	3 28E+02	2 72E+03
Seabrook 1	0 00E+00	0 00E+00
Sequoyah 1&2	4 65E+02	2 64E+03
South Texas 1&2	5 03E+01	7 24E+00
St Lucie 1&2	3 18E+02	1 69E+02
Summer 1	1 40E+02	3 76E+02
Surry 1&2	5 38E+02	1 31E+03
Three Mile Island 1	3 32E+02	5 05E+01
Three Mile Island 2	1 18E+03	1 39E+04
TMI 2/Epkor	**	**
Trojan	2 59E+02	4 47E+02
Turkey Point 3&4	3 46E+02	2 26E+00
Vogtle 1&2	1 00E+02	1 51E+01
Waterford 3	7 61E+02	4 07E+02
Wolf Creek 1	1 51E+02	1 26E+03
Yankee Rowe 1	2 98E+02	1 78E+01
Zion 1&2	2 14E+02	3 58E+03
Total	1 64E+04	1 12E+05

* Represents solid waste shipped by plant but not broken down into units 1, 2, & 3

** Included with Three Mile Island 2 totals

Table 13

Net Electrical Energy Generation Comparison By Year

Megawatt Hours								
Boiling Water Reactors								
Facility	Initial Criticality	Commercial Operation	1978	1979	1980	1981	1982	1983
Big Rock Point 1	09/27/62	03/29/63	4.01E+05	1.14E+05	4.05E+05	4.70E+05	3.60E+05	3.49E+05
Browns Ferry 1	08/17/73	08/01/74	1.69E+07	2.04E+07	6.06E+06	4.41E+06	7.88E+06	2.18E+06
Browns Ferry 2	07/20/74	03/01/75			5.62E+06	7.47E+06	4.45E+06	6.39E+06
Browns Ferry 3	08/08/76	03/01/77			6.94E+06	6.26E+06	4.89E+06	5.39E+06
Brunswick 1	10/08/76	03/18/77	9.91E+06	6.82E+06	3.94E+06	2.56E+06	2.92E+06	1.39E+06
Brunswick 2	03/20/75	11/03/75			1.86E+05	3.28E+06	1.91E+06	3.94E+06
Clinton 1	02/27/87	11/24/87						
Cooper	02/21/74	07/01/74	4.89E+06	4.99E+06	3.79E+06	3.85E+06	5.28E+06	3.34E+06
Dresden 1	10/15/59	07/04/60	7.59E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dresden 2	01/07/70	06/09/70	9.53E+06	8.42E+06	4.58E+06	3.41E+06	5.12E+06	3.40E+06
Dresden 3	01/31/71	11/16/71			4.33E+06	5.18E+06	3.89E+06	4.15E+06
Duane Arnold	03/23/74	02/01/75	1.23E+06	2.90E+06	2.80E+06	2.22E+06	2.28E+06	2.32E+06
Fermi 2	06/21/85	01/23/86						
James A. Fitzpatrick	11/17/74	07/28/75	4.20E+06	2.96E+06	4.33E+06	4.78E+06	4.96E+06	4.63E+06
Grand Gulf 1	08/18/82	07/01/85						0.00E+00
Edwin I. Hatch 1	09/12/74	12/31/75	4.77E+06	5.10E+06	4.79E+06	2.76E+06	2.88E+06	3.96E+06
Edwin I. Hatch 2	07/04/78	09/05/79			3.64E+06	4.48E+06	3.73E+06	3.81E+06
Hope Creek 1	06/28/86	12/20/86						
Humboldt Bay 3	02/16/63	08/ /63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
LaCrosse	07/11/67	11/01/69	1.74E+05	2.01E+05	2.15E+06	2.41E+05	1.38E+05	2.01E+05
LaSalle 1	06/21/82	01/01/84					4.61E+05	1.64E+06
LaSalle 2	03/10/84	10/19/84						
Limerick 1	12/22/84	02/01/86						
Limerick 2	08/12/89	01/08/90						
Millstone 1	10/26/70	03/01/71	4.65E+06	4.22E+06	3.40E+06	2.52E+06	4.08E+06	5.35E+06
Monticello	12/10/70	06/30/71	3.86E+06	4.40E+06	3.45E+06	3.26E+06	2.42E+06	4.15E+06
Nine Mile Point 1	09/05/69	12/01/69	4.47E+06	3.00E+06	4.54E+06	3.27E+06	1.13E+06	2.80E+06
Nine Mile Point 2	05/23/87	04/05/88						
Oyster Creek 1	05/03/69	12/01/69	3.65E+06	4.56E+06	1.96E+06	2.63E+06	2.01E+06	2.05E+05
Peach Bottom 2	09/16/73	07/05/74	1.38E+07	1.47E+07	4.34E+06	6.63E+06	4.79E+06	4.45E+06
Peach Bottom 3	08/07/74	12/23/74			7.23E+06	3.13E+06	8.53E+06	2.42E+06
Perry 1	06/06/86	11/18/87						
Pilgrim 1	06/16/72	12/01/72	4.38E+06	4.84E+06	3.04E+06	3.44E+06	3.29E+06	4.71E+06
Quad-Cities 1	10/18/71	02/18/73	9.15E+06	8.76E+06	3.44E+06	5.73E+06	3.24E+06	5.78E+06
Quad-Cities 2	04/26/72	03/10/73			3.61E+06	3.77E+06	5.06E+06	3.15E+06
River Bend 1	10/31/85	06/16/86						
Shoreham 1	02/15/85							
Susquehanna 1	09/10/82	06/08/83					3.21E+05	3.54E+06
Susquehanna 2	05/08/84	02/12/85						
Vermont Yankee 1	03/24/72	11/30/72	3.24E+06	3.45E+06	2.98E+06	3.57E+06	4.17E+06	2.87E+06
WNP-2	01/19/84	12/13/84						
Total			1.00E+08	9.98E+07	9.16E+07	8.93E+07	9.02E+07	8.65E+07
* Fort St. Vrain 1	01/31/74	07/01/79	6.09E+05	1.24E+05	6.76E+05	7.55E+05	5.69E+05	7.48E+05

* High temperature gas cooled reactor

Table 13

Net Electrical Energy Generation Comparison By Year
Megawatt Hours

Boiling Water Reactors

Facility	Initial Criticality	Commercial Operation	1984	1985	1986	1987	1988	1989
Big Rock Point 1	09/27/62	03/29/63	4.18E+05	3.62E+05	5.06E+05	3.75E+05	3.84E+05	4.17E+05
Browns Ferry 1	08/17/73	08/01/74	7.85E+06	1.54E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Browns Ferry 2	07/20/74	03/01/75	4.04E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Browns Ferry 3	08/08/76	03/01/77	2.91E+05	1.47E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Brunswick 1	10/08/76	03/18/77	5.03E+06	1.91E+06	5.97E+06	4.05E+06	4.45E+06	4.18E+06
Brunswick 2	03/20/75	11/03/75	1.39E+06	5.02E+06	2.91E+06	5.69E+06	3.92E+06	4.19E+06
Clinton 1	02/27/87	11/24/87				6.84E+05	5.86E+06	2.86E+06
Cooper	02/21/74	07/01/74	3.47E+06	1.07E+06	4.05E+06	5.52E+06	4.20E+06	4.79E+06
Dresden 1	10/15/59	07/04/60	4.46E+06	0.00E+00	0.00E+00	0.00E+00		
Dresden 2	01/07/70	06/09/70	2.11E+06	3.09E+06	4.65E+06	3.34E+06	4.32E+06	4.75E+06
Dresden 3	01/31/71	11/16/71	2.11E+06	4.39E+06	1.46E+06	4.40E+06	4.16E+06	5.12E+06
Duane Arnold	03/23/74	02/01/75	2.72E+06	1.94E+06	3.01E+06	2.54E+06	3.14E+06	3.14E+06
Fermi 2	06/21/85	01/23/86			0.00E+00	1.39E+06	4.06E+06	5.22E+06
James A. Fitzpatrick	11/17/74	07/28/75	4.90E+06	4.17E+06	6.02E+06	4.20E+06	4.36E+06	6.16E+06
Grand Gulf 1	08/18/82	07/01/85	1.65E+05	2.65E+06	4.10E+06	7.73E+06	9.59E+06	7.85E+06
Edwin I. Hatch 1	09/12/74	12/31/75	3.60E+06	4.76E+06	3.65E+06	5.08E+06	4.11E+06	6.48E+06
Edwin I. Hatch 2	07/04/78	09/05/79	1.88E+06	5.38E+06	3.62E+06	5.76E+06	4.25E+06	4.14E+06
Hope Creek 1	06/28/86	12/20/86			1.03E+06	7.28E+06	6.99E+06	6.61E+06
Humboldt Bay 3	02/16/63	08/ /63	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
LaCrosse	07/11/67	11/01/69	3.19E+05	3.23E+05	1.57E+05			
LaSalle 1	06/21/82	01/01/84	5.21E+06	4.81E+06	2.02E+06	4.08E+06	5.44E+06	6.16E+06
LaSalle 2	03/10/84	10/19/84	1.39E+06	3.43E+06	5.72E+06	4.54E+06	5.66E+06	6.50E+06
Limerick 1	12/22/84	02/01/86	0.00E+00	1.14E+06	6.85E+06	5.32E+06	6.67E+06	5.21E+06
Limerick 2	08/12/89	01/08/90						1.06E+06
Millstone 1	10/26/70	03/01/71	4.32E+06	4.59E+06	5.25E+06	4.38E+06	5.54E+06	4.64E+06
Monticello	12/10/70	06/30/71	2.63E+05	4.29E+06	3.38E+06	3.53E+06	4.57E+06	2.65E+06
Nine Mile Point 1	09/05/69	12/01/69	3.64E+06	4.93E+06	3.15E+06	4.62E+06	0.00E+00	0.00E+00
Nine Mile Point 2	05/23/87	04/05/88				2.61E+05	2.51E+06	4.25E+06
Oyster Creek 1	05/03/69	12/01/69	2.79E+05	3.75E+06	1.30E+06	3.11E+06	3.54E+06	2.40E+06
Peach Bottom 2	09/16/73	07/05/74	2.43E+06	2.33E+06	6.90E+06	1.55E+06	0.00E+00	3.86E+06
Peach Bottom 3	08/07/74	12/23/74	7.45E+06	3.28E+06	4.85E+06	1.46E+06	0.00E+00	1.89E+05
Perry 1	06/06/86	11/18/87				8.28E+05	7.23E+06	5.32E+06
Pilgrim 1	06/16/72	12/01/72	3.52E+03	4.95E+06	1.03E+06	0.00E+00	0.00E+00	1.71E+06
Quad-Cities 1	10/18/71	02/18/73	3.35E+06	6.07E+06	4.42E+06	4.46E+06	5.66E+06	4.28E+06
Quad-Cities 2	04/26/72	03/10/73	4.98E+06	4.56E+06	4.72E+06	4.95E+06	4.18E+06	5.74E+06
River Bend 1	10/31/85	06/16/86			3.00E+06	4.96E+06	7.25E+06	4.79E+06
Shoreham 1	02/15/85							
Susquehanna 1	09/10/82	06/08/83	6.09E+06	5.26E+06	5.83E+06	6.13E+06	8.41E+06	6.47E+06
Susquehanna 2	05/08/84	02/12/85	9.32E+05	6.95E+06	5.45E+06	8.60E+06	5.90E+06	6.77E+06
Vermont Yankee 1	03/24/72	11/30/72	3.34E+06	3.00E+06	2.06E+06	3.54E+06	4.11E+06	3.61E+06
WNP-2	01/19/84	12/13/84	4.10E+05	5.18E+06	5.18E+06	5.40E+06	6.00E+06	6.12E+06
Total			8.88E+07	1.07E+08	1.12E+08	1.30E+08	1.46E+08	1.48E+08
* Fort St. Vrain 1	01/31/74	07/01/79	5.67E+04	0.00E+00	5.20E+04	1.81E+05	6.60E+05	

* High temperature gas cooled reactor

Table 14

Net Electrical Energy Generation Comparison By Year

			Megawatt Hours					
Pressurized Water Reactors								
Facility	Initial Criticality	Commercial Operation	1978	1979	1980	1981	1982	1983
Arkansas One 1	08/06/74	12/19/74	5.25E+06	3.32E+06	3.78E+06	4.90E+06	3.72E+06	3.22E+06
Arkansas One 2	12/05/78	03/26/80	3.98E+03	8.81E+05	3.65E+06	4.32E+06	3.81E+06	4.43E+06
Beaver Valley 1	05/10/76	10/01/76	2.48E+06	1.79E+06	3.01E+05	4.66E+06	2.69E+06	4.68E+06
Beaver Valley 2	08/04/87	11/17/87						
Braidwood 1	05/29/87	07/29/88						
Braidwood 2	03/08/88	10/17/88						
Byron 1	02/02/85	09/16/85						
Byron 2	01/09/87	08/21/87						
Callaway 1	10/02/84	12/19/84						
Calvert Cliffs 1	10/07/74	05/08/75	9.91E+06	9.68E+06	4.53E+06	6.11E+06	5.36E+06	5.57E+06
Calvert Cliffs 2	11/30/76	04/01/77			6.41E+06	5.42E+06	5.00E+06	6.11E+06
Catawba 1	01/07/85	06/29/85						
Catawba 2	05/08/86	08/19/86						
Donald C. Cook 1	01/18/75	08/27/75	1.01E+07	1.16E+07	6.46E+06	6.78E+06	5.35E+06	5.29E+06
Donald C. Cook 2	03/10/78	07/01/78			6.70E+06	6.38E+06	7.00E+06	7.01E+06
Crystal River 3	01/14/77	03/13/77	2.59E+06	3.76E+06	3.35E+06	4.01E+06	4.92E+06	3.77E+06
Davis-Besse 1	08/12/77	07/31/78	2.61E+06	3.13E+06	2.09E+06	4.36E+06	3.22E+06	4.88E+06
Diablo Canyon 1	04/29/84	05/07/85						
Diablo Canyon 2	09/19/85	03/13/86						
Joseph M. Farley 1	08/09/77	12/01/77	5.92E+06	1.74E+06	4.60E+06	2.62E+06	5.22E+06	5.26E+06
Joseph M. Farley 2	05/05/81	07/30/81				2.92E+06	5.30E+06	5.98E+06
Fort Calhoun 1	08/06/73	06/20/74	2.85E+06	3.67E+06	2.01E+06	2.15E+06	3.48E+06	2.75E+06
R. E. Ginna	11/08/69	07/01/70	3.22E+06	2.96E+06	3.09E+06	3.32E+06	2.41E+06	3.04E+06
Haddam Neck	07/24/67	01/01/68	4.71E+06	4.12E+06	3.56E+06	4.06E+06	4.54E+06	3.78E+06
Harris 1	01/03/87	05/02/87						
Indian Point 1	08/02/62	10/ /62	4.37E+06	4.80E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Indian Point 2	05/22/73	08/01/74			4.26E+06	3.06E+06	4.45E+06	5.90E+06
Indian Point 3	04/06/76	08/30/76	5.46E+06	4.79E+06	3.07E+06	3.03E+06	1.44E+06	6.07E+04
Kewaunee	03/07/74	06/16/74	3.89E+06	3.44E+06	3.63E+06	3.77E+06	3.82E+06	3.71E+06
Maine Yankee	10/23/72	12/28/72	5.35E+06	4.54E+06	4.40E+06	5.21E+06	4.52E+06	0.00E+00
McGuire 1	08/08/81	12/01/81				1.91E+04	4.30E+06	4.63E+06
McGuire 2	05/08/83	03/01/84						0.00E+00
Millstone 2	10/17/75	12/26/75	4.50E+06	4.36E+06	4.88E+06	6.09E+06	5.01E+06	2.45E+06
Millstone 3	01/23/86	04/23/86						
North Anna 1	04/05/78	06/06/78	3.66E+06	4.19E+06	5.63E+06	4.64E+06	2.40E+06	5.31E+06
North Anna 2	06/12/80	12/14/80			3.50E+05	5.65E+06	4.05E+06	5.80E+06
Oconee 1	04/19/73	07/15/73	1.59E+07	1.32E+07	5.12E+06	3.00E+06	5.15E+06	5.67E+06
Oconee 2	11/11/73	09/09/74			3.88E+06	5.19E+06	3.44E+06	5.14E+06
Oconee 3	09/05/74	12/16/74			5.22E+06	5.64E+06	2.12E+06	7.10E+06
Palisades	05/24/71	12/31/71	2.62E+06	3.43E+06	2.38E+06	3.46E+06	3.35E+06	3.77E+06
Palo Verde 1	05/25/85	02/13/86						
Palo Verde 2	04/18/86	09/19/86						
Palo Verde 3	10/25/87	01/08/88						
Point Beach 1	11/02/70	12/21/70	7.65E+06	6.77E+06	2.48E+06	2.61E+06	2.70E+06	2.38E+06
Point Beach 2	05/30/72	10/01/71			3.59E+06	3.72E+06	3.61E+06	3.02E+06
Prairie Island 1	12/01/73	12/16/73	7.73E+06	7.10E+06	3.11E+06	3.84E+06	3.92E+06	3.89E+06
Prairie Island 2	12/17/74	12/21/74			3.47E+06	3.09E+06	3.86E+06	3.72E+06
Rancho Seco 1	09/16/74	04/17/75	4.99E+06	5.71E+06	4.42E+06	2.63E+06	3.37E+06	2.85E+06
H. B. Robinson 2	09/20/70	03/07/71	3.98E+06	4.00E+06	3.21E+06	3.50E+06	2.25E+06	3.35E+06
Salem 1	12/11/76	06/30/77	4.53E+06	2.04E+06	5.68E+06	6.19E+06	4.09E+06	5.38E+06
Salem 2	08/08/80	10/13/81			0.00E+00	1.63E+06	7.94E+06	7.44E+05
San Onofre 1	06/14/67	01/01/68	2.68E+06	3.36E+06	8.17E+05	7.79E+05	5.10E+05	0.00E+00
San Onofre 2	07/26/82	08/08/83					1.26E+05	3.76E+06
San Onofre 3	08/29/83	04/01/84						9.97E+05
Seabrook 1	06/13/89	08/19/90						
Sequoyah 1	07/05/80	07/01/81			5.18E+05	2.53E+06	4.91E+06	7.34E+06
Sequoyah 2	11/05/81	06/01/82						6.69E+06
South Texas 1	03/08/88	08/25/88						
South Texas 2	03/12/89	06/19/89						

Table 14

Net Electrical Energy Generation Comparison By Year

Pressurized Water Reactors								
Facility	Initial	Commercial	Megawatt Hours					
	Criticality	Operation	1978	1979	1980	1981	1982	1983
St. Lucie 1	04/22/76	12/21/76	5.00E+06	4.88E+06	5.20E+06	4.95E+06	6.78E+06	1.07E+06
St. Lucie 2	06/02/83	08/08/83						2.40E+06
Summer 1	10/22/82	01/01/84					1.91E+05	4.33E+06
Surry 1	07/01/72	12/22/72	1.01E+07	2.87E+06	2.47E+06	2.38E+06	5.48E+06	3.52E+06
Surry 2	03/07/73	05/01/73			2.24E+06	5.15E+06	5.49E+06	4.09E+06
Three Mile Island 1	06/05/74	09/02/74	5.67E+06	8.48E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Three Mile Island 2	03/28/78	12/30/78	5.77E+05	N/R	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trojan	12/15/75	05/20/76	1.67E+06	5.27E+06	6.07E+06	6.42E+06	4.80E+06	4.08E+06
Turkey Point 3	10/20/72	12/14/72	8.29E+06	6.71E+06	4.39E+06	9.12E+05	3.77E+06	4.33E+06
Turkey Point 4	06/11/73	09/07/73			3.85E+06	4.50E+06	3.84E+06	2.97E+06
Vogtle 1	03/09/87	05/31/87						
Vogtle 2	03/28/89	05/20/89						
Waterford 3	03/04/85	09/24/85						
Wolf Creek 1	05/22/85	09/03/85						
Yankee Rowe 1	08/19/60	07/01/61	1.19E+06	1.23E+06	2.92E+05	8.85E+05	8.82E+05	1.34E+06
Zion 1	06/19/73	12/31/73	1.35E+07	1.03E+07	6.51E+06	6.19E+06	4.70E+06	4.02E+06
Zion 2	12/24/73	09/17/74			5.28E+06	5.26E+06	5.16E+06	6.18E+06
Total			1.73E+08	1.50E+08	1.57E+08	1.78E+08	1.84E+08	1.98E+08

N/R = Not Reported

Table 14

Net Electrical Energy Generation Comparison By Year

Megawatt Hours								
Pressurized Water Reactors								
Facility	Initial Criticality	Commercial Operation	1984	1985	1986	1987	1988	1989
Arkansas One 1	08/06/74	12/19/74	4.60E+06	5.19E+06	3.57E+06	4.76E+06	3.95E+06	3.37E+06
Arkansas One 2	12/05/78	03/26/80	6.20E+06	4.70E+06	5.31E+06	6.61E+06	4.95E+06	5.47E+06
Beaver Valley 1	05/10/76	10/01/76	4.75E+06	5.90E+06	4.78E+06	5.62E+06	4.98E+06	3.79E+06
Beaver Valley 2	08/04/87	11/17/87				7.38E+05	6.48E+06	4.54E+06
Braidwood 1	05/29/87	07/29/88				1.46E+06	3.42E+06	4.63E+06
Braidwood 2	03/08/88	10/17/88					1.35E+06	7.14E+06
Byron 1	02/02/85	09/16/85		1.01E+06	7.40E+06	5.33E+06	6.29E+06	8.95E+06
Byron 2	01/09/87	08/21/87				1.97E+06	6.36E+06	6.06E+06
Callaway 1	10/02/84	12/19/84	3.23E+05	8.05E+06	7.20E+06	6.32E+06	8.94E+06	8.35E+06
Calvert Cliffs 1	10/07/74	05/08/75	6.22E+06	4.36E+06	5.83E+06	5.27E+06	5.16E+06	1.35E+06
Calvert Cliffs 2	11/30/76	04/01/77	5.34E+06	5.61E+06	7.01E+06	4.83E+06	6.80E+06	4.53E+06
Catawba 1	01/07/85	06/29/85		3.44E+06	5.18E+06	6.38E+06	7.63E+06	7.76E+06
Catawba 2	05/08/86	08/19/86			1.30E+06	7.17E+06	6.17E+06	6.51E+06
Donald C. Cook 1	01/18/75	08/27/75	7.75E+06	2.12E+06	6.65E+06	5.03E+06	7.47E+06	5.43E+06
Donald C. Cook 2	03/10/78	07/01/78	5.36E+06	5.68E+06	4.34E+06	5.03E+06	2.32E+06	6.66E+06
Crystal River 3	01/14/77	03/13/77	6.48E+06	2.85E+06	2.65E+06	3.62E+06	5.77E+06	2.93E+06
Davis-Besse 1	08/12/77	07/31/78	4.29E+06	1.94E+06	3.49E+03	5.06E+06	1.16E+06	7.32E+06
Diablo Canyon 1	04/29/84	05/07/85	2.04E+05	5.23E+06	5.29E+06	8.28E+06	5.26E+06	7.20E+06
Diablo Canyon 2	09/19/85	03/13/86		5.41E+06	6.55E+06	5.72E+06	6.23E+06	8.62E+06
Joseph M. Farley 1	08/09/77	12/01/77	5.43E+06	5.87E+06	5.73E+06	6.44E+06	5.91E+06	6.02E+06
Joseph M. Farley 2	05/05/81	07/30/81	6.62E+06	5.47E+06	5.96E+06	4.90E+06	7.17E+06	5.62E+06
Fort Calhoun 1	08/06/73	06/20/74	2.33E+06	3.07E+06	3.61E+06	3.06E+06	2.63E+06	3.30E+06
R. E. Ginna	11/08/89	07/01/70	3.16E+06	3.62E+06	3.61E+06	3.80E+06	3.53E+06	3.07E+06
Haddam Neck	07/24/87	01/01/88	3.36E+06	4.64E+06	2.13E+06	2.53E+06	3.31E+06	2.96E+06
Harris 1	01/03/87	05/02/87				3.38E+06	5.33E+06	5.63E+06
Indian Point 1	08/02/62	10/ /62	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
Indian Point 2	05/22/73	08/01/74	2.89E+06	6.67E+06	3.81E+06	5.15E+06	6.06E+06	4.47E+06
Indian Point 3	04/06/76	08/30/76	6.04E+06	4.73E+06	5.53E+06	4.85E+06	6.71E+06	4.97E+06
Kewaunee	03/07/74	06/16/74	3.81E+06	3.70E+06	3.85E+06	4.01E+06	3.91E+06	3.74E+06
Maine Yankee	10/23/72	12/28/72	5.13E+06	5.35E+06	6.24E+06	4.04E+06	5.02E+06	6.94E+06
McGuire 1	08/08/81	12/01/81	6.42E+06	6.78E+06	5.16E+06	7.35E+06	7.39E+06	7.80E+06
McGuire 2	05/08/83	03/01/84	6.56E+06	5.60E+06	6.21E+06	7.57E+06	8.05E+06	7.41E+06
Millstone 2	10/17/75	12/26/75	6.61E+06	3.50E+06	5.16E+06	6.89E+06	5.73E+06	4.89E+06
Millstone 3	01/23/86	04/23/86			5.86E+06	6.74E+06	7.67E+06	7.08E+06
North Anna 1	04/05/78	06/06/78	3.78E+06	5.80E+06	6.31E+06	3.57E+06	6.90E+06	4.30E+06
North Anna 2	06/12/80	12/14/80	4.72E+06	6.81E+06	6.02E+06	5.65E+06	7.88E+06	5.90E+06
Oconee 1	04/19/73	07/15/73	6.17E+06	7.07E+06	4.78E+06	5.03E+06	7.19E+06	5.94E+06
Oconee 2	11/11/73	09/09/74	7.30E+06	5.06E+06	5.80E+06	6.23E+06	5.54E+06	6.01E+06
Oconee 3	09/05/74	12/16/74	5.35E+06	4.86E+06	6.06E+06	5.08E+06	5.97E+06	6.34E+06
Palisades	05/24/71	12/31/71	8.12E+05	5.30E+06	8.41E+05	2.63E+06	3.44E+06	3.64E+06
Palo Verde 1	05/25/85	02/13/86		1.13E+06	5.85E+06	5.27E+06	6.67E+06	1.80E+06
Palo Verde 2	04/18/86	09/19/86			2.65E+06	8.19E+06	6.75E+06	4.70E+06
Palo Verde 3	10/25/87	01/08/88				3.20E+05	3.55E+04	1.33E+06
Point Beach 1	11/02/70	12/21/70	3.11E+06	3.35E+06	3.77E+06	3.57E+06	3.83E+06	3.61E+06
Point Beach 2	05/30/72	10/01/71	3.51E+06	3.60E+06	3.42E+06	3.61E+06	3.72E+06	3.49E+06
Prairie Island 1	12/01/73	12/16/73	4.16E+06	3.68E+06	3.82E+06	3.59E+06	3.82E+06	4.39E+06
Prairie Island 2	12/17/74	12/21/74	3.91E+06	3.61E+06	3.86E+06	4.43E+06	3.89E+06	3.89E+06
Rancho Seco 1	09/16/74	04/17/75	3.77E+06	1.94E+06	0.00E+00	0.00E+00	2.81E+06	1.41E+06
H. B. Robinson 2	09/20/70	03/07/71	1.90E+05	5.24E+06	4.80E+06	4.23E+06	3.18E+06	2.78E+06
Salem 1	12/11/76	06/30/77	2.13E+06	9.01E+06	7.08E+06	6.21E+06	7.41E+06	6.21E+06
Salem 2	08/08/80	10/13/81	3.20E+06	5.02E+06	5.31E+06	6.17E+06	5.97E+06	7.82E+06
San Onofre 1	06/14/67	01/01/68	2.62E+05	2.46E+06	8.74E+05	2.71E+06	1.37E+06	1.17E+06
San Onofre 2	07/26/82	08/08/83	5.27E+06	5.15E+06	6.36E+06	6.23E+06	9.00E+06	5.22E+06
San Onofre 3	08/29/83	04/01/84	4.10E+06	3.71E+06	6.76E+06	7.52E+06	6.13E+06	8.84E+06
Seabrook 1	06/13/89	08/19/90						
Sequoyah 1	07/05/80	07/01/81	6.10E+06	4.06E+06	0.00E+00	0.00E+00	6.71E+04	9.55E+06
Sequoyah 2	11/05/81	06/01/82	6.40E+06	5.61E+06	0.00E+00	0.00E+00	3.88E+06	9.55E+06
South Texas 1	03/08/88	08/25/88					2.79E+06	6.28E+06
South Texas 2	03/12/89	06/19/89						3.02E+06

Table 14

Net Electrical Energy Generation Comparison By Year

Pressurized Water Reactors								
Megawatt Hours								
Facility	Initial Criticality	Commercial Operation	1984	1985	1986	1987	1988	1989
St. Lucie 1	04/22/76	12/21/76	4.23E+06	5.87E+06	7.05E+06	5.72E+06	6.25E+06	6.95E+06
St. Lucie 2	06/02/83	08/08/83	5.56E+06	6.11E+06	6.15E+06	5.95E+06	7.41E+06	5.44E+06
Summer 1	10/22/82	01/01/84	4.20E+06	5.23E+06	7.16E+06	5.15E+06	5.05E+06	5.41E+06
Surry 1	07/01/72	12/22/72	3.33E+06	5.62E+06	4.49E+06	4.63E+06	2.69E+06	3.17E+06
Surry 2	03/07/73	05/01/73	5.21E+06	4.07E+06	4.50E+06	4.79E+06	3.57E+06	8.94E+05
Three Mile Island 1	06/05/74	09/02/74	0.00E+00	8.12E+05	4.82E+06	5.03E+06	5.47E+06	7.22E+06
Three Mile Island 2	03/28/78	12/30/78	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
Trojan	12/15/75	05/20/76	4.74E+06	6.91E+06	7.09E+06	4.35E+06	6.34E+06	5.53E+06
Turkey Point 3	10/20/72	12/14/72	4.78E+06	3.41E+06	4.51E+06	8.56E+05	3.45E+06	3.59E+06
Turkey Point 4	06/11/73	09/07/73	3.08E+06	5.18E+06	1.72E+06	2.64E+06	3.26E+06	2.09E+06
Vogtle 1	03/09/87	05/31/87				3.92E+06	6.79E+06	8.71E+06
Vogtle 2	03/28/89	05/20/89						5.55E+06
Waterford 3	03/04/85	09/24/85		1.81E+06	7.30E+06	7.43E+06	6.54E+06	7.61E+06
Wolf Creek 1	05/22/85	09/03/85		2.94E+06	6.97E+06	6.50E+06	6.66E+06	9.71E+06
Yankee Rowe 1	08/19/60	07/01/61	1.03E+06	1.18E+06	1.39E+06	1.14E+06	1.12E+06	1.31E+06
Zion 1	06/19/73	12/31/73	5.69E+06	4.81E+06	4.90E+06	6.06E+06	6.34E+06	5.00E+06
Zion 2	12/24/73	09/17/74	5.99E+06	5.11E+06	7.33E+06	5.11E+06	6.65E+06	7.69E+06
Total			2.32E+08	2.72E+08	2.96E+08	3.19E+08	3.65E+08	3.88E+08

Table 15

Thermal Energy Generation Comparison By Year

Megawatt Hours

Boiling Water Reactors

Facility	Initial Criticality	Commercial Operation	1972	1973	1974	1975	1976	1977
Big Rock Point 1	09/27/62	03/29/63	1.20E+06	1.41E+06	1.13E+06	9.80E+05	8.30E+05	1.23E+06
Browns Ferry 1	08/17/73	08/01/74		1.37E+06	1.64E+07	8.75E+06	1.34E+07	5.37E+07
Browns Ferry 2	07/20/74	03/01/75						
Browns Ferry 3	08/08/76	03/01/77						
Brunswick 1	10/08/76	03/18/77				4.72E+06	7.81E+06	1.59E+07
Brunswick 2 *	03/20/75	11/03/75						
Clinton 1	02/27/87	11/24/87						
Cooper	02/21/74	07/01/74			6.90E+06	1.24E+07	1.19E+07	1.45E+07
Dresden 1	10/15/59	07/04/60	3.76E+06	2.43E+06	1.36E+06	2.56E+06	3.42E+06	2.21E+06
Dresden 2	01/07/70	06/09/70	2.52E+07	2.83E+07	2.18E+07	1.70E+07	2.74E+07	2.89E+07
Dresden 3	01/31/71	11/16/71						
Duane Arnold	03/23/74	02/01/75				7.42E+06	8.02E+06	9.32E+06
Fermi 2	06/21/85	01/23/86						
James A. Fitzpatrick	11/17/74	07/28/75				6.81E+06	1.26E+07	1.18E+07
Grand Gulf 1	08/18/82	07/01/85						
Edwin I. Hatch 1	09/12/74	12/31/75				9.75E+06	1.38E+07	1.22E+07
Edwin I. Hatch 2	07/04/78	09/05/79						
Hope Creek 1	06/28/86	12/20/86						
Humboldt Bay 3	02/16/63	08/ / 63	1.25E+06	1.47E+06	1.27E+06	1.32E+06	6.80E+05	0.00E+00
LaCrosse	07/11/67	11/01/69	8.20E+05	6.90E+05	1.08E+06	9.20E+05	6.10E+05	3.43E+05
LaSalle 1	06/21/82	01/01/84						
LaSalle 2	03/10/84	10/19/84						
Limerick 1	12/22/84	02/01/86						
Limerick 2	08/12/89	01/08/90						
Millstone 1	10/26/70	03/01/71	9.89E+06	5.96E+06	1.12E+07	1.21E+07	1.16E+07	1.48E+07
Monticello	12/10/70	06/30/71	1.10E+07	9.90E+06	8.28E+06	8.88E+06	1.23E+07	1.10E+07
Nine Mile Point 1	09/05/69	12/01/69	1.00E+07	1.10E+07	1.05E+07	9.68E+06	1.31E+07	9.15E+06
Nine Mile Point 2	05/23/87	04/05/88						
Oyster Creek 1	05/03/69	12/01/69	1.30E+07	1.09E+07	1.13E+07	9.81E+06	1.18E+07	9.82E+06
Peach Bottom 2	09/16/73	07/05/74			1.23E+07	3.34E+07	3.72E+07	2.86E+07
Peach Bottom 3	08/07/74	12/23/74						
Perry 1	06/06/86	11/18/87						
Pilgrim 1	06/16/72	12/01/72	2.65E+06	1.25E+07	6.00E+06	8.10E+06	7.60E+06	8.26E+06
Quad-Cities 1	10/18/71	02/18/73	1.25E+07	3.17E+07	2.61E+07	2.31E+07	2.59E+07	2.68E+07
Quad-Cities 2	04/26/72	03/10/73						
River Bend 1	10/31/85	06/16/86						
Shoreham 1	02/15/85							
Susquehanna 1	09/10/82	06/08/83						
Susquehanna 2	05/08/84	02/12/85						
Vermont Yankee 1	03/24/72	11/30/72	1.48E+06	6.08E+06	8.20E+06	1.13E+07	1.02E+07	1.11E+07
WNP-2	01/19/84	12/13/84						
Total			9.26E+07	1.24E+08	1.44E+08	1.89E+08	2.30E+08	2.70E+08
* Fort St. Vrain 1	01/31/74	07/01/79						

* High temperature gas cooled reactor

Table 15

Thermal Energy Generation Comparison By Year

			Megawatt Hours					
Boiling Water Reactors								
Facility	Initial Criticality	Commercial Operation	1978	1979	1980	1981	1982	1983
Big Rock Point 1	09/27/62	03/29/63	1 37E+06	3 96E+05	1 40E+06	1 63E+06	1 20E+06	1 14E+06
Browns Ferry 1	08/17/73	08/01/74	5 32E+07	6 31E+07	1 92E+07	1 36E+07	2 49E+07	6 78E+06
Browns Ferry 2	07/20/74	03/01/75			1 74E+07	2 31E+07	1 38E+07	1 97E+07
Browns Ferry 3	08/08/76	03/01/77			2 13E+07	1 95E+07	1 55E+07	1 70E+07
Brunswick 1	10/08/76	03/18/77	3 07E+07	2 12E+07	1 23E+07	8 29E+06	9 48E+06	4 53E+06
Brunswick 2	03/20/75	11/03/75			5 38E+06	1 04E+07	6 30E+06	1 23E+07
Clinton 1	02/27/87	11/24/87						
Cooper	02/21/74	07/01/74	1 54E+07	1 58E+07	1 36E+07	1 39E+07	1 64E+07	1 05E+07
Dresden 1	10/15/59	07/04/60	2 73E+06	0 00E+00	0 00E+00	0 00E+00	0 00E+00	0 00E+00
Dresden 2	01/07/70	06/09/70	3 13E+07	2 77E+07	1 57E+07	1 13E+07	1 69E+07	1 13E+07
Dresden 3	01/31/71	11/16/71			1 42E+07	1 71E+07	1 27E+07	1 37E+07
Duane Arnold	03/23/74	02/01/75	3 96E+06	9 07E+06	8 87E+06	7 05E+06	7 32E+06	7 38E+06
Fermi 2	06/21/85	01/23/86						
James A. Fitzpatrick	11/17/74	07/28/75	1 30E+07	8 97E+06	1 30E+07	1 42E+07	1 51E+07	1 42E+07
Grand Gulf 1	08/18/82	07/01/85						0 00E+00
Edwin I. Hatch 1	09/12/74	12/31/75	3 37E+07	1 62E+07	1 54E+07	8 97E+06	9 42E+06	1 29E+07
Edwin I. Hatch 2	07/04/78	09/05/79			1 16E+07	1 47E+07	1 18E+07	1 19E+07
Hope Creek 1	06/28/86	12/20/86						
Humboldt Bay 3	02/16/63	08/ /63	0 00E+00	0 00E+00	0 00E+00	0 00E+00	0 00E+00	0 00E+00
LaCrosse	07/11/67	11/01/69	6 54E+05	7 48E+05	8 00E+05	9 11E+05	5 27E+05	7 60E+05
LaSalle 1	06/21/82	01/01/84					2 09E+06	5 86E+06
LaSalle 2	03/10/84	10/19/84						
Limerick 1	12/22/84	02/01/86						
Limerick 2	08/12/89	01/08/90						
Millstone 1	10/26/70	03/01/71	1 43E+07	1 30E+07	1 04E+07	8 60E+06	1 36E+07	1 64E+07
Monticello	12/10/70	06/30/71	1 18E+07	1 35E+07	1 07E+07	1 01E+07	7 68E+06	1 30E+07
Nine Mile Point 1	09/05/69	12/01/69	1 39E+07	9 67E+06	1 41E+07	1 01E+07	3 42E+06	8 72E+06
Nine Mile Point 2	05/23/87	04/05/88						
Oyster Creek 1	05/03/69	12/01/69	1 10E+07	1 38E+07	6 27E+06	8 44E+06	6 79E+06	9 23E+05
Peach Bottom 2	09/16/73	07/05/74	4 39E+07	4 58E+07	1 37E+07	2 08E+07	1 53E+07	1 40E+07
Peach Bottom 3	08/07/74	12/23/74			2 26E+07	9 85E+06	2 65E+07	7 82E+06
Perry 1	06/06/86	11/18/87						
Pilgrim 1	06/16/72	12/01/72	1 33E+07	1 47E+07	9 20E+06	1 05E+07	9 90E+06	1 42E+07
Quad Cities 1	10/18/71	02/18/73	3 14E+07	3 00E+07	1 17E+07	1 88E+07	1 12E+07	1 89E+07
Quad Cities 2	04/26/72	03/10/73			1 22E+07	1 27E+07	1 67E+07	1 08E+07
River Bend 1	10/31/85	06/16/86						
Shoreham 1	02/15/85							
Susquehanna 1	09/10/82	06/08/83					1 16E+06	1 12E+07
Susquehanna 2	05/08/84	02/12/85						
Vermont Yankee 1	03/24/72	11/30/72	1 00E+07	1 08E+07	9 38E+06	1 13E+07	1 31E+07	9 12E+06
WNP 2	01/19/84	12/13/84						
Total			3 36E+08	3 14E+08	2 90E+08	2 86E+08	2 89E+08	2 75E+08
* Fort St. Vrain 1	01/31/74	07/01/79	2 04E+06	4 78E+05	2 23E+06	2 23E+06	1 86E+06	2 58E+06

* High temperature gas cooled reactor

Table 15

Thermal Energy Generation Comparison By Year

		Megawatt Hours						
Boiling Water Reactors		Initial	Commercial					
Facility	Criticality	Operation	1984	1985	1986	1987	1988	1989
Big Rock Point 1	09/27/62	03/29/63	1.37E+06	1.19E+06	1.66E+06	1.23E+06	1.26E+06	1.14E+07
Browns Ferry 1	08/17/73	08/01/74	2.45E+07	4.95E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Browns Ferry 2	07/20/74	03/01/75	1.31E+07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Browns Ferry 3	08/08/76	03/01/77	9.11E+05	4.65E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Brunswick 1	10/08/76	03/18/77	1.56E+07	6.06E+06	1.89E+07	1.29E+07	1.43E+07	1.32E+07
Brunswick 2	03/20/75	11/03/75	4.53E+06	1.57E+07	9.43E+06	1.83E+07	1.24E+07	1.34E+07
Clinton 1	02/27/87	11/24/87				2.15E+06	1.86E+07	9.26E+06
Cooper	02/21/74	07/01/74	1.09E+07	3.42E+06	1.26E+07	1.72E+07	1.31E+07	1.50E+07
Dresden 1	10/15/59	07/04/60	1.46E+07	0.00E+00	0.00E+00	0.00E+00		
Dresden 2	01/07/70	06/09/70	7.10E+06	1.03E+07	1.52E+07	1.11E+07	1.45E+07	1.56E+07
Dresden 3	01/31/71	11/16/71	7.10E+06	1.47E+07	5.04E+06	1.46E+07	1.36E+07	1.67E+07
Duane Arnold	03/23/74	02/01/75	8.71E+06	6.15E+06	9.48E+06	7.96E+06	9.97E+06	1.00E+07
Fermi 2	06/21/85	01/23/86			2.23E+05	5.99E+06	1.30E+07	1.63E+07
James A. Fitzpatrick	11/17/74	07/28/75	1.52E+07	1.28E+07	1.84E+07	1.31E+07	1.34E+07	1.88E+07
Grand Gulf 1	08/18/82	07/01/85	8.80E+05	9.80E+06	1.47E+07	2.55E+07	3.05E+07	2.51E+07
Edwin I. Hatch 1	09/12/74	12/31/75	1.20E+07	1.53E+07	1.18E+07	1.65E+07	1.35E+07	2.09E+07
Edwin I. Hatch 2	07/04/78	09/05/79	5.99E+06	1.70E+07	1.19E+07	1.83E+07	1.36E+07	1.35E+07
Hope Creek 1	06/28/86	12/20/86			3.62E+06	2.29E+07	2.22E+07	2.10E+07
Humboldt Bay 3	02/16/63	08/ /63	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
LaCrosse	07/11/67	11/01/69	1.07E+06	1.11E+06	5.58E+05			
LaSalle 1	06/21/82	01/01/84	2.30E+07	1.54E+07	6.54E+06	1.31E+07	1.69E+07	1.91E+07
LaSalle 2	03/10/84	10/19/84	4.51E+06	1.10E+07	1.80E+07	1.43E+07	1.81E+07	2.04E+07
Limerick 1	12/22/84	02/01/86	0.00E+00	4.42E+06	2.16E+07	1.73E+07	2.19E+07	1.71E+07
Limerick 2	08/12/89	01/08/90						3.54E+06
Millstone 1	10/26/70	03/01/71	1.34E+07	1.42E+07	1.61E+07	1.34E+07	1.70E+07	1.42E+07
Monticello	12/10/70	06/30/71	8.98E+05	1.31E+07	1.04E+07	1.10E+07	1.43E+07	8.48E+06
Nine Mile Point 1	09/05/69	12/01/69	1.12E+07	1.52E+07	9.76E+06	1.42E+07	0.00E+00	0.00E+00
Nine Mile Point 2	05/23/87	04/05/88				1.53E+06	8.32E+06	1.41E+07
Oyster Creek 1	05/03/69	12/01/69	1.04E+06	1.16E+07	4.12E+06	9.69E+06	1.09E+07	7.75E+06
Peach Bottom 2	09/16/73	07/05/74	7.87E+06	7.85E+06	2.16E+07	4.98E+06	0.00E+00	1.25E+07
Peach Bottom 3	08/07/74	12/23/74	2.32E+07	1.08E+07	1.55E+07	4.76E+06	0.00E+00	8.84E+05
Perry 1	06/06/86	11/18/87				2.56E+06	2.23E+07	1.62E+07
Pilgrim 1	06/16/72	12/01/72	4.99E+05	1.50E+07	3.09E+06	0.00E+00	0.00E+00	5.48E+06
Quad-Cities 1	10/18/71	02/18/73	1.06E+07	1.92E+07	1.41E+07	1.42E+07	1.83E+07	1.40E+07
Quad-Cities 2	04/26/72	03/10/73	1.61E+07	1.46E+07	1.52E+07	1.60E+07	1.36E+07	1.85E+07
River Bend 1	10/31/85	06/16/86			9.85E+06	1.55E+07	2.25E+07	1.53E+07
Shoreham 1	02/15/85							
Susquehanna 1	09/10/82	06/08/83	1.94E+07	1.70E+07	1.87E+07	1.98E+07	2.65E+07	2.05E+07
Susquehanna 2	05/08/84	02/12/85	3.23E+06	2.20E+07	1.74E+07	2.72E+07	1.87E+07	2.14E+07
Vermont Yankee 1	03/24/72	11/30/72	1.04E+07	9.55E+06	6.57E+06	1.11E+07	1.30E+07	1.13E+07
WNP-2	01/19/84	12/13/84	1.21E+06	1.64E+07	1.61E+07	1.67E+07	1.87E+07	1.92E+07
Total			2.90E+08	3.40E+08	3.58E+08	4.15E+08	4.65E+08	4.80E+08
* Fort St. Vrain 1	01/31/74	07/01/79	3.40E+05	3.34E+04	3.70E+05	6.68E+05	1.95E+06	

* High temperature gas cooled reactor

Table 16

Thermal Energy Generation Comparison By Year

			Megawatt Hours					
Pressurized Water Reactors								
Facility	Initial Criticality	Commercial Operation	1972	1973	1974	1975	1976	1977
Arkansas One 1	08/06/74	12/19/74			1.99E+06	1.54E+07	1.21E+07	1.64E+07
Arkansas One 2	12/05/78	03/26/80						
Beaver Valley 1	05/10/76	10/01/76					1.97E+06	1.01E+07
Beaver Valley 2	08/04/87	11/17/87						
Braidwood 1	05/29/87	07/29/88						
Braidwood 2	03/08/88	10/17/88						
Byron 1	02/02/85	09/16/85						
Byron 2	01/09/87	08/21/87						
Callaway 1	10/02/84	12/19/84						
Calvert Cliffs 1	10/07/74	05/08/75				1.40E+07	1.98E+07	2.97E+07
Calvert Cliffs 2	11/30/76	04/01/77						
Catawba 1	01/07/85	06/29/85						
Catawba 2	05/08/86	08/19/86						
Donald C. Cook 1	01/18/75	08/27/75				1.46E+07	2.15E+07	1.55E+07
Donald C. Cook 2	03/10/78	07/01/78						
Crystal River 3	01/14/77	03/13/77						1.26E+07
Davis-Besse 1	08/12/77	07/31/78						1.66E+06
Diablo Canyon 1	04/29/84	05/07/85						
Diablo Canyon 2	08/19/85	03/13/86						
Joseph M. Farley 1	08/09/77	12/01/77						
Joseph M. Farley 2	05/05/81	07/30/81						
Fort Calhoun 1	08/06/73	06/20/74		2.03E+06	7.58E+06	6.71E+06	7.15E+06	9.40E+06
R. E. Ginna	11/08/69	07/01/70	7.71E+06	1.08E+07	6.71E+06	9.71E+06	6.98E+06	1.11E+07
Haddam Neck	07/24/67	01/01/68	1.38E+07	7.73E+06	1.42E+07	1.34E+07	1.30E+07	1.31E+07
Harris 1	01/03/87	05/02/87						
Indian Point 1	08/02/62	10/ /62		1.47E+06	1.15E+07	1.64E+07	7.60E+06	3.50E+07
Indian Point 2	05/22/73	08/01/74						
Indian Point 3	04/06/76	08/30/76						
Kewaunee	03/07/74	06/16/74			5.03E+06	1.08E+07	1.08E+07	1.11E+07
Maine Yankee	10/23/72	12/28/72	1.44E+06	1.08E+07	1.14E+07	1.47E+07	1.94E+07	1.65E+07
McGuire 1	08/08/81	12/01/81						
McGuire 2	05/08/83	03/01/84						
Millstone 2	10/17/75	12/26/75				6.40E+05	1.52E+07	1.42E+07
Millstone 3	01/23/86	04/23/86						
North Anna 1	04/05/78	06/06/78						
North Anna 2	06/12/80	12/14/80						
Oconee 1	04/19/73	07/15/73		6.62E+06	1.70E+07	4.68E+07	3.97E+07	4.00E+07
Oconee 2	11/11/73	09/09/74						
Oconee 3	09/05/74	12/16/74						
Palisades	05/24/71	12/31/71	5.91E+06	7.80E+06	4.00E+05	8.91E+06	9.66E+06	1.73E+07
Palo Verde 1	05/25/85	02/13/86						
Palo Verde 2	04/18/86	09/19/86						
Palo Verde 3	10/25/87	01/08/88						
Point Beach 1	11/02/70	12/21/70	9.96E+06	1.84E+07	2.04E+07	2.09E+07	2.18E+07	2.23E+07
Point Beach 2	05/30/72	10/01/71						
Prairie Island 1	12/01/73	12/16/73		1.28E+05	5.26E+06	2.25E+07	2.06E+07	2.46E+07
Prairie Island 2	12/17/74	12/21/74						
Rancho Seco 1	09/16/74	04/17/75				4.11E+06	6.91E+06	1.81E+07
H. B. Robinson 2	09/20/70	03/07/71	1.55E+07	1.25E+07	1.56E+07	1.36E+07	1.59E+07	1.43E+07
Salem 1	12/11/76	06/30/77					5.00E+04	6.70E+06
Salem 2	08/08/80	10/13/81						
San Onofre 1	06/14/67	01/01/68	8.53E+06	7.09E+06	9.73E+06	1.00E+07	7.75E+06	7.29E+06
San Onofre 2	07/26/82	08/08/83						
San Onofre 3	08/29/83	04/01/84						
Seabrook 1	06/13/89	08/19/90						
Sequoyah 1	07/05/80	07/01/81						
Sequoyah 2	11/05/81	06/01/82						
South Texas 1	03/08/88	08/25/88						
South Texas 2	03/12/89	06/19/89						

Table 16

Thermal Energy Generation Comparison By Year

			Megawatt Hours					
Pressurized Water Reactors								
	Initial	Commercial						
Facility	Criticality	Operation	1972	1973	1974	1975	1976	1977
St. Lucie 1	04/22/76	12/21/76					3.50E+05	1.75E+07
St. Lucie 2	06/02/83	08/08/83						
Summer 1	10/22/82	01/01/84						
Surry 1	07/01/72	12/22/72	1.29E+06	2.26E+07	1.92E+07	2.90E+07	2.51E+07	3.10E+07
Surry 2	03/07/73	05/01/73						
Three Mile Island 1	06/05/74	09/02/74			6.20E+06	1.76E+07	1.39E+07	1.76E+07
Three Mile Island 2	03/28/78	12/30/78						
Trojan	12/15/75	05/20/76					7.54E+06	2.12E+07
Turkey Point 3	10/20/72	12/14/72	2.90E+05	1.53E+07	2.55E+07	2.78E+07	2.68E+07	2.70E+07
Turkey Point 4	06/11/73	09/07/73						
Vogtle 1	03/09/87	05/31/87						
Vogtle 2	03/28/89	05/20/89						
Waterford 3	03/04/85	09/24/85						
Wolf Creek 1	05/22/85	09/03/85						
Yankee Rowe 1	08/19/60	07/01/61	2.40E+06	3.57E+06	3.07E+06	4.02E+06	4.25E+06	3.52E+06
Zion 1	06/19/73	12/31/73		2.73E+06	1.69E+07	3.28E+07	3.11E+07	3.66E+07
Zion 2	12/24/73	09/17/74						
Total			6.68E+07	1.30E+08	1.98E+08	3.54E+08	3.67E+08	5.01E+08

Table 16

Thermal Energy Generation Comparison By Year

Megawatt Hours								
Pressurized Water Reactors								
Facility	Initial Criticality	Commercial Operation	1978	1979	1980	1981	1982	1983
Arkansas One 1	08/06/74	12/19/74	1 64E+07	1 05E+07	1 29E+07	1 54E+07	1 22E+07	1 02E+07
Arkansas One 2	12/05/78	03/26/80	4 45E+04	3 45E+06	1 18E+07	1 39E+07	1 25E+07	1 43E+07
Beaver Valley 1	05/10/76	10/01/76	8 80E+06	6 11E+06	1 13E+06	1 55E+07	8 88E+06	1 51E+07
Beaver Valley 2	08/04/87	11/17/87						
Braidwood 1	05/29/87	07/29/88						
Braidwood 2	03/08/88	10/17/88						
Byron 1	02/02/85	09/16/85						
Byron 2	01/09/87	08/21/87						
Callaway 1	10/02/84	12/19/84						
Calvert Cliffs 1	10/07/74	05/08/75	3 14E+07	3 15E+07	1 52E+07	1 96E+07	1 68E+07	1 75E+07
Calvert Cliffs 2	11/30/76	04/01/77			2 05E+07	1 71E+07	1 62E+07	1 96E+07
Catawba 1	01/07/85	06/29/85						
Catawba 2	05/08/86	08/19/86						
Donald C. Cook 1	01/18/75	08/27/75	3 29E+07	3 68E+07	2 02E+07	2 11E+07	1 69E+07	1 68E+07
Donald C. Cook 2	03/10/78	07/01/78			2 14E+07	2 04E+07	2 22E+07	2 22E+07
Crystal River 3	01/14/77	03/13/77	7 97E+06	1 17E+07	1 04E+07	1 27E+07	1 52E+07	1 14E+07
Davis Besse 1	08/12/77	07/31/78	8 52E+06	1 00E+07	6 71E+06	1 40E+07	1 03E+07	1 57E+07
Diablo Canyon 1	04/29/84	05/07/85						
Diablo Canyon 2	08/19/85	03/13/86						
Joseph M. Farley 1	08/09/77	12/01/77	1 95E+07	5 77E+06	1 54E+07	8 96E+06	1 75E+07	1 76E+07
Joseph M. Farley 2	05/05/81	07/30/81				9 47E+06	1 75E+07	1 99E+07
Fort Calhoun 1	08/06/73	06/20/74	8 98E+06	1 16E+07	6 48E+06	6 98E+06	1 09E+07	9 14E+06
R. E. Ginna	11/08/69	07/01/70	1 05E+07	9 35E+06	9 93E+06	1 07E+07	7 68E+06	9 67E+06
Haddam Neck	07/24/67	01/01/68	1 51E+07	1 32E+07	1 14E+07	1 31E+07	1 45E+07	1 22E+07
Harris 1	01/03/87	05/02/87						
Indian Point 1	08/02/62	10/ / 62	1 48E+07	1 61E+07	0 00E+00	0 00E+00	0 00E+00	0 00E+00
Indian Point 2	05/22/73	08/01/74			1 50E+07	1 05E+07	1 51E+07	1 96E+07
Indian Point 3	04/06/76	08/30/76	1 70E+07	1 57E+07	1 15E+07	1 14E+07	5 06E+06	2 82E+05
Kewaunee	03/07/74	06/16/74	1 24E+07	1 09E+07	1 15E+07	1 21E+07	1 23E+07	1 19E+07
Maine Yankee	10/23/72	12/28/72	1 69E+07	1 41E+07	1 41E+07	1 67E+07	1 47E+07	1 83E+07
McGuire 1	08/08/81	12/01/81				8 50E+04	1 34E+07	1 39E+07
McGuire 2	05/08/83	03/01/84						0 00E+00
Millstone 2	10/17/75	12/26/75	1 44E+07	1 38E+07	1 55E+07	1 92E+07	1 60E+07	7 88E+06
Millstone 3	01/23/86	04/23/86						
North Anna 1	04/05/78	06/06/78	1 22E+07	1 41E+07	1 89E+07	1 51E+07	7 95E+06	1 68E+07
North Anna 2	06/12/80	12/14/80			1 12E+06	1 77E+07	1 29E+07	1 87E+07
Oconee 1	04/19/73	07/15/73	4 84E+07	4 37E+07	1 52E+07	9 00E+06	1 57E+07	1 72E+07
Oconee 2	11/11/73	09/09/74			1 20E+07	1 59E+07	1 06E+07	1 58E+07
Oconee 3	09/05/74	12/16/74			1 59E+07	1 72E+07	6 53E+06	2 14E+07
Palisades	05/24/71	12/31/71	9 44E+06	1 20E+07	8 19E+06	1 17E+07	1 12E+07	1 27E+07
Palo Verde 1	05/25/85	02/13/86						
Palo Verde 2	04/18/86	09/19/86						
Palo Verde 3	10/25/87	01/08/88						
Point Beach 1	11/02/70	12/21/70	2 33E+07	2 08E+07	8 09E+06	8 51E+06	8 60E+06	7 59E+06
Point Beach 2	05/30/72	10/01/71			1 11E+07	1 15E+07	1 13E+07	9 38E+06
Prairie Island 1	12/01/73	12/16/73	2 52E+07	1 12E+08	1 06E+07	1 25E+07	1 27E+07	1 24E+07
Prairie Island 2	12/17/74	12/21/74			1 14E+07	1 01E+07	1 26E+07	1 19E+07
Rancho Seco 1	09/16/74	04/17/75	1 59E+07	1 79E+07	1 39E+07	8 92E+06	1 09E+07	9 16E+06
H. B. Robinson 2	09/20/70	03/07/71	1 33E+07	1 30E+07	1 07E+07	1 19E+07	7 67E+06	1 13E+07
Salem 1	12/11/76	06/30/77	1 43E+07	6 60E+06	1 84E+07	2 02E+07	1 31E+07	1 67E+07
Salem 2	08/08/80	10/13/81			0 00E+00	5 11E+06	2 54E+07	2 95E+06
San Onofre 1	06/14/67	01/01/68	8 54E+06	1 05E+07	2 55E+06	2 59E+06	1 59E+06	0 00E+00
San Onofre 2	07/26/82	08/08/83					9 28E+05	1 23E+07
San Onofre 3	08/29/83	04/01/84						3 55E+06
Seabrook 1	06/13/89	08/19/90						
Sequoyah 1	07/05/80	07/01/81			1 67E+06	8 06E+06	1 52E+07	2 22E+07
Sequoyah 2	11/05/81	06/01/82						2 03E+07
South Texas 1	03/08/88	08/25/88						
South Texas 2	03/12/89	06/19/89						

Table 16

Thermal Energy Generation Comparison By Year

			Megawatt Hours					
Pressurized Water Reactors								
	Initial	Commercial						
Facility	Criticality	Operation	1978	1979	1980	1981	1982	1983
St. Lucie 1	04/22/76	12/21/76	1.64E+07	1.60E+07	1.70E+07	1.61E+07	2.18E+07	3.53E+06
St. Lucie 2	06/02/83	08/08/83						7.66E+06
Summer 1	10/22/82	01/01/84					7.95E+05	1.38E+07
Surry 1	07/01/72	12/22/72	3.27E+07	9.32E+06	8.67E+06	7.94E+06	1.83E+07	1.22E+07
Surry 2	03/07/73	05/01/73			7.26E+06	1.68E+07	1.79E+07	1.35E+07
Three Mile Island 1	06/05/74	09/02/74	1.83E+07	2.83E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Three Mile Island 2	03/28/78	12/30/78	3.16E+06	N/R	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trojan	12/15/75	05/20/76	5.63E+06	1.70E+07	1.97E+07	2.10E+07	1.56E+07	1.34E+07
Turkey Point 3	10/20/72	12/14/72	2.81E+07	2.28E+07	1.47E+07	3.03E+06	1.22E+07	1.41E+07
Turkey Point 4	06/11/73	09/07/73			1.32E+07	1.48E+07	1.27E+07	9.83E+06
Vogtle 1	03/09/87	05/31/87						
Vogtle 2	03/28/89	05/20/89						
Waterford 3	03/04/85	09/24/85						
Wolf Creek 1	05/22/85	09/03/85						
Yankee Rowe 1	08/19/60	07/01/61	4.16E+06	4.17E+06	1.13E+06	3.63E+06	3.69E+06	4.69E+06
Zion 1	06/19/73	12/31/73	4.30E+07	3.31E+07	2.22E+07	1.98E+07	1.52E+07	1.34E+07
Zion 2	12/24/73	09/17/74			1.75E+07	1.77E+07	1.71E+07	2.00E+07
Total			5.58E+08	5.76E+08	5.12E+08	5.76E+08	5.96E+08	6.52E+08

N/R = Not Reported

Table 16

Thermal Energy Generation Comparison By Year

			Megawatt Hours					
Pressurized Water Reactors								
	Initial	Commercial						
Facility	Criticality	Operation	1984	1985	1986	1987	1988	1989
Arkansas One 1	08/06/74	12/19/74	1.44E+07	1.62E+07	1.11E+07	1.51E+07	1.24E+07	1.07E+07
Arkansas One 2	12/05/78	03/26/80	1.95E+07	1.50E+07	1.68E+07	2.10E+07	1.58E+07	1.76E+07
Beaver Valley 1	05/10/76	10/01/76	1.58E+07	1.96E+07	1.55E+07	1.84E+07	1.64E+07	1.27E+07
Beaver Valley 2	08/04/87	11/17/87				2.39E+06	2.13E+07	1.51E+07
Braidwood 1	05/29/87	07/29/88				5.02E+06	1.04E+07	1.44E+07
Braidwood 2	03/08/88	10/17/88					4.08E+06	2.18E+07
Byron 1	02/02/85	09/16/85		3.34E+06	2.32E+07	1.71E+07	1.99E+07	2.77E+07
Byron 2	01/09/87	08/21/87				6.47E+06	2.04E+07	1.87E+07
Callaway 1	10/02/84	12/19/84	1.00E+06	2.49E+07	2.26E+07	1.98E+07	2.76E+07	3.15E+07
Calvert Cliffs 1	10/07/74	05/08/75	1.96E+07	1.35E+07	1.82E+07	1.65E+07	1.62E+07	4.23E+06
Calvert Cliffs 2	11/30/76	04/01/77	1.69E+07	1.78E+07	2.18E+07	1.50E+07	2.07E+07	1.45E+06
Catawba 1	01/07/85	06/29/85		1.07E+07	1.59E+07	1.95E+07	2.29E+07	2.36E+07
Catawba 2	05/08/86	08/19/86			4.04E+06	2.17E+07	1.88E+07	1.95E+07
Donald C. Cook 1	01/18/75	08/27/75	2.41E+07	6.83E+06	2.16E+07	1.64E+07	2.42E+07	1.74E+07
Donald C. Cook 2	03/10/78	07/01/78	1.70E+07	1.82E+07	1.44E+07	1.65E+07	7.41E+06	2.13E+07
Crystal River 3	01/14/77	03/13/77	1.97E+07	1.17E+07	8.14E+06	1.11E+07	1.78E+07	9.14E+06
Davis-Besse 1	08/12/77	07/31/78	1.39E+07	6.31E+06	1.29E+05	1.65E+07	3.91E+06	2.35E+07
Diablo Canyon 1	04/29/84	05/07/85	9.48E+05	1.66E+07	1.70E+07	2.54E+07	1.66E+07	2.25E+07
Diablo Canyon 2	08/19/85	03/13/86		2.12E+06	2.11E+07	1.82E+07	1.98E+07	2.69E+07
Joseph M. Farley 1	08/09/77	12/01/77	1.78E+07	1.90E+07	1.85E+07	2.11E+07	1.92E+07	1.96E+07
Joseph M. Farley 2	05/05/81	07/30/81	2.15E+07	1.74E+07	1.91E+07	1.60E+07	2.29E+07	1.81E+07
Fort Calhoun 1	08/06/73	06/20/74	7.43E+06	9.56E+06	1.13E+07	9.48E+06	8.34E+06	1.07E+07
R. E. Ginna	11/08/69	07/01/70	1.00E+07	1.14E+07	1.13E+07	1.19E+07	1.10E+07	9.65E+06
Haddam Neck	07/24/67	01/01/68	1.08E+07	1.49E+07	7.26E+06	8.39E+06	1.06E+07	9.47E+06
Harris 1	01/03/87	05/02/87				1.12E+07	1.71E+07	1.83E+07
Indian Point 1	08/02/62	10/ /62	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
Indian Point 2	05/22/73	08/01/74	1.17E+07	2.21E+07	1.29E+07	1.71E+07	1.95E+07	1.45E+07
Indian Point 3	04/06/76	08/30/76	1.93E+07	1.51E+07	1.77E+07	1.56E+07	2.14E+07	1.55E+07
Kewaunee	03/07/74	06/16/74	1.21E+07	1.16E+07	1.21E+07	1.26E+07	1.22E+07	1.18E+07
Maine Yankee	10/23/72	12/28/72	1.62E+07	1.67E+07	1.93E+07	1.31E+07	1.67E+07	2.11E+07
McGuire 1	08/08/81	12/01/81	1.94E+07	2.06E+07	1.56E+07	2.21E+07	2.26E+07	2.38E+07
McGuire 2	05/08/83	03/01/84	1.94E+07	1.68E+07	1.96E+07	2.25E+07	2.41E+07	2.19E+07
Millstone 2	10/17/75	12/26/75	2.14E+07	1.12E+07	1.66E+07	2.18E+07	1.81E+07	1.55E+07
Millstone 3	01/23/86	04/23/86			2.17E+07	2.05E+07	2.33E+07	2.17E+07
North Anna 1	04/05/78	06/06/78	1.18E+07	1.81E+07	1.98E+07	1.14E+07	2.20E+07	1.37E+07
North Anna 2	06/12/80	12/14/80	1.51E+07	2.16E+07	1.92E+07	1.80E+07	2.50E+07	1.88E+07
Oconee 1	04/19/73	07/15/73	1.86E+07	2.14E+07	1.46E+07	1.56E+07	2.21E+07	1.82E+07
Oconee 2	11/11/73	09/09/74	2.23E+07	1.56E+07	1.79E+07	1.93E+07	1.72E+07	1.84E+07
Oconee 3	09/05/74	12/16/74	1.63E+07	1.49E+07	1.88E+07	1.55E+07	1.80E+07	1.94E+07
Palisades	05/24/71	12/31/71	2.72E+06	1.75E+07	2.76E+06	8.83E+06	1.14E+07	1.21E+07
Palo Verde 1	05/25/85	02/13/86		4.39E+06	1.82E+07	1.61E+07	2.03E+07	5.57E+06
Palo Verde 2	04/18/86	09/19/86			7.02E+06	2.49E+07	2.07E+07	1.47E+07
Palo Verde 3	10/25/87	01/08/88				1.24E+06	3.03E+07	4.10E+06
Point Beach 1	11/02/70	12/21/70	9.41E+06	1.02E+07	1.15E+07	1.09E+07	1.17E+07	1.11E+07
Point Beach 2	05/30/72	10/01/71	1.09E+07	1.11E+07	1.06E+07	1.11E+07	1.14E+07	1.06E+07
Prairie Island 1	12/01/73	12/16/73	1.33E+07	1.18E+07	1.22E+07	1.14E+07	1.23E+07	1.40E+07
Prairie Island 2	12/17/74	12/21/74	1.24E+07	1.15E+07	1.23E+07	1.41E+07	1.26E+07	1.25E+07
Rancho Seco 1	09/16/74	04/17/75	1.21E+07	6.26E+06	0.00E+00	0.00E+00	9.47E+06	4.62E+06
H. B. Robinson 2	09/20/70	03/07/71	7.84E+05	1.66E+07	1.52E+07	1.35E+07	1.06E+07	8.86E+06
Salem 1	12/11/76	06/30/77	6.95E+06	2.77E+07	2.24E+07	1.96E+07	2.32E+07	1.97E+07
Salem 2	08/08/80	10/13/81	1.03E+07	1.60E+07	1.74E+07	1.96E+07	1.90E+07	2.44E+07
San Onofre 1	06/14/67	01/01/68	9.24E+05	8.12E+06	3.00E+06	8.82E+06	4.52E+06	3.92E+06
San Onofre 2	07/26/82	08/08/83	1.66E+07	1.65E+07	2.01E+07	1.93E+07	2.75E+07	1.63E+07
San Onofre 3	08/29/83	04/01/84	1.29E+07	1.21E+07	2.13E+07	2.32E+07	1.89E+07	2.73E+07
Seabrook 1	06/13/89	08/19/90						
Sequoyah 1	07/05/80	07/01/81	1.92E+07	1.24E+07	0.00E+00	0.00E+00	5.16E+05	2.88E+07
Sequoyah 2	11/05/81	06/01/82	1.96E+07	1.71E+07	0.00E+00	0.00E+00	1.26E+07	2.88E+07
South Texas 1	03/08/88	08/25/88					8.81E+06	1.99E+07
South Texas 1	03/12/89	06/19/89						9.52E+06

Table 16

Thermal Energy Generation Comparison By Year

Megawatt Hours								
Pressurized Water Reactors								
Facility	Initial Criticality	Commercial Operation	1984	1985	1986	1987	1988	1989
St. Lucie 1	04/22/76	12/21/76	1.35E+07	1.88E+07	2.23E+07	1.81E+07	1.97E+07	2.19E+07
St. Lucie 2	06/02/83	08/08/83	1.77E+07	1.93E+07	1.94E+07	1.90E+07	2.35E+07	1.73E+07
Summer 1	10/22/82	01/01/84	1.33E+07	1.65E+07	2.26E+07	1.64E+07	1.61E+07	1.76E+07
Surry 1	07/01/72	12/22/72	1.11E+07	1.79E+07	1.42E+07	1.47E+07	8.45E+06	9.95E+06
Surry 2	03/07/73	05/01/73	1.73E+07	1.33E+07	1.45E+07	1.54E+07	1.16E+07	2.87E+06
Three Mile Island 1	06/05/74	09/02/74	0.00E+00	2.82E+06	1.56E+07	1.56E+07	1.69E+07	2.22E+07
Three Mile Island 2	03/28/78	12/30/78	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
Trojan	12/15/75	05/20/76	1.54E+07	2.25E+07	2.29E+07	1.39E+07	1.98E+07	1.73E+07
Turkey Point 3	10/20/72	12/14/72	1.56E+07	1.11E+07	1.46E+07	2.96E+06	1.14E+07	1.18E+07
Turkey Point 4	06/11/73	09/07/73	1.04E+07	1.69E+07	5.73E+06	8.69E+06	1.06E+07	7.14E+06
Vogtle 1	03/09/87	05/31/87				1.27E+07	2.18E+07	2.76E+07
Vogtle 2	03/28/89	05/20/89						1.72E+07
Waterford 3	03/04/85	09/24/85		5.64E+06	2.27E+07	2.31E+07	2.06E+07	2.37E+07
Wolf Creek 1	05/22/85	09/03/85		8.87E+06	2.09E+07	1.97E+07	2.01E+07	2.88E+07
Yankee Rowe 1	08/19/60	07/01/61	3.61E+06	4.19E+06	4.90E+06	4.03E+06	4.03E+06	4.66E+06
Zion 1	06/19/73	12/31/73	1.83E+07	1.85E+07	1.58E+07	1.88E+07	1.97E+07	1.56E+07
Zion 2	12/24/73	09/17/74	1.92E+07	2.16E+07	2.30E+07	1.61E+07	2.08E+07	2.40E+07
Total			7.37E+08	8.58E+08	9.38E+08	1.01E+09	1.18E+09	1.21E+09

APPENDIX A

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:ARKANSAS POWER &LIGHT
DOCKET NO.:50-313 LICENSED POWER (MWT):2.57E+03
THERMAL POWER (MWH):1.07E+07 NET ELECTRIC POWER (MWH):3.37E+06
COMMERCIAL OPERATION:12/19/74 INITIAL CRITICALITY:08/06/74
COOLING WATER SOURCE:DARDANELLE RESERVOIR

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.28E-05
K-40	2.26E-04
AR-41	6.40E-06
CO-58	3.13E-06
CO-60	7.39E-06
KR-85	1.70E+03
KR-85M	1.22E-05
KR-87	8.97E-06
KR-88	1.92E-05
RB-88	5.66E-05
SR-89	3.34E-06
SR-90	4.29E-07
NB-95	3.57E-06
I-131	5.47E-04
XE-131M	4.78E+00
I-132	2.33E-05
I-133	2.46E-05
XE-133	6.18E+02
XE-133M	3.11E+00
CS-134	9.65E-06
I-134	2.67E-05
I-135	2.56E-05
XE-135	5.47E+00
XE-135M	2.18E-06
CS-137	1.93E-05
CS-138	3.50E-05
XE-138	3.87E-06
BI-214	4.16E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	1.21E-04
NA-24	6.57E-03
K-40	4.19E-04
AR-41	1.52E-05
CR-51	3.21E-02
MN-54	1.67E-01
FE-55	3.45E-01
CO-57	6.76E-05
CO-58	3.04E-01
FE-59	8.79E-03
CO-60	8.46E-02
ZN-65	2.99E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
KR-85	1.53E-01
KR-85M	1.37E-04
SR-89	2.81E-03
SR-90	8.24E-04
SR-92	3.54E-03
NB-95	8.15E-03
ZR-95	8.93E-03
NB-97	2.36E-04
ZR-97	7.05E-04
MO-99	4.01E-04
TC-99M	1.00E-03
RU-103	4.29E-03
RU-106	4.18E-04
AG-110M	2.43E-01
SN-113	9.34E-04
SB-122	3.84E-03
SB-124	2.20E-02
SB-125	2.41E-01
SB-127	2.30E-04
I-131	2.07E-01
XE-131M	3.76E-01
I-132	7.94E-04
TE-132	7.05E-04
I-133	7.01E-05
XE-133	2.27E+01
XE-133M	1.32E-01
CS-134	8.29E-02
I-135	1.08E-05
XE-135	3.55E-03
XE-135M	1.11E-03
CS-137	2.21E-01
BA-140	1.28E-04
LA-140	3.49E-02
BI-214	4.05E-04
PB-214	5.79E-08
RA-226	2.03E-08

TOTAL AIRBORNE TRITIUM RELEASE 1.62E+01

TOTAL LIQUID TRITIUM RELEASE 3.81E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.13E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.06E+11

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:ARKANSAS POWER & LIGHT
DOCKET NO.:50-368 LICENSED POWER (MWT):2.82E+03
THERMAL POWER (MWH):1.76E+07 NET ELECTRIC POWER (MWH):5.47E+06
COMMERCIAL OPERATION:03/26/80 INITIAL CRITICALITY:12/05/78
COOLING WATER SOURCE:DARDANELLE RESERVOIR

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
K-40	5.05E-05
CO-58	1.35E-05
CO-60	4.59E-06
KR-85	1.79E+00
KR-85M	3.07E-01
SR-89	4.57E-06
NB-95	1.55E-06
NB-97	9.97E-07
CD-109	2.68E-06
SB-122	1.34E-06
I-131	4.66E-04
XE-131M	4.73E+00
I-133	1.42E-05
XE-133	2.54E+03
XE-133M	2.19E+01
CS-134	6.30E-06
XE-135	1.90E+02
CS-137	2.52E-05
BI-214	1.88E-04
PB-214	4.97E-06
RA-226	5.01E-06
TH-228	9.32E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.97E-03
K-40	1.14E-03
CR-51	7.06E-02
MN-54	2.64E-02
FE-55	4.25E-01
CO-57	1.96E-04
CO-58	5.41E-01
FE-59	8.09E-03
CO-60	1.89E-02
KR-85M	2.47E-03
KR-88	3.14E-04
RB-88	2.90E-03
SR-89	4.58E-03
SR-90	1.16E-03
Y-91	1.94E-03
SR-92	2.98E-03
NB-94	1.04E-05
NB-95	1.65E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
ZR-95	1.71E-02
NB-97	1.40E-04
ZR-97	2.47E-04
MO-99	2.48E-02
TC-99M	2.50E-02
RU-103	1.39E-03
RU-106	1.17E-03
AG-110M	2.28E-01
SN-113	4.12E-03
SB-122	2.29E-02
SB-124	1.90E-01
SB-125	5.03E-01
SB-127	2.71E-03
I-131	3.01E-01
XE-131M	3.01E-01
I-132	2.48E-03
TE-132	5.76E-03
I-133	2.81E-03
XE-133	2.22E+01
XE-133M	1.75E-01
CS-134	4.48E-02
I-135	1.34E-04
XE-135	6.66E-02
CS-136	1.83E-04
CS-137	1.36E-01
CS-138	2.82E-03
LA-140	5.32E-03
W-187	3.83E-04
BI-214	4.30E-03
PB-214	1.60E-04
RA-226	4.85E-05

TOTAL AIRBORNE TRITIUM RELEASE	1.25E+01
TOTAL LIQUID TRITIUM RELEASE	4.40E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.26E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.06E+11

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
2	CASK SHIPMENT	BARNWELL SC
1	UNSHIELDED VAN/TRUCK	BEATTY NV
12	UNSHIELDED VAN/TRUCK	OAK RIDGE TN
16	UNSHIELDED VAN/TRUCK	PITTSBURGH PA
1	UNSHIELDED VAN/TRUCK	WAMPUM PA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

AG-110M	%	1.16E+01
CO-58	%	8.94E+00
CO-60	%	4.31E+00
CS-134	%	1.27E+01
CS-137	%	4.35E+01
FE-55	%	4.80E+00
MN-54	%	1.68E+00
NI-63	%	6.43E+00
SB-125	%	4.28E+00
TE-125M	%	5.80E-01

B

AG-110M	%	1.37E+01	3.17E+00
CO-58	%	1.06E+01	7.83E+00
CO-60	%	9.71E+00	5.07E+00
CR-51	%		2.30E-01
CS-134	%	7.37E+00	1.44E+01
CS-137	%	2.15E+01	5.07E+01
FE-55	%	1.87E+01	9.67E+00
MN-54	%	9.60E-01	
NB-95	%	3.90E+00	9.60E-01
NI-63	%	1.36E+01	7.07E+00
ZR-95	%		7.40E-01

TYPE OF WASTE

UNIT YEAR TOTAL

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.83E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	2.83E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	2.03E+02
	CI	1.26E+01
D. OTHER	M3	0.00E+00
	CI	0.00E+00

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE:PWR	LICENSEE:DUQUESNE LIGHT
DOCKET NO.:50-334		LICENSED POWER (MWT):2.65E+03
THERMAL POWER (MWH):1.27E+07		NET ELECTRIC POWER (MWH):3.79E+06
COMMERCIAL OPERATION:10/01/76		INITIAL CRITICALITY:05/10/76
COOLING WATER SOURCE:OHIO RIVER		
UNIT NUMBER: 2	TYPE:PWR	LICENSEE:DUQUESNE LIGHT
DOCKET NO.:50-412		LICENSED POWER (MWT):2.65E+03
THERMAL POWER (MWH):1.51E+07		NET ELECTRIC POWER (MWH):4.54E+06
COMMERCIAL OPERATION:11/17/87		INITIAL CRITICALITY:08/04/87
COOLING WATER SOURCE:OHIO RIVER		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	6.12E-01
CO-58	1.19E-05
CO-60	7.59E-06
KR-85	7.31E-01
KR-85M	1.61E-02
I-131	2.23E-05
XE-131M	1.56E-01
I-133	3.13E-06
XE-133	1.21E+01
XE-133M	6.11E-02
XE-135	5.52E-01
CS-137	3.60E-04
CE-144	1.18E-07

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.65E-05
CR-51	4.95E-02
MN-54	6.33E-03
FE-55	2.14E-01
CO-57	7.43E-04
CO-58	1.48E-01
FE-59	5.24E-03
CO-60	6.87E-02
NB-95	1.83E-03
ZR-NB-95	1.91E-03
NB-97	2.14E-03
MO-99	3.17E-06
TC-99M	3.10E-06
RU-103	4.91E-04
AG-110M	4.81E-03
SB-124	7.82E-03
SB-125	3.31E-02
I-131	1.91E-04
I-133	1.54E-05
XE-133	3.74E-03
CS-134	3.21E-05
XE-135	5.36E-04

N/A=NOT APPLICABLE

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N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-137	8.31E-04
BA-LA-140	4.29E-05

TOTAL AIRBORNE TRITIUM RELEASE	8.05E+01
TOTAL LIQUID TRITIUM RELEASE	6.21E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	9.31E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.03E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION:BEAVER VALLEY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS

9

34

MODE OF TRANSPORTATION

TRUCK

TRUCK

DESTINATION

BARNWELL SC

OAK RIDGE TN

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A			
AG-110M	%	1.81E-03	1.04E-06
AM-241	%	1.67E-06	1.43E-05
BA-140	%	8.47E-06	1.59E-04
C-14	%	2.84E-02	3.00E-02
CE-141	%		7.26E-05
CE-144/PR-144	%		2.87E-03
CL-36	%		0.00E+00
CM-242	%	1.03E-05	1.52E-04
CM-243/244	%	4.21E-06	3.61E-05
CO-57	%	1.38E-01	2.11E-01
CO-58	%	7.46E+01	5.57E+01
CO-60	%	6.57E+00	1.46E+01
CR-51	%	3.56E-05	3.54E-01
CS-134	%	1.79E-02	1.33E-02
CS-137	%	3.30E-02	5.60E-02
FE-55	%	1.33E+01	1.53E+01
FE-59	%	1.27E-05	9.66E-02
H-3	%	5.33E-01	3.35E-01
I-129	%	4.62E-05	1.16E-05
I-131	%	5.82E-04	8.09E-03
MN-54	%	1.54E-01	9.56E+00
NB-95	%	2.12E-04	1.51E-03
NI-59	%	7.21E-04	2.19E-02
NI-63	%	3.17E+00	2.57E+00
P-32	%	1.50E+00	1.19E-02
PU-238	%	7.47E-06	5.08E-05
PU-239/240	%	1.28E-05	2.39E-05
PU-241	%	3.57E-03	3.49E-03
SB-124	%		2.39E-01
SB-125	%	6.19E-03	3.55E-01
SR-89	%	1.45E-04	7.13E-02
SR-90	%	3.32E-05	7.43E-02
TC-99	%	3.12E-05	1.01E-05
ZN-65	%		3.59E-01
ZR-95	%	1.75E-04	1.49E-03
B			
AG-110M	%	2.91E-01	

N/A=NOT APPLICABLE

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N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
B			
AM-241	%	9.35E-03	1.21E-03
BA-133	%		2.07E-06
BA-140	%	5.31E-02	7.87E-03
BE-7	%	3.55E+00	
C-14	%	4.25E-01	5.09E-01
CD-109	%		3.88E-06
CE-139	%		2.25E-09
CE-141	%		1.98E-02
CE-144/PR-144	%	5.65E-04	3.92E-02
CL-36	%		7.20E-07
CM-242	%	9.94E-04	2.73E-03
CM-243/244	%	8.03E-03	1.99E-03
CO-57	%	4.65E-04	1.48E-02
CO-58	%	2.63E+01	1.43E+01
CO-60	%	1.05E+01	1.34E+01
CR-51	%	4.90E+00	2.69E+00
CS-134	%	9.55E-01	9.70E-01
CS-137	%	1.74E+00	2.22E+00
FE-55	%	3.47E+01	2.36E+01
FE-59	%	6.26E-01	8.83E-02
H-3	%	5.83E-01	2.15E+00
HG-203	%		4.97E-13
I-129	%	7.70E-03	1.52E-02
I-131	%	9.50E-02	
MN-54	%	1.79E+00	5.43E-01
NB-95	%	4.91E+00	8.16E-01
NI-59	%	0.00E+00	4.96E-01
NI-63	%	2.50E+00	3.53E+01
P-32	%	3.09E+00	1.30E+00
PB-210	%		1.04E-04
PR-147	%		7.04E-09
PU-238	%	1.30E-02	3.06E-03
PU-239/240	%	6.93E-03	1.62E-03
PU-241	%	4.27E-01	6.83E-02
RU-103	%		1.27E-12
SB-124	%		1.69E-02
SB-125	%	6.95E-01	8.86E-01
SN-113	%		1.55E-09
SR-89	%	2.52E-02	1.70E-02
SR-90	%	3.52E-03	2.79E-02
TC-99	%	9.51E-03	1.10E-02
TH-230	%		7.20E-08
Y-88	%		1.39E-09

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
B		
ZR-95	% 1.78E+00	3.12E-01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3	4.30E+01
BOTTOMS, ETC.	CI	1.32E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3	1.92E+03 *
EQUIPMENT, ETC.	CI	3.04E+01
C. IRRADIATED COMPONENTS, CONTROL	M3	0.00E+00
RODS, ETC.	CI	0.00E+00
D. OTHER	M3	
	CI	

*VOLUME PRIOR TO REDUCTION (2.29E+2 M3 AFTER REDUCTION)

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:DUQUESNE LIGHT
DOCKET NO.:50-334 LICENSED POWER (MWT):2.65E+03
THERMAL POWER (MWH):1.27E+07 NET ELECTRIC POWER (MWH):3.79E+06
COMMERCIAL OPERATION:10/01/76 INITIAL CRITICALITY:05/10/76
COOLING WATER SOURCE:OHIO RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-58	5.83E-04
CO-60	3.17E-03
KR-85	4.78E+00
KR-85M	1.44E-03
MO-99	8.18E-07
TC-99M	8.01E-07
I-131	8.98E-04
XE-131M	8.18E+00
I-133	8.46E-05
XE-133	1.26E+02
XE-133M	9.85E-02
CS-134	3.24E-05
XE-135	1.00E+00
XE-135M	2.67E-04
CS-137	9.67E-05

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:DUQUESNE LIGHT
DOCKET NO.:50-412 LICENSED POWER (MWT):2.65E+03
THERMAL POWER (MWH):1.51E+07 NET ELECTRIC POWER (MWH):4.54E+06
COMMERCIAL OPERATION:11/17/87 INITIAL CRITICALITY:08/04/87
COOLING WATER SOURCE:OHIO RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.15E-02
CR-51	1.92E-04
MN-54	4.86E-05
CO-57	1.21E-06
CO-58	5.57E-03
CO-60	2.51E-04
KR-85	1.14E+01
KR-85M	6.27E-04
KR-88	1.78E-05
SR-89	3.98E-07
SR-90	1.16E-07
NB-95	2.14E-05
ZR-NB-95	1.85E-04
RU-106	1.92E-07
I-131	1.52E-05
XE-131M	1.27E+00
I-133	1.51E-07
XE-133	3.45E+00
XE-133M	5.20E-01
CS-134	5.88E-08
XE-135	2.27E-03
XE-135M	1.43E-04
CS-137	7.30E-06
BA-139	3.25E-04
CE-144	3.07E-06

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:CONSUMERS POWER
DOCKET NO.:50-155 LICENSED POWER (MWT):2.40E+02
THERMAL POWER (MWH):1.37E+06 NET ELECTRIC POWER (MWH):4.17E+05
COMMERCIAL OPERATION:03/29/63 INITIAL CRITICALITY:09/27/62
COOLING WATER SOURCE:LAKE MICHIGAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
N-13	1.60E+03
NA-24	9.47E-04
CR-51	6.77E-04
MN-54	1.73E-04
CO-58	3.63E-06
FE-59	1.68E-05
CO-60	2.48E-04
ZN-65	3.27E-05
BR-82	1.14E-03
KR-85M	9.91E+01
KR-87	4.91E+02
KR-88	3.12E+02
SR-89	1.28E-04
SR-90	5.67E-06
SR-91	1.60E-03
NB-95	2.51E-07
MO-99	7.17E-05
AG-110M	4.17E-05
I-131	2.60E-03
I-133	1.88E-02
XE-133	4.05E+01
CS-134	8.85E-05
I-135	5.47E-03
XE-135	4.65E+02
XE-135M	7.91E+02
CS-137	3.68E-04
XE-138	3.28E+03
BA-140	4.52E-04
LA-140	1.29E-03
UNIDENTIFIED	3.47E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	3.67E-03
MN-54	5.77E-02
CO-58	1.53E-03
FE-59	1.09E-02
CO-60	5.97E-02
ZN-65	2.88E-03
SR-89	2.88E-04
SR-90	3.64E-04
SR-92	1.25E-05
MO-99	6.85E-05

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AG-110M	9.81E-04
SN-113	1.18E-04
SB-124	2.12E-04
CS-134	3.14E-03
CS-137	2.45E-02
UNIDENTIFIED	6.59E-02

TOTAL AIRBORNE TRITIUM RELEASE	5.21E+00
TOTAL LIQUID TRITIUM RELEASE	6.39E-01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	8.44E+05
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	8.51E+10

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS MODE OF TRANSPORTATION
12 N/R

DESTINATION
BARNWELL SC

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3		2.83E+01
BOTTOMS, ETC.	CI		2.69E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3		3.74E+01
EQUIPMENT, ETC.	CI		2.58E+00
C. IRRADIATED COMPONENTS, CONTROL	M3		0.00E+00
RODS, ETC.	CI		0.00E+00
D. OTHER	M3		7.84E+00
	CI		9.99E+01

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:COMMONWEALTH EDISON
DOCKET NO.:50-456 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.18E+07 NET ELECTRIC POWER (MWH):4.63E+06
COMMERCIAL OPERATION:07/29/88 INITIAL CRITICALITY:05/29/87
COOLING WATER SOURCE:KANKAKEE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.02E-01
CO-58	2.36E-05
CO-60	2.06E-07
KR-85	1.65E-01
KR-85M	3.90E-02
KR-87	1.37E-04
KR-88	7.41E-04
I-131	2.31E-04
XE-131M	1.10E+00
I-132	2.64E-04
I-133	9.37E-05
XE-133	1.53E+02
XE-133M	6.46E-01
XE-135	1.01E+03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	1.75E-05
NA-24	1.13E-03
SC-46	2.41E-05
CR-51	6.90E-02
MN-54	5.43E-02
FE-55	1.42E-02
CO-57	4.49E-03
CO-58	1.85E+00
FE-59	3.52E-02
CO-60	1.61E-01
NI-65	2.51E-03
ZN-65	2.52E-03
AS-76	1.36E-05
BR-82	1.39E-02
KR-88	8.93E-03
SR-91	4.59E-06
SR-92	5.75E-06
NB-95	2.54E-02
ZR-95	1.31E-02
ZR-97	1.96E-02
MO-99	5.10E-04
RU-103	1.05E-04
RU-105	1.39E-05
AG-110M	1.97E-03
SN-113	2.22E-03
SB-122	4.08E-06

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SB-124	1.76E-02
SB-125	1.12E-02
I-131	9.14E-03
I-132	3.00E-02
I-133	3.48E-05
XE-133	2.21E-01
XE-133M	4.86E-04
CS-134	6.19E-02
I-134	2.72E-02
XE-135	4.29E-03
CS-136	4.73E-05
CS-137	7.68E-02
CS-138	1.29E-04
BA/LA-140	1.31E-03
CE-144	3.44E-04

TOTAL AIRBORNE TRITIUM RELEASE	8.72E+00
TOTAL LIQUID TRITIUM RELEASE	5.58E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	6.00E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.68E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:COMMONWEALTH EDISON
DOCKET NO.:50-457 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.18E+07 NET ELECTRIC POWER (MWH):7.14E+06
COMMERCIAL OPERATION:10/17/88 INITIAL CRITICALITY:03/08/88
COOLING WATER SOURCE:KANKAKEE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	5.67E-01
MN-54	1.60E-06
CO-58	5.07E-05
CO-60	1.42E-05
KR-85	1.48E-01
KR-85M	1.71E-01
KR-87	2.17E-04
KR-88	5.40E-04
RU-103	3.71E-08
I-131	2.19E-04
XE-131M	1.06E+00
I-133	7.46E-05
XE-133	4.52E+02
XE-133M	3.75E-01
I-134	2.81E-06
I-135	2.74E-03
XE-135	5.33E+01
CS-137	9.14E-07
BA/LA-140	1.97E-07

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	1.75E-05
NA-24	1.13E-03
SC-46	2.41E-05
CR-51	6.90E-02
MN-54	5.43E-02
CO-57	4.49E-03
CO-58	1.85E+00
FE-59	3.52E-02
CO-60	1.61E-01
NI-65	2.51E-03
ZN-65	2.52E-03
AS-76	1.36E-05
BR-82	1.39E-02
KR-88	8.93E-03
SR-91	4.59E-06
SR-92	5.75E-06
NB-95	2.54E-02
ZR-95	1.31E-02
ZR-97	1.96E-02
MO-99	5.10E-04
RU-103	1.05E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
RU-105	1.39E-05
AG-110M	1.97E-03
SN-113	2.22E-03
SB-122	4.08E-06
SB-124	1.76E-02
SB-125	3.81E-02
I-131	9.14E-03
I-132	3.00E-02
I-133	3.48E-05
XE-133	2.21E-01
XE-133M	4.86E-04
CS-134	6.19E-02
I-134	2.72E-02
XE-135	4.29E-03
CS-136	4.73E-05
CS-137	7.68E-02
CS-138	1.29E-04
BA/LA-140	1.31E-03
CE-144	3.44E-04

TOTAL AIRBORNE TRITIUM RELEASE 3.90E+00

TOTAL LIQUID TRITIUM RELEASE 5.58E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	6.00E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.68E+10

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS

MODE OF TRANSPORTATION

DESTINATION

3

EXCLUSIVE USE VEHICLE

CHEM-NUCLEAR BARNWELL SC

4

EXCLUSIVE USE VEHICLE

SEG OAK RIDGE TN

10

EXCLUSIVE USE VEHICLE

US ECOLOGY RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

BE-7	%	7.63E+00	2.20E-01
CO-57	%		2.60E-01
CO-58	%	3.43E+01	5.24E+01
CO-60	%	3.17E+00	1.60E+01
CR-51	%	2.27E+00	
CS-134	%		4.30E-01
CS-137	%		1.14E+00
FE-55	%	3.26E+01	9.92E+00
FE-59	%	1.76E+00	
H-3	%	1.22E+00	
MN-54	%	4.08E+00	9.36E+00
NB-95	%	1.11E+00	6.50E-01
NI-63	%	1.62E+00	8.14E+00
SB-125	%		5.50E-01
SN-113	%	7.97E+00	9.00E-02
ZE-59	%		1.60E-01
ZN-65	%		2.15E-01
ZR-95	%		3.20E-01

B

C-14	%	1.37E+00	1.90E-02
CO-57	%		8.80E-02
CO-58	%	4.51E+01	3.95E+01
CO-60	%	2.00E+01	4.13E+00
CR-51	%	1.20E-01	
CS-134	%		2.50E-01
CS-137	%		4.93E-01
FE-55	%	9.35E+00	3.42E+01
FE-59	%	1.74E+00	7.55E-01
MN-54	%	1.54E+01	1.52E+01
NB-95	%	1.36E+00	9.62E-01
NI-63	%	2.55E+00	4.26E+00
PU-238	%		4.51E-03
PU-239	%		5.38E-03
PU-241	%		1.59E-01
SR-90	%		1.30E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3		6.31E+01*
BOTTOMS, ETC.	CI		3.85E+02*
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3		2.47E+02
EQUIPMENT, ETC.	CI		4.57E+00
C. IRRADIATED COMPONENTS, CONTROL	M3		0.00E+00
RODS, ETC.	CI		0.00E+00
D. OTHER	M3		
	CI		

*TYPE A. WASTE INCLUDES SMOKE DETECTORS (1.38E-01 M3, 7.58E-05 CI.)

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:TENNESSEE VALLEY AUTHORITY
DOCKET NO.:50-259 LICENSED POWER (MWT):3.29E+03
THERMAL POWER (MWH):0.00E+00 NET ELECTRIC POWER (MWH):0.00E+00
COMMERCIAL OPERATION:08/01/74 INITIAL CRITICALITY:08/17/73
COOLING WATER SOURCE:TENNESSEE RIVER
UNIT NUMBER: 2 TYPE:BWR LICENSEE:TENNESSEE VALLEY AUTHORITY
DOCKET NO.:50-260 LICENSED POWER (MWT):3.29E+03
THERMAL POWER (MWH):0.00E+00 NET ELECTRIC POWER (MWH):0.00E+00
COMMERCIAL OPERATION:03/01/75 INITIAL CRITICALITY:07/20/74
COOLING WATER SOURCE:TENNESSEE RIVER
UNIT NUMBER: 3 TYPE:BWR LICENSEE:TENNESSEE VALLEY AUTHORITY
DOCKET NO.:50-296 LICENSED POWER (MWT):3.29E+03
THERMAL POWER (MWH):0.00E+00 NET ELECTRIC POWER (MWH):0.00E+00
COMMERCIAL OPERATION:03/01/77 INITIAL CRITICALITY:08/08/76
COOLING WATER SOURCE:TENNESSEE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-60	1.54E-04
CS-137	3.23E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	5.32E-05
CO-57	5.60E-06
CO-60	2.71E-02
ZN-65	1.09E-03
SB-125	5.61E-04
CS-134	1.95E-02
CS-137	1.23E-01
CE-144	2.87E-05

TOTAL AIRBORNE TRITIUM RELEASE 2.00E-01
TOTAL LIQUID TRITIUM RELEASE 7.01E-01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.40E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.64E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
43	SOLE USE TRUCK	BARNWELL SC
2	SOLE USE TRUCK	RICHLAND WA

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

CO-60	%	4.53E+01	3.51E+01
CS-134	%	4.00E+00	6.77E+00
CS-137	%	1.77E+01	2.10E+01
FE-55	%	2.77E+01	3.19E+01
MN-54	%	4.10E-02	1.70E-01
OTHERS	%	2.80E+00	2.88E+00
ZN-65	%	2.30E+00	2.18E+00

B

AG-110M	%	1.30E+00	8.65E-01
CO-60	%	1.78E+01	2.81E+01
CR-51	%	1.15E+01	7.79E+00
CS-134	%	6.80E+00	5.05E+00
CS-137	%	6.80E+00	6.72E+00
FE-55	%	2.45E+01	3.15E+01
FE-59	%	1.30E+00	8.24E-01
MN-54	%	4.20E+00	2.93E+00
NB-95	%	2.20E+00	1.42E+00
OTHERS	%	5.20E+00	1.58E+00
ZN-65	%	1.84E+01	1.33E+01

D

AG-110M	%	1.33E+00	1.33E+00
CO-60	%	1.88E+01	1.88E+01
CR-51	%	1.21E+01	1.21E+01
CS-134	%	7.20E+00	7.20E+00
CS-137	%	7.20E+00	7.20E+00
FE-55	%	2.57E+01	2.57E+01
FE-59	%	1.34E+00	1.34E+00
MN-54	%	4.43E+00	4.43E+00
NB-95	%	2.31E+00	2.31E+00
OTHERS	%	2.21E-01	2.21E-01
ZN-65	%	1.94E+01	1.94E+01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3		1.82E+02
BOTTOMS, ETC.	CI		2.61E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3		3.39E+02
EQUIPMENT, ETC.	CI		3.04E+01
C. IRRADIATED COMPONENTS, CONTROL	M3		0.00E+00
RODS, ETC.	CI		0.00E+00
D. OTHER	M3		6.30E+01
ABSORBED OIL MATERIAL	CI		3.15E+00

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:CAROLINA POWER &LIGHT
DOCKET NO.:50-325 LICENSED POWER (MWT):2.44E+03
THERMAL POWER (MWH):1.32E+07 NET ELECTRIC POWER (MWH):4.18E+06
COMMERCIAL OPERATION:03/18/77 INITIAL CRITICALITY:10/08/76
COOLING WATER SOURCE:CAPE FEAR RIVER
UNIT NUMBER: 2 TYPE:BWR LICENSEE:CAROLINA POWER &LIGHT
DOCKET NO.:50-324 LICENSED POWER (MWT):2.44E+03
THERMAL POWER (MWH):1.34E+07 NET ELECTRIC POWER (MWH):4.19E+06
COMMERCIAL OPERATION:11/03/75 INITIAL CRITICALITY:03/20/75
COOLING WATER SOURCE:CAPE FEAR RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	5.18E+00
CR-51	2.44E-02
MN-54	2.11E-03
CO-57	2.99E-06
CO-58	5.89E-04
FE-59	9.64E-05
CO-60	3.46E-03
KR-85M	6.78E+01
KR-87	7.66E+00
KR-88	5.56E+01
SR-89	9.64E-04
SR-90	7.00E-06
NB-95	8.45E-06
RU-103	6.27E-06
I-131	1.51E-02
I-132	4.29E-02
I-133	7.78E-02
XE-133	3.44E+02
CS-134	4.23E-05
I-134	3.92E-03
I-135	8.70E-02
XE-135	2.60E+02
XE-135M	1.10E+02
CS-137	1.36E-04
XE-137	3.79E+02
XE-138	1.29E+02
BA-140	1.43E-03
LA-140	1.02E-03
CE-141	1.67E-06
CE-144	2.16E-05
HF-181	1.10E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.17E-02
AR-41	4.21E-05
CR-51	8.82E-01
MN-54	1.40E-01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
FE-55	7.22E-03
MN-56	1.17E-03
CO-58	4.14E-02
FE-59	3.07E-03
CO-60	2.28E-01
ZN-65	4.87E-04
AS-76	1.95E-03
KR-85M	8.46E-06
SR-89	9.97E-04
SR-90	3.12E-04
Y-91	9.61E-04
Y-91M	7.32E-04
SR-92	9.79E-05
Y-92	1.00E-02
NB-95	4.16E-05
NB-97	8.63E-04
MO-99	1.06E-04
TC-99M	4.94E-02
TC-104	1.67E-04
RU-105	6.89E-04
AG-110M	1.13E-04
TE-129M	6.56E-05
I-131	7.89E-03
I-132	7.86E-05
TE-132	1.88E-04
I-133	5.15E-03
XE-133	4.28E-02
XE-133M	1.73E-04
CS-134	7.98E-02
I-134	4.04E-05
I-135	1.62E-03
XE-135	2.02E-01
XE-135M	1.70E-03
CS-136	8.05E-04
CS-137	7.68E-02
CS-138	4.50E-05
LA-140	4.35E-04
CE-141	8.47E-06
LA-142	1.24E-04
CE-144	2.39E-04
HF-181	1.85E-05
W-187	2.18E-03
NP-239	1.55E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:BRUNSWICK

LOCATION:20 MI S WILMINGTON, NC

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

TOTAL AIRBORNE TRITIUM RELEASE 9.17E+00
TOTAL LIQUID TRITIUM RELEASE 1.79E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.75E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.12E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
71	SOLE USE	CNSI/BARNWELL SC
13	SOLE USE	SEG/OAK RIDGE TN
2	SOLE USE	US ECOLOGY/HANFORD WA

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
5	SOLE USE/RAIL	CP&L/SHNPP(NON-BURIAL)

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A

CO-58	%	1.80E+00	1.77E+00
CO-60	%	1.94E+01	1.54E+01
CR-51	%	1.30E+01	1.09E+01
CS-134	%	2.83E+00	2.64E+00
CS-137	%	2.97E+00	2.65E+00
FE-55	%	4.85E+01	5.83E+01
MN-54	%	9.43E+00	7.39E+00
NI-63	%	1.87E+00	1.02E+00

B

CO-60	%	1.94E+01	1.09E+01
CS-134	%	1.05E+00	
CS-137	%	1.27E+00	1.28E+00
FE-55	%	6.99E+01	8.43E+01
MN-54	%	6.55E+00	2.37E+00
NI-63	%	9.70E-01	

C

CO-60	%	3.14E+01	2.99E+01
FE-55	%	1.35E+01	1.43E+01
NI-63	%	1.32E+00	1.34E+00
SB-125	%	5.37E+01	5.43E+01

D

CO-60	%		3.03E+01
CS-137	%		1.87E+00
FE-55	%		6.56E+01
H-3	%		9.40E-01

TYPE OF WASTE

UNIT YEAR TOTAL

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.20E+02
	CI	3.57E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	3.60E+02 *
	CI	1.82E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	1.76E+01
	CI	2.47E+03
D. OTHER	M3	2.17E+01
OIL	CI	6.47E-03

*VOLUMES REPORTED WERE AFTER COMPACTION

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE:PWR	LICENSEE:COMMONWEALTH EDISON CO.
DOCKET NO.:50-454		LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.77E+07		NET ELECTRIC POWER (MWH):8.95E+06
COMMERCIAL OPERATION:09/16/85		INITIAL CRITICALITY:02/02/85
COOLING WATER SOURCE:ROCK RIVER		
UNIT NUMBER: 2	TYPE:PWR	LICENSEE:COMMONWEALTH EDISON CO.
DOCKET NO.:50-455		LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):1.87E+07		NET ELECTRIC POWER (MWH):6.06E+06
COMMERCIAL OPERATION:08/21/87		INITIAL CRITICALITY:01/09/87
COOLING WATER SOURCE:ROCK RIVER		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	3.59E-01
CO-60	3.40E-05
KR-85	1.33E+01
KR-85M	2.51E-01
KR-87	1.14E-03
KR-88	4.18E-01
I-131	7.59E-04
XE-131M	7.26E+00
I-132	1.10E-04
I-133	1.44E-03
XE-133	7.84E+02
XE-133M	5.08E+00
I-135	8.08E-04
XE-135	5.97E+00

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.61E-05
CR-51	5.79E-02
MN-54	2.61E-02
FE-55	2.47E-06
CO-57	4.78E-04
CO-58	2.41E-01
FE-59	2.41E-02
CO-60	1.69E-01
ZN-65	1.62E-03
BR-82	1.61E-04
NB-95	2.70E-02
ZR-95	1.45E-02
MO-99	8.08E-05
MO-99/TC-99M	1.69E-04
RU-103	3.93E-05
AG-110M	1.08E-03
IN-113M	4.76E-05
SN-113	1.07E-03
SB-124	8.56E-04
SB-125	1.23E-02
I-131	2.58E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
XE-131M	6.19E-03
I-132	2.71E-03
BA-133	4.01E-05
I-133	5.03E-05
XE-133	1.36E+00
XE-133M	5.26E-03
CS-134	2.13E-02
XE-135	7.24E-04
CS-137	2.83E-02
BA/LA-140	1.25E-03
CE-144	1.29E-03
HF-181	2.62E-04

TOTAL AIRBORNE TRITIUM RELEASE	1.84E+02
TOTAL LIQUID TRITIUM RELEASE	1.29E+03

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.17E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.58E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
37	EXCLUSIVE USE	BARNWELL SC
3	EXCLUSIVE USE	RICHLAND WA
12	EXCLUSIVE USE	VENDOR FOR COMPACTION

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

AM-241	%	3.70E-02	5.00E-03
C-14	%	5.10E-01	5.80E-01
CM-244	%	3.70E-02	1.30E-02
CO-58	%	3.30E+01	4.87E+01
CO-60	%	6.60E+00	9.91E+00
CS-134	%	1.71E+01	9.67E+00
CS-137	%	2.30E+01	9.51E+00
FE-55	%	7.40E+00	1.14E+01
H-3	%	8.33E+00	1.10E-01
I-129	%	9.20E-02	4.00E-03
MN-54	%	2.61E+00	8.20E+00
NI-63	%	1.27E+00	1.72E-01
PU-238	%	9.00E-03	2.00E-03
PU-239	%	9.00E-03	4.00E-03
PU-241	%	4.00E-04	1.00E-03
SR-90	%	2.00E-03	4.00E-03
TC-99	%	5.00E-02	1.74E+00

B

C-14	%	7.70E+00	4.30E+00
CO-58	%	1.20E+01	1.33E+01
CO-60	%		1.55E+01
CS-134	%	3.30E+00	1.30E+00
CS-137	%	5.80E+00	1.40E+00
FE-55	%	4.66E+01	6.06E+01
I-129	%		1.00E-04
MN-54	%	4.00E+00	1.50E+00
NI-63	%	8.40E+00	2.06E+00
SR-90	%		3.80E-02
TC-99	%		5.00E-03

TYPE OF WASTE

UNIT YEAR TOTAL

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.64E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	1.27E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.83E+02 *
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	CI	1.13E+01
D. OTHER	M3	1.78E+01
VAN	CI	8.60E-01

*VOLUME CONTAINS 9.88E+1 M3 WASTE SENT TO VENDOR & NOT IN FINAL BURIAL FORM.

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:UNION ELECTRIC COMPANY
DOCKET NO.:50-483 LICENSED POWER (MWT):3.57E+03
THERMAL POWER (MWH):3.15E+07 NET ELECTRIC POWER (MWH):8.35E+06
COMMERCIAL OPERATION:12/19/84 INITIAL CRITICALITY:10/02/84
COOLING WATER SOURCE:MISSOURI RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.02E+00
CO-60	1.19E-05
BR-82	4.09E-07
KR-85	6.57E+00
KR-85M	2.14E+00
KR-87	9.10E-02
KR-88	1.78E+00
RB-88	3.10E-05
I-131	1.53E-04
XE-131M	1.21E+00
I-132	5.23E-07
I-133	2.27E-05
XE-133	6.59E+02
XE-133M	1.68E+00
I-135	3.67E-06
XE-135	4.85E+01
XE-135M	9.99E-02
CE-141	4.85E-07

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.36E-04
MN-54	2.28E-04
FE-55	2.09E-03
CO-57	3.32E-06
CO-58	8.74E-04
CO-60	1.80E-03
SR-89	2.82E-03
SR-90	1.75E-03
NB-95	7.79E-05
ZR-95	5.53E-05
MO-99	1.79E-06
TC-99M	1.80E-06
RU-105	5.72E-05
I-131	6.00E-05
XE-131M	3.55E-03
XE-133	5.35E-01
XE-133M	5.51E-03
CS-134	4.94E-05
XE-135	2.34E-03
CS-137	1.33E-04
HF-181	5.26E-06

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:CALLAWAY

LOCATION:10 MI SE FULTON, MO

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

TOTAL AIRBORNE TRITIUM RELEASE 3.89E+01
TOTAL LIQUID TRITIUM RELEASE 6.10E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	8.69E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.04E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION:CALLAWAY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
5	CASK	BARNWELL SC
1	TRUCK	BARNWELL SC
4	TRUCK	OAK RIDGE TN (QUADREX)
2	TRUCK	OAK RIDGE TN (SEG)
10	TRUCK	RICHLAND WA

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A			
CO-58	%		5.30E+00
CO-60	%	2.69E+01	2.77E+01
CS-134	%	8.70E+00	1.80E+00
CS-137	%	2.05E+01	4.00E+00
FE-55	%	2.63E+01	4.06E+01
H-3	%		1.90E+00
MN-54	%	3.23E+00	1.30E+00
NB-95	%		1.00E+00
NI-63	%	1.30E+01	1.44E+01
B			
C-14	%		2.60E+00
CO-58	%	2.72E+01	1.93E+01
CO-60	%	1.20E+01	1.43E+01
CR-51	%	2.90E+00	1.50E+00
FE-55	%	4.55E+01	5.02E+01
MN-54	%	3.60E+00	3.70E+00
NB-95	%	3.20E+00	1.80E+00
NI-63	%	3.20E+00	4.70E+00
ZR-95	%	2.30E+00	1.50E+00

TYPE OF WASTE

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3	1.06E+02	
BOTTOMS, ETC.	CI	5.94E+02	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3	1.03E+02	*
EQUIPMENT, ETC.	CI	6.40E+00	
C. IRRADIATED COMPONENTS, CONTROL	M3		
RODS, ETC.	CI		
D. OTHER	M3		
	CI		

*VOLUME LISTED IS AFTER REDUCTION.

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:BALTIMORE GAS & ELECTRIC
DOCKET NO.:50-317 LICENSED POWER (MWT):2.70E+03
THERMAL POWER (MWH):4.23E+06 NET ELECTRIC POWER (MWH):1.35E+06
COMMERCIAL OPERATION:05/08/75 INITIAL CRITICALITY:10/07/74
COOLING WATER SOURCE:CHESAPEAKE BAY
UNIT NUMBER: 2 TYPE:PWR LICENSEE:BALTIMORE GAS & ELECTRIC
DOCKET NO.:50-318 LICENSED POWER (MWT):2.70E+03
THERMAL POWER (MWH):1.45E+06 NET ELECTRIC POWER (MWH):4.53E+06
COMMERCIAL OPERATION:04/01/77 INITIAL CRITICALITY:11/30/76
COOLING WATER SOURCE:CHESAPEAKE BAY

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	6.91E-01
KR-85	3.89E+01
KR-85M	3.00E+01
KR-87	8.26E+00
KR-88	2.34E+01
I-131	4.80E-02
XE-131M	1.79E+01
I-133	5.00E-02
XE-133	3.04E+03
XE-133M	4.00E+01
XE-135	8.63E+01
CS-137	9.55E-05
CE-144	1.26E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	7.12E-05
CR-51	3.83E-02
MN-54	2.25E-02
CO-57	8.18E-04
CO-58	2.11E-01
CO-60	9.16E-02
ZN-65	2.82E-04
KR-85M	1.76E-05
KR-88	8.40E-06
SR-89	<3.61E-02
SR-90	5.28E-03
SR-92	7.36E-06
NB-95	5.28E-02
ZR-95	3.66E-02
NB-97	9.90E-05
TC-99M	1.94E-04
RU-103	7.10E-03
RU-106	1.83E-02
AG-110M	8.87E-02
SN-113	9.57E-03
SB-124	5.58E-04
SB-125	1.09E-01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-131	2.92E-02
XE-131M	9.92E-05
I-133	2.01E-03
XE-133	2.94E-01
XE-133M	2.00E-04
CS-134	3.19E-01
XE-135	6.24E-04
CS-136	7.92E-05
CS-137	9.49E-01
CE-139	2.46E-04
BA-140	4.47E-06
LA-140	1.18E-03
CE-141	8.41E-04
CE-144	4.02E-02

TOTAL AIRBORNE TRITIUM RELEASE	2.04E+01
TOTAL LIQUID TRITIUM RELEASE	2.36E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.47E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.86E+12

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
4	MOTOR SURFACE TRANSIT	BARNWELL SC
6	MOTOR SURFACE TRANSIT	SEG OAK RIDGE TN

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A

CO-58	%	9.90E+00	1.24E+01
CO-60	%	2.70E+00	2.50E+00
CS-134	%	1.86E+01	1.95E+01
CS-137	%	5.90E+01	5.48E+01
FE-55	%	2.60E+00	2.50E+00
MN-54	%	1.50E+00	
NI-63	%	3.50E+00	3.70E+00
SB-125	%		2.40E+00

B

CO-58	%	3.20E+00	3.20E+00
CO-60	%	1.40E+01	1.40E+01
CS-134	%	8.30E+00	8.30E+00
CS-137	%	2.10E+01	2.10E+01
FE-55	%	4.10E+01	4.10E+01
NI-63	%	8.90E+00	8.90E+00

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.23E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.91E+02 *
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
D. OTHER	M3	3.60E+00
	CI	3.69E+02

*COMPACTED VOLUME

N/A--NOT APPLICABLE
N/D--NOT DETECTED
N/R--NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:DUKE POWER CO
DOCKET NO.:50-413 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.36E+07 NET ELECTRIC POWER (MWH):7.76E+06
COMMERCIAL OPERATION:06/29/85 INITIAL CRITICALITY:01/07/85
COOLING WATER SOURCE:LAKE WYLIE

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	1.94E-02
NA-24	1.33E-08
AR-41	1.83E+01
MN-54	2.51E-06
MN-56	2.67E-08
CO-57	7.73E-07
CO-58	5.29E-05
CO-60	2.80E-06
ZN-65	4.77E-10
BR-80M	1.16E-06
BR-82	3.95E-07
KR-85	1.19E+00
KR-85M	7.83E-01
KR-87	1.60E-01
KR-88	8.34E-01
RB-88	1.18E-04
RB-89	2.67E-08
SR-90	2.06E-06
SR-92	3.30E-08
ZR-97	7.37E-05
TC-99M	2.83E-10
CD-115	6.80E-09
SB-126	8.81E-10
I-131	6.83E-04
TE-131M	9.64E-10
XE-131M	1.26E+00
I-132	2.70E-04
I-133	1.88E-03
XE-133	2.76E+02
XE-133M	2.89E+00
CS-134	7.56E-09
I-134	3.02E-07
I-135	7.41E-04
XE-135	1.36E+01
XE-135M	2.24E-02
CS-137	1.83E-06
CS-138	2.02E-06
XE-138	5.77E-03
BA-139	6.76E-08
CE-143	2.70E-06

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	3.02E-04
F-18	1.82E-03
NA-24	1.63E-04
AR-41	2.02E-06
CR-51	1.93E-02
MN-54	7.22E-03
FE-55	1.07E-01
CO-57	8.23E-05
CO-58	7.46E-02
FE-59	2.57E-03
CO-60	2.31E-02
ZN-65	1.41E-05
KR-85	4.68E-04
KR-87	1.19E-06
KR-88	4.00E-06
RB-88	2.03E-04
SR-89	2.27E-05
SR-91	8.30E-06
SR-92	4.63E-05
Y-92	1.89E-05
NB-95	2.27E-03
ZR-95	1.25E-03
NB-97	4.04E-04
ZR-97	9.01E-05
MO-99	1.52E-05
TC-99M	4.72E-04
RU-103	1.21E-04
AG-110M	8.85E-05
SN-113	1.45E-04
SB-122	2.02E-04
SB-124	6.30E-03
SB-125	3.10E-02
SB-126	4.62E-06
I-131	3.36E-03
I-132	2.66E-06
I-133	9.47E-04
XE-133	7.44E-02
XE-133M	5.27E-04
CS-134	2.37E-03
I-135	1.03E-04
XE-135	1.33E-02
XE-135M	2.44E-06
CS-136	8.93E-06
CS-137	4.25E-03
CS-138	3.44E-02
BA-140	9.46E-05
LA-140	1.41E-03
CE-143	2.52E-06

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
W-187	1.37E-05
TL-208	3.30E-05
BI-214	2.72E-04
PB-214	2.29E-04
AC-228	5.72E-06
TH-228	1.58E-02

TOTAL AIRBORNE TRITIUM RELEASE	2.38E+01
TOTAL LIQUID TRITIUM RELEASE	4.45E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.22E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.05E+11

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:DUKE POWER CO
DOCKET NO.:50-414 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):1.95E+07 NET ELECTRIC POWER (MWH):6.51E+06
COMMERCIAL OPERATION:08/19/86 INITIAL CRITICALITY:05/08/86
COOLING WATER SOURCE:LAKE WYLIE

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	1.94E-02
NA-24	1.33E-08
AR-41	1.83E+01
MN-54	2.51E-06
MN-56	2.67E-08
CO-57	7.73E-07
CO-58	5.29E-05
CO-60	2.80E-06
ZN-65	4.77E-10
BR-80M	1.16E-06
BR-82	3.95E-07
KR-85	1.19E+00
KR-85M	7.83E-01
KR-87	1.60E-01
KR-88	8.34E-01
RB-88	1.18E-04
RB-89	2.67E-08
SR-90	2.06E-06
SR-92	3.30E-08
ZR-97	7.37E-05
TC-99M	2.83E-10
CD-115	6.80E-09
SB-126	8.81E-10
I-131	6.83E-04
TE-131M	9.64E-10
XE-131M	1.26E+00
I-132	2.70E-04
I-133	1.88E-03
XE-133	2.76E+02
XE-133M	2.89E+00
CS-134	7.56E-09
I-134	3.02E-07
I-135	7.41E-04
XE-135	1.36E+01
XE-135M	2.24E-02
CS-137	1.83E-06
CS-138	2.02E-06
XE-138	5.77E-03
BA-139	6.76E-08
CE-143	2.70E-06

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	3.02E-04
F-18	1.82E-03
NA-24	1.63E-04
AR-41	2.02E-06
CR-51	1.93E-02
MN-54	7.22E-03
FE-55	1.07E-01
CO-57	8.23E-05
CO-58	7.46E-02
FE-59	2.57E-03
CO-60	2.31E-02
ZN-65	1.41E-05
KR-85	4.68E-04
KR-87	1.19E-06
KR-88	4.00E-06
RB-88	2.03E-04
SR-89	2.27E-05
SR-91	8.30E-06
SR-92	4.63E-05
Y-92	1.89E-05
NB-95	2.27E-03
ZR-95	1.25E-03
NB-97	4.04E-04
ZR-97	9.01E-05
MO-99	1.52E-05
TC-99M	4.72E-04
RU-103	1.21E-04
AG-110M	8.85E-05
SN-113	1.45E-04
SB-122	2.02E-04
SB-124	6.30E-03
SB-125	3.10E-02
SB-126	4.62E-06
I-131	3.36E-03
I-132	2.66E-06
I-133	9.47E-04
XE-133	7.44E-02
XE-133M	5.27E-04
CS-134	2.37E-03
I-135	1.03E-04
XE-135	1.33E-02
XE-135M	2.44E-06
CS-136	8.93E-06
CS-137	4.25E-03
CS-138	3.44E-02
BA-140	9.46E-05
LA-140	1.41E-03
CE-143	2.52E-06

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
W-187	1.37E-05
TL-208	3.30E-05
BI-214	2.72E-04
PB-214	2.29E-04
AC-228	5.72E-06
TH-228	1.58E-02

TOTAL AIRBORNE TRITIUM RELEASE	2.38E+01
TOTAL LIQUID TRITIUM RELEASE	4.45E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.22E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.05E+11

N/A=NOT APPLICABLE
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N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS + 16	MODE OF TRANSPORTATION N/R	DESTINATION N/R
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+DOES NOT INCLUDE BROKERED TOTALS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
A		
C-14	%	2.16E-04
CO-57	%	2.00E+00
CO-58	%	6.90E+00
CO-60	%	1.67E+01
CS-134	%	7.20E+00
CS-137	%	1.52E+01
FE-55	%	2.20E+01
I-131	%	1.00E-02
LA-140	%	1.96E-04
MN-54	%	1.99E+01
NI-63	%	1.13E+01
SB-122	%	1.96E-04
XE-133	%	6.67E-04
B		
CO-58	%	7.95E+00
CO-60	%	2.41E+01
CR-51	%	1.20E+00
FE-55	%	5.55E-01
MN-54	%	7.85E+00
NI-63	%	2.50E+00
D		
CO-58	%	1.31E+01
CO-60	%	2.93E+01
FE-55	%	3.92E+01
MN-54	%	1.28E+01
NI-63	%	4.30E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	4.03E+01
	CI	1.11E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.53E+02 *
	CI	1.27E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E+00
	CI	0.00E+00
D. OTHER	M3	2.27E+01
DEWATERED MECH. FLTRS.	CI	1.93E+02

*TOTAL VOLUME INCLUDES COMPACTED AND NON-COMPACTED VOLUMES

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:ILLINOIS POWER
DOCKET NO.:50-461 LICENSED POWER (MWT):2.89E+03
THERMAL POWER (MWH):9.26E+06 NET ELECTRIC POWER (MWH):2.86E+06
COMMERCIAL OPERATION:11/24/87 INITIAL CRITICALITY:02/27/87
COOLING WATER SOURCE:SALT CREEK

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	8.15E-03
MN-54	3.28E-04
CO-58	3.05E-04
CO-60	4.84E-04
KR-87	7.64E+00
SR-89	8.19E-05
AG-110M	5.16E-06
I-131	1.67E-04
I-133	1.54E-04
XE-135	5.31E+00

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	2.60E-03
MN-54	2.75E-03
FE-55	1.89E-03
CO-58	2.18E-03
CO-60	7.91E-03
AG-110M	2.38E-05

TOTAL AIRBORNE TRITIUM RELEASE 8.69E-01
TOTAL LIQUID TRITIUM RELEASE 1.49E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.12E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.90E+08

N/A=NOT APPLICABLE
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N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
6	TRUCK	BARNWELL SC
42	TRUCK	RICHLAND WA

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A			
CO-60	%	1.36E+01	9.58E+00
CR-51	%		2.81E+01
FE-55	%	7.08E+01	5.35E+01
FE-59	%	1.35E+00	
MN-54	%	1.13E+01	6.39E+00
OTHER	%	5.82E-01	3.60E-01
B			
AG-110M	%		1.25E+01
CO-58	%	2.29E+00	3.17E+00
CO-60	%	8.23E+00	1.46E+01
CR-51	%	2.41E+00	2.11E+00
FE-55	%	7.22E+01	4.95E+01
MN-54	%	1.21E+01	1.52E+01
OTHER	%	2.85E+00	

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.90E+02
	CI	1.89E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.09E+02 *
	CI	2.20E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E+00
	CI	0.00E+00
D. OTHER	M3	
	CI	

*VOLUME AFTER REDUCTION (5.66E+02 M3 PRIOR TO REDUCTION)

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:INDIANA MICHIGAN POWER CO.
DOCKET NO.:50-315 LICENSED POWER (MWT):3.25E+03
THERMAL POWER (MWH):1.74E+07 NET ELECTRIC POWER (MWH):5.43E+06
COMMERCIAL OPERATION:08/27/75 INITIAL CRITICALITY:01/18/75
COOLING WATER SOURCE:LAKE MICHIGAN
UNIT NUMBER: 2 TYPE:PWR LICENSEE:INDIANA MICHIGAN POWER CO.
DOCKET NO.:50-316 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.13E+07 NET ELECTRIC POWER (MWH):6.66E+06
COMMERCIAL OPERATION:07/01/78 INITIAL CRITICALITY:03/10/78
COOLING WATER SOURCE:LAKE MICHIGAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.17E-05
AR-41	7.48E+00
CR-51	2.11E-02
CO-58	4.48E-04
CO-60	2.95E-04
KR-85	5.39E+00
SR-89	2.86E-05
SR-90	6.05E-06
CD-109	1.06E-07
I-131	6.42E-04
XE-131M	2.06E+00
I-133	1.23E-04
XE-133	9.43E+01
XE-133M	1.01E+00
CS-134	3.29E-04
XE-135	4.55E+00
CS-137	1.16E-02

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.19E-03
CR-51	1.57E-02
MN-54	2.88E-02
FE-55	8.96E-02
CO-57	9.43E-03
CO-58	3.48E-01
FE-59	6.05E-04
CO-60	7.18E-02
ZN-65	1.83E-03
KR-85	7.85E-03
SR-85	3.48E-05
SR-89	3.54E-02
SR-90	2.71E-03
ZR-NB-95	9.63E-03
ZR-97	1.43E-03
TC-99M	4.28E-05
AG-110M	5.29E-02
SN-113	1.29E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SB-122	1.84E-03
SB-124	5.08E-02
SB-125	1.78E-02
I-131	7.76E-03
XE-131M	8.35E-04
I-133	5.31E-04
XE-133	7.63E-02
XE-133M	5.62E-04
CS-134	1.95E-02
XE-135	2.89E-04
CS-136	3.08E-03
CS-137	3.35E-02

TOTAL AIRBORNE TRITIUM RELEASE	1.76E+01
TOTAL LIQUID TRITIUM RELEASE	8.74E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	5.16E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.02E+12

N/A=NOT APPLICABLE
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N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
127	TRUCK
3	TRUCK

DESTINATION
BARNWELL SC
RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

CO-58	%	1.10E+01	3.30E+01
CO-60	%	2.00E+01	1.40E+01
CS-134	%	2.00E+01	9.00E+00
CS-137	%	3.00E+01	1.70E+01
FE-55	%	3.00E+00	1.10E+01
MN-54	%		8.00E+00
NI-63	%	1.30E+01	8.00E+00
SB-125	%	3.00E+00	

B

C-14	%		5.00E+00
CO-58	%	4.00E+00	2.00E+00
CO-60	%	2.80E+01	1.60E+01
CS-134	%	1.70E+01	9.00E+00
CS-137	%	4.90E+01	2.50E+01
FE-55	%		2.40E+01
H-3	%	2.00E+00	
NI-63	%		1.90E+01

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
D. OTHER

UNIT	YEAR	TOTAL
M3	4.17E+01	
CI	1.16E+03	
M3	3.46E+02	
CI	1.57E+01	
M3		
CI		
M3		
CI		

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:NEBRASKA PUBLIC POWER DISTRICT
DOCKET NO.:50-298 LICENSED POWER (MWT):2.38E+03
THERMAL POWER (MWH):1.50E+07 NET ELECTRIC POWER (MWH):4.79E+06
COMMERCIAL OPERATION:07/01/74 INITIAL CRITICALITY:02/21/74
COOLING WATER SOURCE:MISSOURI RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
KR-83M	2.66E+00
KR-85	1.50E+01
KR-85M	5.12E+00
KR-87	1.64E+01
KR-88	1.68E+01
RB-88	4.16E-03
KR-89	7.49E+01
RB-89	1.36E-03
SR-91	1.18E-04
Y-91M	7.66E-05
AG-110M	1.29E-05
I-131	5.23E-03
I-132	2.16E-05
TE-132	8.99E-05
I-133	1.07E-04
XE-133	2.13E+01
XE-133M	2.25E-01
I-135	2.94E-04
XE-135	2.33E+01
XE-135M	8.16E+00
XE-137	8.95E+01
CS-138	1.56E-02
XE-138	7.10E+01
BA-140	1.98E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.55E-04
CR-51	2.83E-02
MN-54	2.21E-01
FE-55	3.22E-01
CO-58	4.85E-02
FE-59	5.34E-04
CO-60	1.02E+00
SR-89	5.22E-02
SR-90	4.28E-03
TC-99M	7.55E-05
AG-110M	3.32E-02
SB-125	3.75E-04
I-131	1.48E-02
I-133	6.26E-04
CS-134	1.81E-01
CS-136	8.34E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION: COOPER

LOCATION: 70 MI S OMAHA, NE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-137	2.62E-01
BA-140	2.36E-03
LA-140	1.10E-03

TOTAL AIRBORNE TRITIUM RELEASE	0.00E+00
TOTAL LIQUID TRITIUM RELEASE	5.45E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	8.84E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	8.16E+11

N/A=NOT APPLICABLE
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N/R=NOT REPORTED

INSTALLATION: COOPER

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
2	EXCLUSIVE USE VEHICLE	BEATTY NV
28	EXCLUSIVE USE VEHICLE	RICHLAND WA

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
1	RAIL	MORRIS IL

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A			
	AG-110M	%	5.22E-01 9.99E-01
	BA-LA-140	%	2.86E-02 1.97E-02
	C-14	%	5.75E-01 2.83E-01
	CO-58	%	4.04E+00 1.27E+00
	CO-60	%	2.87E+01 4.22E+01
	CR-51	%	8.41E-01 5.40E-02
	CS-134	%	3.27E+00 6.24E+00
	CS-137	%	4.13E+00 1.12E+01
	CU-242	%	1.10E-04 7.27E-05
	FE-55	%	4.48E+01 2.63E+01
	FE-59	%	5.69E-02
	H-3	%	4.57E-02 1.76E-02
	I-131	%	2.52E-01 5.82E-02
	MN-54	%	1.17E+01 1.06E+01
	NI-59	%	1.80E-03
	NI-63	%	9.92E-01 8.26E-01
	PU-241	%	7.53E-03 5.21E-03
	SR-90	%	8.26E-03 1.31E-02
	TC-99	%	1.24E-03 8.12E-04
B			
	AM-241	%	3.14E-02
	CO-60	%	5.69E+01 5.69E+01
	CS-134	%	4.16E-01 4.16E-01
	CS-137	%	1.64E+00 1.65E+00
	CU-242	%	1.50E-05 1.50E-05
	FE-55	%	3.87E+01 3.88E+01
	MN-54	%	6.82E-01 6.84E-01
	NI-63	%	6.00E-01 6.02E-01
	PU-241	%	7.73E-03 7.75E-03
	SB-125	%	9.45E-01 9.50E-01
	SR-90	%	5.76E-04 5.78E-04

N/A=NOT APPLICABLE

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N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3		1.24E+02
BOTTOMS, ETC.	CI		3.06E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3		1.68E+02
EQUIPMENT, ETC.	CI		4.09E-01
C. IRRADIATED COMPONENTS, CONTROL	M3		
RODS, ETC.	CI		
D. OTHER	M3		
	CI		

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 3 TYPE:PWR LICENSEE:FLORIDA POWER
DOCKET NO.:50-302 LICENSED POWER (MWT):2.54E+03
THERMAL POWER (MWH):9.14E+06 NET ELECTRIC POWER (MWH):2.93E+06
COMMERCIAL OPERATION:03/13/77 INITIAL CRITICALITY:01/14/77
COOLING WATER SOURCE:GULF OF MEXICO

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
KR-85	2.15E+01
KR-85M	1.48E+01
KR-87	1.59E+00
KR-88	1.41E+00
SR-89	2.02E-06
SR-90	7.21E-07
I-131	2.02E-03
XE-131M	1.67E+01
I-133	1.34E-04
XE-133	4.21E+03
XE-133M	4.10E+01
CS-134	4.88E-09
XE-135	2.25E+02
XE-135M	1.23E-01
CS-137	7.01E-09
CE-143	1.17E-07

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.38E-06
CR-51	1.20E-02
MN-54	1.96E-03
FE-55	5.57E-02
CO-58	6.99E-02
FE-59	4.87E-04
CO-60	3.50E-02
KR-85	3.56E-02
KR-85M	2.38E-03
KR-88	1.04E-04
RB-88	1.64E-03
SR-89	5.32E-04
SR-90	5.48E-04
SR-92	2.76E-03
Y-92	1.30E-04
NB-95	1.07E-03
ZR-95	3.97E-04
ZR-97	2.38E-04
MO-99	4.14E-03
TC-99M	6.29E-03
TE-99M	1.98E-03
RU-103	2.54E-04
RU-106	5.95E-04
AG-110M	7.98E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-131	7.40E-03
XE-131M	3.20E-01
TE-132	1.02E-04
I-133	1.21E-03
XE-133	4.21E+01
XE-133M	4.09E-01
CS-134	4.86E-03
XE-135	2.07E-01
CS-137	1.09E-02
BA-139	3.17E-04
BA-140	5.27E-05
LA-140	7.15E-03

TOTAL AIRBORNE TRITIUM RELEASE	3.43E+01
TOTAL LIQUID TRITIUM RELEASE	3.44E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.03E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.18E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
17	TRUCK EXCLUSIVE USE	CHEM NUCLEAR BARNWELL SC
7	TRUCK EXCLUSIVE USE	SEG OAK RIDGE TN

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A			
	CO-58	%	7.20E+00 3.17E+00
	CO-60	%	7.23E+01 1.26E+01
	CS-134	%	3.60E+00 1.80E+01
	CS-137	%	7.60E+00 3.97E+01
	FE-55	%	1.24E+01
	MN-54	%	5.70E+00
	NI-63	%	1.00E+01
B			
	C-14	%	2.30E+00
	CO-58	%	1.51E+01
	CO-60	%	2.14E+01 1.42E+01
	CR-51	%	4.67E+00
	CS-137	%	2.77E+01
	FE-55	%	4.35E+01 4.50E+01
	NI-63	%	1.21E+01 7.26E+00

TYPE OF WASTE

- A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
- B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
- C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
- D. OTHER

UNIT	YEAR TOTAL
M3	6.65E+01
CI	2.40E+03
M3	2.81E+02
CI	4.94E+00
M3	
CI	
M3	
CI	

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:TOLEDO EDISON CO.
DOCKET NO.:50-346 LICENSED POWER (MWT):2.77E+03
THERMAL POWER (MWH):2.35E+07 NET ELECTRIC POWER (MWH):7.32E+06
COMMERCIAL OPERATION:07/31/78 INITIAL CRITICALITY:08/12/77
COOLING WATER SOURCE:LAKE ERIE

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.93E-06
AR-41	1.57E-04
KR-85	2.84E+00
KR-85M	2.37E-02
KR-87	1.81E-02
KR-88	3.74E-02
RB-88	2.11E-01
SR-89	<4.95E-07
SR-90	<1.10E-07
TC-99M	1.88E-06
I-131	2.98E-03
XE-131M	5.79E-01
I-132	3.63E-04
I-133	3.34E-03
XE-133	3.62E+02
XE-133M	2.54E-01
CS-134	2.64E-05
I-134	6.88E-06
I-135	1.06E-03
XE-135	1.22E+01
XE-135M	5.16E-02
CS-136	7.40E-06
CS-137	5.01E-05
CS-138	3.62E-03
XE-138	2.16E-02
BA-140	1.94E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	4.99E-06
MN-54	5.38E-04
FE-55	4.00E-02
CO-57	4.93E-04
CO-58	2.18E-02
CO-60	5.37E-02
KR-85	1.54E+00
SR-89	<8.64E-05
SR-90	<2.28E-05
Y-91	8.20E-04
NB-95	3.68E-07
ZR-95	4.88E-05
NB-97	1.16E-05
ZR-97	2.58E-03

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MO-99	4.41E-04
TC-99M	1.42E-03
RU-106	2.35E-05
AG-110M	5.10E-02
SN-113	1.47E-04
SB-125	3.45E-03
I-131	2.81E-03
XE-131M	8.46E-03
BA-133	2.00E-06
I-133	4.24E-04
XE-133	8.67E-02
XE-133M	4.85E-03
CS-134	7.96E-04
I-135	9.83E-06
XE-135	2.34E-03
CS-136	2.46E-06
CS-137	2.55E-03
LA-140	1.93E-06
CE-144	5.77E-04
W-187	6.98E-06

TOTAL AIRBORNE TRITIUM RELEASE	1.89E+01
TOTAL LIQUID TRITIUM RELEASE	2.39E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.99E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.24E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS
8

MODE OF TRANSPORTATION
TRUCK

DESTINATION
BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

CS-137
FE-55

% 5.06E+01 3.45E+01
% 5.03E+01

B

FE-55

% 5.02E+01

D

FE-55

% 5.92E+01

TYPE OF WASTE

UNIT YEAR TOTAL

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

M3 6.27E+01
CI 1.83E+02

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

M3 5.21E+01
CI 1.72E+00

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

M3
CI

D. OTHER

M3 3.10E+00

DEWATERED CARTRIDGE FILTERS

CI 2.31E+01

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:PACIFIC GAS & ELECTRIC CO
DOCKET NO.:50-275 LICENSED POWER (MWT):3.34E+03
THERMAL POWER (MWH):2.25E+07 NET ELECTRIC POWER (MWH):7.20E+06
COMMERCIAL OPERATION:05/07/85 INITIAL CRITICALITY:04/29/84
COOLING WATER SOURCE:PACIFIC OCEAN
UNIT NUMBER: 2 TYPE:PWR LICENSEE:PACIFIC GAS & ELECTRIC CO
DOCKET NO.:50-323 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.69E+07 NET ELECTRIC POWER (MWH):8.62E+06
COMMERCIAL OPERATION:03/13/86 INITIAL CRITICALITY:08/19/85
COOLING WATER SOURCE:PACIFIC OCEAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.94E+00
CO-57	1.17E-06
CO-58	2.61E-05
CO-60	2.89E-05
KR-85	3.44E+01
KR-85M	1.30E-01
KR-87	4.70E-02
KR-88	9.76E-02
I-131	9.15E-04
XE-131M	1.27E+00
I-133	4.58E-04
XE-133	2.77E+02
XE-133M	7.45E-01
XE-135	1.91E+01
XE-135M	3.19E-02
CS-137	3.93E-06
XE-138	7.32E-02

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	1.21E-03
NA-24	1.79E-04
CR-51	7.21E-02
MN-54	1.97E-02
FE-55	2.61E-01
MN-56	9.30E-09
CO-57	1.87E-03
CO-58	5.43E-01
FE-59	9.22E-03
CO-60	2.39E-01
BR-82	1.44E-04
KR-85	2.04E-03
SR-89	3.15E-04
SR-91	1.25E-05
SR-92	5.83E-06
ZR-95	1.67E-02
MO-99	7.35E-04
RU-103	1.23E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AG-110M	3.15E-03
SN-113	1.28E-03
SN-117M	2.70E-05
SB-122	1.56E-04
SB-124	1.28E-02
SB-125	1.23E-01
TE-129M	2.96E-03
I-131	8.33E-02
I-132	4.26E-06
TE-132	9.13E-05
I-133	4.81E-03
XE-133	1.49E-01
XE-133M	4.25E-04
CS-134	9.51E-02
I-134	5.70E-09
I-135	2.79E-04
XE-135	1.55E-03
CS-136	4.97E-04
CS-137	1.19E-01
LA-140	5.70E-04
CE-141	1.80E-05
CE-144	7.21E-04
W-187	2.89E-06

TOTAL AIRBORNE TRITIUM RELEASE	3.82E+01
TOTAL LIQUID TRITIUM RELEASE	9.35E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.48E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.87E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
35	TRUCK	BARNWELL SC
10	TRUCK	RICHLAND WA

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A		
CO-58	%	7.47E+00
CO-60	%	3.30E+01 8.11E+00
CR-51	%	3.39E+00
CS-134	%	1.60E+01 2.26E+00
CS-137	%	1.78E+01 3.70E+00
FE-55	%	6.55E+01
NI-63	%	1.77E+01 3.94E+00
B		
CO-58	%	4.54E+00
CO-60	%	1.50E+01 7.89E+00
FE-55	%	8.30E+01 7.82E+01
H-3	%	1.20E+00
NI-63	%	4.63E+00

TYPE OF WASTE

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3	3.19E+01
BOTTOMS, ETC.	CI	4.20E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3	1.55E+02
EQUIPMENT, ETC.	CI	8.83E+00
C. IRRADIATED COMPONENTS, CONTROL	M3	
RODS, ETC.	CI	
D. OTHER	M3	
	CI	

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

INSTALLATION:DRESDEN 1

LOCATION:14 MI SW JOLIET, IL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:COMMON WEALTH EDISON
DOCKET NO.:50-10 LICENSED POWER (MWT):7.00E+02
THERMAL POWER (MWH): NET ELECTRIC POWER (MWH):
COMMERCIAL OPERATION:07/04/60 INITIAL CRITICALITY:10/15/59
COOLING WATER SOURCE:KANKAKEE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	1.26E-05
FE-55	5.08E-06
CO-60	2.90E-05
SR-89	1.76E-05
SR-90	8.75E-08
CS-137	4.26E-05

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:BWR LICENSEE:COMMONWEALTH EDISON
DOCKET NO.:50-237 LICENSED POWER (MWT):2.53E+03
THERMAL POWER (MWH):1.56E+07 NET ELECTRIC POWER (MWH):4.75E+06
COMMERCIAL OPERATION:06/09/70 INITIAL CRITICALITY:01/07/70
COOLING WATER SOURCE:KANKAKEE RIVER
UNIT NUMBER: 3 TYPE:BWR LICENSEE:COMMONWEALTH EDISON
DOCKET NO.:50-249 LICENSED POWER (MWT):8.09E+02
THERMAL POWER (MWH):1.67E+07 NET ELECTRIC POWER (MWH):5.12E+06
COMMERCIAL OPERATION:11/16/71 INITIAL CRITICALITY:01/31/71
COOLING WATER SOURCE:KANKAKEE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.58E-02
MN-54	6.79E-03
FE-55	3.78E-02
CO-58	3.18E-03
FE-59	3.93E-03
CO-60	2.10E-02
ZN-65	6.18E-04
KR-85	1.09E-02
SR-89	1.05E+00
SR-90	3.98E-03
MO-99	3.81E-03
AG-110M	2.87E-04
SB-124	1.05E-04
I-131	4.70E-03
I-133	2.47E-02
XE-133	1.00E-08
I-135	3.79E-02
XE-135	3.33E+01
XE-135M	3.37E+00
CS-137	7.34E-05
BA-140	3.57E-03
LA-140	3.67E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	8.08E-05
FE-55	3.40E-05
FE-59	6.61E-05
CO-60	1.44E-04
CS-134	1.00E-04
CS-136	4.12E-07
CS-137	2.60E-04
BA-140	5.60E-07
LA-140	5.60E-07

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE:BWR	LICENSEE:COMMONWEALTH EDISON
DOCKET NO.:50-10		LICENSED POWER (MWT):7.00E+02
THERMAL POWER (MWH):		NET ELECTRIC POWER (MWH):
COMMERCIAL OPERATION:07/04/60		INITIAL CRITICALITY:10/15/59
COOLING WATER SOURCE:KANKAKEE RIVER		
UNIT NUMBER: 2	TYPE:BWR	LICENSEE:COMMONWEALTH EDISON
DOCKET NO.:50-237		LICENSED POWER (MWT):2.53E+03
THERMAL POWER (MWH):1.56E+07		NET ELECTRIC POWER (MWH):4.75E+06
COMMERCIAL OPERATION:06/09/70		INITIAL CRITICALITY:01/07/70
COOLING WATER SOURCE:KANKAKEE RIVER		
UNIT NUMBER: 3	TYPE:BWR	LICENSEE:COMMONWEALTH EDISON
DOCKET NO.:50-249		LICENSED POWER (MWT):8.09E+02
THERMAL POWER (MWH):1.67E+07		NET ELECTRIC POWER (MWH):5.12E+06
COMMERCIAL OPERATION:11/16/71		INITIAL CRITICALITY:01/31/71
COOLING WATER SOURCE:KANKAKEE RIVER		

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.62E-03
MN-54	1.26E-01
FE-55	3.76E-02
CO-58	2.33E-03
FE-59	7.23E-03
CO-60	3.51E-01
CU-64	3.25E-06
ZN-65	5.30E-05
AS-76	3.31E-05
KR-88	1.74E-05
RB-88	3.67E-04
SR-90	6.45E-04
NB-95	1.11E-05
TC-99M	6.57E-06
SB-124	7.03E-02
XE-133	1.30E-04
CS-134	2.61E-05
I-135	3.80E-05
XE-135	2.41E-04
CS-137	5.52E-02
CS-138	1.42E-05
LA-140	3.72E-06
HF-181	1.27E-05

TOTAL AIRBORNE TRITIUM RELEASE	1.46E+01
TOTAL LIQUID TRITIUM RELEASE	1.83E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.60E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	9.53E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
66	MOTOR FREIGHT(EXCL. USE)	BARNWELL SC
10	MOTOR FREIGHT(EXCL. USE)	CNSI, CHANNON IL
12	MOTOR FREIGHT(EXCL. USE)	RICHLAND WA
13	MOTOR FREIGHT(EXCL. USE)	SEG, OAK RIDGE TN
11	MOTOR FREIGHT(EXCL. USE)	WEST. DDR, MADISON PA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A			
CO-60	%	6.72E+01	5.41E+01
CS-137	%		1.09E+01
FE-55	%	1.89E+01	2.12E+01
MN-54	%	1.21E+01	5.64E+00
NI-63	%	8.05E-01	6.46E+00
OTHER	%	9.95E-01	
B			
CO-60	%	2.66E+01	2.53E+01
CS-137	%	9.81E-01	1.18E+01
FE-55	%	6.31E+01	5.99E+01
MN-54	%	7.99E+00	1.14E+00
OTHER	%	1.33E+00	
C			
CO-60	%		2.02E+01
CS-137	%		9.38E+00
FE-55	%		6.80E+01
MN-54	%		1.72E+00

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
D. OTHER

UNIT	YEAR TOTAL
M3	3.64E+02
CI	2.50E+03
M3	1.86E+03
CI	3.38E+01
M3	1.42E+01
CI	3.97E+00
M3	
CI	

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:IOWA ELECTRIC LIGHT & POWER
DOCKET NO.:50-331 LICENSED POWER (MWT):1.66E+03
THERMAL POWER (MWH):1.00E+07 NET ELECTRIC POWER (MWH):3.14E+06
COMMERCIAL OPERATION:02/01/75 INITIAL CRITICALITY:03/23/74
COOLING WATER SOURCE:CEDAR RAPIDS RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
N-13	2.17E+00
CR-51	1.37E-03
MN-54	1.46E-04
CO-58	2.20E-04
CO-60	1.16E-03
KR-85	2.24E-03
SR-89	2.68E-05
SR-90	1.27E-06
I-131	1.85E-04
I-132	3.30E-06
I-133	2.69E-04
XE-133	1.10E+00
CS-134	1.58E-05
I-134	3.10E-05
I-135	6.55E-05
XE-135	1.85E+01
XE-135M	2.20E+01
CS-137	3.41E-05
BA-1A-140	4.20E-07
CE-141	2.80E-07

TOTAL AIRBORNE TRITIUM RELEASE 1.66E+01
TOTAL LIQUID TRITIUM RELEASE 0.00E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	N/A
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	N/A

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
12	TRUCK(EXCL. USE)	BARNWELL SC
3	TRUCK(EXCL. USE)	OAK RIDGE TN
2	TRUCK(EXCL. USE)	RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A			
AG-110M, I-134, NB-94, RH-105, SB-125, SR-90, ZN-65	⌘		8.21E-01
C-14	⌘	1.47E-02	8.93E-02
CM-242	⌘	6.35E-05	
CO-58	⌘	3.61E+00	2.53E+00
CO-60	⌘	2.48E+01	4.08E+01
CR-51	⌘	2.89E+00	1.22E+00
CS-134	⌘	1.11E+01	2.89E+00
CS-137	⌘	9.69E+00	4.18E+00
FE-55	⌘	3.55E+01	3.99E+01
H-3	⌘	6.80E-03	2.70E-02
MN-54	⌘	1.10E+01	5.55E+00
NI-63	⌘		1.99E+00
PU-241	⌘	7.18E-03	6.69E-06
SR-90, FE-59, CO-57, ZN-65, RH-105, NI-63, SR-89	⌘	1.36E+00	
TRU	⌘	3.40E-04	5.86E-04
B			
C-14	⌘		7.89E-01
CE-144, CR-51, CO-58, CS-137, CS-134, FE-59, NI-59, SR-90, ZN-65	⌘		3.77E-01
CM-242	⌘	4.89E-03	1.36E-04
CO-58	⌘	1.71E+00	
CO-60	⌘	3.06E+01	2.30E+01
CR-51	⌘	2.16E+01	
CS-137, CS-134, ZN-65	⌘	1.19E+00	
FE-55	⌘	3.11E+01	7.07E+01
FE-59	⌘	9.41E-01	
I-129	⌘		6.60E-06
MN-54	⌘	9.38E+00	3.88E+00
NI-63	⌘	2.97E+00	1.33E+00
PU-241	⌘	4.89E-01	2.11E-03
TC-99	⌘		1.84E-05
TRU	⌘	9.57E-03	7.09E-05
C			
C-14	⌘		1.27E-03
CM-242	⌘		8.67E-08
CO-60	⌘		4.28E+01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
C			
CS-137,NB-94,NI-59,SR-90	%		5.34E-02
FE-55	%		4.87E+01
H-3	%		1.73E-02
I-129	%		4.60E-11
MN-54	%		4.84E+00
NI-63	%		3.59E+00
PU-241	%		6.98E-07
TC-99	%		5.11E-06
TRU	%		8.86E-07
D			
CE-144,CS-134,CS-137,CR-51,ZN-65	%		8.00E-01
CM-242	%	4.90E-03	3.77E-03
CO-58	%	1.71E+00	1.59E+00
CO-60	%	3.06E+01	1.76E+01
CR-51	%	2.17E+01	
CS-137,CS-134,ZN-65	%	1.20E+00	
FE-55	%	3.10E+01	5.94E+01
FE-59	%	9.40E-01	1.94E+00
MN-54	%	9.40E+00	5.14E+00
NI-63	%	2.98E+00	1.35E+01
PU-241	%	4.90E-01	3.51E-02
TRU	%	9.56E-03	1.07E-03

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	5.63E+01
	CI	9.78E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	7.87E+01
	CI	4.91E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	1.63E+00
	CI	1.59E+04
D. OTHER	M3	9.73E+00
WET TRASH	CI	1.17E+00

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:ALABAMA POWER
DOCKET NO.:50-348 LICENSED POWER (MWT):2.65E+03
THERMAL POWER (MWH):1.96E+07 NET ELECTRIC POWER (MWH):6.02E+06
COMMERCIAL OPERATION:12/01/77 INITIAL CRITICALITY:08/09/77
COOLING WATER SOURCE:CHATAHOOCHEE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.23E+01
KR-85	8.02E-01
KR-85M	2.67E-04
I-131	3.64E-05
XE-131M	3.81E-02
I-133	7.14E-06
XE-133	5.80E+01
XE-133M	8.56E-04
XE-135	2.81E+01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.78E-02
MN-54	3.60E-04
FE-55	8.63E-03
CO-57	3.38E-07
CO-58	1.75E-02
FE-59	5.62E-04
CO-60	1.47E-02
AS-76	1.84E-07
SR-92	3.36E-06
NB-95	3.24E-03
ZR-95	1.49E-03
NB-97	2.26E-04
ZR-97	9.98E-07
TC-99M	6.39E-05
RU-103	8.98E-04
RU-105	2.71E-05
RU-106	6.64E-05
AG-110M	1.73E-03
SB-124	1.29E-04
SB-125	5.26E-04
I-131	8.94E-07
TE-131M	1.93E-06
I-132	9.17E-05
TE-132	1.23E-04
I-133	1.85E-06
XE-133	3.41E-02
XE-133M	1.30E-04
CS-134	9.81E-04
I-135	2.16E-06
XE-135	1.82E-04
CS-136	1.04E-06

N/A-NOT APPLICABLE

N/D-NOT DETECTED

N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-137	3.95E-03
BA-140	1.01E-06
LA-140	6.34E-06
CE-141	4.85E-06
CE-144	7.82E-06
NP-239	2.16E-05

TOTAL AIRBORNE TRITIUM RELEASE	1.15E+02
TOTAL LIQUID TRITIUM RELEASE	6.99E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.84E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.78E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:ALABAMA POWER
DOCKET NO.:50-364 LICENSED POWER (MWT):2.65E+03
THERMAL POWER (MWH):1.81E+07 NET ELECTRIC POWER (MWH):5.62E+06
COMMERCIAL OPERATION:07/30/81 INITIAL CRITICALITY:05/05/81
COOLING WATER SOURCE:CHATAHOOCHEE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.88E+01
CO-58	1.42E-08
KR-85	2.49E-01
KR-85M	9.86E-03
KR-87	5.29E-04
KR-88	6.40E-03
ZR-95	2.19E-07
I-131	5.56E-07
XE-131M	2.13E-02
XE-133	1.02E+02
XE-133M	2.61E-02
XE-135	3.89E+01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	2.44E-02
MN-54	2.80E-04
FE-55	1.40E-02
CO-57	6.50E-07
CO-58	1.50E-02
FE-59	8.97E-04
CO-60	8.83E-03
ZN-65	5.82E-06
AS-76	2.11E-06
SR-91	2.73E-06
SR-92	2.55E-06
NB-95	3.40E-03
ZR-95	1.53E-03
NB-97	1.16E-04
ZR-97	4.49E-06
MO-99	1.46E-05
TC-99M	3.68E-05
RU-103	1.04E-03
RU-105	4.19E-05
RU-106	9.52E-05
AG-110M	1.55E-03
SB-124	1.38E-04
SB-125	6.06E-04
I-131	3.83E-07
TE-131M	6.16E-07
I-132	4.26E-05
TE-132	1.15E-04
I-133	1.97E-06

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
XE-133	2.64E-02
XE-133M	7.57E-05
CS-134	3.60E-04
I-135	1.90E-06
XE-135	1.73E-04
CS-136	9.77E-07
CS-137	8.18E-04
LA-140	2.80E-06
CE-141	4.20E-05
W-187	1.63E-06
NP-239	3.76E-05

TOTAL AIRBORNE TRITIUM RELEASE	9.33E+01
TOTAL LIQUID TRITIUM RELEASE	6.08E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.13E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.97E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
10	CHEM-NUC TRANSPORT	BARNWELL SC
19	HITTMAN TRANSPORT	BARNWELL SC
1	HITTMAN TRANSPORT	RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A			
	C-14	%	1.67E+01
	CO-58	%	1.15E+00
	CO-60	%	5.09E+01
	CR-51	%	1.78E+00
	CS-134	%	2.65E+00
	CS-137	%	4.96E+00
	FE-55	%	4.83E+00
	H-3	%	2.00E+01
	MN-54	%	1.76E+01
	NB-95	%	1.10E+00
	NI-63	%	3.04E+01
	SB-124	%	1.86E+00
B			
	C-14	%	1.18E+00
	CE-144	%	2.77E+00
	CO-58	%	1.45E+01
	CO-60	%	1.95E+01
	CR-51	%	5.22E+00
	CS-137	%	1.79E+00
	FE-55	%	3.12E+01
	MN-54	%	1.98E+00
	NB-95	%	7.14E+00
	NI-63	%	4.66E+00
	PU-241	%	3.19E+00
	ZR-95	%	4.96E+00

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
D. OTHER

UNIT	YEAR	TOTAL
M3	1.34E+02	
CI	3.88E+02	
M3	3.51E+02	
CI	1.23E+01	
M3		
CI		
M3		
CI		

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2	TYPE:BWR	LICENSEE:DETROIT EDISON COMPANY
DOCKET NO.:50-341		LICENSED POWER (MWT):3.29E+03
THERMAL POWER (MWH):1.63E+07		NET ELECTRIC POWER (MWH):5.22E+06
COMMERCIAL OPERATION:01/23/88		INITIAL CRITICALITY:06/21/85
COOLING WATER SOURCE:LAKE ERIE		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.84E-02
AR-41	5.35E+01
CR-51	1.23E-02
MN-54	2.92E-04
MN-56	4.60E-03
CO-57	3.89E-06
CO-58	4.50E-04
FE-59	8.20E-05
CO-60	2.61E-04
CU-64	9.30E-02
ZN-65	5.59E-04
ZN-69M	1.41E-04
SE-75	7.78E-06
AS-76	1.10E-03
KR-85M	5.47E+00
RB-89	1.03E+00
SR-89	2.75E-04
SR-90	3.55E-05
SR-91	6.61E-03
Y-91M	6.08E-03
SR-92	1.40E-04
MO-99	7.75E-05
TC-99M	6.98E-02
TC-101	2.80E-02
AG-110M	8.88E-05
SB-124	1.62E-06
XE-129M	2.85E+01
BA-131	2.86E-04
I-131	1.73E-03
I-132	7.05E-03
I-133	1.19E-02
I-134	3.68E-03
BA-135M	5.82E-04
I-135	8.95E-03
XE-135	2.97E+00
XE-135M	4.87E+00
XE-137	5.23E+01
CS-138	3.93E-01
XE-138	1.60E+01
BA-139	6.12E-01
BA-140	3.58E-04
LA-140	2.53E-04
W-187	4.60E-05

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
RE-188	8.00E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.09E-02
CR-51	6.31E-02
MN-54	2.31E-02
FE-55	3.64E-03
CO-57	4.17E-06
CO-58	1.59E-02
FE-59	3.88E-03
CO-60	1.75E-02
ZN-65	1.80E-02
AS-76	5.63E-04
SR-89	1.99E-04
SR-90	1.01E-05
MO-99	1.28E-03
TC-99M	4.20E-03
AG-110M	5.98E-04
SB-124	1.31E-04
SB-125	6.45E-05
BA-131	3.92E-03
I-131	6.18E-05
BA-133	3.32E-05
I-133	3.02E-04
XE-133	5.90E-05
BA-135M	4.55E-05
XE-135	5.64E-05
W-187	3.42E-05
RE-188	3.92E-04

TOTAL AIRBORNE TRITIUM RELEASE	0.00E+00
TOTAL LIQUID TRITIUM RELEASE	1.30E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.61E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.71E+10

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
35	TRUCK
3	TRUCK
1	TRUCK

DESTINATION
BARNWELL SC
CHANNAHON IL
OAK RIDGE TN

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

AG-110M	%	6.00E-01	1.20E+00
BA-131	%	<1.00E-01	
C-14	%	3.00E-01	<1.00E-01
CE-144	%		<1.00E-01
CO-58	%	8.30E+00	5.30E+00
CO-60	%	7.30E+00	3.90E+00
CR-51	%	3.62E+01	6.37E+01
FE-55	%	2.73E+01	1.16E+01
FE-59	%	5.00E-01	<1.00E-01
H-3	%	<1.00E-01	<1.00E-01
I-129	%	<1.00E-01	<1.00E-01
MN-54	%	9.40E+00	2.90E+00
NB-95	%	4.00E-01	<1.00E-01
NI-63	%	2.00E-01	
SN-113	%		3.00E-01
TC-99	%	<1.00E-01	<1.00E-01
ZN-65	%	9.50E+00	1.10E+01
ZR-95	%	2.00E-01	<1.00E-01

B

C-14	%	1.16E+01	3.10E+00
CO-58	%	6.60E+00	2.60E+00
CO-60	%	1.02E+01	1.24E+01
CR-51	%	8.70E+00	3.10E+00
CS-137	%	<1.00E-01	
FE-55	%	3.88E+01	6.65E+01
FE-59	%	<1.00E-01	1.60E+00
MN-54	%	1.46E+01	9.00E+00
NI-63	%	3.00E+00	8.00E-01
ZN-65	%	6.40E+00	1.00E+00

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

UNIT YEAR TOTAL

M3 2.83E+02

CI 7.01E+02

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

M3 8.29E+01 *

CI 4.71E-01

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

M3

CI

D. OTHER

M3

*VOLUME PRIOR TO REDUCTION

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:POWER AUTHORITY OF THE STATE OF NY
DOCKET NO.:50-333 LICENSED POWER (MWT):2.44E+03
THERMAL POWER (MWH):1.88E+07 NET ELECTRIC POWER (MWH):6.16E+06
COMMERCIAL OPERATION:07/28/75 INITIAL CRITICALITY:11/17/74
COOLING WATER SOURCE:LAKE ONTARIO

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.76E+01
CR-51	5.32E-03
MN-54	3.46E-04
CO-57	8.72E-07
CO-58	7.08E-04
FE-59	2.14E-05
CO-60	1.01E-03
ZN-65	6.26E-02
KR-85M	8.36E+01
KR-87	1.29E+01
KR-88	1.23E+02
SR-89	2.11E-04
SR-90	9.81E-07
AG-110M	4.63E-06
I-131	6.30E-04
XE-131M	6.31E+01
I-133	6.06E-03
XE-133	4.75E+01
XE-133M	5.05E+01
XE-135	5.11E+01
XE-135M	2.14E+01
CS-137	6.78E-06
XE-137	2.40E+01
XE-138	6.46E+01
BA-LA-140	1.91E-04
CE-141	1.20E-04
CE-144	1.45E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.84E-02
MN-54	3.14E-03
FE-55	6.43E-04
CO-58	5.41E-06
CO-60	1.65E-02
ZN-65	3.64E-03
TE-132	1.10E-04
I-133	1.99E-04
CS-134	4.68E-03
XE-135	2.07E-04
CS-137	6.48E-03
NP-239	7.61E-04

N/A-NOT APPLICABLE

N/D-NOT DETECTED

N/R-NOT REPORTED

INSTALLATION:JAMES A. FITZPATRICK

LOCATION:36 MI N SYRACUSE, NY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

TOTAL AIRBORNE TRITIUM RELEASE 1.26E+01
TOTAL LIQUID TRITIUM RELEASE 7.32E-01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.40E+05
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.43E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
33	TRUCK
6	TRUCK

DESTINATION
BARNWELL SC
RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A			
C-14	%	1.29E-01	6.67E-03
CO-58	%	1.30E+00	1.90E-01
CO-60	%	4.86E+01	1.77E+01
CR-51	%	1.80E+00	4.70E-01
CS-134	%	4.90E+00	1.45E+00
CS-137	%	7.80E+00	2.60E+00
FE-55	%	2.26E+01	9.00E+00
MN-54	%	9.30E+00	2.90E+00
NI-63	%	4.25E-01	1.75E-01
ZN-65	%	1.90E+00	6.37E+01
B			
CO-58	%	1.20E+00	
CO-60	%	5.14E+01	3.99E+01
CR-51	%	3.00E+00	2.30E+00
CS-134	%	2.20E+00	1.78E+00
CS-137	%	6.15E+00	4.75E+00
FE-55	%	2.46E+01	1.92E+01
MN-54	%	7.30E+00	5.70E+00
NI-63	%	1.20E+00	
ZN-65	%	3.00E+00	2.57E+01
C			
C-14	%	1.00E-02	1.00E-02
CO-60	%	3.55E+01	3.49E+01
FE-55	%	5.91E+01	6.00E+01
H-3	%	2.90E-01	4.60E-01
MN-54	%	1.24E+00	1.42E+00
NI-59	%	2.00E-02	2.00E-02
NI-63	%	3.71E+00	3.14E+00

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
D. OTHER

UNIT	YEAR TOTAL
M3	1.34E+02
CI	1.33E+03
M3	1.10E+02
CI	1.22E+01
M3	6.50E+00
CI	9.26E+04
M3	
CI	

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:OMAHA PUBLIC POWER
DOCKET NO.:50-285 LICENSED POWER (MWT):1.50E+03
THERMAL POWER (MWH):1.07E+07 NET ELECTRIC POWER (MWH):3.30E+06
COMMERCIAL OPERATION:06/20/74 INITIAL CRITICALITY:08/06/73
COOLING WATER SOURCE:MISSOURI RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.92E+00
KR-85	2.42E-01
KR-85M	1.44E-02
KR-87	2.24E-03
SR-89	9.52E-08
I-131	1.27E-04
XE-131M	9.34E-01
I-133	7.62E-04
XE-133	1.57E+02
XE-133M	1.18E+00
XE-135	3.28E+00

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	5.94E-04
MN-54	3.72E-03
CO-57	1.63E-04
CO-58	6.53E-02
CO-60	1.67E-02
SR-89	3.40E-04
SR-90	2.71E-04
NB-95	3.38E-03
ZR-95	1.16E-03
TC-99M	6.12E-04
RU-103	1.34E-04
AG-110M	4.41E-03
SB-124	1.10E-04
SB-125	3.81E-02
I-131	1.01E-02
XE-133	2.40E-01
CS-134	8.95E-02
XE-135	1.12E-03
CS-136	5.65E-06
CS-137	3.16E-01
LA-140	1.17E-02

TOTAL AIRBORNE TRITIUM RELEASE 2.25E-01
TOTAL LIQUID TRITIUM RELEASE 2.28E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.55E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.03E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS 10
MODE OF TRANSPORTATION
CLOSED SOLE USE VEH.

DESTINATION
RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

B

AG-110M	%	2.80E+00	2.80E+00
CE-144	%	2.10E+00	2.10E+00
CO-58	%	1.26E+01	1.26E+01
CO-60	%	1.20E+00	1.20E+00
CS-134	%	6.10E+00	6.10E+00
CS-137	%	6.54E+01	6.54E+01
RH-106	%	1.90E+00	1.90E+00
RU-103	%	2.90E+00	2.90E+00
TC-99	%	5.00E+00	5.00E+00

TYPE OF WASTE

UNIT YEAR TOTAL

- A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
D. OTHER

M3	0.00E+00
CI	0.00E+00
M3	1.75E+02
CI	8.76E+00
M3	
CI	
M3	
CI	

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:HTG LICENSEE:PUBLIC SERVICE CO OF COLORADO
DOCKET NO.:50-267 LICENSED POWER (MWT):8.42E+02
THERMAL POWER (MWH): NET ELECTRIC POWER (MWH):
COMMERCIAL OPERATION:07/01/79 INITIAL CRITICALITY:01/31/74
COOLING WATER SOURCE:SOUTH PLATTE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
KR-85	2.68E+00
KR-85M	1.28E+00
KR-87	1.31E-01
KR-88	1.20E+00
XE-131M	9.67E-01
XE-133	1.81E+02
XE-133M	1.72E+00
XE-135	7.63E+00
XE-135M	5.52E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-60	2.60E-06
CS-137	9.63E-06

TOTAL AIRBORNE TRITIUM RELEASE 3.72E+00
TOTAL LIQUID TRITIUM RELEASE 1.12E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	6.46E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.19E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS
3

MODE OF TRANSPORTATION
HIGHWAY

DESTINATION
BEATTY NV

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

B

AG-110M	%	1.22E+01
CS-134	%	7.31E+00
CS-137	%	1.34E+01
H-3	%	5.11E+01
MN-54	%	1.59E+01

C

CO-60	%	2.30E+01
FE-55	%	4.07E+01
H-3	%	8.30E+00
MN-54	%	2.00E-01
NI-59	%	2.00E-01
NI-63	%	2.76E+01

TYPE OF WASTE

- A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
- B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
- C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
- D. OTHER

UNIT YEAR TOTAL

M3	0.00E+00
CI	0.00E+00
M3	2.86E+00
CI	1.16E-02
M3	1.71E+00
CI	1.08E+03
M3	
CI	

*VOLUME BEFORE COMPACTION

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:ROCHESTER GAS&ELEC
DOCKET NO.:50-244 LICENSED POWER (MWT):1.52E+03
THERMAL POWER (MWH):9.65E+06 NET ELECTRIC POWER (MWH):3.07E+06
COMMERCIAL OPERATION:07/01/70 INITIAL CRITICALITY:11/08/69
COOLING WATER SOURCE:LAKE ONTARIO

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.47E+00
CO-58	2.18E-05
CO-60	3.99E-05
KR-85	6.34E-01
KR-85M	6.13E-01
KR-87	1.90E-01
KR-88	1.88E-01
I-131	4.48E-04
XE-131M	4.85E+00
I-133	2.64E-04
XE-133	4.69E+02
XE-133M	2.23E+00
XE-135	2.87E+01
XE-135M	1.54E+00
CS-137	6.87E-06
XE-138	7.35E-01
UNIDENTIFIED	3.22E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	7.95E-06
MN-54	2.65E-04
FE-55	3.11E-04
CO-58	7.83E-03
CO-60	3.38E-03
ZN-65	9.29E-09
SR-89	4.04E-05
SR-90	9.77E-06
ZR-NB-95	1.56E-04
MO-99	8.16E-05
AG-110M	5.66E-04
SB-124	1.20E-02
SB-125	6.15E-03
I-131	1.21E-02
I-133	1.37E-02
XE-133	5.34E-04
CS-134	2.05E-03
I-135	6.24E-03
XE-135	3.03E-06
CS-136	3.35E-05
CS-137	1.61E-02
BA-LA-140	3.07E-05
CE-141	1.54E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:R.E.GINNA

LOCATION:16 MI NE ROCHESTER, NY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

TOTAL AIRBORNE TRITIUM RELEASE 8.64E+01
TOTAL LIQUID TRITIUM RELEASE 5.92E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.19E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.59E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS 24
MODE OF TRANSPORTATION
HIGHWAY VEHICLE

DESTINATION
BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

CO-58	%	2.40E+00	2.40E+00
CO-60	%	3.70E+01	3.70E+01
CS-134	%	5.90E+00	5.90E+00
CS-137	%	2.50E+01	2.50E+01
FE-55	%	1.10E+01	1.10E+01
H-3	%	1.60E+00	1.60E+00
MN-54	%	3.00E+00	3.00E+00
NI-63	%	1.00E+01	1.00E+01
SB-125	%	1.30E+00	1.30E+00

B

C-14	%	2.00E+00	2.20E+00
CO-58	%	6.00E+00	6.00E+00
CO-60	%	1.60E+01	1.60E+01
CS-137	%	1.00E+00	1.00E-01
FE-55	%	3.90E+01	4.00E+01
NI-63	%	3.30E+01	3.40E+01
SR-90	%	2.00E+00	2.00E-01

TYPE OF WASTE

- A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
- B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
- C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
- D. OTHER

UNIT YEAR TOTAL

M3	1.30E+02
CI	6.88E+01
M3	1.03E+02*
CI	1.11E+01
M3	
CI	
M3	
CI	

*AFTER VOLUME REDUCTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:SYSTEM ENERGY RESOURCES, INC.
DOCKET NO.:50-416 LICENSED POWER (MWT):3.83E+03
THERMAL POWER (MWH):2.51E+07 NET ELECTRIC POWER (MWH):7.85E+06
COMMERCIAL OPERATION:07/01/85 INITIAL CRITICALITY:08/18/82
COOLING WATER SOURCE:MISSISSIPPI RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	1.13E+00
NA-24	3.37E-05
AR-41	7.25E-01
CR-51	1.77E-04
MN-54	9.41E-05
CO-58	1.05E-05
FE-59	1.81E-05
CO-60	1.25E-04
AS-76	2.27E-05
KR-85M	7.33E-01
KR-87	1.24E-02
KR-88	1.07E-01
KR-89	7.24E+01
SR-89	1.96E-06
SR-90	9.30E-07
TC-99M	3.42E-04
RU-106	1.20E-05
I-131	6.19E-04
XE-131M	2.00E-02
I-133	1.19E-03
XE-133	3.34E+01
XE-133M	3.98E-01
CS-134	1.17E-06
XE-135	2.70E+01
XE-135M	7.95E+00
CS-137	3.04E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.96E-04
CR-51	1.09E-01
MN-54	8.74E-02
FE-55	3.76E-02
CO-58	1.05E-02
FE-59	9.60E-03
CO-60	5.78E-02
CU-64	7.85E-04
NI-65	4.32E-06
AS-76	6.48E-04
SR-89	1.29E-03
ZR-NB-95	1.84E-04
TC-99M	3.99E-05
RU-106	2.93E-03

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AG-110M	6.91E-04
SB-124	7.61E-05
SB-125	1.20E-05
I-131	7.58E-05
XE-133	2.51E-04
CS-134	2.30E-04
XE-135	3.90E-04
CS-137	2.76E-04
BA-LA-140	3.30E-06
CE-144	1.13E-04
HF-181	2.42E-05

TOTAL AIRBORNE TRITIUM RELEASE	3.34E+00
TOTAL LIQUID TRITIUM RELEASE	1.32E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.13E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	4.09E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
27	TRUCK	BARNWELL SC
1	TRUCK	BEATTY NV
17	TRUCK	SEG, BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE) JAN-JUNE JULY-DEC

A			
CO-58	%	2.00E+00	2.00E+00
CO-60	%	2.60E+01	3.20E+01
CR-51	%	3.00E+00	
FE-55	%	3.40E+01	3.60E+01
MN-54	%	2.60E+01	2.40E+01
OTHERS	%	3.00E+00	6.00E+00
B			
CO-58	%	2.00E+00	
CO-60	%	2.10E+01	2.30E+01
CR-51	%	9.00E+00	5.00E+00
FE-55	%	2.40E+01	2.60E+01
FE-59	%	1.00E+01	9.00E+00
MN-54	%	3.40E+01	3.60E+01
OTHERS	%		1.00E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3	1.63E+02
BOTTOMS, ETC.	CI	2.00E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3	1.09E+02 *
EQUIPMENT, ETC.	CI	5.73E+00
C. IRRADIATED COMPONENTS, CONTROL	M3	
RODS, ETC.	CI	
D. OTHER	M3	
	CI	

*ACTUAL COMPACTED BURIAL VOLUME AFTER VOL. REDUCTION BY SEG

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:CONNECTICUT YANKEE ATOMIC POWER
DOCKET NO.:50-213 LICENSED POWER (MWT):1.82E+03
THERMAL POWER (MWH):9.47E+06 NET ELECTRIC POWER (MWH):2.96E+06
COMMERCIAL OPERATION:01/01/68 INITIAL CRITICALITY:07/24/67
COOLING WATER SOURCE:CONNECTICUT RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	3.56E-01
CO-60	4.44E-06
KR-85	2.02E+03
KR-85M	6.52E+00
KR-87	1.13E+00
KR-88	1.58E+00
SR-90	2.60E-05
I-131	1.43E-02
XE-131M	2.16E+02
I-133	6.02E-04
XE-133	1.46E+04
XE-133M	7.72E+01
CS-134	2.29E-04
XE-135	1.89E+02
XE-135M	3.78E-01
CS-137	4.43E-04
XE-137	4.70E-01
XE-138	4.45E-01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.68E-03
MN-54	2.17E-03
FE-55	1.85E-01
CO-57	8.86E-07
CO-58	5.02E-03
FE-59	5.59E-04
CO-60	1.67E-01
KR-85	2.00E-01
SR-89	7.09E-04
SR-90	2.07E-03
ZR-NB-95	1.80E-04
RU-103	3.14E-04
RU-106	2.91E-04
AG-110M	6.73E-05
SB-125	1.45E-04
I-131	1.33E-02
XE-131M	1.98E-01
XE-133	5.59E+00
XE-133M	3.84E-02
CS-134	2.28E-03
XE-135	8.97E-03
CS-137	8.76E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:HADDAM NECK

LOCATION:9.5 MI SE MIDDLETOWN, CT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED

ACTIVITY (CI)

BA-LA-140

3.00E-05

TOTAL AIRBORNE TRITIUM RELEASE 1.37E+02

TOTAL LIQUID TRITIUM RELEASE 4.81E+03

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION) LITERS 1.09E+08

VOLUME OF DILUTION WATER USED DURING PERIOD LITERS 3.78E+11

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
14	TRUCK
10	TRUCK

DESTINATION
BARNWELL SC
RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

AM-241	%	1.29E-02	4.57E-03
C-14	%	2.41E-01	8.10E-02
CE-144	%	1.00E+00	7.40E-02
CM-242	%	9.75E-05	
CM-243	%	6.85E-03	2.03E-03
CM-244	%	6.85E-03	2.03E-03
CO-57	%	1.00E-01	6.00E-03
CO-58	%	3.60E+00	2.97E+00
CO-60	%	2.11E+01	2.07E+01
CS-134	%	4.00E+00	1.89E+01
CS-137	%	1.30E+01	2.27E+01
FE-55	%	4.74E+01	2.65E+01
H-3	%	2.00E-01	2.10E-02
I-129	%	2.05E-04	6.29E-05
MN-54	%	1.50E+00	2.32E+00
NI-63	%	7.22E+00	3.80E+00
PU-238	%	2.20E-02	1.10E-02
PU-239	%	3.29E-03	
PU-240	%	3.29E-03	1.66E-03
PU-241	%	5.00E-01	3.00E-01
SR-90	%	2.05E-03	1.49E-01
TC-99	%	1.10E-04	2.93E-04

B

AM-241	%	1.91E-02	1.92E-02
C-14	%	2.47E-01	2.47E-01
CM-242	%	1.65E-02	1.65E-02
CM-243	%	1.12E-02	1.12E-02
CM-244	%	1.12E-02	1.12E-02
CO-58	%	2.98E+00	2.98E+00
CO-60	%	1.03E+01	1.03E+01
CS-134	%	1.41E+00	1.41E+00
CS-137	%	7.54E+00	7.55E+00
FE-55	%	6.18E+01	6.18E+01
H-3	%	4.57E-01	3.25E-01
I-129	%	1.51E-01	1.51E-01
NI-63	%	5.87E+00	5.87E+00
NP-237	%	3.19E-03	3.20E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
B			
PU-238	%	1.88E-01	1.89E-01
PU-239	%	2.23E-02	2.24E-02
PU-240	%	2.23E-02	2.24E-02
PU-241	%	8.85E+00	8.86E+00
SR-90	%	9.04E-02	9.06E-02
TC-99	%	2.86E-02	2.87E-02

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.73E+01	
	CI	6.35E+02	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.26E+02	
	CI	2.01E+01	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3		
	CI		
D. OTHER	M3		
	CI		

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:CAROLINA POWER & LIGHT
DOCKET NO.:50-400 LICENSED POWER (MWT):2.77E+03
THERMAL POWER (MWH):1.83E+07 NET ELECTRIC POWER (MWH):5.63E+06
COMMERCIAL OPERATION:05/02/87 INITIAL CRITICALITY:01/03/87
COOLING WATER SOURCE:MAKEUP RESERVOIR

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.51E-02
KR-85	3.12E-03
KR-85M	2.48E+01
KR-87	8.26E+00
KR-88	4.13E+01
SR-90	8.37E-07
I-131	9.49E-07
XE-131M	3.53E-04
XE-133	9.94E+02
XE-133M	1.66E+01
XE-135	5.83E+01
XE-138	8.26E+00

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.55E-05
CR-51	1.43E-02
MN-54	1.08E-02
FE-55	8.01E-02
CO-57	1.70E-04
CO-58	8.82E-02
FE-59	2.74E-03
CO-60	1.63E-02
ZN-65	2.97E-05
SR-89	2.62E-06
SR-90	1.19E-05
ZR/NB-95	1.00E-03
NB-97	3.94E-05
MO-99	4.06E-05
TC-99M	1.86E-04
AG-110M	1.36E-04
SN-113	1.81E-04
SB-122	2.95E-04
SB-124	1.19E-03
SB-125	2.44E-02
I-131	5.83E-04
XE-131M	4.04E-05
I-132	1.94E-05
TE-132	1.05E-05
I-133	5.09E-04
XE-133	1.72E-02
XE-133M	1.47E-04
CS-134	1.31E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
XE-135	3.02E-04
CS-137	3.83E-04
CS-138	1.47E-05
CE-141	7.79E-06
PR-144	2.61E-04
HF-181	2.85E-05
W-187	1.99E-05

TOTAL AIRBORNE TRITIUM RELEASE 0.00E+00

TOTAL LIQUID TRITIUM RELEASE 4.58E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	7.28E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.43E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
16	TRUCK
27	TRUCK

DESTINATION
BARNWELL SC
BARNWELL SC VIA SEG

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE	JULY-DEC
----------	----------

A

C-14	%	2.60E+00	9.00E-02
CO-58	%	1.59E+01	2.01E+01
CO-60	%	1.25E+01	8.66E+00
FE-55	%	3.09E+01	5.89E+01
H-3	%	1.36E+01	3.90E+00
MN-54	%	1.37E+01	5.29E+00
NI-63	%	1.07E+01	3.09E+00
SB-125	%	1.00E-01	1.00E-02

B

AM-241	%	1.05E-03	5.87E-05
C-14	%	5.66E-01	5.00E-02
CM-244	%	1.53E-03	8.72E-05
CO-58	%	9.80E+00	2.15E+00
CO-60	%	1.81E+00	6.23E+00
CR-51	%	1.10E+00	1.70E-01
CS-137	%	7.34E-03	1.00E-02
FE-55	%	7.46E+01	8.53E+01
FE-59	%	2.21E-01	1.00E-02
H-3	%	1.48E+00	1.35E+00
MN-54	%	3.51E+00	1.74E+00
NB-95	%	7.68E-01	5.50E-01
NI-63	%	5.77E+00	2.00E+00
ZR-95	%	4.07E-01	4.60E-01

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
D. OTHER

UNIT	YEAR TOTAL
M3	1.03E+02
CI	1.75E+01
M3	5.78E+01*
CI	7.89E+00
M3	
CI	
M3	
CI	

*VOLUME AFTER REDUCTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE:BWR	LICENSEE:GEORGIA POWER
DOCKET NO.:50-321		LICENSED POWER (MWT):2.44E+03
THERMAL POWER (MWH):2.09E+07		NET ELECTRIC POWER (MWH):6.48E+06
COMMERCIAL OPERATION:12/31/75		INITIAL CRITICALITY:09/12/74
COOLING WATER SOURCE:ALTAMAHA RIVER		
UNIT NUMBER: 2	TYPE:BWR	LICENSEE:GEORGIA POWER
DOCKET NO.:50-366		LICENSED POWER (MWT):2.44E+03
THERMAL POWER (MWH):1.35E+07		NET ELECTRIC POWER (MWH):4.14E+06
COMMERCIAL OPERATION:09/05/79		INITIAL CRITICALITY:07/04/78
COOLING WATER SOURCE:ALTAMAHA RIVER		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.99E+00
CR-51	4.44E-04
MN-54	5.02E-06
CO-58	4.50E-05
CO-60	1.00E-04
ZN-65	6.49E-04
KR-83M	9.43E-02
KR-85M	6.08E+00
KR-87	7.34E+00
KR-88	4.16E+00
SR-89	3.02E-04
SR-90	1.26E-06
NB-95	2.29E-09
MO-99	2.70E-05
I-131	3.26E-03
XE-131M	1.26E-05
I-133	1.73E-02
XE-133	1.57E+02
I-135	2.31E-02
XE-135	1.38E+02
XE-135M	6.22E+01
CS-137	1.68E-05
XE-138	1.25E+02
BA-140	8.64E-04
LA-140	1.54E-03
CE-141	4.04E-05
CE-144	2.18E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	6.49E-03
AR-41	6.02E-06
CR-51	5.37E-03
MN-54	6.92E-03
MN-56	1.76E-05
CO-58	2.69E-03
FE-59	1.37E-04
CO-60	2.30E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CU-64	1.01E-02
ZN-65	4.20E-02
AS-76	3.93E-04
KR-85	6.01E-04
KR-85M	3.85E-06
KR-87	4.44E-06
KR-88	6.66E-06
RB-88	2.35E-05
SR-89	1.68E-03
SR-91	1.07E-04
Y-91M	1.78E-03
SR-92	7.42E-05
NB-95	2.68E-05
NB-97	2.80E-04
MO-99	3.02E-04
TC-99M	1.89E-03
SB-125	6.11E-05
I-131	5.49E-03
I-132	1.06E-04
I-133	6.19E-03
XE-133	1.33E-02
XE-133M	2.15E-04
CS-134	3.62E-02
I-134	6.89E-05
I-135	9.72E-04
XE-135	4.24E-02
XE-135M	3.91E-03
CS-136	7.47E-05
CS-137	8.69E-02
BA-139	2.33E-05
BA-140	3.38E-05
LA-140	1.35E-04
CE-141	3.32E-05
NP-239	8.82E-03

TOTAL AIRBORNE TRITIUM RELEASE 5.41E+01

TOTAL LIQUID TRITIUM RELEASE 4.57E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.29E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.22E+09

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
31	CASK	BARNWELL & SEG OAK RIDGE TN
33	CASK	BARNWELL SC
13	VAN/BOXES	BARNWELL SC
32	VAN	BARNWELL & SEG OAK RIDGE TN

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE) JAN-JUNE JULY-DEC

A		
CO-60	%	1.03E+01 1.34E+01
CS-137	%	3.00E+00 2.39E+00
FE-55	%	1.41E+01 1.75E+01
OTHER	%	1.76E+01 1.22E+01
ZN-65	%	5.50E+01 5.45E+01
B		
CO-60	%	3.81E+01 2.75E+01
CS-137	%	1.04E+01 8.32E+00
FE-55	%	3.90E+00 4.42E+00
OTHER	%	1.19E+01 9.68E+00
ZN-65	%	3.57E+01 5.01E+01
D		
CO-60	%	5.49E+01
CS-137	%	4.10E-02
FE-55	%	2.50E-02
NI-63	%	3.29E+00
OTHER	%	3.28E+01
ZN-65	%	8.91E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3	2.01E+02
BOTTOMS, ETC.	CI	1.88E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3	6.30E+02
EQUIPMENT, ETC.	CI	5.52E+00
C. IRRADIATED COMPONENTS, CONTROL	M3	
RODS, ETC.	CI	
D. OTHER	M3	2.20E+01
CONTROL ROD DRIVE FLTRS*	CI	1.99E+01

*ALSO, DAW COMPACTED AT SEG (ACTUAL VOL. BURIED) & SOLIDIFIED OIL

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:PUBLIC SERV ELEC & GAS CO OF NJ
DOCKET NO.:50-354 LICENSED POWER (MWT):3.29E+03
THERMAL POWER (MWH):2.10E+07 NET ELECTRIC POWER (MWH):6.61E+06
COMMERCIAL OPERATION:12/20/86 INITIAL CRITICALITY:06/28/86
COOLING WATER SOURCE:DELAWARE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
KR-83M	3.14E+00
KR-85M	3.14E+00
KR-87	1.26E+01
KR-88	1.26E+01
KR-89	8.48E+01
XE-133	2.74E+01
XE-135	1.57E+01
XE-135M	1.79E+01
XE-137	9.75E+01
XE-138	5.97E+01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	9.28E-03
CR-51	1.85E-01
MN-54	2.02E-01
FE-55	2.06E-01
CO-58	1.69E-02
FE-59	5.77E-02
CO-60	4.56E-02
ZN-65	3.22E-01
AS-76	2.44E-05
SR-90	3.01E-05
SR-92	3.83E-04
NB-95	4.33E-06
NB-97	2.14E-05
TC-99M	9.99E-05
AG-110M	1.13E-03
SB-125	5.82E-05
I-131	1.33E-05
XE-133	4.58E-04
XE-135	2.68E-03
CS-137	3.58E-05

TOTAL AIRBORNE TRITIUM RELEASE 2.76E+01
TOTAL LIQUID TRITIUM RELEASE 2.35E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.75E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	4.44E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
27	TRUCK	BARNWELL SC
1	TRUCK	RICHLAND WA

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A

C-14	%	1.00E-01
CE-144	%	5.00E-01
CO-58	%	2.80E-01
CO-60	%	1.98E+00
CR-51	%	3.34E+00
CS-137	%	2.00E-01
FE-55	%	8.35E+00
FE-59	%	7.40E-01
MN-54	%	4.16E+00
NI-59	%	6.00E-01
NI-63	%	1.50E-01
ZN-65	%	8.09E+01

B

C-14	%	4.00E-02
CO-58	%	2.21E+00
CO-60	%	8.96E+00
CR-51	%	7.15E+00
FE-55	%	1.23E+01
FE-59	%	2.91E+00
MN-54	%	8.52E+00
ZN-65	%	6.07E+01

TYPE OF WASTE

UNIT YEAR TOTAL

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.01E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	5.22E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	6.54E+01 *
D. OTHER	CI	5.38E+00
	M3	
	CI	

*VOLUME AFTER COMPACTION BY SEG

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 3 TYPE:BWR LICENSEE:PACIFIC GAS &ELECTRIC
DOCKET NO.:50-133 LICENSED POWER (MWT):2.20E+02
THERMAL POWER (MWH): NET ELECTRIC POWER (MWH):
COMMERCIAL OPERATION:08/01/63 INITIAL CRITICALITY:02/16/63
COOLING WATER SOURCE:HUMBOLDT BAY

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-60	2.38E-05
KR-85	<6.40E+01
SR-90	<4.54E-07
CS-134	<1.58E-05
CS-137	1.28E-05
UNIDENTIFIED	<1.58E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-60	8.79E-04
SR-90	2.50E-04
CS-134	3.42E-05
CS-137	7.25E-03
UNIDENTIFIED	<1.04E-05

TOTAL AIRBORNE TRITIUM RELEASE <3.94E-02
TOTAL LIQUID TRITIUM RELEASE 1.14E-03

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.71E+05
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.79E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:CONSOLIDATED EDISON
DOCKET NO.:50-3 LICENSED POWER (MWT):6.15E+02
THERMAL POWER (MWH): NET ELECTRIC POWER (MWH):
COMMERCIAL OPERATION: INITIAL CRITICALITY:08/02/62
COOLING WATER SOURCE:HUDSON RIVER
UNIT NUMBER: 2 TYPE:PWR LICENSEE:CONSOLIDATED EDISON
DOCKET NO.:50-247 LICENSED POWER (MWT):2.76E+03
THERMAL POWER (MWH):1.45E+07 NET ELECTRIC POWER (MWH):4.47E+06
COMMERCIAL OPERATION:08/01/74 INITIAL CRITICALITY:05/22/73
COOLING WATER SOURCE:HUDSON RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	5.65E-01
MN-54	3.19E-05
CO-58	1.24E-04
CO-60	2.01E-03
NI-63	1.69E-05
KR-85	3.32E-01
KR-85M	1.48E-01
KR-87	6.04E-01
KR-88	2.35E-01
SR-90	2.28E-07
I-131	1.23E-03
XE-131M	7.89E-03
I-133	5.47E-04
XE-133	7.13E+01
XE-133M	3.12E-01
CS-134	3.31E-06
I-135	6.75E-04
XE-135	1.07E+01
XE-135M	1.19E+00
CS-137	4.64E-04
XE-138	2.33E+00

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.51E-03
CR-51	1.02E-02
MN-54	3.18E-03
FE-55	1.02E-01
MN-56	1.96E-04
CO-57	4.45E-05
CO-58	7.63E-02
FE-59	2.08E-04
CO-60	5.19E-02
NI-63	5.05E-02
SR-89	4.36E-04
SR-90	2.65E-04
NB-95	4.95E-04
ZR-95	1.24E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
TC-99M	5.21E-04
RU-103	3.01E-05
RU-106	4.38E-03
AG-110M	6.32E-06
SB-124	6.84E-03
SB-125	2.88E-02
I-131	1.14E-02
I-132	4.76E-02
TE-132	3.98E-05
I-133	8.37E-02
XE-133	7.51E-03
CS-134	7.52E-05
I-134	3.68E-02
I-135	8.14E-02
XE-135	7.34E-03
XE-135M	4.18E-02
CS-137	2.30E-02
CS-138	1.01E-02
BA-139	5.01E-03
LA-140	6.74E-05

TOTAL AIRBORNE TRITIUM RELEASE	3.04E-01
TOTAL LIQUID TRITIUM RELEASE	5.60E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.87E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	9.04E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS MODE OF TRANSPORTATION
41 TRUCK

DESTINATION
BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

CO-58	%	3.24E+01	2.74E+01
CO-60	%	4.29E+01	1.70E+01
CS-134	%	2.30E+00	9.00E-01
CS-137	%	4.90E+00	3.16E+01
FE-55	%	6.30E+00	4.10E+00
H-3	%		1.20E+00
MN-54	%	1.30E+00	2.05E+00
NI-63	%	9.30E+00	1.14E+01
OTHERS	%	6.00E-01	8.50E-01
SB-125	%		3.50E+00

B

C-14	%	3.00E-01	3.00E-01
CO-58	%	9.40E+00	9.10E+00
CO-60	%	2.53E+01	2.49E+01
CS-134	%	7.90E+00	7.70E+00
CS-137	%	1.68E+01	1.63E+01
FE-55	%	7.80E+00	7.60E+00
H-3	%	1.03E+01	1.00E+01
I-129	%	1.00E-03	1.00E-03
MN-54	%	3.20E+00	3.10E+00
NB-95	%	9.00E-01	9.00E-01
NI-63	%	1.38E+01	1.34E+01
PU-241	%		2.50E+00
SR-90	%	2.00E-01	2.00E-01
ZR-95	%	4.10E+00	4.00E+00

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

D. OTHER

UNIT YEAR TOTAL

M3	3.13E+01
CI	3.34E+02
M3	4.46E+02*
CI	2.62E+01
M3	
CI	
M3	
CI	

*VOLUME AFTER REDUCTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 3 TYPE: PWR LICENSEE: POWER AUTHORITY OF THE STATE OF NY
DOCKET NO.: 50-286 LICENSED POWER (MWT): 3.02E+03
THERMAL POWER (MWH): 1.55E+07 NET ELECTRIC POWER (MWH): 4.97E+06
COMMERCIAL OPERATION: 08/30/76 INITIAL CRITICALITY: 04/06/76
COOLING WATER SOURCE: HUDSON RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.23E-01
CO-58	2.39E-06
KR-85	9.14E-01
KR-85M	4.37E-02
KR-87	1.62E-03
KR-88	6.46E-03
I-131	1.34E-03
XE-131M	1.90E+00
I-133	8.18E-04
XE-133	2.94E+02
XE-133M	1.88E+00
XE-135	1.54E+01
XE-135M	1.75E-03
CS-137	8.55E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	5.19E-03
CR-51	1.02E-02
MN-54	4.79E-03
FE-55	2.94E-01
CO-57	2.44E-04
CO-58	9.09E-02
FE-59	8.18E-04
CO-60	8.06E-02
NI-63	1.81E-02
ZN-65	3.95E-05
KR-85	2.09E-02
SR-85	9.16E-05
SR-89	9.50E-06
SR-90	8.30E-06
NB-95	3.87E-03
ZR-95	9.36E-04
TC-99M	1.36E-05
AG-110M	4.91E-02
SN-113	1.96E-03
SB-124	1.16E-03
SB-125	2.06E-02
I-131	1.32E-03
XE-131M	2.78E-02
I-133	4.34E-06
XE-133	1.58E+00
XE-133M	1.10E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-134	3.29E-03
XE-135	8.26E-03
CS-137	3.91E-03
LA-140	5.52E-04

TOTAL AIRBORNE TRITIUM RELEASE	2.21E+00
TOTAL LIQUID TRITIUM RELEASE	3.51E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	9.30E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.98E+11

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
2	TRUCK	ALARON, WAMPUM PA
10	TRUCK	BARNWELL SC
2	TRUCK	QUADREX, OAK RIDGE TN
13	TRUCK	SEG, OAK RIDGE TN

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

CO-58	%	1.40E+01	3.65E+01
CO-60	%	1.10E+01	1.51E+01
CR-51	%	1.50E+00	5.30E+00
CS-134	%	2.00E+01	2.50E+00
CS-137	%	1.80E+01	3.90E+00
FE-55	%	2.60E+01	2.39E+01
MN-54	%	1.40E+00	1.80E+00
NB-95	%		1.40E+00
NI-63	%	5.90E+00	5.10E+00
ZR-95	%		1.20E+00

B

CO-58	%	5.00E+00	5.00E+00
CO-60	%	2.80E+01	2.80E+01
CS-137	%	2.00E+00	2.00E+00
FE-55	%	5.90E+01	5.90E+01
NI-63	%	5.00E+00	5.00E+00

D

CO-58	%	5.00E+00	5.00E+00
CO-60	%	2.80E+01	2.80E+01
CS-137	%	2.00E+00	2.00E+00
FE-55	%	5.90E+01	5.90E+01
NI-63	%	5.00E+00	5.00E+00

TYPE OF WASTE

UNIT YEAR TOTAL

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

D. OTHER
DRY COMPRESS. EQUIP/VOL. RED.

M3	3.71E+01
CI	3.96E+01
M3	1.13E+01
CI	3.06E+02
M3	
CI	
M3	5.29E+02
CI	4.70E+00

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:WISCONSIN PUBLIC SERVICE
DOCKET NO.:50-305 LICENSED POWER (MWT):1.65E+03
THERMAL POWER (MWH):1.18E+07 NET ELECTRIC POWER (MWH):3.74E+06
COMMERCIAL OPERATION:06/16/74 INITIAL CRITICALITY:03/07/74
COOLING WATER SOURCE:LAKE MICHIGAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	6.13E-01
FE-55	1.80E-06
CO-58	1.74E-05
CO-60	9.22E-06
AS-76	3.70E-07
KR-85	2.27E+01
KR-85M	5.76E-03
KR-87	2.80E-03
KR-88	8.43E-03
RB-88	1.14E-04
NB-95	4.51E-07
I-131	1.23E-02
XE-131M	5.94E-01
I-132	1.05E-02
I-133	1.08E-04
XE-133	4.03E+01
XE-133M	8.66E-01
XE-135	1.57E-01
XE-135M	6.68E-03
CS-137	2.56E-06
XE-137	2.74E-03
XE-138	2.93E-03
BA-139	2.73E-06
CE-141	5.44E-08
CE-144	8.39E-06
UNIDENTIFIED	5.17E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.79E-02
AR-41	9.15E-06
CR-51	5.79E-02
MN-54	7.20E-03
FE-55	3.47E-01
NI-56	8.22E-04
CO-57	7.88E-04
CO-58	5.41E-01
FE-59	4.19E-03
CO-60	9.32E-02
BR-82	3.40E-06
KR-85M	6.47E-05
KR-88	5.12E-05
RB-88	1.71E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SR-91	9.26E-06
NB-95	1.48E-02
ZR-95	1.03E-02
ZR-97	3.98E-04
MO-99	3.16E-07
MO-TC-99M	2.98E-05
RU-103	6.95E-06
AG-110M	6.12E-02
SN-113	4.38E-03
SB-122	1.11E-04
SB-124	1.44E-02
SB-125	1.08E-02
SB-126	1.92E-06
I-130	2.38E-04
I-131	4.87E-03
I-132	8.87E-04
I-133	3.12E-03
XE-133	2.31E-02
XE-133M	3.37E-04
CS-134	8.77E-03
I-134	1.69E-04
I-135	1.52E-03
XE-135	1.03E-03
XE-135M	1.22E-03
CS-136	1.65E-04
CS-137	7.02E-03
LA-140	2.49E-04
CE-141	2.48E-05
CE-144	1.17E-04
W-187	9.02E-04

TOTAL AIRBORNE TRITIUM RELEASE	1.01E+01
TOTAL LIQUID TRITIUM RELEASE	3.41E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.69E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	4.09E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
4	CNSI 14-190H CASK	BARNWELL SC
2	CNSI VAN	BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
A			
AG-110M	%	4.05E-01	4.05E-01
C-14	%	5.01E-02	5.02E-02
CM-242	%	5.11E-06	5.11E-06
CO-57	%	1.58E-01	1.59E-01
CO-58	%	8.80E-01	8.81E-01
CO-60	%	4.19E+01	4.18E+01
CS-137	%	3.93E-01	3.93E-01
FE-55	%	1.42E+01	1.42E+01
MN-54	%	1.05E+00	1.05E+00
NB-94	%	4.14E-03	4.21E-02
NI-59	%	4.09E-01	4.09E-01
NI-63	%	3.55E+01	3.56E+01
PU-241	%	1.34E-03	1.34E-03
SB-125	%	5.06E+00	5.08E+00
SR-90	%	7.72E-03	7.70E-03
TC-99	%	4.73E-04	4.71E-04
TRU	%	4.33E-05	4.32E-05
B			
AG-110M	%	5.73E-01	
C-14	%	1.25E-01	
CM-242	%	4.94E-04	1.54E-03
CO-57	%	9.42E-02	1.27E-01
CO-58	%	3.35E+00	1.98E+01
CO-60	%	1.76E+01	2.83E+01
CS-134	%		2.12E-01
CS-137	%	7.27E-02	2.27E-01
FE-55	%	5.52E+01	3.97E+01
MN-54	%	1.15E+00	1.23E+00
NB-95	%	1.79E+00	4.11E-01
NI-59	%	2.01E-01	
NI-63	%	1.75E+01	9.05E+00
PU-241	%	2.44E-02	7.64E-02
SB-125	%	1.18E+00	3.83E-01
SN-113	%	2.37E-01	2.27E-01
SR-90	%	1.16E-03	
TRU	%	4.14E-04	1.29E-03
ZR-95	%	8.62E-01	1.69E-01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
D			
AG-110M	%	2.10E-01	
C-14	%	1.39E-03	
CM-242	%	3.22E-07	5.99E-06
CO-57	%	6.13E-05	9.92E-02
CO-58	%	7.52E+01	1.85E+01
CO-60	%	1.10E+00	2.88E+01
CR-51	%	1.52E+01	
CS-134	%		8.24E-04
CS-137	%	4.73E-05	3.77E-01
FE-55	%	4.07E-01	2.71E+01
FE-59	%	7.10E-01	
MN-54	%	2.59E-01	4.91E-03
NB-94	%		2.30E-02
NB-95	%	3.06E+00	4.50E+00
NI-59	%	1.00E-02	
NI-63	%	9.39E-01	1.60E+01
PU-241	%	1.59E-05	2.96E-04
SB-124	%	8.70E-01	
SB-125	%	7.67E-04	1.64E+00
SN-112	%	1.54E-04	
SN-113	%		5.32E-01
SR-90	%	7.53E-07	
TRU	%	2.69E-07	2.20E-05
ZR-95	%	1.93E+00	2.29E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.04E+01
	CI	6.32E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	4.76E+01
	CI	3.40E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E+00
	CI	0.00E+00
D. OTHER	M3	1.20E+01
NON-COMPR. CONTAM. SCRAP, FILTER	CI	1.40E+02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:LACROSSE

LOCATION:19 MI S LACROSSE, WI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:DAIRYLAND POWER
DOCKET NO.:50-409 LICENSED POWER (MWT):1.65E+02
THERMAL POWER (MWH): NET ELECTRIC POWER (MWH):
COMMERCIAL OPERATION:11/01/69 INITIAL CRITICALITY:07/11/67
COOLING WATER SOURCE:MISSISSIPPI RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	3.78E-07
CO-60	7.19E-06
CS-137	5.38E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	6.50E-03
FE-55	3.76E-02
CO-57	1.50E-05
CO-60	8.74E-02
ZN-65	3.70E-05
SR-89	1.82E-04
SR-90	9.63E-04
AG-110M	1.34E-04
CS-134	3.30E-04
CS-137	3.53E-02
CE-144	7.44E-05
AM-241	3.90E-05

TOTAL AIRBORNE TRITIUM RELEASE 1.06E+00
TOTAL LIQUID TRITIUM RELEASE 2.79E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	5.09E+05
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.03E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION:LACROSSE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS

MODE OF TRANSPORTATION

DESTINATION

4

SOLE USE

(QUADREX)OAK RIDGE, TN

1

SOLE USE

BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

AM-241	%	3.22E-03
C-14	%	1.31E-02
CM-242	%	1.80E-02
CM-243/244	%	1.41E-03
CO-60	%	5.57E+01
CS-137	%	9.42E+00
FE-55	%	2.52E+01
H-3	%	5.32E-03
I-129	%	2.94E-03
MN-54	%	3.60E+00
NI-59	%	5.70E-02
NI-63	%	5.01E+00
PU-238	%	7.98E-03
PU-239/240	%	4.48E-03
PU-241	%	3.57E-01
SR-90	%	5.89E-01
TC-99	%	6.11E-05
U-235	%	2.45E-06
U-238	%	2.07E-06

B

CO-60	%	4.38E+01
CS-137	%	2.09E+00
FE-55	%	4.51E+01
MN-54	%	1.83E+00
NI-63	%	6.84E+00
PU-241	%	3.60E-01

TYPE OF WASTE

UNIT YEAR TOTAL

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

M3 4.62E+00

CI 3.19E+01

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

M3 2.12E+00 *

CI 2.23E-01

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

M3

CI

D. OTHER

M3

CI

*VOLUME AFTER REDUCTION (1.70E+1 M3 BEFORE PROCESSING)

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE: BWR	LICENSEE: COMMONWEALTH EDISON COMPANY
DOCKET NO.: 50-373		LICENSED POWER (MWT): 3.32E+03
THERMAL POWER (MWH): 1.91E+07		NET ELECTRIC POWER (MWH): 6.16E+06
COMMERCIAL OPERATION: 01/01/84		INITIAL CRITICALITY: 06/21/82
COOLING WATER SOURCE: RESERVOIR		
UNIT NUMBER: 2	TYPE: BWR	LICENSEE: COMMONWEALTH EDISON COMPANY
DOCKET NO.: 50-374		LICENSED POWER (MWT): 3.32E+03
THERMAL POWER (MWH): 2.04E+07		NET ELECTRIC POWER (MWH): 6.50E+06
COMMERCIAL OPERATION: 10/19/84		INITIAL CRITICALITY: 03/10/84
COOLING WATER SOURCE: RESERVOIR		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.35E-03
CR-51	1.33E-04
MN-54	2.03E-04
FE-59	8.98E-06
CO-60	2.20E-03
KR-85M	1.52E+02
KR-87	8.30E+01
KR-88	3.31E+02
ZR-95	9.01E-06
I-131	5.68E-03
I-132	6.99E-03
I-133	1.24E-02
XE-133	4.16E+02
XE-133M	2.16E-06
I-134	1.65E-02
I-135	6.29E-03
XE-135	9.39E+01
CS-136	6.58E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	4.06E-06
CR-51	1.23E-02
MN-54	4.47E-02
FE-55	2.14E-01
CO-58	1.34E-03
FE-59	1.11E-03
CO-60	1.25E-01
ZN-65	1.79E-03
SR-89	2.29E-04
SR-90	2.53E-05
TC-99M	1.10E-04
AG-110M	6.50E-05
CS-137	1.29E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:LASALLE

LOCATION:11 MI SE OF OTTAWA, IL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

TOTAL AIRBORNE TRITIUM RELEASE 5.99E-01
TOTAL LIQUID TRITIUM RELEASE 1.07E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.51E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.86E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
16	HITTMAN	BARNWELL SC
97	HITTMAN	BEATTY NV
16	HITTMAN	OAK RIDGE TN
7	HITTMAN	WALTZ MILL PA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A			
CO-60	%	2.49E+01	2.50E+01
CR-51	%	1.78E+00	2.00E+00
FE-55	%	6.07E+01	5.80E+01
MN-54	%	1.27E+01	1.30E+01
B			
CO-60	%	1.00E+01	1.00E+01
FE-55	%	7.10E+01	7.10E+01
MN-54	%	6.00E+00	6.00E+00

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

UNIT YEAR TOTAL

M3 3.80E+02

CI 4.32E+03

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

M3 5.00E+02 *

CI 4.07E+01

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

M3

CI

D. OTHER

M3

CI

*VOLUME PRIOR TO REDUCTION

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:PHILADELPHIA ELEC.CO
DOCKET NO.:50-352 LICENSED POWER (MWT):3.29E+03
THERMAL POWER (MWH):1.71E+07 NET ELECTRIC POWER (MWH):5.21E+06
COMMERCIAL OPERATION:02/01/86 INITIAL CRITICALITY:12/22/84
COOLING WATER SOURCE:SCHUYLKILL RIVER
UNIT NUMBER: 2 TYPE:BWR LICENSEE:PHILADELPHIA ELEC.CO
DOCKET NO.:50-353 LICENSED POWER (MWT):3.29E+03
THERMAL POWER (MWH):3.54E+06 NET ELECTRIC POWER (MWH):1.06E+06
COMMERCIAL OPERATION:01/08/90 INITIAL CRITICALITY:08/12/89
COOLING WATER SOURCE:SCHUYLKILL RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.89E-04
SR-89	5.74E-06
MN-54	3.53E-04
CO-58	1.61E-05
FE-59	9.39E-06
CO-60	1.09E-03
ZN-65	2.42E-03
KR-85	1.10E-01
KR-85M	8.43E-01
KR-88	1.10E+00
SR-89	2.71E-05
SR-90	1.80E-07
ZR-95	5.29E-06
I-131	3.48E-03
I-133	6.27E-04
XE-133	1.93E+02
XE-135	5.63E+01
XE-135M	6.90E+00
CS-137	3.73E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.07E-02
MN-54	6.28E-03
FE-55	2.28E-02
CO-58	1.75E-03
FE-59	1.11E-03
CO-60	1.50E-02
ZN-65	4.60E-02
SR-89	9.16E-05
NB-95	8.19E-04
ZR-95	2.63E-04
TC-99M	1.89E-05
RU-103	9.59E-05
AG-110M	2.39E-04
I-131	2.22E-04
I-133	8.27E-06
XE-133	8.58E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-134	2.61E-03
XE-135	6.97E-03
CS-137	3.86E-03
LA-140	3.66E-05
CE-141	9.20E-05
CE-144	1.11E-04

TOTAL AIRBORNE TRITIUM RELEASE	1.79E+01
TOTAL LIQUID TRITIUM RELEASE	2.70E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.93E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.73E+08

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
71	TRUCK	BARNWELL SC
100	TRUCK	BARNWELL SC (QUADREX)
12	TRUCK	BARNWELL SC (SEG)

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A

AG-110M	%		3.30E-01
BA-140	%	1.31E-01	
BA-LA-140	%		8.00E-02
C-14	%	3.14E-01	4.90E-01
CE-141	%	7.62E-03	
CO-58	%	4.76E+00	4.23E+00
CO-60	%	3.87E+00	5.77E+00
CR-51	%	2.40E+01	1.07E+01
CS-134	%	7.39E+00	1.04E+01
CS-136	%	3.33E-01	
CS-137	%	7.33E+00	1.08E+01
FE-55	%	8.43E-01	1.69E+00
FE-59	%	3.44E-02	
H-3	%	8.08E-02	1.30E-01
I-131	%	1.13E+01	
I-134	%		2.67E+00
MN-54	%	1.58E+00	2.11E+00
NB-95	%	1.01E+00	5.70E-01
NI-63	%	1.24E-01	2.80E-01
P-32	%		7.83E-03
PU-241	%	2.95E-04	
SR-89	%		6.10E-01
SR-90	%	5.62E-03	7.12E-03
ZN-65	%	3.67E+01	4.93E+01
ZR-95	%	2.22E-01	3.00E-02

B

AG-110M	%		2.10E-02
CO-57	%		3.60E-02
CO-58	%	5.24E+00	4.80E+00
CO-60	%	6.08E+00	4.62E+00
CR-51	%	1.46E+01	2.87E+01
CS-134	%	1.07E+01	7.54E+00
CS-137	%	1.11E+01	7.88E+00
FE-55	%	2.38E+00	3.13E+00
H-3	%		1.10E-02
I-131	%		1.07E-01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
B			
MN-54	%	2.34E+00	5.05E+00
NB-95	%	1.23E+00	8.59E-01
NI-63	%		1.79E-01
SR-89	%	9.43E-01	6.45E-01
ZN-65	%	4.54E-01	3.64E+01
C			
CO-60	%		2.69E+01
FE-55	%		7.03E+01
H-3	%		1.00E-03
NI-63	%		1.23E+00
UNIDENTIFIED	%		1.57E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	4.27E+02
	CI	2.57E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.48E+02 *
	CI	8.44E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	6.37E-01
	CI	3.14E+04
D. OTHER	M3	
	CI	

*VOLUME AFTER REDUCTION. PROCESSED BY OFFSITE VENDORS (QUADREX, SEG)

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:MAINE YANKEE ATOMIC POWER
DOCKET NO.:50-309 LICENSED POWER (MWT):2.70E+03
THERMAL POWER (MWH):2.11E+07 NET ELECTRIC POWER (MWH):6.94E+06
COMMERCIAL OPERATION:12/28/72 INITIAL CRITICALITY:10/23/72
COOLING WATER SOURCE:BACK RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	9.68E-02
MN-54	1.75E-07
CO-58	1.73E-05
CO-60	5.69E-06
KR-85M	3.88E-02
KR-87	5.64E-02
KR-88	2.79E-02
RU-103	2.34E-05
I-131	1.89E-04
XE-131M	1.10E-01
I-132	9.56E-05
I-133	4.70E-04
XE-133	1.62E+01
XE-133M	1.79E-01
I-134	6.28E-06
I-135	1.14E-04
XE-135	1.03E+00
XE-135M	1.18E-01
CS-137	3.71E-06
XE-138	5.32E-02
BA-1A-140	2.36E-10
UNIDENTIFIED	2.26E+00

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	4.89E-04
MN-54	1.85E-03
FE-55	2.18E-02
CO-57	4.25E-05
CO-58	2.66E-02
CO-60	3.47E-02
ZN-65	9.39E-08
KR-85M	2.11E-06
KR-87	1.04E-05
KR-88	1.66E-06
SR-89	7.08E-04
SR-91	5.13E-05
Y-91M	5.78E-05
ZR-NB-95	4.29E-05
MO-99	1.69E-04
TC-99M	4.15E-04
RU-103	9.32E-07
AG-110M	7.69E-03

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SN-113	9.88E-05
SB-124	3.44E-02
SB-125	2.49E-02
I-131	5.00E-03
XE-131M	6.27E-04
TE-132	7.28E-07
I-133	1.15E-03
TE-133M	8.09E-06
XE-133	1.89E-01
XE-133M	2.23E-03
CS-134	3.96E-03
TE-134	1.74E-03
I-135	2.21E-05
XE-135	1.69E-03
CS-137	1.60E-02
BA-139	4.87E-05
BA-1A-140	8.26E-04
LA-142	1.77E-06
CE-144	6.76E-06
TOTAL AIRBORNE TRITIUM RELEASE	1.26E+01
TOTAL LIQUID TRITIUM RELEASE	4.22E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.32E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.97E+11

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
14	TRUCK OVER HIGHWAY	BARNWELL SC
# 57	TRUCK OVER HIGHWAY	SEG, BARNWELL SC

#SEG PERFORMS SUPER COMPACTING OF DAW

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
A		
BA-137M	% 2.00E+00	
C-14	%	1.50E+00
CO-58	%	3.80E+00
CO-60	% 2.20E+01	3.31E+01
CS-134	%	1.69E+01
CS-137	% 2.00E+00	2.26E+01
FE-55	% 3.50E+01	1.44E+01
MN-54	%	1.20E+00
NI-63	% 3.10E+01	4.40E+00
SB-125	% 1.00E+00	
B		
CO-58	% 1.10E+01	1.10E+01
CO-60	% 2.20E+01	2.20E+01
CS-134	% 3.00E+00	3.00E+00
CS-137	% 1.00E+01	1.00E+01
FE-55	% 2.60E+01	2.60E+01
NI-63	% 1.40E+01	1.40E+01
SB-125	% 2.00E+00	2.00E+00
ZR-95	% 5.00E+00	5.00E+00

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3	2.33E+01	
BOTTOMS, ETC.	CI	2.31E+02	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3	1.72E+02	*
EQUIPMENT, ETC.	CI	5.50E+00	
C. IRRADIATED COMPONENTS, CONTROL	M3		
RODS, ETC.	CI		
D. OTHER	M3		
	CI		

*VOLUME AFTER COMPACTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:DUKE POWER COMPANY
DOCKET NO.:50-369 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.38E+07 NET ELECTRIC POWER (MWH):7.80E+06
COMMERCIAL OPERATION:12/01/81 INITIAL CRITICALITY:08/08/81
COOLING WATER SOURCE:LAKE NORMAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	9.19E-09
CL-38	2.28E-08
K-40	1.83E-06
AR-41	6.69E+00
CR-51	5.28E-08
MN-54	5.85E-09
CO-58	2.23E-05
FE-59	2.50E-08
CO-60	7.39E-05
BR-82	1.51E-07
KR-85	6.37E+00
KR-85M	3.22E+00
KR-87	6.08E-01
KR-88	3.52E+00
RB-88	3.46E-04
RB-89	1.50E-06
SR-92	1.87E-08
Y-92	2.20E-08
NB-95	8.01E-09
NB-97	2.03E-09
TC-99M	2.57E-08
RU-103	3.58E-10
SB-124	1.20E-09
I-131	3.64E-03
XE-131M	2.61E+00
I-132	1.17E-04
TE-132	8.81E-09
I-133	2.01E-03
XE-133	6.36E+02
XE-133M	1.01E+01
CS-134	4.47E-06
I-134	8.00E-06
I-135	1.09E-04
XE-135	4.98E+01
XE-135M	9.13E-02
CS-137	1.59E-05
CS-138	1.45E-05
XE-138	3.33E-01
BA-139	1.27E-06
BI-214	1.93E-08
PB-214	9.46E-07

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	4.46E-05
F-18	8.41E-03
NA-24	7.89E-04
K-40	1.22E-03
AR-41	2.51E-06
CR-51	1.19E-01
MN-54	3.80E-02
FE-55	1.87E-01
CO-57	2.67E-03
CO-58	5.67E-01
FE-59	7.36E-03
CO-60	2.08E-01
NI-65	5.50E-06
ZN-65	6.54E-04
SE-75	2.33E-05
BR-82	1.15E-04
KR-85	8.93E-04
KR-85M	1.07E-04
KR-87	3.45E-03
KR-88	2.64E-04
RB-88	3.67E-03
RB-89	3.66E-03
SR-89	6.89E-05
SR-91	5.79E-05
Y-91M	4.55E-05
SR-92	4.15E-04
NB-95	2.24E-02
ZR-95	1.23E-02
NB-97	1.16E-03
ZR-97	7.00E-05
MO-99	6.35E-05
TC-99M	1.30E-03
RU-103	8.75E-04
RU-106	2.18E-03
AG-110M	9.42E-03
SN-113	4.84E-03
SB-122	3.39E-03
SB-124	1.75E-02
SB-125	1.49E-01
SB-126	4.12E-04
I-131	3.41E-02
XE-131M	1.22E-02
I-132	2.48E-03
TE-132	3.18E-04
I-133	2.71E-02
XE-133	2.23E-01
XE-133M	3.00E-03
CS-134	2.94E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-134	5.06E-04
TE-134	1.55E-05
I-135	1.08E-02
XE-135	1.86E-02
XE-135M	1.53E-03
CS-136	6.96E-03
CS-137	3.34E-02
CS-138	1.94E-02
BA-139	1.06E-03
BA-140	9.34E-05
LA-140	1.33E-03
CE-141	1.34E-04
CE-144	1.42E-03
W-187	1.50E-04
BI-214	3.71E-05
PB-214	2.75E-04
NP-239	1.78E-04

TOTAL AIRBORNE TRITIUM RELEASE	2.66E+01
TOTAL LIQUID TRITIUM RELEASE	4.23E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.75E+07 *
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.45E+12 *

*THESE VOLUMES REPRESENT THE TOTAL DILUTION FLOW FOR BOTH MCGUIRE 1 & 2
SINCE THERE IS ONE PRIMARY RELEASE POINT FOR THE SITE.

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:DUKE POWER COMPANY
DOCKET NO.:50-370 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.19E+07 NET ELECTRIC POWER (MWH):7.41E+06
COMMERCIAL OPERATION:03/01/84 INITIAL CRITICALITY:05/08/83
COOLING WATER SOURCE:LAKE NORMAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	9.19E-09
CL-38	2.28E-08
K-40	1.83E-06
AR-41	6.69E+00
CR-51	5.28E-08
MN-54	5.85E-09
CO-58	2.23E-05
FE-59	2.50E-08
CO-60	7.39E-05
BR-82	1.51E-07
KR-85	6.37E+00
KR-85M	3.22E+00
KR-87	6.08E-01
KR-88	3.52E+00
RB-88	3.46E-04
RB-89	1.50E-06
SR-92	1.87E-08
Y-92	2.20E-08
NB-95	8.01E-09
NB-97	2.03E-09
TC-99M	2.57E-08
RU-103	3.58E-10
SB-124	1.20E-09
I-131	3.64E-03
XE-131M	2.61E+00
I-132	1.17E-04
TE-132	8.81E-09
I-133	2.01E-03
XE-133	6.36E+02
XE-133M	1.01E+01
CS-134	4.47E-06
I-134	8.00E-06
I-135	1.09E-04
XE-135	4.98E+01
XE-135M	9.13E-02
CS-137	1.59E-05
CS-138	1.45E-05
XE-138	3.33E-01
BA-139	1.27E-06
BI-214	1.93E-08
PB-214	9.46E-07

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	4.46E-05
F-18	8.41E-03
NA-24	7.89E-04
K-40	1.22E-03
AR-41	2.51E-06
CR-51	1.19E-01
MN-54	3.80E-02
FE-55	1.87E-01
CO-57	2.67E-03
CO-58	5.67E-01
FE-59	7.36E-03
CO-60	2.08E-01
NI-65	5.50E-06
ZN-65	6.54E-04
SE-75	2.33E-05
BR-82	1.15E-04
KR-85	8.93E-04
KR-85M	1.07E-04
KR-87	3.45E-03
KR-88	2.64E-04
RB-88	3.67E-03
RB-89	3.66E-03
SR-89	6.89E-05
SR-91	5.79E-05
Y-91M	4.55E-05
SR-92	4.15E-04
NB-95	2.24E-02
ZR-95	1.23E-02
NB-97	1.16E-03
ZR-97	7.00E-05
MO-99	6.35E-05
TC-99M	1.30E-03
RU-103	8.75E-04
RU-106	2.18E-03
AG-110M	9.42E-03
SN-113	4.84E-03
SB-122	3.39E-03
SB-124	1.75E-02
SB-125	1.49E-01
SB-126	4.12E-04
I-131	3.41E-02
XE-131M	1.22E-02
I-132	2.48E-03
TE-132	3.18E-04
I-133	2.71E-02
XE-133	2.23E-01
XE-133M	3.00E-03
CS-134	2.94E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-134	5.06E-04
TE-134	1.55E-05
I-135	1.08E-02
XE-135	1.86E-02
XE-135M	1.53E-03
CS-136	6.96E-03
CS-137	3.34E-02
CS-138	1.94E-02
BA-139	1.06E-03
BA-140	9.34E-05
LA-140	1.33E-03
CE-141	1.34E-04
CE-144	1.42E-03
W-187	1.50E-04
BI-214	3.71E-05
PB-214	2.75E-04
NP-239	1.78E-04

TOTAL AIRBORNE TRITIUM RELEASE	2.66E+01
TOTAL LIQUID TRITIUM RELEASE	4.23E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.75E+07 *
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.45E+12 *

*THESE VOLUMES REPRESENT THE TOTAL DILUTION FLOW FOR BOTH MCGUIRE 1 & 2
SINCE THERE IS ONE PRIMARY RELEASE POINT FOR THE SITE.

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS # 16	MODE OF TRANSPORTATION N/R	DESTINATION N/R
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#DOES NOT INCLUDE BROKERED TOTALS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
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A

C-14	%	5.40E+00	1.20E-01
CE-144	%		2.00E-02
CO-57	%		2.00E-01
CO-58	%	2.30E+00	2.19E+01
CO-60	%	1.30E+00	2.81E+01
CR-51	%		1.40E-01
CS-134	%	3.34E+01	8.30E+00
CS-137	%	4.74E+01	1.46E+01
FE-55	%		8.36E+00
FE-59	%		2.00E-02
I-131	%	3.50E+00	6.19E-05
MN-54	%	1.00E+00	4.60E+00
NB-95	%	1.10E+00	9.00E-02
NI-63	%		1.25E+01
PU-241	%		8.94E-03
SB-122	%		2.00E-02
SB-125	%	1.10E+00	8.40E-01
SN-113	%		8.00E-02
SR-90	%	2.60E+00	5.00E-02
ZN-65	%		2.00E-02
ZR-95	%	8.00E-01	5.00E-02

B

C-14	%	1.90E-01	1.90E-01
CO-58	%	4.63E+01	4.63E+01
CO-60	%	1.33E+01	1.33E+01
CR-51	%	2.18E+01	2.18E+01
FE-55	%	9.69E+00	9.69E+00
H-3	%	1.92E+00	1.92E+00
MN-54	%	1.89E+00	1.89E+00
NB-95	%	2.26E+00	2.26E+00
NI-63	%	1.39E+00	1.39E+00
ZR-95	%	1.18E+00	1.18E+00

D

C-14	%	2.00E-01	2.00E-01
CE-144	%	1.50E-01	1.50E-01
CO-58	%	7.93E+00	7.93E+00
CO-60	%	3.49E+01	3.49E+01
CS-137	%	4.60E-01	4.60E-01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
D			
FE-55	%	4.68E+01	4.68E+01
MN-54	%	2.55E+00	2.55E+00
NB-95	%	1.80E+00	1.80E+00
NI-63	%	5.10E+00	5.10E+00
PU-241	%	8.00E-02	8.00E-02
TRU	%	2.00E-02	2.00E-02

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.66E+02
	CI	5.88E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.63E+02 *
	CI	3.20E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	6.44E+00
DEWATERED MECH. FILTERS	CI	1.20E+01

*VOLUME CONTAINS COMPACTED AND NON-COMPACTED WASTE

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:NORTHEAST NUCLEAR ENERGY
DOCKET NO.:50-245 LICENSED POWER (MWT):2.01E+03
THERMAL POWER (MWH):1.42E+07 NET ELECTRIC POWER (MWH):4.64E+06
COMMERCIAL OPERATION:03/01/71 INITIAL CRITICALITY:10/26/70
COOLING WATER SOURCE:LONG ISLAND SOUND

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.65E+00
CR-51	1.33E-03
MN-54	1.37E-04
CO-58	1.31E-04
CO-60	8.30E-04
ZN-65	3.27E-03
KR-85	2.47E+00
KR-85M	1.09E+01
KR-87	1.65E-01
KR-88	7.20E+00
SR-89	4.65E-04
SR-90	9.22E-06
I-131	2.34E-03
I-133	9.76E-03
XE-133	8.97E+01
XE-133M	6.21E-01
XE-135	2.53E+01
XE-135M	9.60E+00
CS-137	2.71E-04
XE-138	3.35E+01
BA-140	5.72E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.94E-06
CR-51	7.34E-03
MN-54	6.23E-02
FE-55	1.43E-01
CO-58	1.05E-02
FE-59	1.41E-02
CO-60	2.81E-01
ZN-65	1.69E-01
ZN-69M	5.80E-05
SR-89	6.84E-04
SR-90	4.36E-03
NB-97	8.16E-05
TC-99M	1.52E-03
AG-110M	8.74E-04
I-131	4.88E-04
I-132	4.72E-06
I-133	1.11E-03
XE-133	1.71E-03
CS-134	2.32E-03

N/A-NOT APPLICABLE

N/D-NOT DETECTED

N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-135	3.00E-04
XE-135	2.41E-03
XE-135M	9.68E-05
CS-137	2.06E-01
CS-138	4.54E-05
BA-139	2.21E-05
NP-239	5.32E-04

TOTAL AIRBORNE TRITIUM RELEASE	1.15E+02
TOTAL LIQUID TRITIUM RELEASE	4.58E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.74E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.40E+11

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
41	TRUCK (SOLE USE)	CHEM-NUC, BARNWELL SC
1	TRUCK (SOLE USE)	QUADREX, OAK RIDGE TN
9	TRUCK (SOLE USE)	SEG, OAK RIDGE TN
# 1	TRUCK (SOLE USE)	US ECOLOGY, RICHLAND WA

#NO UNIT ASSIGNMENT, CHARGED TO STATION

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3		1.66E+02
BOTTOMS, ETC.	CI		1.77E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3		2.58E+02 *
EQUIPMENT, ETC.	CI		2.02E+01
C. IRRADIATED COMPONENTS, CONTROL	M3		4.40E+00
RODS, ETC.	CI		1.81E+04
D. OTHER	M3		
	CI		

*TOTAL VOLUME SENT TO BURIAL

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:NORTHEAST NUCLEAR ENERGY
DOCKET NO.:50-336 LICENSED POWER (MWT):2.70E+03
THERMAL POWER (MWH):1.55E+07 NET ELECTRIC POWER (MWH):4.89E+06
COMMERCIAL OPERATION:12/26/75 INITIAL CRITICALITY:10/17/75
COOLING WATER SOURCE:LONG ISLAND SOUND

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.05E-05
CO-58	3.10E-07
CO-60	3.60E-06
KR-85	4.74E+00
KR-85M	6.26E-03
RB-88	7.87E-04
SB-125	1.80E-07
I-131	3.78E-02
XE-131M	5.34E-01
I-133	8.41E-03
XE-133	2.24E+02
XE-133M	2.04E-01
CS-134	2.24E-06
XE-135	1.64E+01
XE-135M	2.71E-01
CS-137	6.65E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.08E-03
CR-51	2.24E-01
MN-54	4.92E-02
FE-55	2.30E-01
CO-57	1.33E-02
CO-58	6.95E+00
FE-59	7.29E-03
CO-60	1.26E+00
KR-85	3.65E-01
SR-89	1.40E-03
SR-90	1.59E-04
SR-92	4.15E-02
NB-95	1.13E-02
ZR-95	2.52E-02
NB-97	1.85E-01
MO-99	5.87E-03
TC-99M	5.31E-03
RU-103	3.68E-03
RU-106	1.89E-03
AG-110M	1.28E-01
SB-124	1.24E-01
SB-125	7.45E-02
I-131	1.05E-01
XE-131M	5.27E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-132	2.12E-03
I-133	1.40E-02
XE-133	1.42E+00
XE-133M	4.72E-03
CS-134	4.05E-01
I-135	1.57E-03
XE-135	2.09E-02
CS-136	1.28E-02
CS-137	6.90E-01
LA-140	1.96E-03
LA-141	3.54E-02
CE-144	9.61E-04
PR-144	9.45E-03

TOTAL AIRBORNE TRITIUM RELEASE 6.55E+01

TOTAL LIQUID TRITIUM RELEASE 3.66E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.37E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	9.36E+11

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
12	TRUCK (SOLE USE)	CHEM-NUC, BARNWELL SC
3	TRUCK (SOLE USE)	QUADREX, OAK RIDGE TN
3	TRUCK (SOLE USE)	SEG, OAK RIDGE TN

TYPE OF WASTE

UNIT YEAR TOTAL

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 1.68E+01 *
	CI 5.51E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 2.30E+02 *
	CI 4.23E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3
	CI
D. OTHER	M3
	CI

*TOTAL VOLUME SENT TO BURIAL

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 3 TYPE:PWR LICENSEE:NORTHEAST NUCLEAR ENERGY
DOCKET NO.:50-423 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.17E+07 NET ELECTRIC POWER (MWH):7.08E+06
COMMERCIAL OPERATION:04/23/86 INITIAL CRITICALITY:01/23/86
COOLING WATER SOURCE:NIANTIC BAY

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-58	1.28E-04
KR-85	1.89E+00
KR-85M	6.20E-02
KR-89	6.36E-02
CD-109	4.03E-04
I-131	1.21E-02
XE-131M	9.05E-01
I-133	8.61E-03
XE-133	2.88E+02
XE-133M	7.55E-01
CS-134	1.95E-05
XE-135	5.14E+00
CS-137	9.91E-05
ND-147	1.34E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.55E-02
AR-41	2.06E-03
CR-51	3.42E-01
MN-54	3.02E-01
FE-55	1.52E+00
CO-57	6.66E-03
CO-58	1.45E+00
FE-59	2.52E-02
CO-60	7.93E-01
ZN-65	7.32E-03
AS-76	2.28E-06
KR-85	6.80E-06
KR-85M	1.98E-05
KR-87	2.38E-05
RB-88	1.42E-03
SR-89	9.95E-04
SR-90	3.01E-05
Y-91M	1.80E-06
SR-92	5.78E-02
NB-95	1.29E-01
ZR-95	5.36E-02
NB-97	2.08E-01
MO-99	3.55E-03
TC-99M	8.72E-03
RU-103	6.95E-03
RU-106	1.19E-02

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AG-110M	1.15E-01
SB-124	6.37E-03
SB-125	6.10E-02
I-131	1.95E-01
XE-131M	7.36E-03
I-132	2.41E-05
I-133	1.16E-02
XE-133	1.38E-01
XE-133M	2.50E-03
CS-134	1.87E-01
CS-135	1.12E-03
I-135	2.13E-03
XE-135	3.25E-02
XE-135M	1.67E-03
CS-136	8.34E-03
CS-137	3.28E-01
LA-141	1.13E-03
CE-144	4.23E-02
HF-181	8.69E-03
W-187	4.87E-04

TOTAL AIRBORNE TRITIUM RELEASE	1.84E+01
TOTAL LIQUID TRITIUM RELEASE	6.97E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.86E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.57E+12

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
12	TRUCK (SOLE USE)

DESTINATION
CHEM-NUC, BARNWELL SC

TYPE OF WASTE

- A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
- B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
- C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
- D. OTHER

UNIT	YEAR	TOTAL
M3	3.02E+01	*
CI	7.34E+02	
M3	1.17E+02	*
CI	3.45E+00	
M3		
CI		
M3		
CI		

*TOTAL VOLUME SENT TO BURIAL

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:NORTHERN STATES POWER
DOCKET NO.:50-263 LICENSED POWER (MWT):1.67E+03
THERMAL POWER (MWH):8.48E+06 NET ELECTRIC POWER (MWH):2.65E+06
COMMERCIAL OPERATION:06/30/71 INITIAL CRITICALITY:12/10/70
COOLING WATER SOURCE:MISSISSIPPI RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.32E-03
MN-54	1.56E-04
CO-58	1.59E-04
FE-59	1.87E-06
CO-60	2.43E-03
ZN-65	6.66E-03
KR-85	1.60E+02
KR-85M	7.73E+00
KR-87	4.03E+01
KR-88	2.53E+01
KR-89	6.09E+02
SR-89	2.09E-03
KR-90	2.07E+01
SR-90	1.93E-05
RU-103	2.61E-05
I-131	9.09E-02
XE-131M	5.02E+00
I-133	4.40E-01
XE-133	1.10E+03
XE-133M	8.70E+00
CS-134	8.58E-06
I-135	5.76E-01
XE-135	9.71E+01
XE-135M	1.32E+02
CS-137	2.17E-04
XE-137	9.71E+02
XE-138	7.44E+02
XE-139	6.14E+01
BA-140	9.95E-03
CE-141	9.28E-05
CE-144	7.35E-07

TOTAL AIRBORNE TRITIUM RELEASE 9.23E+01
TOTAL LIQUID TRITIUM RELEASE 0.00E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	0.00E+00
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	0.00E+00

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS

MODE OF TRANSPORTATION

DESTINATION

3

RAILWAY

CHEM-NUC, BARNWELL SC

11

TRUCK

CHEM-NUC, BARNWELL SC

9

TRUCK

US ECOLOGY, RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

BA-140	%	1.93E+00	8.87E-02
CE-141	%	3.29E-02	1.34E-01
CO-58	%		1.14E+00
CO-60	%	2.70E+01	5.54E+01
CR-51	%	9.75E-01	
CS-134	%	2.57E+00	9.12E-01
CS-137	%	1.89E+01	3.67E+00
FE-55	%	2.94E+01	2.55E+01
FE-59	%	5.55E+00	2.91E-01
I-131	%	4.49E+00	8.35E-02
LA-140	%	7.01E-01	
MN-54	%	1.48E+00	5.14E+00
RU-103	%		1.23E-01
SR-89	%	1.81E-01	4.03E-01
SR-90	%		1.67E-01
ZN-65	%	3.24E+00	5.75E+00
ZR-95	%		2.45E-02

B

BA-140	%		4.44E-01
CO-58	%		5.68E-01
CO-60	%	2.93E+01	3.19E+01
CR-51	%	1.77E+00	2.56E+00
CS-134	%	2.52E+00	1.44E+00
CS-137	%	9.50E+00	4.75E+00
FE-55	%	3.81E+01	3.07E+01
FE-59	%		7.70E-01
I-131	%	1.85E+00	
LA-140	%	1.11E+00	4.38E-01
MN-54	%	2.83E+00	1.12E+01
SR-89	%		1.03E+00
SR-90	%		3.49E-01
ZN-65	%	3.04E+00	3.15E+00

C

CO-60	%	4.43E+01	
CR-51	%	7.24E-01	
FE-55	%	4.83E+01	

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE) JAN-JUNE JULY-DEC

C		
MN-54	%	3.15E+00

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3		6.07E+01
BOTTOMS, ETC.	CI		4.55E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3		1.85E+02 *
EQUIPMENT, ETC.	CI		6.85E+00
C. IRRADIATED COMPONENTS, CONTROL	M3		2.23E+00
RODS, ETC.	CI		5.92E+04
D. OTHER	M3		
	CI		

*VOLUME AFTER COMPACTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION:NINE MILE POINT 1

LOCATION:8 MI NE OSWEGO, NY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:NIAGARA MOHAWK POWER
DOCKET NO.:50-220 LICENSED POWER (MWT):1.85E+03
THERMAL POWER (MWH):0.00E+00 NET ELECTRIC POWER (MWH):0.00E+00
COMMERCIAL OPERATION:12/01/69 INITIAL CRITICALITY:09/05/69
COOLING WATER SOURCE:LAKE ONTARIO

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	7.92E-06
FE-55	2.87E-04
CO-60	1.83E-03
KR-85	1.31E-04
SR-89	2.62E-05
SR-90	7.08E-06
XE-133	2.11E-05
CS-137	8.64E-04

TOTAL AIRBORNE TRITIUM RELEASE 7.76E+00
TOTAL LIQUID TRITIUM RELEASE 0.00E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	0.00E+00
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.84E+11

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
* 151	N/R	VENDORS, BARNWELL SC
24	TRUCK	CHEM-NUC, BARNWELL SC
1	TRUCK	HANFORD WA

*WASTE BURIED AFTER VOL. RED. BY SEG, ALARON & QUADREX

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
A		
C-14	% 2.45E+00	
CO-60	% 6.92E+01	3.72E+01
CS-134	%	3.37E-01
CS-137	% 1.91E+01	2.99E+01
FE-55	% 3.84E+00	2.83E+01
MN-54	% 2.60E+00	1.03E+00
NI-63	% 1.78E+00	1.99E+00
OTHER	% 1.03E+00	5.40E-01
SR-90	%	7.36E-01
B		
AG-110M	% 2.72E+00	
CO-60	% 5.06E+01	3.30E+01
CS-134	% 5.80E-02	
CS-137	% 3.30E+01	5.89E+01
H-3	% 3.74E-01	5.28E+00
MN-54	% 2.58E+00	1.07E+00
NI-63	% 7.75E+00	8.40E-01
OTHER	% 2.93E+00	9.10E-01
D		
CO-60	% 5.97E+00	
CS-137	% 1.22E+01	
FE-55	% 4.70E+00	
H-3	% 7.32E+01	
OTHER	% 1.20E+00	
PU-241	% 2.73E+00	

TYPE OF WASTE**	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	9.76E+01
	CI	2.46E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.34E+02
	CI	2.22E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E+00
	CI	0.00E+00
D. OTHER	M3	5.10E+00
OIL	CI	1.25E-03

**SOLID WASTE TOTALS DO NOT INCLUDE VENDOR WASTE.

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:BWR LICENSEE:NIAGARA MOHAWK POWER
DOCKET NO.:50-410 LICENSED POWER (MWT):3.32E+03
THERMAL POWER (MWH):1.41E+07 NET ELECTRIC POWER (MWH):4.25E+06
COMMERCIAL OPERATION:04/05/88 INITIAL CRITICALITY:05/23/87
COOLING WATER SOURCE:LAKE ONTARIO

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	9.77E+00
CR-51	4.03E-03
MN-54	6.51E-06
FE-55	<3.79E-05
CO-58	2.85E-06
CO-60	1.12E-05
ZN-65	9.85E-05
KR-85M	1.15E-01
KR-87	1.31E+00
KR-88	1.53E+01
SR-89	<3.37E-04
SR-90	<4.19E-05
MO-99	8.79E-05
I-131	4.55E-04
I-133	4.43E-03
XE-135	5.19E-01
XE-135M	4.05E+00
CS-137	1.43E-06
XE-137	3.00E+01
XE-138	2.32E+01
BA-LA-140	1.75E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.18E-04
CR-51	5.04E-02
MN-54	2.60E-02
CO-58	2.02E-02
FE-59	6.42E-03
CO-60	4.27E-02
ZN-65	7.35E-02
MO-99	2.25E-04
TC-99M	1.96E-04
XE-133	3.34E-04
XE-135	2.02E-04
CE-144	1.87E-04
W-187	1.78E-04

TOTAL AIRBORNE TRITIUM RELEASE 1.00E+01
TOTAL LIQUID TRITIUM RELEASE 8.10E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.31E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.62E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
31	TRUCK
2	TRUCK

DESTINATION
BARNWELL SC
OAK RIDGE TN

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A		
CO-58	%	6.50E+00 2.26E+00
CO-60	%	1.66E+01 4.83E+00
CR-51	%	3.40E+00 7.14E+01
FE-55	%	2.77E+01 5.29E+00
MN-54	%	1.12E+01 2.44E+00
OTHERS	%	2.80E+00 8.80E-01
ZN-65	%	3.18E+01 1.29E+01
B		
CO-58	%	2.30E+00
CO-60	%	1.89E+01
CR-51	%	3.46E+01
FE-55	%	9.87E+00
MN-54	%	1.31E+01
OTHERS	%	1.63E+00
ZN-65	%	1.96E+01
D		
CO-58	%	1.33E+01
CO-60	%	3.08E+01
FE-55	%	2.42E+00
MN-54	%	2.91E+01
OTHERS	%	<1.00E+00
ZN-65	%	2.37E+01

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
D. OTHER
(NON-COMPACTED TRASH SENT TO PROCESSOR)

UNIT	YEAR	TOTAL
M3	2.46E+02	
CI	4.77E+02	
M3	3.06E+01	
CI	1.23E-01	
M3	0.00E+00	
CI	0.00E+00	
M3	1.45E+02*	
CI	1.13E+01	

*VOLUME BEFORE REDUCTION (8.19E-01 M3 AFTER REDUCTION AT OAK RIDGE)

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE:PWR	LICENSEE:VIRGINIA ELECTRIC &POWER
DOCKET NO.:50-338		LICENSED POWER (MWT):2.89E+03
THERMAL POWER (MWH):1.37E+07		NET ELECTRIC POWER (MWH):4.30E+06
COMMERCIAL OPERATION:06/06/78		INITIAL CRITICALITY:04/05/78
COOLING WATER SOURCE:LAKE ANNA		
UNIT NUMBER: 2	TYPE:PWR	LICENSEE:VIRGINIA ELECTRIC &POWER
DOCKET NO.:50-339		LICENSED POWER (MWT):2.89E+03
THERMAL POWER (MWH):1.88E+07		NET ELECTRIC POWER (MWH):5.90E+06
COMMERCIAL OPERATION:12/14/80		INITIAL CRITICALITY:06/12/80
COOLING WATER SOURCE:LAKE ANNA		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.96E-08
AR-41	1.86E+00
MN-54	6.67E-09
FE-55	4.74E-05
CO-58	7.41E-05
CO-60	1.11E-04
KR-83M	1.99E+00
KR-85	1.06E+02
KR-85M	1.31E+00
SR-85	2.96E-06
KR-87	6.31E-01
KR-88	2.65E+00
RB-88	2.34E-05
NB-95	1.27E-08
RH-106	1.39E-08
RU-106	3.95E-07
AG-110M	7.13E-08
SB-122	2.00E-06
SB-125	9.40E-06
I-131	3.76E-03
XE-131M	2.10E+01
I-132	2.87E-08
I-133	7.33E-03
XE-133	1.26E+03
XE-133M	2.65E+00
CS-134	3.52E-05
I-134	1.55E-08
I-135	4.38E-08
XE-135	3.66E+01
XE-135M	2.92E-01
CS-137	2.87E-04
CS-138	1.97E-08
XE-138	5.66E-02
CE-143	2.68E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	9.42E-05
AR-41	7.86E-04
CR-51	9.72E-03
MN-54	3.92E-03
FE-55	1.00E-04
CO-57	1.83E-04
CO-58	3.05E-01
FE-59	9.99E-04
CO-60	2.13E-01
CU-64	7.01E-04
ZN-65	4.27E-06
ZN-69M	1.46E-05
BR-84	9.29E-05
KR-85	3.49E-02
KR-85M	8.55E-04
SR-85	1.51E-04
KR-87	1.06E-04
KR-88	1.68E-03
NB-95	7.56E-03
ZR-95	1.71E-05
RH-106	3.65E-04
RU-RH-106	7.25E-03
AG-110M	1.09E-01
SB-122	5.12E-03
SB-124	4.52E-03
SB-125	3.07E-01
TE-129M	2.60E-04
I-131	1.74E-02
XE-131M	1.59E-02
I-132	2.06E-04
I-133	3.61E-03
XE-133	5.51E+00
XE-133M	4.34E-02
CS-134	6.15E-02
I-134	7.88E-08
I-135	8.52E-04
XE-135	6.31E-02
XE-135M	5.09E-03
CS-136	7.66E-04
CS-137	1.04E-01
CS-138	4.10E-05
BA-139	1.77E-04
BA-140	2.42E-04
CE-143	1.09E-04

N/A=NOT APPLICABLE

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N/R=NOT REPORTED

INSTALLATION:NORTH ANNA

LOCATION:40 MI NW RICHMOND, VA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

TOTAL AIRBORNE TRITIUM RELEASE 1.22E+02
TOTAL LIQUID TRITIUM RELEASE 1.40E+03

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.74E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.43E+12

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
26	TRUCK	BARNWELL SC
5	TRUCK	QUADREX, OAK RIDGE TN
13	TRUCK	SEG, OAK RIDGE TN

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A

CO-60	%	4.68E+01	4.93E+01
CS-134	%	1.55E+00	1.30E+00
CS-137	%	1.02E+01	2.62E+00
FE-55	%	1.32E+01	1.76E+01
MN-54	%	1.07E+00	1.10E+00
NI-63	%	2.57E+01	2.65E+01

B

CO-58	%	3.50E+00	3.52E+00
CO-60	%	2.55E+01	2.76E+01
CR-51	%	2.77E+01	2.83E+01
CS-137	%		1.17E+00
FE-55	%	2.68E+01	2.52E+01
MN-54	%	1.23E+00	1.28E+00
NB-95	%	3.41E+00	2.19E+00
NI-63	%	4.16E+00	3.57E+00
PU-241	%	1.00E+00	1.19E+00
RU-103	%	3.55E+00	3.85E+00
ZR-95	%	1.15E+00	

D

CE-144	%		6.48E+01
CO-60	%		1.81E+01
CS-137	%		1.71E+01

TYPE OF WASTE

UNIT YEAR TOTAL

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.73E+02 *
	CI	1.67E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	4.99E+02 #
	CI	5.24E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E+00
	CI	0.00E+00
D. OTHER	M3	5.09E+00 +
CONTAMINATED OIL	CI	9.84E-06

*NOT REPRESENTATIVE OF ACTUAL VOL. BURIED (VOL. BURIED 57.1 M3)

#NOT REPRESENTATIVE OF ACTUAL VOL. BURIED (VOL. BURIED 342.1 M3)

+SHIPPED TO WASTE PROCESSOR FOR INCINERATION (VOL. BURIED 0. M3)

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE:PWR	LICENSEE:DUKE POWER
DOCKET NO.:50-269		LICENSED POWER (MWT):2.57E+03
THERMAL POWER (MWH):1.82E+07		NET ELECTRIC POWER (MWH):5.94E+06
COMMERCIAL OPERATION:07/15/73		INITIAL CRITICALITY:04/19/73
COOLING WATER SOURCE:LAKE KEOWEE		
UNIT NUMBER: 2	TYPE:PWR	LICENSEE:DUKE POWER
DOCKET NO.:50-270		LICENSED POWER (MWT):2.57E+03
THERMAL POWER (MWH):1.84E+07		NET ELECTRIC POWER (MWH):6.01E+06
COMMERCIAL OPERATION:09/09/74		INITIAL CRITICALITY:11/11/73
COOLING WATER SOURCE:LAKE KEOWEE		
UNIT NUMBER: 3	TYPE:PWR	LICENSEE:DUKE POWER
DOCKET NO.:50-287		LICENSED POWER (MWT):2.57E+03
THERMAL POWER (MWH):1.94E+07		NET ELECTRIC POWER (MWH):6.34E+06
COMMERCIAL OPERATION:12/16/74		INITIAL CRITICALITY:09/05/74
COOLING WATER SOURCE:LAKE KEOWEE		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.64E-05
AR-41	2.62E-01
CR-51	3.50E-06
MN-54	1.57E-05
CO-57	6.72E-07
CO-58	7.86E-04
CO-60	9.77E-05
KR-85	4.74E+02
KR-85M	8.45E+00
KR-87	5.32E-02
KR-88	7.28E-01
RB-88	4.05E-03
RB-89	8.41E-06
SR-89	3.78E-07
SR-90	4.33E-09
SR-91	4.91E-07
SR-92	1.64E-07
NB-95	2.06E-06
ZR-95	1.41E-06
MO-99	5.97E-06
TC-99M	1.77E-06
RU-103	8.26E-05
RU-106	1.06E-07
AG-110M	1.13E-06
SB-125	8.11E-04
SB-126	3.77E-05
I-131	2.25E-02
XE-131M	1.40E+02
I-132	1.23E-03
TE-132	5.04E-09
I-133	6.63E-03
XE-133	8.16E+03
XE-133M	5.06E+01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-134	6.68E-03
I-134	6.52E-06
I-135	7.65E-04
XE-135	1.37E+02
XE-135M	1.24E-01
CS-136	1.05E-05
CS-137	4.56E-03
CS-138	3.97E-04
BA-140	5.06E-06
CE-141	6.66E-08
CE-143	1.81E-07

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.82E-04
AR-41	3.62E-05
CR-51	2.25E-01
MN-54	1.98E-02
FE-55	4.73E-01
CO-57	1.54E-03
CO-58	9.27E-01
FE-59	6.17E-03
CO-60	2.72E-01
ZN-65	3.56E-03
SR-89	7.71E-04
SR-90	1.09E-04
SR-92	7.59E-03
NB-95	1.17E-01
ZR-95	3.52E-02
NB-97	1.38E-01
MO-99	8.82E-04
TC-99M	2.79E-03
RU-103	1.52E-02
RU-106	1.28E-01
AG-110M	6.54E-01
SN-113	2.13E-03
SB-122	1.13E-03
SB-124	3.15E-02
SB-125	4.49E-01
SB-126	1.17E-04
I-131	9.49E-02
XE-131M	5.38E-02
I-132	2.68E-03
TE-132	2.66E-03
I-133	1.88E-03
XE-133	4.27E+00
XE-133M	1.37E-02
CS-134	3.40E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:OCONEE

LOCATION:30 MI W GREENVILLE, SC

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-134	1.02E-04
XE-135	2.11E-02
CS-136	1.71E-03
CS-137	4.76E-02
CS-138	8.57E-04
BA-140	6.58E-03
LA-140	8.08E-02
CE-141	2.86E-03
CE-144	3.35E-02
W-187	1.65E-04
NP-239	2.66E-03

TOTAL AIRBORNE TRITIUM RELEASE	1.18E+02
TOTAL LIQUID TRITIUM RELEASE	1.02E+03

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.00E+09
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.64E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

	NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
	1	N/R	ALARON-BARNWELL SC
#	41	N/R	N/R
	38	N/R	SEG-BARNWELL SC

#DOES NOT INCLUDED BROKERED TOTALS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
A			
AG-110M	%	3.77E+00	2.66E-01
C-14	%	7.96E-01	1.21E-01
CO-58	%	1.62E+01	9.52E+00
CO-60	%	2.20E+01	1.81E+00
CR-51	%	7.52E-04	
CS-134	%	2.90E+00	3.03E+01
CS-137	%	8.63E+00	4.97E+01
FE-55	%	2.20E+01	1.91E+00
H-3	%		2.10E+00
I-131	%	3.35E-01	1.37E-01
MN-54	%	4.67E+00	7.57E-01
NB-95	%	1.50E-03	
NI-63	%	1.77E+01	2.57E+00
SB-125	%	8.93E-01	
SR-90	%		3.80E-01
XE-131M	%	7.52E-04	
XE-133	%	7.52E-03	
ZR-95	%	7.52E-04	
B			
C-14	%	2.30E+00	2.30E+00
CO-58	%	2.15E+01	2.13E+01
CO-60	%	4.00E+00	4.00E+00
CR-51	%	2.39E+00	2.31E+00
CS-134	%	2.36E+01	2.36E+01
CS-137	%	3.36E+01	3.37E+01
FE-55	%	7.20E+00	7.20E+00
H-3	%	7.34E-01	6.00E-01
NI-63	%	2.80E+00	2.80E+00
PU-241	%	1.00E-01	1.00E-01
SB-125	%	1.20E+00	1.20E+00
SR-90	%	4.00E-01	4.00E-01
TC-99	%	3.00E-01	3.00E-01
C			
AG-108M	%		3.00E-01
AG-110	%		1.19E+00
AG-110M	%		8.95E+01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
C			
CO-58	%		3.00E+00
CO-60	%		8.70E-01
CR-51	%		3.40E-01
FE-55	%		1.66E+00
MN-54	%		2.30E-01
NI-63	%		5.40E-01
TA-182	%		2.32E+00
D			
AG-110M	%	3.80E+00	2.35E+01
C-14	%	8.00E-01	4.00E-01
CE-144	%		5.99E-01
CO-58	%	1.62E+01	2.38E+00
CO-60	%	2.22E+01	3.83E+01
CS-134	%	2.90E+00	
CS-137	%	8.40E+00	3.02E-01
FE-55	%	2.21E+01	3.10E+00
H-3	%		1.71E-01
I-131	%	2.00E-01	
MN-54	%	4.70E+00	1.50E+00
NI-63	%	1.78E+01	2.85E+01
PU-241	%		5.00E-01
SB-125	%	9.00E-01	
SR-90	%		4.01E-01
TC-99	%		2.00E-01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.49E+02
	CI	1.30E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.47E+02 *
	CI	6.58E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	1.08E+00
	CI	2.80E+00
D. OTHER	M3	2.71E+01
DEWATERED MECHANICAL FILTERS	CI	9.26E+01

*VOLUME CONTAINS COMPACTED AND NON-COMPACTED WASTE

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE: BWR LICENSEE: GPU NUCLEAR CORP.
DOCKET NO.: 50-219 LICENSED POWER (MWT): 1.93E+03
THERMAL POWER (MWH): 7.75E+06 NET ELECTRIC POWER (MWH): 2.40E+06
COMMERCIAL OPERATION: 12/01/69 INITIAL CRITICALITY: 05/03/69
COOLING WATER SOURCE: BARNEGAT BAY

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	6.77E-03
MN-54	9.41E-04
KR-85M	2.89E+01
KR-87	6.31E+01
KR-88	6.80E+01
SR-89	2.67E-03
SR-90	1.71E-05
TC-99M	4.06E-02
I-131	4.04E-02
I-132	8.82E-02
I-133	8.34E-02
I-135	3.87E-02
XE-135	1.50E+02
XE-135M	1.39E+01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	9.22E-05
FE-55	3.33E-04
CO-60	5.55E-03
I-131	1.92E-03
I-133	5.94E-04
XE-133	6.42E-04
CS-134	1.41E-02
XE-135	1.57E-03
CS-137	2.75E-02

TOTAL AIRBORNE TRITIUM RELEASE 1.03E+01
TOTAL LIQUID TRITIUM RELEASE 3.96E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.98E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.19E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
54	TRUCK
17	TRUCK

DESTINATION
BARNWELL SC
SEG, OAK RIDGE TN

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A			
C-14	%	4.63E-01	1.50E-02
CM-242	%	3.00E-03	1.00E-03
CO-60	%	3.04E+01	2.52E+01
CR-51	%	1.08E+00	
CS-134	%	1.20E+01	7.89E+00
CS-137	%	2.78E+01	2.54E+01
FE-55	%	2.30E+01	3.66E+01
H-3	%	1.03E-01	2.20E-02
MN-54	%	4.59E+00	4.45E+00
NI-63	%	2.87E-01	2.77E-01
PU-241	%	9.60E-02	7.00E-02
SR-90	%	1.29E-01	5.70E-02
B			
C-14	%	2.40E-03	1.22E-03
CE-141	%	2.00E-02	1.05E-02
CE-144	%	2.00E-02	1.05E-02
CO-58	%	3.88E-01	3.15E-01
CO-60	%	2.98E+01	2.75E+01
CR-51	%	1.08E+00	1.08E+00
CS-134	%	4.30E+00	4.31E+00
CS-137	%	1.37E+01	1.17E+01
FE-55	%	4.60E+01	5.10E+01
FE-59	%	6.10E-02	6.30E-02
H-3	%	4.08E-03	4.20E-03
LA-140	%	2.49E-01	2.10E-01
MN-54	%	3.80E+00	3.37E+00
NI-63	%	1.33E-01	1.05E-01
PU-241	%	7.10E-02	4.20E-02
SR-89	%	1.94E-01	3.20E-02
SR-90	%	4.10E-02	8.90E-02
ZN-65	%	7.10E-02	6.30E-02
C			
C-14	%		8.00E-03
CO-60	%		3.45E+01
CS-137	%		9.00E-03
FE-55	%		5.61E+01
H-3	%		6.95E-01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
C		
MN-54	%	4.23E+00
NI-59	%	3.10E-02
NI-63	%	4.45E+00
D		
CO-60	%	3.03E+01
CS-134	%	9.68E+00
CS-137	%	3.65E+01
FE-55	%	1.77E+01
H-3	%	2.20E-02
MN-54	%	5.05E+00
NI-63	%	6.88E-01
PU-241	%	1.80E-02

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.56E+02	
	CI	1.18E+03	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.15E+02 *	
	CI	1.71E+01	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	4.40E+01	
	CI	2.32E+05	
D. OTHER	M3	5.10E+00	
OTHER WASTE	CI	2.42E+01	

*VOLUME AFTER COMPACTION INCLUDES 199.6 M3 PROCESSED BY SEG

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:CONSUMERS POWER
DOCKET NO.:50-255 LICENSED POWER (MWT):2.53E+03
THERMAL POWER (MWH):1.21E+07 NET ELECTRIC POWER (MWH):3.64E+06
COMMERCIAL OPERATION:12/31/71 INITIAL CRITICALITY:05/24/71
COOLING WATER SOURCE:LAKE MICHIGAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	8.68E-05
AR-41	3.36E-01
MN-56	1.64E-05
CO-58	4.78E-06
CO-60	2.36E-06
SE-75	3.54E-05
KR-85	3.64E-01
KR-85M	7.75E-02
KR-87	1.60E-01
KR-88	2.21E-01
SR-89	3.04E-06
SR-90	2.51E-06
I-131	1.28E-02
XE-131M	4.18E-02
I-132	1.21E-03
I-133	6.48E-03
XE-133	1.48E+02
XE-133M	3.32E-02
CS-134	7.71E-04
I-134	2.31E-04
I-135	1.00E-03
XE-135	1.04E+00
XE-135M	1.42E+00
CS-137	2.99E-03
XE-138	5.45E-01
UNIDENTIFIED	6.59E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-58	1.28E-04
CO-60	9.86E-04
SR-89	1.27E-04
SR-90	2.44E-05
SB-125	5.58E-05
CS-134	2.66E-05
CS-137	1.28E-03
UNIDENTIFIED	1.12E-03

TOTAL AIRBORNE TRITIUM RELEASE 1.12E+01
TOTAL LIQUID TRITIUM RELEASE 8.06E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.81E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.24E+11

N/A-NOT APPLICABLE
N/D-NOT DETECTED
N/R-NOT REPORTED

INSTALLATION: PALISADES

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
11	CASK	BARNWELL SC
1	VAN	BEATTY NV
4	VAN	RICHLAND WA
* 12	VAN	SEG, BARNWELL SC

TYPE OF WASTE

	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3		4.80E+01
BOTTOMS, ETC.	CI		4.19E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3		1.70E+02
EQUIPMENT, ETC.	CI		1.11E+01
C. IRRADIATED COMPONENTS, CONTROL	M3		4.13E-01
RODS, ETC.	CI		4.11E+03
D. OTHER	M3		
	CI		

*SENT TO SEG FOR VOL. REDUCTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:ARIZONA PUBLIC SERVICE CO.
DOCKET NO.:50-528 LICENSED POWER (MWT):3.80E+03
THERMAL POWER (MWH):5.57E+06 NET ELECTRIC POWER (MWH):1.80E+06
COMMERCIAL OPERATION:01/28/86 INITIAL CRITICALITY:05/25/85
COOLING WATER SOURCE:SEWAGE TREATMENT

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.59E-01
MN-54	2.71E-06
CO-57	9.50E-07
CO-58	3.53E-05
CO-60	7.66E-05
BR-82	9.61E-06
KR-85	7.65E+01
KR-85M	4.93E+00
KR-87	2.37E+00
KR-88	1.06E+01
RB-88	2.11E-03
NB-95	3.19E-06
RU-103	1.17E-05
SB-124	1.83E-05
I-131	6.05E-04
XE-131M	1.61E+00
I-132	5.79E-06
I-133	2.20E-04
XE-133	4.92E+02
XE-133M	3.55E-01
CS-134	9.31E-08
I-134	8.19E-07
I-135	1.66E-05
XE-135	5.25E+01
CS-137	8.03E-06
CS-138	1.65E-05

TOTAL AIRBORNE TRITIUM RELEASE 1.56E+02
TOTAL LIQUID TRITIUM RELEASE 0.00E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	0.00E+00
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	0.00E+00

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:ARIZONA PUBLIC SERVICE CO.
DOCKET NO.:50-529 LICENSED POWER (MWT):3.80E+03
THERMAL POWER (MWH):1.47E+07 NET ELECTRIC POWER (MWH):4.70E+06
COMMERCIAL OPERATION:09/19/86 INITIAL CRITICALITY:04/18/86
COOLING WATER SOURCE:SEWAGE TREATMENT

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.77E-01
CO-58	3.67E-05
CO-60	4.04E-06
BR-82	4.55E-05
KR-85	3.97E+00
KR-85M	1.74E+00
KR-87	7.17E-01
KR-88	2.03E+00
RB-88	1.52E-04
SR-90	1.34E-07
SB-124	2.57E-05
I-131	2.97E-03
XE-131M	8.14E-01
I-133	5.43E-05
XE-133	3.84E+02
XE-133M	3.06E+00
XE-135	3.12E+01
XE-135M	6.14E-01
CS-138	1.48E-06
CE-141	5.08E-07

TOTAL AIRBORNE TRITIUM RELEASE 3.59E+02

TOTAL LIQUID TRITIUM RELEASE 0.00E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	0.00E+00
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	0.00E+00

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 3 TYPE:PWR LICENSEE:ARIZONA PUBLIC SERVICE CO.
DOCKET NO.:50-530 LICENSED POWER (MWT):3.80E+03
THERMAL POWER (MWH):4.10E+06 NET ELECTRIC POWER (MWH):1.33E+06
COMMERCIAL OPERATION:01/08/88 INITIAL CRITICALITY:10/25/87
COOLING WATER SOURCE:SEWAGE TREATMENT

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	6.90E-01
MN-54	1.13E-06
CO-58	6.70E-05
CO-60	1.42E-05
BR-82	1.22E-04
KR-85	1.76E+02
KR-85M	1.43E-01
KR-87	5.03E-02
KR-88	1.79E-01
RB-88	1.82E-02
SR-89	1.04E-07
SR-90	3.48E-09
SB-122	8.73E-06
SB-124	3.60E-04
I-131	6.00E-03
XE-131M	3.94E+00
I-132	4.12E-06
I-133	8.64E-04
XE-133	6.39E+02
XE-133M	2.83E+00
CS-134	1.23E-06
I-135	3.57E-05
XE-135	1.09E+01
CS-137	5.46E-06
CS-138	2.23E-03
XE-138	3.28E-03

TOTAL AIRBORNE TRITIUM RELEASE 1.83E+02
TOTAL LIQUID TRITIUM RELEASE 0.00E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	0.00E+00
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	0.00E+00

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS

MODE OF TRANSPORTATION

DESTINATION

66

TRUCK

HANFORD WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

AG-110M	%	7.98E-01	
C-14	%	2.70E-01	1.42E+00
CE-144	%	4.19E-04	5.12E-04
CO-58	%	6.21E+00	2.88E+01
CO-60	%	1.08E+01	1.42E+01
CR-51	%	2.22E-01	4.84E-01
CS-134	%	1.87E+01	1.14E+01
CS-137	%	2.60E+01	1.61E+01
FE-55	%	1.50E+01	1.54E+01
FE-59	%	1.44E-01	3.28E-01
H-3	%	2.81E+00	8.63E-01
MN-54	%	3.05E+00	3.01E+00
NB-95	%	4.89E-01	1.09E+00
NI-63	%	2.31E+00	4.17E+00
PU-239/240	%	7.73E-04	4.25E-05
PU-241	%	2.70E-02	2.03E-03
RU-106	%	2.00E-01	
SB-124	%	1.21E+01	1.88E+00
SB-125	%	6.06E-01	3.55E-02
SR-90	%	9.75E-02	2.74E-03
TC-99	%	4.96E-05	9.21E-05
ZR-95	%	3.02E-01	7.05E-01

B

AG-110M	%	4.13E-01	8.87E-01
C-14	%	3.53E-01	7.29E-01
CE-141	%	9.52E-01	2.70E-02
CE-144	%	1.13E+00	5.36E-01
CO-58	%	5.71E+00	7.95E+00
CO-60	%	8.66E+00	4.50E+00
CR-51	%	9.38E+00	2.09E+00
CS-134	%	3.77E+00	9.10E+00
CS-137	%	1.06E+01	2.32E+01
FE-55	%	3.31E+01	1.47E+01
FE-59	%	1.61E+00	5.31E-01
H-3	%	2.38E-01	1.10E+00
I-131	%	2.70E-02	1.04E+00
MN-54	%	1.99E+00	4.05E-01
NB-95	%	3.02E+00	3.36E+00

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
B			
NI-63	%	5.78E-01	4.28E+00
RU-103	%	1.72E+00	2.68E-01
SB-124	%	1.57E+01	2.47E+01
SR-90	%	3.00E-03	1.50E-02
TC-99	%	1.00E-03	1.00E-03
ZR-95	%	1.20E+00	6.48E-01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	5.01E+02
	CI	6.55E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	3.73E+02 *
	CI	1.92E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	
	CI	

*AFTER VOLUME REDUCTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2	TYPE:BWR	LICENSEE:PHILADELPHIA ELECTRIC
DOCKET NO.:50-277		LICENSED POWER (MWT):3.44E+03
THERMAL POWER (MWH):1.25E+07		NET ELECTRIC POWER (MWH):3.86E+06
COMMERCIAL OPERATION:07/05/74		INITIAL CRITICALITY:09/16/73
COOLING WATER SOURCE:SUSQUEHANNA RIVER		
UNIT NUMBER: 3	TYPE:BWR	LICENSEE:PHILADELPHIA ELECTRIC
DOCKET NO.:50-278		LICENSED POWER (MWT):3.44E+03
THERMAL POWER (MWH):8.84E+05		NET ELECTRIC POWER (MWH):1.89E+05
COMMERCIAL OPERATION:12/23/74		INITIAL CRITICALITY:08/07/74
COOLING WATER SOURCE:SUSQUEHANNA RIVER		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	9.38E-04
CR-51	7.17E-04
CO-58	3.88E-05
CO-60	1.26E-04
CU-64	5.90E-04
ZN-65	1.23E-05
KR-85M	2.17E+02
KR-87	5.44E+01
KR-88	1.16E+02
SR-89	7.54E-04
SR-90	9.46E-05
SR-91	2.88E-04
Y-91M	2.26E-03
MO-99	5.48E-05
TC-99M	6.37E-05
CD-109	6.03E-06
I-131	8.71E-04
TE-132	2.35E-06
I-133	2.78E-03
XE-133	1.22E+03
XE-133M	1.39E+01
CS-134	1.79E-06
I-135	3.75E-05
XE-135	4.84E+02
XE-135M	1.52E+01
CS-137	1.10E-04
CS-138	2.06E-02
XE-138	5.52E+00
BA-139	4.00E-03
BA-140	2.73E-04
LA-140	1.71E-04
UNIDENTIFIED	5.10E+02

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	5.25E-05
P-32	4.92E-03
CR-51	4.27E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	4.12E-06
FE-55	1.23E-02
CO-58	9.05E-05
CO-60	1.88E-02
ZN-65	3.29E-03
SR-89	7.95E-04
SR-90	2.47E-04
SR-92	5.53E-05
NB-95	1.26E-04
MO-99	4.00E-06
AG-110M	1.04E-03
I-131	6.68E-05
XE-133	6.83E-03
CS-134	1.83E-02
XE-135	8.83E-03
XE-135M	3.32E-05
CS-137	4.90E-02

TOTAL AIRBORNE TRITIUM RELEASE	5.72E+00
TOTAL LIQUID TRITIUM RELEASE	2.00E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.50E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.88E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS 238
MODE OF TRANSPORTATION N/R

DESTINATION
N/R

TYPE OF WASTE

- A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
- B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
- C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
- D. OTHER
MISC.

UNIT	YEAR	TOTAL
M3		3.42E+02
CI		8.04E+02
M3		4.95E+02 *
CI		2.34E+01
M3		1.63E+00
CI		8.44E+02
M3		5.37E+01
CI		6.35E+01

*VOLUME AFTER REDUCTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:CLEVELAND ELEC ILLUMINATING CO
DOCKET NO.:50-440 LICENSED POWER (MWT):3.58E+03
THERMAL POWER (MWH):1.62E+07 NET ELECTRIC POWER (MWH):5.32E+06
COMMERCIAL OPERATION:11/18/87 INITIAL CRITICALITY:06/06/86
COOLING WATER SOURCE:LAKE ERIE

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
KR-85	1.31E+00
KR-85M	1.89E+01
KR-87	1.30E+00
KR-88	5.92E+00
SR-89	1.52E-04
SR-90	1.21E-06
I-131	8.38E-03
XE-131M	1.13E+01
I-132	5.76E-04
I-133	9.26E-03
XE-133	1.04E+02
XE-133M	7.06E-01
XE-135	3.90E+01
XE-135M	8.15E+00
XE-138	1.35E+00

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	6.12E-04
SC-46	4.31E-05
CR-51	3.61E-01
MN-54	1.92E-01
FE-55	1.23E-01
CO-58	3.73E-02
FE-59	2.56E-02
CO-60	3.75E-01
ZN-65	5.61E-03
AS-76	6.41E-04
SR-89	4.26E-04
SR-92	6.31E-04
NB-95	2.24E-04
ZR-95	3.96E-05
TC-99M	9.24E-05
AG-110M	1.87E-02
SB-122	3.07E-05
SB-124	3.74E-04
SB-125	9.35E-04
I-131	1.10E-03
I-133	2.28E-04
XE-133	9.20E-03
CS-134	4.69E-03
XE-135	2.26E-03
CS-137	1.20E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
LA-140	3.30E-03
NP-239	1.30E-03

TOTAL AIRBORNE TRITIUM RELEASE	0.00E+00
TOTAL LIQUID TRITIUM RELEASE	6.96E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.28E+10
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.32E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION:PERRY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
19	TRUCK
20	TRUCK

DESTINATION
BARNWELL SC
RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A			
AG-110M	%	2.51E+00	2.72E+00
C-14	%	2.87E-01	1.49E-01
CO-58	%	4.47E+00	3.26E+00
CO-60	%	3.47E+01	4.24E+01
CR-51	%	6.35E+00	1.56E+01
CS-137	%	1.50E+00	6.27E-01
FE-59	%	2.94E+00	7.59E+00
H-3	%	3.03E-01	3.53E-01
MN-54	%	2.47E+01	1.64E+01
NB-95	%	1.84E+01	7.70E+00
NI-63	%	3.16E-01	7.52E-01
SB-124	%	1.39E+00	1.08E+00
SR-90	%	4.00E-03	4.00E-03
TC-99	%	6.00E-03	
ZN-65	%	1.38E+00	
B			
AG-110M	%	1.03E+00	1.11E+00
C-14	%	1.00E-03	1.00E-03
CO-58	%	1.54E+01	1.45E+01
CO-60	%	1.26E+01	1.48E+01
CR-51	%	3.39E+01	2.24E+01
CS-137	%	7.90E-02	8.90E-02
FE-55	%		1.12E+01
FE-59	%	4.48E+00	4.39E+00
H-3	%	2.00E-03	2.00E-03
MN-54	%	2.93E+01	2.85E+01
NB-95	%	2.24E+00	2.00E+00
NI-63	%	1.37E-01	1.52E-01

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

UNIT YEAR TOTAL

M3 1.39E+02

CI 8.95E+02

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

M3 8.29E+02 *

CI 2.25E+01

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

M3

CI

D. OTHER

M3

CI

*VOLUME BEFORE COMPACTION

JAN-JUNE 2.54E+2 M3 SENT FOR COMPACTION; 8 TO 1 RED. FACTOR EXPECTED

JULY-DEC 3.62E+2 M3 SENT FOR COMPACTION; 6 TO 1 RED. FACTOR EXPECTED

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:BOSTON EDISON
DOCKET NO.:50-293 LICENSED POWER (MWT):2.00E+03
THERMAL POWER (MWH):5.48E+06 NET ELECTRIC POWER (MWH):1.71E+06
COMMERCIAL OPERATION:12/01/72 INITIAL CRITICALITY:06/16/72
COOLING WATER SOURCE:CAPE COD BAY

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-60	2.82E-05
KR-85M	1.11E+02
KR-87	7.54E+01
KR-88	1.78E+02
SR-89	2.47E-04
SR-90	2.05E-06
I-131	5.05E-03
I-133	3.16E-02
XE-133	7.96E+01
I-135	1.08E-02
XE-135	1.70E+02
XE-135M	1.15E+01
CS-137	9.32E-06
XE-138	5.17E+01
BA/LA-140	2.86E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	5.68E-04
MN-54	3.74E-04
FE-55	9.47E-03
CO-58	6.68E-04
FE-59	2.11E-06
CO-60	8.65E-03
SR-89	4.57E-05
SR-90	4.26E-05
MO-99-TC-99M	1.28E-06
RH-105	2.78E-05
SB-122	4.58E-07
I-131	6.30E-05
XE-133	1.01E-05
CS-134	2.26E-05
XE-135	1.24E-04
CS-137	3.86E-03
BA/LA-140	1.07E-03
CE-141	9.60E-07
CE-PR-144	3.86E-06
HF-181	3.93E-06

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:PILGRIM

LOCATION:25 MI SE BOSTON, MA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

TOTAL AIRBORNE TRITIUM RELEASE 4.85E+00
TOTAL LIQUID TRITIUM RELEASE 2.37E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.73E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.33E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

	NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
*	2	TRACTOR-TRAILER	ALARON-WAMPUM PA
	21	TRACTOR-TRAILER	BARNWELL SC
*	3	TRACTOR-TRAILER	QUADREX-OAK RIDGE TN
*	16	TRACTOR-TRAILER	SEG-OAK RIDGE TN

*SHIPPED TO WASTE PROCESSOR FOR VOL. RED. BEFORE BURIAL

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

BA-140	%	3.10E-02
C-14	%	<1.00E-02
CM-242	%	<1.00E-02
CO-58	%	9.70E-01
CO-60	%	3.83E+01
CR-51	%	
CS-134	%	9.70E-01
CS-137	%	3.29E+01
FE-55	%	2.12E+01
H-3	%	3.00E-02
I-129	%	<1.00E-02
LA-140	%	
MN-54	%	2.89E+00
NI-63	%	1.94E+00
PU-241	%	2.00E-02
SR-90	%	5.00E-02
TC-99	%	<1.00E-02
TC-99M	%	
TRU	%	<1.00E-02

B

C-14	%	2.72E-01
CM-242	%	9.00E-03
CO-58	%	8.40E-02
CO-60	%	3.38E+01
CS-134	%	1.22E+00
CS-137	%	3.05E+01
FE-55	%	2.73E+01
H-3	%	2.50E+00
I-129	%	9.00E-03
MN-54	%	1.38E+00

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
B			
	NI-63	%	2.06E+00
	PU-241	%	4.33E-01
	SR-90	%	4.06E-01
	TC-99	%	3.80E-02
	TRU	%	9.00E-03

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.25E+02	
	CI	2.75E+02	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	7.66E+01	#
	CI	6.11E-01	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3		
	CI		
D. OTHER	M3		
	CI		

#VOLUME AFTER REDUCTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:WISCONSIN ELECTRIC POWER COMPANY
DOCKET NO.:50-266 LICENSED POWER (MWT):1.52E+03
THERMAL POWER (MWH):1.11E+07 NET ELECTRIC POWER (MWH):3.61E+06
COMMERCIAL OPERATION:12/21/70 INITIAL CRITICALITY:11/02/70
COOLING WATER SOURCE:LAKE MICHIGAN
UNIT NUMBER: 2 TYPE:PWR LICENSEE:WISCONSIN ELECTRIC POWER COMPANY
DOCKET NO.:50-301 LICENSED POWER (MWT):1.52E+03
THERMAL POWER (MWH):1.06E+07 NET ELECTRIC POWER (MWH):3.49E+06
COMMERCIAL OPERATION:10/01/72 INITIAL CRITICALITY:05/30/72
COOLING WATER SOURCE:LAKE MICHIGAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	3.31E-04
AR-41	1.57E+00
CR-51	5.28E-04
CO-58	1.69E-04
CO-60	1.63E-04
KR-85	3.58E-01
KR-85M	2.24E-01
KR-87	4.94E-01
KR-88	5.46E-01
RB-88	1.81E-05
RB-89	4.30E-09
TC-99M	9.24E-07
I-131	3.18E-04
I-132	4.20E-05
TE-132	7.33E-08
I-133	1.19E-03
XE-133	7.54E+00
XE-133M	4.94E-03
I-135	1.26E-05
XE-135	1.08E+00
XE-135M	7.37E-01
CS-137	2.09E-03
CS-138	3.44E-06
XE-138	2.45E+00
CE-144	3.92E-07

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	1.16E-03
CR-51	4.44E-04
MN-54	2.68E-04
CO-57	6.90E-07
CO-58	3.12E-03
CO-60	1.54E-02
SR-89	8.69E-06
SR-90	2.56E-04
NB-95	2.33E-06
NB-97	3.90E-06

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:POINT BEACH

LOCATION:15 MI N MANITOWOC, WI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AG-110M	4.70E-04
SB-125	2.12E-02
I-131	1.77E-03
I-132	8.15E-04
I-133	8.11E-03
CS-134M	5.97E-06
CS-137	2.80E-03
CE-144	1.59E-05

TOTAL AIRBORNE TRITIUM RELEASE	1.42E+02
TOTAL LIQUID TRITIUM RELEASE	5.59E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.82E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.60E+11

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:POINT BEACH

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
27	N/R

DESTINATION
BARNWELL SC

TYPE OF WASTE

UNIT	YEAR	TOTAL
------	------	-------

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

M3		1.22E+01
----	--	----------

CI		2.53E+02
----	--	----------

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

M3		9.35E+01
----	--	----------

CI		1.54E+00
----	--	----------

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

M3		
----	--	--

CI		
----	--	--

D. OTHER

M3		
----	--	--

CI		
----	--	--

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:NORTHERN STATES POWER
DOCKET NO.:50-282 LICENSED POWER (MWT):1.65E+03
THERMAL POWER (MWH):1.40E+07 NET ELECTRIC POWER (MWH):4.39E+06
COMMERCIAL OPERATION:12/16/73 INITIAL CRITICALITY:12/01/73
COOLING WATER SOURCE:MISSISSIPPI RIVER
UNIT NUMBER: 2 TYPE:PWR LICENSEE:NORTHERN STATES POWER
DOCKET NO.:50-306 LICENSED POWER (MWT):1.65E+03
THERMAL POWER (MWH):1.25E+07 NET ELECTRIC POWER (MWH):3.89E+06
COMMERCIAL OPERATION:12/21/74 INITIAL CRITICALITY:12/17/74
COOLING WATER SOURCE:MISSISSIPPI RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	6.31E-02
CO-60	2.06E-06
KR-85	2.10E-01
KR-85M	2.37E-03
SR-89	1.37E-07
SR-90	2.02E-07
CD-109	9.17E-06
I-131	4.67E-06
XE-131M	2.40E-02
XE-133	1.69E+02
XE-133M	4.55E-03
XE-135	3.64E+00
CS-137	4.71E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.16E-06
AR-41	3.09E-06
SC-47	1.18E-04
CR-51	5.55E-04
MN-54	1.03E-04
FE-55	1.48E-01
CO-58	2.72E-03
FE-59	2.13E-03
CO-60	2.39E-03
KR-85M	5.58E-06
SR-92	8.90E-06
NB-95	3.10E-05
NB-97	7.48E-05
ZR-97	3.38E-04
TC-99M	9.37E-06
AG-110M	7.39E-03
SN-113	1.03E-03
SB-122	3.58E-05
SB-124	3.02E-03
SB-125	4.20E-03
I-131	2.71E-04
XE-131M	6.28E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-133	8.11E-05
XE-133	4.50E-02
XE-133M	3.07E-04
CS-134	9.74E-08
XE-135	6.28E-04
CS-137	1.02E-05
CS-138	2.28E-05

TOTAL AIRBORNE TRITIUM RELEASE	1.18E+02
TOTAL LIQUID TRITIUM RELEASE	4.64E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.48E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.47E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
1	TRUCK	BARNWELL SC
2	TRUCK	OAK RIDGE TN
2	TRUCK	QUADREX RECYCLE CENTER
14	TRUCK	RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

C-14	%	9.50E-01
CO-60	%	4.05E+01
CS-134	%	2.60E+00
CS-137	%	8.96E+00
FE-55	%	2.38E+01
H-3	%	1.35E+00
NI-63	%	2.18E+01

B

AG-110M	%	2.00E+00	2.35E-03
C-14	%	6.80E+01	1.08E+01
CO-58	%	7.00E-01	8.23E-04
CO-60	%	6.40E+00	2.63E+01
CS-134	%		1.30E+00
CS-137	%	3.00E-01	3.80E+00
FE-55	%	1.02E+01	4.16E+01
H-3	%	8.50E+00	2.91E+00
NB-95	%		1.10E+00
NI-63	%	2.40E+00	9.89E+00
SB-125	%	8.00E-01	9.40E-04

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

UNIT YEAR TOTAL

M3 3.71E+01

CI 6.52E+01

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

M3 8.82E+01 *

CI 3.75E+01

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

M3

CI

D. OTHER

M3

CI

*VOLUME INCLUDES BOTH NON-COMPACTED(JAN-JUNE) AND COMPACTED(JULY-DEC) WASTE.

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE:BWR	LICENSEE:COMMONWEALTH EDISON CO.
DOCKET NO.:50-254		LICENSED POWER (MWT):2.51E+03
THERMAL POWER (MWH):1.40E+07		NET ELECTRIC POWER (MWH):4.28E+06
COMMERCIAL OPERATION:02/18/73		INITIAL CRITICALITY:10/18/71
COOLING WATER SOURCE:MISSISSIPPI RIVER		
UNIT NUMBER: 2	TYPE:BWR	LICENSEE:COMMONWEALTH EDISON CO.
DOCKET NO.:50-265		LICENSED POWER (MWT):2.51E+03
THERMAL POWER (MWH):1.85E+07		NET ELECTRIC POWER (MWH):5.74E+06
COMMERCIAL OPERATION:03/10/73		INITIAL CRITICALITY:04/26/72
COOLING WATER SOURCE:MISSISSIPPI RIVER		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.88E-02
MN-54	1.95E-03
CO-58	1.39E-03
CO-60	9.48E-03
ZN-65	5.47E-04
KR-85M	3.42E+01
KR-87	5.89E+00
KR-88	4.10E+01
SR-89	6.87E-04
SR-90	7.35E-06
MO-99	1.12E-02
AG-110M	3.74E-05
I-131	2.59E-03
I-133	1.60E-02
XE-133	1.16E+01
CS-134	1.23E-05
I-135	3.19E-02
XE-135	7.37E+01
XE-135M	6.25E+01
CS-137	5.93E-04
XE-138	5.79E+01
BA-140	1.28E-03
LA-140	3.05E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	5.82E-04
CR-51	3.05E-02
MN-54	4.26E-02
FE-55	3.81E-02
CO-58	8.52E-03
FE-59	3.35E-03
CO-60	3.51E-01
ZN-65	5.51E-04
SR-89	8.40E-04
SR-90	1.02E-04
MO-99	8.39E-05
AG-110M	8.74E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:QUAD-CITIES

LOCATION:20 MI NE MOLINE, IL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SB-124	1.14E-05
I-131	1.10E-04
I-133	3.25E-05
XE-133	9.28E-04
CS-134	1.18E-04
XE-135	1.36E-03
CS-137	6.31E-03

TOTAL AIRBORNE TRITIUM RELEASE	7.82E+01
TOTAL LIQUID TRITIUM RELEASE	2.91E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	6.11E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.58E+12

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
6	A J METLER	SEG
7	A J METLER	U.S. ECOLOGY
59	CNSI	BARNWELL SC
7	CNSI	U.S. ECOLOGY
14	HITTMAN	SEG

TYPE OF WASTE

	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3		9.79E+02
BOTTOMS, ETC.	CI		1.33E+05
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3		
EQUIPMENT, ETC.	CI		
C. IRRADIATED COMPONENTS, CONTROL	M3		
RODS, ETC.	CI		
D. OTHER	M3		
	CI		

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:SACRAMENTO MUNICIPAL UTILITY
DOCKET NO.:50-312 LICENSED POWER (MWT):2.77E+03
THERMAL POWER (MWH):4.62E+06 NET ELECTRIC POWER (MWH):1.41E+06
COMMERCIAL OPERATION:04/17/75 INITIAL CRITICALITY:09/16/74
COOLING WATER SOURCE:FOLSOM CANAL

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
KR-85	3.46E+00
KR-85M	2.87E+00
KR-88	5.72E+00
I-131	2.66E-04
XE-131M	8.77E+00
I-133	1.33E-04
XE-133	1.91E+03
XE-133M	1.57E+01
XE-135	4.68E+01
XE-135M	6.21E-06
CS-137	1.00E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	5.29E-07
FE-55	9.99E-05
CO-58	2.05E-05
CO-60	2.23E-04
I-131	3.02E-04
I-133	3.86E-05
CS-134	2.00E-04
XE-135	3.12E-06
CS-137	1.27E-03

TOTAL AIRBORNE TRITIUM RELEASE 3.75E+01
TOTAL LIQUID TRITIUM RELEASE 7.29E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	5.46E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.91E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS

22

MODE OF TRANSPORTATION

TRUCK(SOLE USE VEHICLE)

DESTINATION

RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

C-14	%	3.66E-01	1.18E-01
CO-58	%		5.22E+00
CO-60	%	6.20E+00	1.70E+00
CS-134	%	1.29E+01	3.32E+00
CS-137	%	5.33E+01	1.34E+01
FE-55	%	1.43E+01	1.59E+00
H-3	%		7.09E+01
MN-54	%	3.34E-01	
NI-63	%	1.24E+01	3.20E+00
SB-125	%		2.79E-01
SR-90	%	1.33E-01	

B

AG-110M	%	1.11E+00	1.73E-01
C-14	%	3.42E-01	4.98E-01
CE-141	%	1.58E-01	
CE-144	%	8.91E-01	
CO-58	%	2.46E+01	
CO-60	%	6.38E+00	7.08E+00
CR-51	%	2.73E-01	
CS-134	%	6.13E+00	2.58E+00
CS-137	%	2.39E+01	1.13E+01
FE-55	%	1.81E+01	7.57E+00
H-3	%	7.29E-01	5.90E+01
MN-54	%	1.26E-01	1.13E-01
NB-95	%	1.52E+00	
NI-63	%	1.43E+01	1.12E+01
SB-125	%	5.26E-01	3.13E-01
TE-125M	%	1.16E-01	
ZR-95	%	7.68E-01	

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
D. OTHER

UNIT YEAR TOTAL

M3	2.10E+02
CI	2.83E+02
M3	3.48E+01
CI	4.44E+01
M3	
CI	
M3	
CI	

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:GULF STATES UTILITIES CO
DOCKET NO.:50-458 LICENSED POWER (MWT):2.89E+03
THERMAL POWER (MWH):1.53E+07 NET ELECTRIC POWER (MWH):4.79E+06
COMMERCIAL OPERATION:06/16/86 INITIAL CRITICALITY:10/31/85
COOLING WATER SOURCE:MISSISSIPPI RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	8.37E-05
CO-58	5.32E-06
CO-60	2.29E-05
SR-89	1.82E-05
I-131	2.82E-04
I-133	4.74E-03
XE-135	8.31E-01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	4.68E-04
CR-51	7.44E-01
MN-54	7.81E-02
FE-55	2.80E-02
MN-56	2.81E-05
CO-58	2.93E-02
FE-59	1.61E-02
CO-60	1.90E-01
ZN-65	9.55E-03
AS-76	2.43E-03
SR-89	1.17E-04
Y-91M	2.11E-05
SR-92	5.20E-04
ZR-NB-95	8.20E-04
NB-97	2.01E-03
MO-99	8.54E-04
TC-99M	9.77E-04
AG-110M	1.67E-03
SN-113	2.42E-04
SB-122	1.54E-04
SB-124	4.66E-03
I-133	7.84E-06
BA-LA-140	4.72E-04
CE-144	6.97E-04
W-187	2.36E-03

TOTAL AIRBORNE TRITIUM RELEASE 5.82E+00
TOTAL LIQUID TRITIUM RELEASE 1.60E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.98E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	4.88E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS
67

MODE OF TRANSPORTATION
TRUCK EXCLUSIVE USE

DESTINATION
CNSI-BARNWELL SC

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS
0

MODE OF TRANSPORTATION
N/A

DESTINATION
N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A			
AG-110M	%	4.88E-02	5.33E-02
AM-241	%	2.46E-04	3.11E-04
C-14	%	1.59E-01	7.17E-02
CM-242	%	3.34E-04	3.95E-04
CM-244	%	2.86E-04	3.76E-04
CO-57	%	1.85E-02	7.65E-03
CO-58	%	5.48E+00	1.83E+00
CO-60	%	3.03E+01	3.06E+01
CR-51	%	1.38E+01	1.16E+00
FE-55	%	2.70E+01	5.22E+01
FE-59	%	3.49E-01	5.37E-02
H-3	%	1.71E-02	1.07E-02
I-131	%	9.42E-04	
LA-140	%	3.68E-07	
MN-54	%	1.89E+01	1.15E+01
MO-99	%	4.09E-05	9.35E-06
NA-24	%	4.48E-27	3.34E-11
NB-95	%	4.00E-02	5.02E-03
NI-63	%	8.02E-01	5.07E-01
PU-238	%	5.42E-04	6.85E-04
PU-239	%	3.97E-04	5.02E-04
PU-241	%	1.42E-02	1.78E-02
SB-122	%	7.04E-07	
SB-124	%	9.20E-02	2.60E-02
SC-46	%		1.33E-05
SN-113	%	7.16E-04	
SR-89	%	5.02E-01	
ZN-65	%	2.46E+00	1.93E+00
ZR-95	%	2.46E-02	2.06E-03
B			
AM-241	%	2.90E-03	
C-14	%	1.26E+00	8.40E-01
CM-242	%	4.43E-03	

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
B			
CM-244	%	3.51E-03	
CO-58	%	2.97E+00	5.00E-01
CO-60	%	4.59E+01	2.99E+01
CR-51	%	2.68E+00	5.00E-02
FE-55	%	1.61E+01	5.86E+01
FE-59	%	1.23E+00	
MN-54	%	2.13E+01	7.16E+00
NB-95	%	4.48E-01	
NI-63	%	9.54E-01	5.50E-01
PU-239	%	4.68E-03	
PU-241	%	1.70E-01	6.00E-02
ZN-65	%	6.97E+00	2.32E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	3.22E+02
	CI	8.36E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.94E+02
	CI	4.57E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	
	CI	

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:CAROLINA POWER &LIGHT
DOCKET NO.:50-261 LICENSED POWER (MWT):2.30E+03
THERMAL POWER (MWH):8.86E+06 NET ELECTRIC POWER (MWH):2.78E+06
COMMERCIAL OPERATION:03/07/71 INITIAL CRITICALITY:09/20/70
COOLING WATER SOURCE:ROBINSON IMPOUNDMENT

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.76E+00
CR-51	5.17E-06
MN-54	3.14E-07
CO-57	1.26E-08
CO-58	6.85E-06
FE-59	3.38E-07
CO-60	1.21E-04
KR-85	2.40E+01
KR-85M	6.59E-03
KR-87	4.67E-04
KR-88	3.96E-03
NB-95	7.74E-07
AG-110M	2.02E-06
SN-113	7.78E-08
I-131	3.18E-06
XE-131M	1.62E-03
I-133	5.72E-05
XE-133	9.75E-01
XE-133M	8.04E-03
CS-134	1.37E-07
XE-135	2.08E-01
XE-135M	4.56E-04
CS-137	2.15E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	6.62E-05
CR-51	4.48E-03
MN-54	3.54E-03
FE-55	3.21E-02
CO-57	4.89E-05
CO-58	9.68E-03
CO-60	8.62E-02
KR-85	5.01E-03
SR-89	2.81E-06
SR-90	5.59E-06
NB-95	1.95E-04
ZR-95	2.15E-05
NB-97	5.54E-05
RU-106	1.84E-03
AG-110M	1.50E-02
SN-113	1.83E-05
SB-124	2.63E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SB-125	9.54E-02
XE-127	3.33E-05
I-131	1.57E-04
TE-132	2.74E-05
XE-133	3.67E-02
XE-133M	2.04E-04
CS-134	2.20E-03
XE-135	1.37E-04
CS-136	2.64E-05
CS-137	4.28E-03

TOTAL AIRBORNE TRITIUM RELEASE	1.68E+01
TOTAL LIQUID TRITIUM RELEASE	1.64E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.65E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.40E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
47	SOLE USE VEHICLE

DESTINATION
BARNWELL SC

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION
0	N/A

DESTINATION
N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

CO-58	%	1.37E+00	3.86E+00
CO-60	%	5.12E+00	1.80E+01
CR-51	%	1.97E+00	
CS-134	%	3.20E+01	1.50E+01
CS-137	%	4.88E+01	2.82E+01
FE-55	%	8.60E+00	7.19E+00
MN-54	%	3.34E-01	4.24E+00
NB-95	%	3.15E-01	
NI-63	%	8.00E-01	2.32E+01
OTHERS	%	6.87E-01	1.76E-01

B

CO-58	%		8.50E+00
CO-60	%	4.88E+01	3.27E+01
FE-55	%	3.33E+01	4.57E+01
MN-54	%	1.19E+00	1.30E+00
NI-63	%	1.55E+01	1.02E+01
OTHERS	%	1.17E+00	1.60E+00

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

UNIT YEAR TOTAL

M3 1.59E+01

CI 1.82E+02

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

M3 8.10E+01 *

CI 4.29E+00

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

M3

CI

D. OTHER

M3

CI

*AFTER VOLUME REDUCTION

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:PSE&G
DOCKET NO.:50-272 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):1.97E+07 NET ELECTRIC POWER (MWH):6.21E+06
COMMERCIAL OPERATION:06/30/77 INITIAL CRITICALITY:12/11/76
COOLING WATER SOURCE:DELAWARE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	8.61E-03
CO-58	3.37E-05
CO-60	3.66E-05
KR-85	2.44E+00
KR-85M	1.22E-01
KR-87	3.47E-03
KR-88	7.37E-02
I-131	3.54E-03
XE-131M	2.18E+00
XE-133	1.38E+03
XE-133M	1.79E+00
CS-134	4.64E-07
XE-135	9.14E+00
CS-137	7.53E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	4.35E-01
NA-24	4.70E-04
CR-51	5.25E-03
MN-54	1.12E-01
FE-55	1.75E-01
CO-57	6.12E-03
CO-58	1.82E+00
FE-59	1.32E-03
CO-60	1.78E-01
ZN-65	3.63E-04
BR-82	1.80E-05
KR-85	1.52E-04
SR-89	1.54E-03
SR-90	6.86E-04
SR-92	2.30E-05
NB-95	3.85E-03
NB-95M	7.15E-05
ZR-95	1.53E-03
NB-97	7.94E-05
TC-99M	4.63E-04
RU-103	3.58E-05
AG-110M	2.69E-03
SN-113M	4.16E-05
SB-122	3.46E-03
SB-124	1.36E-02
SB-125	6.52E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-131	2.99E-02
XE-131	3.09E-03
I-133	6.88E-03
TE-133M	6.36E-05
XE-133	6.45E-01
XE-133M	4.64E-03
CS-134	1.16E-01
I-135	1.94E-04
XE-135	9.16E-03
CS-136	9.79E-04
CS-137	1.28E-01
LA-140	2.66E-04
CE-144	1.19E-04

TOTAL AIRBORNE TRITIUM RELEASE	1.99E+02
TOTAL LIQUID TRITIUM RELEASE	6.09E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.16E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.24E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:PSE&G
DOCKET NO.:50-311 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.44E+07 NET ELECTRIC POWER (MWH):7.82E+06
COMMERCIAL OPERATION:10/13/81 INITIAL CRITICALITY:08/08/80
COOLING WATER SOURCE:DELAWARE RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	4.32E-03
CR-51	2.76E-05
MN-54	1.13E-06
CO-58	4.76E-05
CO-60	6.69E-05
KR-85	1.46E-01
KR-85M	5.74E-01
KR-87	1.07E-03
KR-88	1.08E+00
NB-95	5.95E-04
ZR-95	6.41E-04
I-131	8.07E-05
XE-131M	1.34E-01
XE-133	4.57E+01
XE-133M	2.13E-01
XE-135	2.08E+01
XE-135M	4.31E+00
CS-137	5.30E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	5.34E-01
NA-24	8.08E-04
CR-51	1.57E-02
MN-54	1.18E-01
FE-55	1.89E-01
CO-57	6.70E-03
CO-58	2.02E+00
FE-59	3.00E-03
CO-60	2.08E-01
ZN-65	1.41E-04
KR-88	7.35E-05
SR-89	1.51E-03
SR-90	6.46E-04
SR-92	3.11E-05
NB-95	7.41E-03
ZR-95	3.40E-03
NB-97	2.54E-04
TC-99M	6.64E-04
AG-110M	6.42E-03
SB-122	3.58E-03
SB-124	1.89E-02
SB-125	8.09E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-131	3.80E-02
XE-131M	3.56E-03
I-133	8.64E-03
XE-133	7.08E-01
XE-133M	6.02E-03
CS-134	1.42E-01
I-135	5.17E-04
XE-135	1.00E-02
CS-136	1.39E-03
CS-137	1.55E-01
LA-140	5.19E-04
CE-143	4.92E-05
CE-144	6.04E-04
PR-147	2.56E-04
HG-203	2.81E-05

TOTAL AIRBORNE TRITIUM RELEASE	2.18E+02
TOTAL LIQUID TRITIUM RELEASE	5.11E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	9.03E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.68E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS MODE OF TRANSPORTATION
43 TRUCK

DESTINATION
BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A		
CE-144	%	4.00E-01
CO-58	%	4.00E-01
CO-60	%	2.84E+01
CS-134	%	6.70E+00
CS-137	%	9.30E+00
FE-55	%	6.41E+01
FE-59	%	2.00E-01
H-3	%	1.20E+00
MN-54	%	3.50E+00
NI-63	%	2.30E+00
SB-125	%	7.00E-01
B		
CE-144	%	2.00E-01
CO-58	%	5.66E+01
CO-60	%	9.40E+00
CS-134	%	2.10E+00
CS-137	%	4.20E+00
FE-55	%	1.57E+01
H-3	%	1.00E-01
MN-54	%	1.20E+00
NI-63	%	9.10E+00
PU-241	%	1.30E+00

TYPE OF WASTE

- A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
- B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
- C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
- D. OTHER

UNIT YEAR TOTAL

M3	3.44E+01
CI	1.14E+03
M3	8.70E+01
CI	7.47E+00
M3	1.05E+00
CI	5.54E+04
M3	0.00E+00
CI	0.00E+00

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:SOUTHERN CALIFORNIA EDISON CO.
DOCKET NO.:50-206 LICENSED POWER (MWT):1.35E+03
THERMAL POWER (MWH):3.92E+06 NET ELECTRIC POWER (MWH):1.17E+06
COMMERCIAL OPERATION:01/01/68 INITIAL CRITICALITY:06/14/67
COOLING WATER SOURCE:PACIFIC OCEAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.26E-02
MN-54	6.70E-07
CO-58	1.25E-06
CO-60	3.99E-06
BR-82	1.83E-05
KR-85	1.58E+01
KR-85M	1.60E+01
KR-87	3.69E-01
KR-88	1.40E+00
RB-88	1.73E-03
ZR-97	3.04E-07
MO-99	1.49E-07
TC-99M	1.52E-07
SN-113	2.27E-07
I-131	2.09E-03
XE-131M	8.93E-01
I-132	8.09E-06
TE-132	8.52E-08
I-133	6.67E-04
XE-133	8.19E+02
XE-133M	7.56E+00
CS-134	3.58E-05
I-135	4.87E-06
XE-135	4.46E+01
XE-135M	4.82E-02
CS-137	9.52E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.70E-03
CR-51	6.91E-03
MN-54	2.26E-03
FE-55	2.72E-02
CO-57	3.92E-05
CO-58	4.66E-02
FE-59	1.03E-04
CO-60	5.33E-02
KR-85	2.01E-03
KR-85M	3.76E-04
KR-88	2.38E-04
SR-89	6.10E-04
SR-90	4.13E-04
NB-95	1.27E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MO-99	3.75E-04
TC-99M	3.83E-04
RU-103	1.89E-04
RU-106	7.80E-04
AG-110M	1.97E-04
SB-124	3.33E-03
SB-125	2.21E-03
I-131	1.33E-02
XE-131M	1.24E-02
I-133	1.63E-02
XE-133	1.42E-01
XE-133M	4.29E-03
CS-134	2.03E-01
I-135	3.80E-04
XE-135	2.63E-02
CS-136	2.96E-03
CS-137	3.00E-01
BA-140	2.29E-06
LA-140	8.66E-04
CE-141	6.57E-04
CE-143	2.64E-05
CE-144	1.50E-03

TOTAL AIRBORNE TRITIUM RELEASE	3.37E+01
TOTAL LIQUID TRITIUM RELEASE	9.62E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	9.17E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.67E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
A			
AM-241	%	9.63E-04	
C-14	%	8.16E-05	1.46E-06
CE-144	%	1.33E-03	
CM-242	%	1.48E-03	2.51E-03
CO-57	%	7.65E-02	4.70E-02
CO-58	%	1.97E+01	4.73E+00
CO-60	%	1.57E+01	1.16E+01
CS-134	%	2.30E+01	3.71E+01
CS-137	%	2.97E+01	3.90E+01
FE-55	%	4.10E+00	3.02E+00
FE-59	%	3.70E-02	
H-3	%	6.29E-02	8.15E-02
I-129	%	4.41E-05	1.25E-04
MN-54	%	2.21E+00	7.53E-01
NI-59	%	2.63E-02	
NI-63	%	5.18E+00	3.50E+00
PU-238	%	1.38E-03	
PU-241	%	6.42E-02	1.88E-02
SB-124	%	1.42E-02	7.96E-02
SR-89	%	5.97E-02	5.56E-02
SR-90	%	9.97E-02	1.04E-01
TC-99	%	5.09E-05	3.99E-05
ZN-65	%		1.68E-03
ZR-95	%	2.11E-03	
B			
C-14	%	5.75E-03	3.49E-01
CO-58	%	3.35E+00	3.09E+00
CO-60	%	1.04E+01	1.53E+01
CS-134	%	1.04E+01	1.07E+01
CS-137	%	2.02E+01	2.46E+01
FE-55	%	3.11E+01	2.82E+01
H-3	%	2.04E+01	1.16E+01
I-129	%	6.37E-04	7.81E-03
MN-54	%	1.15E+00	9.13E-01
NI-63	%	2.92E+00	4.78E+00
PU-241	%		2.80E-01
SR-90	%		2.13E-02
TC-99	%	1.79E-04	2.55E-03
D			
AG-110M	%		2.23E-02
AM-241	%	9.31E-03	6.88E-03
C-14	%	6.38E-03	1.95E-03
CE-141	%	2.91E-09	2.35E-01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
D			
CE-144	%	6.40E-02	6.18E-01
CM-242	%	9.77E-02	9.62E-02
CM-243/244	%	1.06E-02	1.13E-02
CO-57	%	1.00E-02	2.86E+00
CO-58	%	3.08E-02	5.10E+00
CO-60	%	3.14E+01	2.38E+01
CR-51	%	4.12E-08	1.83E+01
CS-134	%	6.19E-01	2.69E-01
CS-137	%	2.31E+00	2.57E+00
FE-55	%	3.83E+01	2.82E+01
FE-59	%	1.19E-07	3.83E-01
H-3	%	1.63E+01	5.32E+00
I-129	%	2.37E-03	1.11E-03
MN-54	%	6.30E-01	2.00E+00
NB-95	%	1.40E-07	3.54E-01
NI-59	%		3.58E-02
NI-63	%	9.69E+00	8.44E+00
PU-238	%	1.09E-02	1.83E-02
PU-239/240	%	4.43E-03	4.74E-03
PU-241	%	3.83E-01	5.60E-01
PU-242	%		1.46E-05
RU-103	%		2.39E-01
RU-106	%		2.69E-01
SB-124	%	4.18E-05	3.49E-02
SR-89	%	3.60E-08	4.11E-02
SR-90	%	2.27E-02	5.31E-02
TC-99	%	1.36E-03	3.57E-04
ZN-65	%		3.57E-04
ZR-95	%		2.07E-01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	3.94E+01
	CI	1.69E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	7.28E+01
	CI	2.42E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	6.48E+00
	CI	2.38E+01

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS.

UNIT NUMBER: 2	TYPE:PWR	LICENSEE:SOUTHERN CALIFORNIA EDISON CO.
DOCKET NO.:50-361		LICENSED POWER (MWT):3.39E+03
THERMAL POWER (MWH):1.63E+07		NET ELECTRIC POWER (MWH):5.22E+06
COMMERCIAL OPERATION:08/08/83		INITIAL CRITICALITY:07/26/82
COOLING WATER SOURCE:PACIFIC OCEAN		
UNIT NUMBER: 3	TYPE:PWR	LICENSEE:SOUTHERN CA EDISON CO.
DOCKET NO.:362		LICENSED POWER (MWT):3.39E+03
THERMAL POWER (MWH):2.73E+07		NET ELECTRIC POWER (MWH):8.84E+06
COMMERCIAL OPERATION:04/01/84		INITIAL CRITICALITY:08/29/83
COOLING WATER SOURCE:PACIFIC OCEAN		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	7.49E+00
CR-51	1.24E-04
MN-54	1.99E-05
CO-57	6.46E-11
CO-58	8.59E-04
CO-60	3.14E-04
ZN-65	7.80E-07
BR-82	1.81E-04
KR-85	1.52E+01
KR-85M	6.83E+00
KR-87	2.63E+00
KR-88	3.50E+00
RB-88	3.26E-01
RB-89	1.89E-03
SR-89	3.66E-06
SR-90	1.31E-06
SR-92	2.74E-06
Y-92	1.56E-06
NB-95	3.47E-05
ZR-95	2.04E-05
MO-99	4.97E-05
TC-99M	5.07E-05
RU-103	1.49E-05
SN-113	3.77E-06
I-131	4.72E-01
XE-131M	4.36E+00
I-132	4.50E-02
TE-132	3.62E-06
I-133	1.03E-02
XE-133	2.34E+03
XE-133M	1.10E+01
CS-134	2.22E-05
I-134	3.34E-08
I-135	3.98E-03
XE-135	6.59E+01
XE-135M	4.97E+00
CS-136	9.01E-06
CS-137	1.25E-04

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-138	7.63E-02
XE-138	1.79E-01
BA-139	1.87E-04
LA-140	5.83E-07
CE-141	2.08E-06
CE-143	4.24E-08
CE-144	1.82E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.62E-06
AR-41	1.02E-05
CR-51	3.34E-02
MN-54	8.47E-03
FE-55	8.46E-02
CO-57	6.59E-04
CO-58	2.38E-01
FE-59	2.90E-03
CO-60	4.08E-02
ZN-65	8.77E-05
KR-85	1.03E-03
KR-85M	9.77E-05
SR-92	3.20E-05
NB-95	2.45E-02
NB-95M	2.16E-04
ZR-95	1.46E-02
NB-97	3.81E-05
ZR-97	2.00E-05
MO-99	2.48E-03
TC-99M	2.51E-03
RU-103	2.33E-03
RU-106	1.34E-03
AG-110M	2.90E-03
SN-113	2.66E-03
SB-124	2.77E-03
SB-125	8.22E-03
I-131	6.71E-02
XE-131M	9.26E-02
I-132	1.36E-05
TE-132	6.31E-06
I-133	2.26E-02
XE-133	2.25E+00
XE-133M	2.04E-02
CS-134	1.59E-01
XE-135	2.27E-02
CS-136	5.80E-03
CS-137	1.79E-01
CS-138	8.01E-06

N/A=NOT APPLICABLE

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BA-139	7.10E-05
BA-140	1.43E-03
LA-140	5.81E-03
CE-141	6.65E-04
CE-143	9.63E-04
CE-144	3.38E-03

TOTAL AIRBORNE TRITIUM RELEASE	4.05E+01
TOTAL LIQUID TRITIUM RELEASE	1.30E+03

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.79E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.32E+12

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
A			
C-14	⌘	2.66E-02	4.79E-06
CE-144	⌘	9.34E-04	7.61E-04
CM-242	⌘		6.28E-01
CO-57	⌘	2.38E-02	5.87E-02
CO-58	⌘	2.31E+00	1.50E+00
CO-60	⌘	6.37E+00	2.34E+00
CS-134	⌘	1.71E+01	2.24E+01
CS-137	⌘	6.32E+01	5.74E+01
FE-55	⌘	3.39E+00	7.52E+00
H-3	⌘	2.86E-02	2.20E-02
I-129	⌘	2.26E-05	2.95E-04
MN-54	⌘	7.64E-01	7.90E-01
NB-95	⌘	1.13E-02	9.74E-02
NI-59	⌘	8.69E-02	
NI-63	⌘	6.40E+00	6.10E+00
PU-241	⌘	1.03E-02	6.28E-01
SB-125	⌘	9.22E-02	3.45E-01
SR-89	⌘	6.60E-03	4.00E-02
SR-90	⌘	1.86E-01	8.96E-02
TC-99	⌘	4.96E-05	4.48E-04
ZR-95	⌘		4.73E-02
B			
AG-110M	⌘		3.62E-02
BA-140	⌘		9.10E-02
C-14	⌘	3.33E-03	2.20E-03
CE-144	⌘		9.37E-01
CM-242	⌘		3.46E-02
CO-58	⌘	3.24E+00	5.03E+00
CO-60	⌘	1.29E+01	1.10E+01
CR-51	⌘		9.80E-01
CS-134	⌘	7.28E+00	8.89E+00
CS-137	⌘	1.40E+01	1.70E+01
FE-55	⌘	3.26E+01	3.35E+01
FE-59	⌘		9.80E-02
H-3	⌘	2.32E+01	9.44E+00
I-129	⌘	4.77E-03	4.18E-02
I-131	⌘		1.13E-01
MN-54	⌘	1.82E+00	2.12E+00
NB-95	⌘	1.19E+00	3.98E+00
NI-63	⌘	3.64E+00	3.80E+00
PU-241	⌘		6.84E-01
SB-125	⌘	1.52E-02	3.08E-01
SR-89	⌘		1.13E-01

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
B			
SR-90	⌘		6.15E-02
TC-99	⌘	3.43E-03	8.75E-02
ZR-95	⌘	9.67E-02	1.67E+00
D			
AG-110M	⌘	6.76E-03	1.37E-01
AM-241	⌘	5.79E-04	3.12E-06
BA-140	⌘	1.16E-02	1.93E-05
C-14	⌘	1.83E-02	5.03E-04
CE-141	⌘	4.89E-04	5.16E-03
CE-144	⌘	9.67E-02	1.96E-01
CM-242	⌘	1.19E-02	8.07E-03
CM-243/244	⌘	7.83E-04	8.74E-04
CO-57	⌘	2.88E-02	6.89E-02
CO-58	⌘	1.17E+00	1.36E+01
CO-60	⌘	2.31E+01	1.36E+01
CR-51	⌘	1.08E+00	3.02E+00
CS-134	⌘	1.54E-01	2.01E-01
CS-136	⌘	7.68E-03	
CS-137	⌘	4.62E-01	5.37E-01
FE-55	⌘	6.36E+01	5.34E+01
FE-59	⌘	4.46E-02	4.56E-01
H-3	⌘	7.96E-01	1.09E+00
I-129	⌘	2.14E-03	3.46E-04
MN-54	⌘	1.30E+00	1.77E+00
NB-95	⌘	1.85E-01	3.83E+00
NI-59	⌘	8.80E-03	5.07E-05
NI-63	⌘	7.15E+00	5.11E+00
PU-238	⌘	1.44E-03	
PU-239/240	⌘	2.02E-03	3.93E-04
PU-241	⌘	1.58E-01	9.73E-02
RU-103	⌘	4.35E-04	8.46E-02
RU-106	⌘	1.05E-03	3.03E-02
SB-124	⌘	1.87E-03	2.95E-02
SB-125	⌘	3.12E-01	2.12E-01
SR-89	⌘	2.29E-03	2.63E-01
SR-90	⌘	8.59E-02	3.87E-02
TC-99	⌘	4.87E-03	8.56E-04
ZN-65	⌘	1.02E-02	3.66E-02
ZR-95	⌘	1.20E-01	2.11E+00

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	7.37E+01
	CI	2.49E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.34E+02
	CI	1.15E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	1.97E+01
	CI	2.22E+02

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N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

	NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
	5	TRI-STATE TRUCK/CASK	BARNWELL SC
	35	TRI-STATE TRUCK/CASK	RICHLAND WA
#	3	TRI-STATE TRUCK/TRAILER	BARNWELL SC
	15	TRI-STATE TRUCK/TRAILER	BEATTY NV
#	3	TRI-STATE TRUCK/TRAILER	RICHLAND WA

#THESE SHIPMENTS WERE MADE FROM VENDORS AFTER VOL. REDUCTION

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

	NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
	0	N/A	N/A

TYPE OF WASTE

	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3		N/A
BOTTOMS, ETC.	CI		N/A
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3		N/A
EQUIPMENT, ETC.	CI		N/A
C. IRRADIATED COMPONENTS, CONTROL	M3		
RODS, ETC.	CI		
D. OTHER	M3		
	CI		

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N/R=NOT REPORTED

INSTALLATION:SEABROOK

LOCATION:13 MI S OF PORTSMOUTH, NH

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:PSC OF NEW HAMPSHIRE
DOCKET NO.:50-443 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH): NET ELECTRIC POWER (MWH):
COMMERCIAL OPERATION:08/19/90 INITIAL CRITICALITY:06/13/89
COOLING WATER SOURCE:ATLANTIC OCEAN

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-58	1.09E-04

TOTAL AIRBORNE TRITIUM RELEASE 1.05E-05
TOTAL LIQUID TRITIUM RELEASE 1.33E-03

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.02E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.67E+11

N/A=NOT APPLICABLE
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N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE:PWR	LICENSEE:TENNESSEE VALLEY AUTHORITY
DOCKET NO.:50-327		LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.88E+07		NET ELECTRIC POWER (MWH):9.55E+06
COMMERCIAL OPERATION:07/01/81		INITIAL CRITICALITY:07/05/80
COOLING WATER SOURCE:CHICKAMAUGA LAKE		
UNIT NUMBER: 2	TYPE:PWR	LICENSEE:TENNESSEE VALLEY AUTHORITY
DOCKET NO.:50-328		LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.88E+07		NET ELECTRIC POWER (MWH):9.55E+06
COMMERCIAL OPERATION:06/01/82		INITIAL CRITICALITY:11/05/81
COOLING WATER SOURCE:CHICKAMAUGA LAKE		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.06E+01
CO-58	5.79E-05
CO-60	6.88E-05
KR-85	6.77E+00
KR-85M	3.60E+00
KR-88	1.28E+00
MO-99	1.49E-06
TC-99M	1.49E-06
I-131	2.88E-04
XE-131M	1.97E+01
I-132	1.62E-06
TE-132	1.62E-06
XE-133	3.70E+03
XE-133M	3.45E+01
XE-135	6.95E+01
CS-137	7.41E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.38E-02
MN-54	6.76E-03
FE-55	1.87E-02
CO-57	3.46E-04
CO-58	1.30E-01
FE-59	3.59E-04
CO-60	8.56E-02
ZN-65	2.96E-05
ZN-69M	5.34E-06
BR-82	3.93E-05
KR-85	1.92E-02
KR-85M	2.16E-06
RB-86	8.47E-05
KR-88	5.04E-06
SR-89	1.89E-04
Y-91	5.44E-03
NB-95	1.78E-03
ZR-95	5.54E-04
NB-97	1.35E-05

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EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MO-99	1.55E-02
TC-99M	1.69E-02
RU-103	1.10E-03
SB-122	2.77E-06
SB-124	2.47E-04
SB-125	7.51E-03
SN-125	2.86E-05
I-131	6.56E-03
XE-131M	2.53E-02
I-132	1.32E-06
TE-132	2.12E-05
I-133	2.10E-04
XE-133	1.94E+00
XE-133M	1.70E-02
CS-134	8.52E-03
XE-135	8.66E-03
XE-135M	7.62E-11
CS-136	6.02E-05
CS-137	2.74E-02
BA-139	2.72E-05
BA-140	6.53E-04
LA-140	3.08E-03
CE-141	1.56E-03
CE-143	1.50E-04
CE-144	1.14E-04
W-187	4.05E-05

TOTAL AIRBORNE TRITIUM RELEASE	5.62E+01
TOTAL LIQUID TRITIUM RELEASE	1.15E+03

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.40E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.08E+09

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N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
90	MOTOR FREIGHT	BARNWELL SC
1	MOTOR FREIGHT	RICHLAND WA

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

C-14	%	4.26E-01	
CO-58	%	3.30E+00	1.70E+01
CO-60	%	3.62E+01	3.08E+01
CR-51	%	2.58E-02	
CS-134	%	2.18E+00	2.30E+00
CS-137	%	6.29E+00	6.55E+00
FE-55	%	3.91E+01	3.11E+01
FE-59	%	3.56E-03	
H-3	%	2.25E-02	
I-129	%	8.69E-06	
MN-54	%	1.26E-01	
NI-63	%	1.24E+01	1.15E+01
SR-90	%	1.84E-03	
TC-99	%	2.67E-05	

B

C-14	%	2.58E-02	
CO-58	%		2.49E+00
CO-60	%	1.97E+01	1.90E+01
CS-137	%	3.38E-03	
FE-55	%	7.34E+01	6.89E+01
H-3	%	8.18E-02	
I-129	%	7.11E-03	
I-131	%	1.26E+00	
NI-63	%	5.50E+00	8.69E+00
SR-90	%	9.91E-03	
TC-99	%	7.95E-03	

D

C-14	%	5.30E-02	
CO-58	%	2.79E+01	3.94E+00
CO-60	%	1.54E+01	3.37E+01
CS-134	%	1.45E+00	
CS-137	%	2.04E+00	2.16E+00

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
D			
FE-55	%	4.57E+01	3.91E+01
H-3	%	5.16E-02	
I-129	%	4.31E-03	
MN-54	%	2.88E+00	
NI-63	%	4.50E+00	1.98E+01
TC-99	%	4.83E-03	

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.07E+02
	CI	2.47E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	3.35E+02
	CI	1.54E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	2.27E+01
COMPOSITE LINERS & OIL LINERS	CI	1.40E+01

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION:SHOREHAM

LOCATION:BROOKHAVEN, NY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE:BWR	LICENSEE:LONG ISLAND LIGHTING CO
DOCKET NO.:50-322		LICENSED POWER (MWT):1.22E+02
THERMAL POWER (MWH):		NET ELECTRIC POWER (MWH):
COMMERCIAL OPERATION:		INITIAL CRITICALITY:02/15/85
COOLING WATER SOURCE:LONG ISLAND SOUND		

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-60	1.78E-05

TOTAL AIRBORNE TRITIUM RELEASE N/D

TOTAL LIQUID TRITIUM RELEASE N/D

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	8.51E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.51E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION: SHOREHAM

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS
1

MODE OF TRANSPORTATION
TRUCK

DESTINATION
BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

AG-110M	%	3.69E+00
CE-141	%	5.00E-03
CE-144	%	2.75E-01
CO-57	%	5.50E-02
CO-58	%	1.41E+01
CO-60	%	2.79E+01
CR-51	%	1.86E+01
CS-137	%	8.30E-02
FE-55	%	2.39E+01
FE-59	%	1.71E+00
H-3	%	2.81E-01
MN-54	%	2.63E+00
NB-95	%	1.16E-01
NI-59	%	2.00E-02
NI-63	%	1.09E+00
PU-241	%	8.17E-01
SB-124	%	1.38E-01
SR-90	%	2.00E-03
ZN-65	%	4.59E+00
ZR-95	%	2.30E-02

TYPE OF WASTE

UNIT YEAR TOTAL

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

M3 1.79E+01

CI 3.51E-02

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

M3

CI

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

M3

CI

D. OTHER

M3

CI

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:HOUSTON LIGHTING & POWER
DOCKET NO.:50-498 LICENSED POWER (MWT):3.80E+03
THERMAL POWER (MWH):1.99E+07 NET ELECTRIC POWER (MWH):6.28E+06
COMMERCIAL OPERATION:08/25/88 INITIAL CRITICALITY:03/08/88
COOLING WATER SOURCE:MAIN COOLING RESERVOIR

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	9.78E+01
CR-51	5.32E-05
MN-54	1.47E-05
CO-58	2.92E-04
FE-59	7.67E-06
CO-60	2.49E-05
KR-85M	2.45E-01
KR-88	2.24E-04
ZR-95	3.67E-06
I-131	3.57E-03
XE-131M	5.59E-01
I-133	3.76E-04
XE-133	3.44E+02
XE-133M	3.03E-01
CS-134	6.54E-07
XE-135	1.98E+00
XE-135M	2.48E-01
CS-137	1.05E-06
UNIDENTIFIED	4.90E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	4.18E-05
CR-51	6.88E-01
MN-54	8.00E-02
FE-55	5.13E-01
CO-58	1.21E+00
FE-59	5.63E-02
CO-60	2.02E-01
ZN-65	6.64E-03
SR-91	3.09E-05
NB-95	7.88E-02
ZR-95	4.29E-02
MO-99	4.94E-05
TC-99M	7.29E-05
AG-110M	2.90E-03
TE-129M	2.35E-04
I-131	9.93E-03
I-133	1.34E-04
XE-133	9.16E-01
CS-134	1.13E-02
XE-135	5.05E-03
CS-136	5.86E-05

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:SOUTH TEXAS 1

LOCATION:12 MI SSW OF BAY CITY, TX

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-137	2.97E-02
BA-140	1.67E-05
LA-140	2.19E-04
CE-144	2.70E-04
UNIDENTIFIED	8.57E-02

TOTAL AIRBORNE TRITIUM RELEASE 6.33E+00

TOTAL LIQUID TRITIUM RELEASE 3.17E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.07E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.20E+10

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:HOUSTON LIGHTING & POWER
DOCKET NO.:50-499 LICENSED POWER (MWT):3.80E+03
THERMAL POWER (MWH):9.52E+06 NET ELECTRIC POWER (MWH):3.02E+06
COMMERCIAL OPERATION:06/19/89 INITIAL CRITICALITY:03/12/89
COOLING WATER SOURCE:MAIN COOLING RESERVOIR

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	8.88E+01
CO-58	1.60E-06
XE-133	2.53E+01
XE-135	1.43E+00
UNIDENTIFIED	1.42E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	7.02E-04
MN-54	9.32E-05
CO-58	8.18E-03
FE-59	2.17E-04
CO-60	2.07E-04
NB-95	8.16E-06
ZR-95	6.21E-06
I-131	2.69E-06
I-133	4.22E-06
XE-133	6.68E-02
XE-135	1.98E-03
LA-140	3.76E-05
UNIDENTIFIED	2.26E-03

TOTAL AIRBORNE TRITIUM RELEASE 1.20E+01

TOTAL LIQUID TRITIUM RELEASE 2.72E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.26E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.20E+10

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS
9

MODE OF TRANSPORTATION
TRUCK

DESTINATION
SEG-OAK RIDGE TN

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A		
CO-58	⊗	7.85E+01
CO-60	⊗	5.00E+00
CS-137	⊗	1.70E+00
H-3	⊗	7.00E+00
MN-54	⊗	2.60E+00
NI-63	⊗	2.10E+00
B		
CO-58	⊗	1.40E+01
CR-51	⊗	2.10E+01
FE-55	⊗	3.60E+00
H-3	⊗	5.50E+01
NB-95	⊗	1.90E+00
ZR-95	⊗	1.50E+00

TYPE OF WASTE

- A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
- B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
- C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
- D. OTHER

UNIT YEAR TOTAL

M3 2.33E+01
CI 7.07E+00
M3 2.70E+01
CI 1.69E-01
M3
CI
M3
CI

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:FLORIDA POWER & LIGHT
DOCKET NO.:50-335 LICENSED POWER (MWT):2.70E+03
THERMAL POWER (MWH):2.19E+07 NET ELECTRIC POWER (MWH):6.95E+06
COMMERCIAL OPERATION:12/21/76 INITIAL CRITICALITY:04/22/76
COOLING WATER SOURCE:ATLANTIC OCEAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.78E+00
KR-85M	3.46E+01
KR-87	2.65E-02
KR-88	2.02E+01
SR-89	1.49E-05
SR-90	4.03E-06
Y-90	4.03E-06
I-131	5.73E-03
XE-131M	1.10E+00
I-132	2.81E-02
I-133	4.00E-02
XE-133	4.02E+03
XE-133M	2.32E+01
I-134	3.74E-02
I-135	2.57E-02
XE-135	4.21E+02

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.10E-04
AR-41	4.35E-04
CR-51	2.13E-02
MN-54	2.29E-03
FE-55	5.47E-02
CO-57	4.85E-05
CO-58	4.76E-02
FE-59	2.36E-03
CO-60	2.32E-02
KR-85M	6.25E-05
RB-88	3.14E-04
NB-95	7.78E-03
ZR-95	4.20E-03
NB-97	5.62E-03
ZR-97	3.48E-05
TC-99M	2.23E-04
RU-103	4.41E-04
AG-110	4.56E-03
SN-113	2.36E-03
SB-122	7.96E-04
SB-124	1.06E-02
SB-125	2.79E-02
I-131	1.11E-02
XE-131M	2.70E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-132	4.70E-04
TE-132	4.31E-04
I-133	1.42E-03
XE-133	4.60E-01
XE-133M	4.10E-03
CS-134	1.04E-02
XE-135	3.33E-03
CS-137	1.41E-02
CS-138	7.85E-05
BA-140	4.09E-06
LA-140	1.07E-03
CE-141	2.69E-05
CE-144	6.75E-04
NP-239	3.64E-05

TOTAL AIRBORNE TRITIUM RELEASE	3.10E+02
TOTAL LIQUID TRITIUM RELEASE	4.05E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.66E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.78E+12

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:FLORIDA POWER & LIGHT
DOCKET NO.:50-389 LICENSED POWER (MWT):2.70E+03
THERMAL POWER (MWH):1.73E+07 NET ELECTRIC POWER (MWH):5.44E+06
COMMERCIAL OPERATION:08/08/83 INITIAL CRITICALITY:06/02/83
COOLING WATER SOURCE:ATLANTIC OCEAN

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.48E+00
CO-58	3.72E-06
KR-85	9.55E-01
KR-85M	2.50E+01
KR-87	1.33E-02
KR-88	3.04E+01
TC-99M	5.65E-05
I-131	8.27E-03
XE-131M	2.41E+00
I-133	1.27E-02
XE-133	1.95E+03
XE-133M	2.18E+01
XE-135	1.84E+02
XE-137	2.10E-02

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.10E-04
AR-41	4.35E-04
CR-51	2.13E-02
MN-54	2.29E-03
FE-55	5.47E-02
CO-57	4.85E-05
CO-58	4.76E-02
FE-59	2.36E-03
CO-60	2.32E-02
KR-85M	6.25E-05
RB-88	3.14E-04
NB-95	7.78E-03
ZR-95	4.20E-03
NB-97	5.62E-03
ZR-97	3.48E-05
TC-99M	2.23E-04
RU-103	4.41E-04
AG-110	4.56E-03
SN-113	2.36E-03
SB-122	7.96E-04
SB-124	1.06E-02
SB-125	2.79E-02
I-131	8.87E-03
XE-131M	2.70E-03
I-132	4.70E-04
TE-132	4.31E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-133	1.42E-03
XE-133	4.60E-01
XE-133M	4.10E-03
CS-134	9.95E-03
XE-135	3.33E-03
CS-137	1.32E-02
CS-138	7.85E-05
BA-140	4.09E-06
LA-140	1.07E-03
CE-141	2.69E-05
CE-144	6.75E-04
NP-239	3.64E-05

TOTAL AIRBORNE TRITIUM RELEASE	7.78E+01
TOTAL LIQUID TRITIUM RELEASE	4.05E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	5.98E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.78E+12

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
72	SOLE USE TRUCK	BARNWELL SC

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
A			
CO-58	%	1.71E+01	9.91E+00
CO-60	%	4.65E+01	1.59E+01
CR-51	%	4.93E+00	
CS-134	%	8.02E-01	1.57E+01
CS-137	%	2.53E+00	3.57E+01
FE-55	%	1.20E+01	5.05E+00
FE-59	%	7.51E-01	
H-3	%		1.08E+00
MN-54	%	2.21E+00	1.10E+00
NB-95	%	2.24E+00	
NI-63	%	6.45E+00	1.05E+01
SB-122	%		1.18E+00
SB-125	%	1.52E+00	2.85E+00
ZR-95	%	1.32E+00	
B			
CE-144	%	3.02E+00	2.09E+00
CO-58	%	7.27E+00	4.77E+00
CO-60	%	2.26E+01	2.11E+01
CR-51	%	1.06E+00	
CS-134	%	7.44E+00	6.12E+00
CS-137	%	1.96E+01	1.88E+01
FE-55	%	7.74E+00	5.96E+00
H-3	%	2.31E+01	3.45E+01
MN-54	%	1.05E+00	7.06E-01
NB-95	%	1.56E+00	
NI-63	%	2.54E+00	2.46E+00
SB-125	%	1.07E+00	1.01E+00
ZR-95	%	1.57E+00	8.09E-01
D			
CO-58	%	4.85E+00	1.54E+00
CO-60	%	2.80E+01	4.11E+01
CR-51	%	1.08E+00	
CS-134	%	1.41E+01	9.91E+00

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
D			
CS-137	%	3.68E+01	2.58E+01
FE-55	%	5.93E+00	1.52E+01
MN-54	%	1.74E+00	1.84E+00
NB-95	%	2.85E+00	
NI-63	%	2.87E+00	3.87E+00
ZR-95	%	1.64E+00	

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	5.05E+01
	CI	1.66E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.26E+02 *
	CI	1.72E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E+00
	CI	0.00E+00
D. OTHER	M3	4.14E+01 *
NON-COMPRESSIBLE METAL (DAW)	CI	6.43E-01

*TYPE B & D VOLUMES AFTER REDUCTION (3.31E2, 1.42E3 RESPECTIVELY, BEFORE RED.)

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:SOUTH CAROLINA ELECTRIC & GAS CO.
DOCKET NO.:50-395 LICENSED POWER (MWT):2.77E+03
THERMAL POWER (MWH):1.76E+07 NET ELECTRIC POWER (MWH):5.41E+06
COMMERCIAL OPERATION:01/01/84 INITIAL CRITICALITY:10/22/82
COOLING WATER SOURCE:MONTICELLO RESERVOIR

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-58	1.26E-06
KR-85	2.98E+00
KR-85M	2.79E+00
KR-87	1.09E-01
KR-88	4.83E-01
RB-88	1.41E-03
SR-89	7.36E-08
I-131	1.61E-03
XE-131M	8.00E+00
I-132	5.44E-04
I-133	1.33E-03
XE-133	1.68E+03
XE-133M	1.06E+01
I-135	7.09E-04
XE-135	1.13E+02
XE-135M	9.26E-02
CS-138	5.92E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	2.23E-03
NA-24	8.52E-01
CR-51	2.14E-03
MN-54	3.73E-03
FE-55	3.15E-02
NI-56	2.37E-07
CO-57	1.92E-04
CO-58	6.78E-02
FE-59	1.38E-03
CO-60	2.36E-02
ZN-65	1.74E-04
KR-85	7.58E-05
KR-85M	5.68E-06
KR-87	7.49E-07
KR-88	1.04E-05
RB-88	5.35E-05
SR-89	5.34E-04
SR-90	5.82E-04
ZR-NB-95	2.26E-03
ZR-97	8.56E-06
MO-99	1.90E-03
TC-99M	2.72E-03
RU-103	3.66E-05

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
RU-106	6.35E-04
AG-110M	1.40E-04
SN-113	1.15E-05
SB-124	2.24E-03
SB-125	2.43E-02
I-131	1.22E-01
XE-131M	1.34E-02
I-132	2.38E-02
I-133	6.86E-02
XE-133	8.33E-01
XE-133M	4.28E-03
CS-134	3.32E-02
I-134	1.27E-02
I-135	3.73E-02
XE-135	3.39E-03
CS-136	2.51E-04
CS-137	4.19E-02
CS-138	4.36E-03
BA-LA-140	6.11E-04
CE-141	4.97E-06
CE-144	5.79E-04
NP-239	3.89E-06

TOTAL AIRBORNE TRITIUM RELEASE	1.05E-01
TOTAL LIQUID TRITIUM RELEASE	6.86E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.77E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.57E+12

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
* 60	TRUCK	BARNWELL SC

*INCLUDES 54 SHIPMENTS OF DAW FROM WASTE PROCESSOR TO BARNWELL

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

CE-144	%		1.13E+00
CO-58	%	4.87E+01	6.57E+00
CO-60	%	6.65E+00	2.11E+01
CS-134	%	1.23E+01	2.24E+00
CS-137	%	9.03E+00	3.81E+00
FE-55	%	1.42E+01	4.96E+01
H-3	%	5.09E+00	
MN-54	%		2.36E+00
NI-63	%	2.30E+00	1.08E+01

B

C-14	%	1.42E+00	1.53E+00
CO-58	%	2.14E+01	2.29E+01
CO-60	%	7.55E+00	8.12E+00
CR-51	%	3.69E+00	3.95E+00
CS-134	%	5.99E+00	6.43E+00
CS-137	%	5.10E+00	5.48E+00
FE-55	%	4.56E+01	4.90E+01
H-3	%	3.41E+00	
MN-54	%	1.14E+00	1.22E+00
NB-95	%	1.23E+00	1.32E+00

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

D. OTHER

UNIT YEAR TOTAL

M3	4.44E+01
CI	3.74E+02
M3	9.60E+01
CI	1.85E+00
M3	
CI	
M3	
CI	

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE:PWR	LICENSEE:VIRGINIA ELECTRIC &POWER
DOCKET NO.:50-280		LICENSED POWER (MWT):2.44E+03
THERMAL POWER (MWH):9.95E+06		NET ELECTRIC POWER (MWH):3.17E+06
COMMERCIAL OPERATION:12/22/72		INITIAL CRITICALITY:07/01/72
COOLING WATER SOURCE:JAMES RIVER		
UNIT NUMBER: 2	TYPE:PWR	LICENSEE:VIRGINIA ELECTRIC &POWER
DOCKET NO.:50-281		LICENSED POWER (MWT):2.44E+03
THERMAL POWER (MWH):2.87E+06		NET ELECTRIC POWER (MWH):8.94E+05
COMMERCIAL OPERATION:05/01/73		INITIAL CRITICALITY:03/07/73
COOLING WATER SOURCE:JAMES RIVER		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.23E-01
MN-54	1.05E-05
CO-58	8.45E-05
CO-60	8.91E-04
KR-85	6.24E+00
KR-85M	6.46E-02
KR-87	5.62E-03
KR-88	5.18E-02
RB-88	5.38E-05
I-131	3.89E-04
XE-131M	1.84E-01
I-132	5.16E-07
I-133	9.23E-04
XE-133	1.25E+02
XE-133M	5.96E-01
CS-134	1.53E-04
I-135	2.75E-06
XE-135	4.87E+00
XE-135M	8.44E-04
CS-137	8.47E-04
CS-138	6.76E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-22	5.95E-06
NA-24	4.32E-05
AR-41	6.42E-05
CR-51	3.54E-02
MN-54	1.28E-02
FE-55	4.80E-01
CO-57	5.54E-04
CO-58	6.77E-02
FE-59	4.19E-04
CO-60	5.45E-01
ZN-65	1.16E-04
KR-85M	3.76E-05
NB-95	7.49E-03
ZR-95	1.67E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
TC-99M	4.99E-05
RU-103	6.18E-04
AG-110M	2.05E-02
SB-124	1.19E-02
SB-125	5.25E-01
I-131	8.74E-03
TE-132	1.62E-05
I-133	1.52E-03
XE-133	3.96E-01
XE-133M	2.61E-03
CS-134	4.41E-01
I-134	4.63E-06
I-135	1.40E-04
XE-135	1.11E-01
XE-135M	7.80E-05
CS-137	1.71E+00
LA-140	1.37E-04
CE-144	9.11E-05

TOTAL AIRBORNE TRITIUM RELEASE	2.75E+01
TOTAL LIQUID TRITIUM RELEASE	4.29E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.95E+09
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.13E+12

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION: SURRY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
17	TRUCK	BARNWELL SC
16	TRUCK	OAK RIDGE TN
1	TRUCK	RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A			
CO-58	%	6.38E+00	5.72E+00
CO-60	%	3.19E+01	5.01E+01
CS-134	%	2.22E+00	3.64E+00
CS-137	%	5.05E+00	8.80E+00
FE-55	%	1.47E+01	1.25E+01
MN-54	%	2.63E+00	
NI-63	%	3.60E+01	1.67E+01
B			
CO-58	%	1.09E+01	1.12E+01
CO-60	%	4.58E+01	5.25E+01
CR-51	%	2.10E+00	
CS-134	%	2.42E+00	3.34E+00
CS-137	%	9.24E+00	1.36E+01
FE-55	%	2.02E+01	9.31E+00
MN-54	%	1.27E+00	1.55E+00
NI-63	%	7.46E+00	7.72E+00
D			
CO-60	%	3.59E+01	
CS-137	%	1.57E+01	
FE-55	%	9.03E+00	
NI-63	%	3.70E+01	

TYPE OF WASTE

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3	5.18E+01
BOTTOMS, ETC.	CI	1.28E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3	4.82E+02 *
EQUIPMENT, ETC.	CI	2.90E+01
C. IRRADIATED COMPONENTS, CONTROL	M3	0.00E+00
RODS, ETC.	CI	0.00E+00
D. OTHER	M3	3.70E+00
	CI	8.35E-01

*NOT REPRESENTATIVE OF ACTUAL VOL. BURIED (4.68E+2 M3 SENT FOR VOL. RED.)

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:PENNSYLVANIA POWER & LIGHT CO.
DOCKET NO.:50-387 LICENSED POWER (MWT):3.29E+03
THERMAL POWER (MWH):2.05E+07 NET ELECTRIC POWER (MWH):6.47E+06
COMMERCIAL OPERATION:06/08/83 INITIAL CRITICALITY:09/10/82
COOLING WATER SOURCE:SUSQUEHANNA RIVER
UNIT NUMBER: 2 TYPE:BWR LICENSEE:PENNSYLVANIA POWER & LIGHT CO.
DOCKET NO.:50-388 LICENSED POWER (MWT):3.29E+03
THERMAL POWER (MWH):2.14E+07 NET ELECTRIC POWER (MWH):6.77E+06
COMMERCIAL OPERATION:02/12/85 INITIAL CRITICALITY:05/08/84
COOLING WATER SOURCE:SUSQUEHANNA RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	3.52E-04
CO-58	2.47E-05
FE-59	8.57E-07
CO-60	2.11E-04
ZN-65	1.51E-05
SR-89	1.81E-06
I-131	5.00E-04
XE-133	1.19E+02

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.42E-03
CR-51	3.36E-02
MN-54	1.49E-02
FE-55	3.98E-02
CO-58	1.31E-03
FE-59	1.27E-03
CO-60	7.78E-03
ZN-65	1.12E-03
AS-76	4.08E-05
SR-90	4.15E-05
TC-99M	8.46E-05
AG-110M	5.57E-05
XE-133	6.74E-04
CS-134	2.31E-04
XE-135	3.40E-04
CS-137	1.70E-04

TOTAL AIRBORNE TRITIUM RELEASE 5.76E+01
TOTAL LIQUID TRITIUM RELEASE 2.74E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.03E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.25E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS
45

MODE OF TRANSPORTATION
TRUCK

DESTINATION
BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

AG-110M	%	1.72E-02	2.41E-02
C-14	%	3.00E-01	5.64E-02
CO-57	%	3.42E-05	
CO-58	%	8.95E-01	6.68E-01
CO-60	%	9.64E+00	5.72E+00
CR-51	%	4.58E+00	2.83E+00
CS-134	%	5.03E-02	4.29E-02
CS-137	%	3.11E-02	3.83E-02
FE-55	%	6.57E+01	7.31E+01
FE-59	%	1.88E+00	1.94E+00
H-3	%	2.92E-02	8.67E-03
I-129	%	1.24E-02	<6.57E-04
I-131	%	1.14E-03	6.34E-04
KR-85	%	2.45E+00	
MN-54	%	1.23E+01	1.48E+01
NI-63	%	3.26E-01	1.73E-01
SB-124	%	3.00E-03	
SR-85	%	1.00E-02	
SR-90	%	8.46E-04	1.07E-03
TC-99	%	1.94E-03	<4.55E-04
ZN-65	%	1.69E+00	6.27E-01
ZR-95	%	9.69E-03	

B

C-14	%	1.30E-02	2.00E-02
CO-58	%	1.18E+00	2.50E-01
CO-60	%	8.73E+00	7.84E+00
CR-51	%	2.55E+00	5.00E-02
FE-55	%	7.14E+01	7.95E+01
FE-59	%	1.87E-01	4.20E-01
H-3	%	4.47E-03	<3.00E-03
I-129	%		<3.00E-02
MN-54	%	1.24E+01	1.09E+01
NI-63	%	3.15E-01	1.00E-02
TC-99	%	9.00E-01	<1.30E-01
ZN-65	%	2.37E+00	8.30E-01

D

AG-110M	%	5.10E-01	2.10E-01
CO-58	%	1.51E+00	1.48E+00

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
D			
CO-60	%	1.52E+01	1.29E+01
CR-51	%	1.57E+01	1.01E+00
CS-134	%	3.20E-01	6.90E-01
CS-137	%	2.90E-01	4.60E-01
FE-55	%	3.80E+01	5.81E+01
FE-59	%	1.86E+00	8.70E-01
MN-54	%	2.29E+01	1.76E+01
NI-63	%	4.70E-01	4.30E-01
SR-90	%	2.00E-02	
ZN-65	%	3.12E+00	6.29E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	2.16E+02 8.70E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	2.03E+02 2.70E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 CI	
D. OTHER	M3	8.52E+00
REACTOR WATER/FUEL CLEAN-UP	CI	4.41E+02

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:GPU NUCLEAR GROUP
DOCKET NO.:50-289 LICENSED POWER (MWT):2.57E+03
THERMAL POWER (MWH):2.22E+07 NET ELECTRIC POWER (MWH):7.22E+06
COMMERCIAL OPERATION:09/02/74 INITIAL CRITICALITY:06/05/74
COOLING WATER SOURCE:SUSQUEHANNA RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	8.21E-01
KR-85	1.06E+01
KR-85M	2.59E+00
KR-87	1.61E+00
KR-88	3.24E+00
I-131	8.22E-03
XE-131M	8.94E+00
I-132	1.25E-06
I-133	1.14E-02
XE-133	2.02E+03
XE-133M	1.42E+01
CS-134	1.01E-06
I-135	3.59E-03
XE-135	3.42E+01
XE-135M	2.33E+00
CS-137	1.17E-06
XE-138	7.62E-01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
FE-55	4.64E-04
CO-58	1.18E-02
CO-60	1.08E-04
KR-85M	1.25E-05
SR-89	6.10E-05
MO-99	1.23E-04
AG-110M	1.57E-04
SB-125	7.33E-06
I-131	1.40E-03
XE-131M	1.86E-04
I-133	5.22E-05
XE-133	2.25E-01
XE-133M	1.80E-03
CS-134	6.02E-04
XE-135	1.52E-03
CS-136	8.01E-06
CS-137	1.33E-03

TOTAL AIRBORNE TRITIUM RELEASE 4.76E+00
TOTAL LIQUID TRITIUM RELEASE 3.73E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.94E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	4.66E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION:THREE MILE ISLAND 1

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

	NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
	1	TRACTOR-CASK	BARNWELL SC
	1	TRACTOR-CASK	HANFORD-RICHLAND WA
	2	TRACTOR-CLOSED VAN	HANFORD-RICHLAND WA
#	1	TRACTOR-CLOSED VAN	SEG-OAK RIDGE TN
	11	TRACTOR-FLATBED	HANFORD-RICHLAND WA
#	8	TRACTOR-FLATBED	SEG-OAK RIDGE TN

#SENT TO WASTE PROCESSOR FOR VOL. RED.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

CO-58	%	7.16E+01	3.41E+01
CR-51	%	6.30E+00	
CS-134	%		8.86E+00
CS-137	%	5.33E+00	1.55E+01
H-3	%		2.62E+01
NI-63	%	3.52E+00	

B

CO-58	%	3.96E+01	1.12E+01
CO-60	%		1.05E+01
CR-51	%	6.47E+00	
CS-134	%		5.39E+00
CS-137	%	1.65E+01	5.01E+01
FE-55	%	5.99E+00	
NI-63	%	1.07E+01	1.27E+01

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.

UNIT YEAR TOTAL

M3 9.48E+01

CI 4.95E+01

B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.

M3 2.37E+02 *

CI 9.87E-01

C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.

M3

CI

D. OTHER

M3

CI

*VOLUME BEFORE REDUCTION

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:THREE MILE ISLAND 2*

LOCATION:10 MI SE HARRISBURG, PA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:METROPOLITAN ED&JERSEY CENTRAL PWR&LGHT
DOCKET NO.:50-320 LICENSED POWER (MWT):2.77E+03
THERMAL POWER (MWH): NET ELECTRIC POWER (MWH):
COMMERCIAL OPERATION:12/30/78 INITIAL CRITICALITY:03/28/78
COOLING WATER SOURCE:SUSQUEHANNA RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SR-90	3.14E-06
CS-137	3.59E-07

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SR-90	1.03E-04
CS-137	2.12E-04

TOTAL AIRBORNE TRITIUM RELEASE 1.44E+01
TOTAL LIQUID TRITIUM RELEASE 9.76E-04

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.55E+05
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	4.66E+10

*INCLUDING EPICOR II

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

	NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
	11	TRACTOR-CASK	BARNWELL SC
	10	TRACTOR-CASK	HANFORD-RICHLAND WA
	2	TRACTOR-CLOSED VAN	HANFORD-RICHLAND WA
#	1	TRACTOR-CLOSED VAN	SEG-OAK RIDGE TN
	2	TRACTOR-FLATBED	HANFORD-RICHLAND WA
#	16	TRACTOR-FLATBED	SEG-OAK RIDGE TN

#SENT TO WASTE PROCESSOR FOR VOL. RED.

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

	NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
	12	RAILCAR-CASK	INEL-SCOVILLE ID

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A

CS-134	%	7.44E-01	
CS-137	%	4.68E+01	1.34E+01
NI-63	%		1.15E+00
PM-147	%	7.58E+00	1.06E+01
SR-90	%	4.30E+01	7.33E+01

B

CS-137	%	2.61E+01	2.06E+01
PM-147	%	8.63E+00	7.61E+00
PU-241	%	3.98E+00	4.51E+00
SB-125	%	1.97E+00	1.57E+00
SR-90	%	5.33E+01	6.06E+01

TYPE OF WASTE

- A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
- B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
- C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
- D. OTHER

UNIT	YEAR	TOTAL
M3		5.58E+01
CI		1.39E+04
M3		1.12E+03
CI		1.53E+01
M3		
CI		
M3		
CI		

*INCLUDING EPICOR II

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:PORTLAND GENERAL ELECTRIC
DOCKET NO.:50-344 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):1.73E+07 NET ELECTRIC POWER (MWH):5.53E+06
COMMERCIAL OPERATION:05/20/76 INITIAL CRITICALITY:12/15/75
COOLING WATER SOURCE:COLUMBIA RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	6.57E-01
CO-58	3.86E-09
KR-85	9.49E+00
KR-85M	1.09E-01
KR-87	1.14E-01
KR-88	1.62E-01
SR-89	3.01E-05
SR-90	1.69E-05
NB-95	1.35E-05
I-131	4.26E-03
XE-131M	3.62E+00
I-132	1.10E-07
I-133	6.48E-04
XE-133	5.71E+02
XE-133M	3.47E+00
I-135	2.79E-07
XE-135	3.78E+00
XE-135M	5.86E-01
CS-137	2.24E-07
XE-137	1.87E-01
XE-138	3.02E-01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	9.88E-03
MN-54	1.26E-03
FE-55	5.12E-02
CO-57	1.05E-04
CO-58	2.95E-02
FE-59	2.25E-04
CO-60	2.50E-02
KR-85	1.07E-03
SR-89	2.94E-03
SR-90	3.12E-04
NB-95	5.94E-03
ZR-95	3.04E-03
MO-99	1.25E-05
TC-99M	1.27E-05
RU-103	1.93E-03
RU-106	1.47E-02
AG-110M	4.63E-03
SN-113	2.67E-04
SB-124	2.71E-05

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SB-125	2.01E-03
I-131	7.14E-04
XE-131M	1.41E-03
I-133	2.24E-05
XE-133	2.63E-01
XE-133M	3.72E-03
CS-134	9.43E-04
XE-135	4.95E-03
CS-137	1.50E-03
LA-140	2.55E-04
CE-141	3.24E-04
CE-144	4.46E-03
W-187	1.69E-04
UNIDENTIFIED	2.46E-05

TOTAL AIRBORNE TRITIUM RELEASE	7.31E+01
TOTAL LIQUID TRITIUM RELEASE	3.18E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	5.56E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.19E+10

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
2	EXCLUSIVE TRUCK	ALLIED NUCLEAR, RICHLAND WA
14	EXCLUSIVE TRUCK	RICHLAND WA
2	EXCLUSIVE TRUCK	US ECOLOGY, RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

AG-110M	%	2.97E-03	9.53E-02
C-14	%	8.45E-02	1.49E+00
CE-144	%	8.80E-02	7.94E-01
CM-242	%		3.18E-02
CO-57	%	2.74E-01	
CO-58	%	1.74E+01	5.97E+00
CO-60	%	2.83E+01	6.00E+00
CR-51	%	4.79E-03	9.50E-02
CS-134	%	4.10E+00	2.48E+00
CS-137	%	9.32E+00	3.02E+00
FE-55	%	1.10E+01	1.39E+01
FE-59	%	4.57E-04	
H-3	%	7.39E-01	5.52E+01
I-131	%	2.28E-04	
MN-54	%	9.44E-01	6.35E-01
NB-95	%	2.74E-03	3.49E-01
NI-63	%	2.55E+01	5.27E+00
PU-238	%	3.65E-03	3.18E-02
PU-239	%	4.11E-03	3.18E-02
PU-240	%		3.18E-02
PU-241	%	2.75E-01	2.32E+00
RU-103	%	6.85E-04	3.18E-02
RU-106	%	2.56E-01	1.30E+00
SB-125	%	4.02E-01	3.81E-01
SR-89	%	2.28E-04	3.18E-02
SR-90	%	2.30E+00	3.18E-02
ZR-95	%	2.97E-03	5.08E-01

B

AG-110M	%	1.25E-01	
C-14	%	1.33E+01	5.45E+00
CE-144	%	9.65E-01	1.99E+00
CO-58	%	4.17E+00	1.01E+01
CO-60	%	5.70E+00	1.01E+01
CR-51	%	1.34E+00	3.12E+00
CS-134	%	3.74E-01	
CS-137	%	5.60E-01	4.13E-01

N/A=NOT APPLICABLE

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N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
B			
FE-55	%	1.46E+01	2.83E+01
H-3	%	4.05E+01	1.65E+01
MN-54	%	2.74E+00	9.76E-01
NB-95	%	1.15E+00	3.72E+00
NI-63	%	2.55E+00	4.66E+00
PU-238	%		3.75E-02
PU-239	%		3.75E-02
PU-240	%		3.75E-02
PU-241	%	1.37E+00	2.78E+00
RU-103	%	4.36E-01	4.51E-01
RU-106	%	1.81E+00	2.85E+00
SB-125	%	6.20E-02	2.63E-01
SR-89	%	7.38E+00	5.74E+00
ZR-95	%	9.02E-01	2.44E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	8.20E+01
	CI	4.41E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.77E+02
	CI	5.86E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	
	CI	

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 3 TYPE:PWR LICENSEE:FLORIDA POWER & LIGHT
DOCKET NO.:50-250 LICENSED POWER (MWT):2.20E+03
THERMAL POWER (MWH):1.18E+07 NET ELECTRIC POWER (MWH):3.59E+06
COMMERCIAL OPERATION:12/14/72 INITIAL CRITICALITY:10/20/72
COOLING WATER SOURCE:CLOSED CYCLE CANAL

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	7.74E-01
CO-58	3.70E-06
CO-60	9.06E-06
BR-82	4.03E-05
KR-85	2.82E+00
KR-85M	3.61E-02
I-131	2.93E-04
XE-131M	2.57E+00
I-133	1.09E-04
XE-133	1.70E+03
XE-133M	1.26E+00
XE-135	1.22E+00
XE-135M	4.55E-03
CS-137	1.59E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.36E-05
CR-51	5.24E-04
MN-54	1.87E-02
FE-55	3.49E-02
CO-57	1.45E-05
CO-58	1.26E-02
FE-59	1.78E-05
CO-60	3.13E-02
ZN-65	3.70E-05
KR-85	7.55E-07
KR-85M	3.73E-05
SR-90	4.85E-04
NB-95	8.12E-05
ZR-97	2.58E-06
AG-110	2.12E-03
SN-117M	3.53E-06
SB-124	1.02E-03
SB-125	3.45E-02
I-131	5.56E-04
XE-131M	1.32E-02
I-133	6.71E-05
XE-133	8.82E-01
XE-133M	4.57E-03
CS-134	5.32E-03
XE-135	1.15E-03
XE-135M	3.78E-05

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-137	1.58E-02
CE-144	4.56E-06
W-187	2.87E-06

TOTAL AIRBORNE TRITIUM RELEASE	4.23E+00
TOTAL LIQUID TRITIUM RELEASE	2.29E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	7.02E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.62E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 4 TYPE:PWR LICENSEE:FLORIDA POWER & LIGHT
DOCKET NO.:50-251 LICENSED POWER (MWT):2.20E+03
THERMAL POWER (MWH):7.14E+06 NET ELECTRIC POWER (MWH):2.09E+06
COMMERCIAL OPERATION:09/07/73 INITIAL CRITICALITY:06/11/73
COOLING WATER SOURCE:CLOSED CYCLE CANAL

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	8.28E-01
CO-58	3.70E-06
CO-60	9.15E-06
BR-82	4.03E-05
KR-85	1.49E+00
KR-85M	4.83E-02
KR-87	1.40E-03
I-131	2.85E-04
XE-131M	2.23E+00
I-133	1.05E-04
XE-133	1.70E+03
XE-133M	1.36E+00
XE-135	1.59E+00
CS-137	1.59E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.36E-05
CR-51	5.24E-04
MN-54	1.87E-02
FE-55	3.49E-02
CO-57	1.45E-05
CO-58	1.26E-02
FE-59	1.78E-05
CO-60	3.13E-02
ZN-65	3.70E-05
KR-85	7.55E-07
KR-85M	3.73E-05
SR-90	4.85E-04
NB-95	8.12E-05
ZR-97	2.58E-06
AG-110	2.12E-03
SN-117M	3.53E-06
SB-124	1.02E-03
SB-125	3.45E-02
I-131	4.01E-04
XE-131M	1.32E-02
I-133	1.54E-06
XE-133	8.66E-01
XE-133M	4.57E-03
CS-134	5.33E-03
XE-135	7.87E-04
XE-135M	3.63E-05

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-137	1.58E-02
CE-144	4.56E-06
W-187	2.87E-06

TOTAL AIRBORNE TRITIUM RELEASE	4.36E+00
TOTAL LIQUID TRITIUM RELEASE	2.29E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	7.02E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.62E+11

N/A=NOT APPLICABLE
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N/R=NOT REPORTED

INSTALLATION: TURKEY POINT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS 35
MODE OF TRANSPORTATION
SOLE USE TRUCK

DESTINATION
OAK RIDGE TN

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
B		
C-14	% 1.00E+01	
CO-57	%	1.00E+00
CO-58	% 1.40E+01	1.00E+00
CO-60	% 4.00E+01	6.00E+01
CS-134	% 2.00E+00	1.00E+00
CS-137	% 5.00E+00	3.00E+00
FE-55	% 1.70E+01	1.90E+01
H-3	%	1.00E+00
MN-54	% 1.00E+00	1.00E+00
NB-95	% 1.00E+00	
NI-63	% 7.00E+00	1.10E+01
SB-125	% 2.00E+00	2.00E+00
D		
AG-110M	% 1.00E+00	1.00E+00
C-14	% 3.00E+00	2.00E+00
CO-60	% 5.40E+01	4.60E+01
CS-137	% 2.20E+01	3.60E+01
FE-55	% 3.00E+00	3.00E+00
NI-63	% 1.60E+01	1.20E+01

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	0.00E+00	
	CI	0.00E+00	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.26E+02 *	
	CI	8.90E-01	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.00E+00	
	CI	0.00E+00	
D. OTHER	M3	1.21E+02 *	
NON-COMPRESSIBLE WASTE	CI	1.37E+00	

*TYPE B&D WASTE ARE VOL. BURIED (259.9 M3, 596. M3 RESPECTIVELY; BEFORE REDUCTION)

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:BWR LICENSEE:VERMONT YANKEE NUCLEAR POWER
DOCKET NO.:50-271 LICENSED POWER (MWT):1.59E+03
THERMAL POWER (MWH):1.13E+07 NET ELECTRIC POWER (MWH):3.61E+06
COMMERCIAL OPERATION:11/30/72 INITIAL CRITICALITY:03/24/72
COOLING WATER SOURCE:CONNECTICUT RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	3.08E-04
CO-58	2.07E-05
FE-59	9.42E-05
CO-60	1.24E-03
ZN-65	1.69E-04
KR-85M	1.97E+01
KR-87	2.95E+01
SR-89	7.20E-04
SR-90	8.59E-06
I-131	5.47E-03
I-133	7.65E-03
XE-133	5.58E+02
CS-134	1.64E-06
XE-135	2.98E+02
XE-135M	8.38E+01
CS-137	5.54E-05
XE-138	3.89E+01
BA-LA-140	8.33E-04

TOTAL AIRBORNE TRITIUM RELEASE 5.53E+01
TOTAL LIQUID TRITIUM RELEASE 0.00E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	0.00E+00
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	0.00E+00

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS
1

MODE OF TRANSPORTATION
TRUCK

DESTINATION
BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE) JAN-JUNE JULY-DEC

A

C-14	%	1.49E-01
CM-242	%	9.30E-05
CO-60	%	1.71E+01
CS-134	%	5.55E+00
CS-137	%	2.20E+01
FE-55	%	1.97E+01
H-3	%	1.38E+00
I-129	%	3.12E-03
I-131	%	5.33E-01
MN-54	%	3.11E+00
NI-63	%	7.00E+00
PU-241	%	2.60E-01
TC-99	%	3.67E-03
TRANSURANICS	%	3.91E-03
ZN-65	%	2.32E+01

TYPE OF WASTE

- A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
- B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
- C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
- D. OTHER

UNIT	YEAR TOTAL
M3	4.84E+00
CI	2.15E+00
M3	
CI	
M3	
CI	
M3	
CI	

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:GEORGIA POWER
DOCKET NO.:50-424 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.76E+07 NET ELECTRIC POWER (MWH):8.71E+06
COMMERCIAL OPERATION:05/31/87 INITIAL CRITICALITY:03/09/87
COOLING WATER SOURCE:SAVANNAH RIVER
UNIT NUMBER: 2 TYPE:PWR LICENSEE:GEORGIA POWER
DOCKET NO.:50-425 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):1.72E+07 NET ELECTRIC POWER (MWH):5.55E+06
COMMERCIAL OPERATION:05/20/89 INITIAL CRITICALITY:03/28/89
COOLING WATER SOURCE:SAVANNAH RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	4.76E+00
MN-54	1.48E-05
CO-58	1.15E-03
CO-60	8.05E-06
KR-85	2.26E+01
KR-85M	2.38E-03
NB-95	3.90E-06
TC-99M	2.02E-06
I-131	8.20E-05
XE-131M	2.15E+01
I-133	1.23E-04
XE-133	4.94E+02
XE-133M	1.51E-01
XE-135	2.57E+00
XE-135M	1.72E-04
XE-137	5.16E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	1.47E-03
NA-24	6.01E-03
CR-51	2.05E-02
MN-54	2.51E-02
FE-55	8.65E-02
CO-57	7.16E-04
CO-58	1.96E-01
FE-59	3.86E-03
CO-60	3.67E-02
NI-65	1.99E-05
ZN-65	1.71E-04
BR-82	1.14E-04
KR-88	2.37E-05
SR-92	2.16E-05
NB-95	9.95E-03
ZR-95	6.15E-03
NB-97	1.48E-04
ZR-97	2.27E-05
TC-99M	5.02E-05

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
RU-103	7.50E-06
AG-110M	3.70E-05
SB-124	1.10E-03
SB-125	4.03E-03
TE-125M	7.21E-04
I-131	1.09E-03
XE-131M	8.77E-05
TE-132	2.78E-08
I-133	6.37E-04
XE-133	1.49E-01
XE-133M	3.36E-04
CS-134	8.00E-04
XE-135	8.62E-03
CS-137	1.52E-03
BA-140	5.47E-08
LA-140	1.13E-04
CE-144	3.47E-05
HF-181	1.55E-04
W-187	4.36E-05
AU-198	1.30E-05

TOTAL AIRBORNE TRITIUM RELEASE	9.10E+02
TOTAL LIQUID TRITIUM RELEASE	9.18E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	9.94E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.19E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
7	TRACTOR TRAILER	SEG, OAK RIDGE TN
6	TRACTOR/SHIELDED CASK	BARNWELL SC

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A			
	CO-58	% 3.02E+01	3.29E+01
	FE-55	% 2.44E+01	2.38E+01
	OTHERS	% 4.54E+01	4.32E+01
B			
	CO-58	%	4.15E+01
	CO-60	% 3.75E+01	
	FE-55	% 2.65E+01	2.59E+01
	OTHERS	% 3.60E+01	3.26E+01

TYPE OF WASTE

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	3.01E+01
	CI	1.49E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	7.01E+01 *
	CI	2.07E-01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	
	CI	

*VOLUME AFTER COMPACTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 3 TYPE:PWR LICENSEE:LOUISIANA POWER & LIGHT
DOCKET NO.:50-382 LICENSED POWER (MWT):3.39E+03
THERMAL POWER (MWH):2.37E+07 NET ELECTRIC POWER (MWH):7.61E+06
COMMERCIAL OPERATION:09/24/85 INITIAL CRITICALITY:03/04/85
COOLING WATER SOURCE:MISSISSIPPI RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	3.77E-01
MN-54	4.12E-07
CO-58	9.24E-05
CO-60	3.96E-06
BR-82	2.55E-06
KR-85	4.86E-02
KR-85M	1.33E+00
NB-95	9.22E-07
RU-103	2.83E-06
SN-113	6.08E-07
I-131	6.56E-04
XE-131M	7.31E-03
I-133	1.36E-05
XE-133	5.07E+02
XE-133M	2.18E-01
CS-134	5.28E-07
XE-135	5.05E+01
CS-137	5.76E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.34E-03
AR-41	4.93E-05
CR-51	4.38E-02
MN-54	8.14E-03
FE-55	1.02E-01
CO-57	1.05E-03
CO-58	4.59E-01
FE-59	2.28E-03
CO-60	4.64E-02
KR-85	3.49E-02
KR-85M	3.24E-04
KR-88	6.24E-05
RB-88	2.10E-04
SR-92	3.28E-04
NB-95	3.04E-02
ZR-95	1.66E-02
NB-97	1.96E-03
ZR-97	3.59E-04
MO-99	2.59E-04
TC-99M	1.50E-04
RU-103	1.74E-03
RU-106	2.19E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AG-110M	1.09E-02
SN-113	5.46E-03
SB-122	8.27E-03
SB-124	4.16E-02
SB-125	1.77E-01
SB-126	2.54E-03
SB-127	9.33E-04
I-131	9.33E-02
XE-131M	1.19E-01
I-132	2.40E-03
TE-132	1.48E-03
I-133	7.51E-04
XE-133	8.27E+00
XE-133M	5.10E-02
CS-134	8.14E-02
XE-135	2.89E-02
CS-136	1.08E-04
CS-137	1.30E-01
BA-140	5.79E-04
LA-140	3.49E-03
CE-141	3.30E-05
CE-144	8.12E-04
W-187	1.22E-03

TOTAL AIRBORNE TRITIUM RELEASE	1.26E+02
TOTAL LIQUID TRITIUM RELEASE	3.58E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	7.69E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.83E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

INSTALLATION:WATERFORD

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
3	TRUCK	BARNWELL SC
15	TRUCK	OAK RIDGE TN
1	TRUCK	RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE) JAN-JUNE JULY-DEC

A		
CO-58	%	6.94E+00 1.46E+01
CO-60	%	3.72E+00 3.23E+00
CS-134	%	2.72E+01 2.62E+01
CS-137	%	4.74E+01 4.18E+01
FE-55	%	3.66E+00 2.87E+00
H-3	%	6.07E-03
MN-54	%	1.64E+00 1.74E+00
NI-63	%	1.00E+01 9.47E+00
B		
CO-58	%	6.05E+01 1.52E+00
CO-60	%	3.75E+00 2.70E-01
CS-134	%	9.63E+00 4.02E-01
CS-137	%	1.31E+01 6.23E-01
FE-55	%	1.15E+01 5.20E-01
MN-54	%	1.64E+00 1.83E-01
NI-63	%	5.76E+00 3.66E-01
SB-124	%	8.30E-02
SB-125	%	9.86E-01
D		
CD-109	%	7.90E-01
CO-58	%	6.21E+00
CO-60	%	3.58E+00
FE-55	%	1.74E+01
MN-54	%	5.49E-01
NB-95	%	6.03E-01
NI-59	%	1.72E+00
NI-63	%	1.20E+00
SN-113	%	4.24E-01
ZR-95	%	5.08E-01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	3.14E+01
	CI	3.68E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	7.26E+02 *
	CI	4.68E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	3.41E+00
DEWATERED MECH. FTLTRS.	CI	3.39E+01

*VOLUME SHIPPED FOR REDUCTION(NOT FINAL BURIAL VOL.)

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:BWR LICENSEE:WASHINGTON PUBLIC POWER SUPPLY SYSTEM
DOCKET NO.:50-397 LICENSED POWER (MWT):3.32E+03
THERMAL POWER (MWH):1.92E+07 NET ELECTRIC POWER (MWH):6.12E+06
COMMERCIAL OPERATION:12/13/84 INITIAL CRITICALITY:01/19/84
COOLING WATER SOURCE:COLUMBIA RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.81E-03
AR-41	7.76E+00
CR-51	3.71E-02
MN-54	1.21E-03
MN-56	3.00E-05
CO-58	3.80E-03
FE-59	1.80E-03
CO-60	6.94E-03
CU-64	4.00E-01
ZN-65	1.85E-02
ZN-69M	3.20E-05
AS-76	5.90E-04
KR-85	4.20E+00
KR-85M	2.87E+02
KR-87	1.49E+02
KR-88	4.64E+02
RB-88	8.60E-04
RB-89	1.20E-04
SR-89	3.36E-03
SR-90	5.19E-05
SR-91	3.40E-04
SR-91M	7.70E-06
SR-92	3.60E-03
NB-95	1.90E-06
TC-99M	1.88E-03
AG-110M	6.00E-06
I-131	3.87E-02
XE-131M	4.10E+01
I-132	2.47E-02
TE-132	4.90E-06
I-133	3.30E-02
XE-133	2.94E+03
XE-133M	1.14E+02
CS-134	2.03E-04
I-134	4.18E-03
I-135	2.76E-02
XE-135	1.08E+03
XE-135M	3.58E+02
CS-137	2.07E-04
CS-138	4.70E-01
XE-138	2.55E+01
BA-139	2.66E-01
BA-LA-140	5.43E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NP-239	2.90E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	8.74E-03
MN-54	2.12E-03
FE-55	1.92E-03
CO-58	1.91E-03
FE-59	1.20E-03
CO-60	1.92E-02
ZN-65	1.41E-02
SR-89	1.86E-05
SR-90	1.44E-05
SR-92	2.10E-05
ZR-NB-95	5.00E-04
AG-110M	1.84E-04
SB-124	4.80E-05
I-131	9.90E-05
XE-133	3.90E-05
CS-134	1.60E-04
XE-135	2.55E-04
CS-137	2.00E-04

TOTAL AIRBORNE TRITIUM RELEASE	1.68E+01
TOTAL LIQUID TRITIUM RELEASE	2.03E+00

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	3.17E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.18E+09

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
2	10-142 CASK	US ECOLOGY RICHLAND WA
23	14-170 CASK	US ECOLOGY RICHLAND WA
11	FLAT BED TRAILER	US ECOLOGY RICHLAND WA

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE JULY-DEC

A

AG-110M	%	5.50E-01	
CO-134	%		7.60E+00
CO-58	%	5.22E+00	3.10E+00
CO-60	%	1.90E+01	2.05E+01
CR-51	%	1.80E+01	6.60E+00
CS-137	%	5.00E-01	7.00E+00
FE-55	%	5.38E+00	5.60E+00
MN-54	%	2.99E+00	2.80E+00
NB-95	%	3.78E+00	2.30E+00
ZN-65	%	4.10E+01	4.17E+01
ZR-95	%	2.49E+00	1.40E+00

B

CO-58	%	1.26E+00	4.62E-01
CO-60	%	2.71E+01	4.18E+01
CR-51	%	9.83E+00	3.38E-01
FE-55	%	2.32E+01	3.33E+01
H-3	%	2.28E+00	
MN-54	%	1.11E+00	1.60E+00
NB-95	%	1.32E+00	8.13E-01
NI-63	%	1.55E+00	2.70E+00
SB-125	%		2.00E-01
ZN-65	%	2.32E+01	1.80E+01
ZR-95	%	7.60E-01	4.00E-01

TYPE OF WASTE

A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR
BOTTOMS, ETC.
B. DRY COMPRESSIBLE WASTE, CONTAMINATED
EQUIPMENT, ETC.
C. IRRADIATED COMPONENTS, CONTROL
RODS, ETC.
D. OTHER

UNIT YEAR TOTAL

M3	1.54E+02
CI	7.08E+02
M3	2.10E+02
CI	3.92E+02
M3	
CI	
M3	
CI	

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:WOLF CREEK NUCLEAR OPER.
DOCKET NO.:50-482 LICENSED POWER (MWT):3.41E+03
THERMAL POWER (MWH):2.88E+07 NET ELECTRIC POWER (MWH):9.71E+06
COMMERCIAL OPERATION:09/03/85 INITIAL CRITICALITY:05/22/85
COOLING WATER SOURCE:COOLING LAKE

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	5.92E+00
CO-60	5.36E-06
KR-85	2.85E-01
KR-85M	2.97E-01
KR-88	6.92E-02
I-131	1.77E-05
XE-131M	4.04E+00
I-133	4.29E-06
XE-133	6.13E+02
XE-133M	2.88E+00
XE-135	1.39E+01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.29E-03
MN-54	8.80E-03
FE-55	3.50E-01
CO-57	2.10E-03
CO-58	2.48E-01
FE-59	8.23E-04
CO-60	8.85E-02
SR-92	5.80E-05
NB-95	5.12E-04
ZR-95	1.70E-04
NB-97	2.02E-04
AG-110M	5.54E-04
SN-113	2.02E-05
SB-124	2.47E-04
SB-125	6.71E-03
I-131	7.01E-05
XE-131M	6.33E-03
XE-133	1.95E-01
XE-133M	1.03E-03
CS-134	5.92E-03
I-134	6.24E-05
XE-135	1.25E-04
CS-137	8.86E-03
LA-140	1.97E-05

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

TOTAL AIRBORNE TRITIUM RELEASE 1.23E+02
TOTAL LIQUID TRITIUM RELEASE 5.88E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	8.85E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	8.89E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS

11

MODE OF TRANSPORTATION

TRUCK

DESTINATION

BARNWELL SC

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

JAN-JUNE

JULY-DEC

A

C-14	%		1.62E-01
CO-58	%	3.20E-02	
CO-57	%	7.00E-03	8.00E-02
CO-58	%		2.96E+00
CO-60	%	2.14E+00	5.75E+00
CR-51	%		4.61E+00
CS-134	%	2.28E-01	1.27E+00
CS-137	%	3.05E-01	1.80E+00
FE-55	%	5.64E+01	7.37E+01
FE-59	%		2.30E+00
H-3	%		2.95E+00
MN-54	%	4.98E-01	1.03E+00
NB-95	%	5.00E-03	6.20E-02
NI-63	%	3.94E+01	3.05E+00
RU-106	%	9.22E-01	5.00E-02
SB-125	%	1.80E-02	1.65E-01
SN-113	%	2.00E-03	
SR-89	%		8.65E-02
SR-90	%		6.00E-03
ZR-95	%	5.00E-03	3.60E-02

B

AG-110M	%	7.76E-01	1.20E-02
C-14	%	5.50E-02	3.00E-02
CO-57	%	1.99E+00	2.02E-01
CO-58	%	2.38E+01	3.62E+00
CO-60	%	2.05E+01	1.67E+01
CR-51	%	1.25E+00	3.20E-02
CS-134	%	5.27E-01	1.10E-02
CS-137	%		2.00E-03
FE-55	%	3.04E+01	5.25E+01
FE-59	%	1.35E+00	
MN-54	%	4.39E+00	2.58E+00
NI-63	%	1.23E+01	2.33E+01
SB-125	%	1.79E+00	1.10E+00
SN-113	%	3.84E-01	
ZR-95	%	5.09E-01	

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

TYPE OF WASTE	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	4.18E+01	
	CI	1.26E+03	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.09E+02	*
	CI	3.36E+00	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3		
	CI		
D. OTHER	M3		
	CI		

*VOLUME AFTER COMPACTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:YANKEE ATOMIC ELECTRIC
DOCKET NO.:50-029 LICENSED POWER (MWT):6.00E+02
THERMAL POWER (MWH):4.66E+06 NET ELECTRIC POWER (MWH):1.31E+06
COMMERCIAL OPERATION:07/01/61 INITIAL CRITICALITY:08/19/60
COOLING WATER SOURCE:DEERFIELD RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-37	1.86E-01
AR-41	1.12E+00
CR-51	<2.47E-05
MN-54	8.26E-06
CO-58	<5.51E-06
FE-59	<3.66E-06
CO-60	3.20E-05
ZN-65	<1.05E-05
KR-85	1.05E+00
KR-85M	1.19E+00
KR-87	<1.35E+00
KR-88	2.07E+00
SR-89	<2.09E-06
SR-90	<4.15E-07
ZR-NB-95	<6.62E-06
MO-99	<1.08E-05
RU-103	<3.25E-06
AG-110M	<1.22E-06
SB-124	<7.67E-06
I-131	<8.82E-05
XE-131M	1.97E-01
I-133	<1.07E-05
XE-133	4.46E+01
XE-133M	9.98E-01
CS-134	<1.82E-06
I-135	<1.75E-06
XE-135	2.65E+01
XE-135M	<4.14E+01
CS-137	3.57E-06
XE-138	<9.50E-01
BA-LA-140	<4.32E-06
CE-141	<1.52E-06
CE-144	<5.74E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	<7.89E-04
MN-54	<8.93E-05
FE-55	<6.57E-03
CO-58	<9.33E-05
FE-59	<2.00E-04
CO-60	1.19E-04
ZN-65	<2.11E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SE-75	<1.12E-04
KR-85	<5.44E-02
SR-89	<7.72E-04
SR-90	<4.21E-04
ZR-NB-95	<1.68E-04
MO-99	<7.12E-04
TC-99M	<3.01E-05
RU-103	<9.82E-05
AG-110M	<9.92E-05
SB-124	<8.60E-05
SB-125	<2.82E-04
I-131	<1.11E-04
XE-131M	<3.58E-03
I-133	<8.17E-05
XE-133	<3.24E-02
XE-133M	<6.08E-04
CS-134	<3.92E-04
XE-135	<1.65E-04
CS-136	<9.64E-05
CS-137	7.36E-04
BA-LA-140	<3.45E-04
CE-141	<1.39E-04
CE-144	<6.37E-04

TOTAL AIRBORNE TRITIUM RELEASE	6.64E+00
TOTAL LIQUID TRITIUM RELEASE	1.68E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.39E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.65E+11

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
19	TRUCK	BARNWELL SC

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0	N/A	N/A

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE) JAN-JUNE JULY-DEC

A		
C-14	%	8.40E-02
CO-60	%	2.92E+00
CS-134	%	1.71E+01
CS-137	%	2.41E+01
FE-55	%	1.71E+01
H-3	%	3.69E+01
NI-63	%	1.70E+00
B		
C-14	%	1.13E-01
CO-60	%	4.01E+00
CS-134	%	3.00E+01
CS-137	%	3.33E+01
FE-55	%	2.68E+01
MN-54	%	1.05E+00
NB-95	%	1.80E+00
NI-63	%	2.12E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3	1.16E+02
BOTTOMS, ETC.	CI	1.19E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3	1.82E+02
EQUIPMENT, ETC.	CI	5.89E+00
C. IRRADIATED COMPONENTS, CONTROL	M3	
RODS, ETC.	CI	
D. OTHER	M3	
	CI	

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1 TYPE:PWR LICENSEE:COMMONWEALTH EDISON
DOCKET NO.:50-295 LICENSED POWER (MWT):3.25E+03
THERMAL POWER (MWH):1.56E+07 NET ELECTRIC POWER (MWH):5.00E+06
COMMERCIAL OPERATION:12/31/73 INITIAL CRITICALITY:06/19/73
COOLING WATER SOURCE:LAKE MICHIGAN

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.00E-03
CR-51	3.50E-02
MN-54	2.72E-03
FE-55	8.42E-02
CO-57	4.32E-03
CO-58	2.18E-01
FE-59	3.70E-03
CO-60	1.41E-01
KR-85M	2.70E-05
RB-88	2.10E-04
SR-89	1.20E-04
SR-90	8.80E-06
NB-95	6.57E-03
ZR-95	5.74E-03
MO-99	2.45E-04
TC-99M	2.50E-05
AG-110M	5.47E-02
SN-113	6.20E-05
SB-124	6.89E-02
SB-125	1.78E-01
SB-126	6.60E-04
I-131	2.43E-02
XE-131M	4.00E-04
I-132	3.60E-03
I-133	6.20E-03
XE-133	3.91E-01
XE-133M	1.27E-03
CS-134	3.15E-02
I-135	3.00E-04
XE-135	3.47E-03
CS-137	3.27E-02
LA-140	1.19E-03
TOTAL LIQUID TRITIUM RELEASE	1.81E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	4.96E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.01E+12

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 2 TYPE:PWR LICENSEE:COMMONWEALTH EDISON
DOCKET NO.:50-304 LICENSED POWER (MWT):3.25E+03
THERMAL POWER (MWH):2.40E+07 NET ELECTRIC POWER (MWH):7.69E+06
COMMERCIAL OPERATION:09/17/74 INITIAL CRITICALITY:12/24/73
COOLING WATER SOURCE:LAKE MICHIGAN

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.34E-03
CR-51	1.35E-01
MN-54	1.06E-02
FE-55	1.60E-01
CO-57	2.37E-03
CO-58	8.80E-01
FE-59	8.80E-03
CO-60	3.54E-01
ZN-65	7.50E-05
SE-75	1.60E-04
KR-85M	3.60E-05
KR-88	2.60E-04
SR-90	8.20E-06
NB-95	4.52E-02
ZR-95	2.76E-02
MO-99	3.32E-03
TC-99M	5.60E-05
RU-103	4.40E-04
AG-110M	2.29E-01
SN-113	6.29E-03
SN-117M	1.83E-03
SB-124	1.69E-01
SB-125	2.85E-01
SB-126	6.35E-03
I-131	6.99E-02
XE-131M	5.80E-03
I-132	7.20E-04
TE-132	3.90E-04
I-133	2.85E-02
XE-133	1.64E+00
XE-133M	1.77E-02
CS-134	5.98E-02
I-135	4.95E-04
XE-135	3.15E-02
CS-137	8.17E-02
LA-140	4.07E-03
TOTAL LIQUID TRITIUM RELEASE	8.66E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.29E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.44E+12

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER: 1	TYPE: PWR	LICENSEE: COMMONWEALTH EDISON
DOCKET NO.: 50-295		LICENSED POWER (MWT): 3.25E+03
THERMAL POWER (MWH): 1.56E+07		NET ELECTRIC POWER (MWH): 5.00E+06
COMMERCIAL OPERATION: 12/31/73		INITIAL CRITICALITY: 06/19/73
COOLING WATER SOURCE: LAKE MICHIGAN		
UNIT NUMBER: 2	TYPE: PWR	LICENSEE: COMMONWEALTH EDISON
DOCKET NO.: 50-304		LICENSED POWER (MWT): 3.25E+03
THERMAL POWER (MWH): 2.40E+07		NET ELECTRIC POWER (MWH): 7.69E+06
COMMERCIAL OPERATION: 09/17/74		INITIAL CRITICALITY: 12/24/73
COOLING WATER SOURCE: LAKE MICHIGAN		

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	5.74E-05
AR-41	7.62E+00
CR-51	3.40E-06
MN-54	2.05E-06
MN-56	1.44E-07
CO-58	2.09E-04
CO-60	8.78E-05
BR-82	2.21E-05
KR-85	2.10E+00
KR-85M	3.45E-01
KR-87	4.21E-01
KR-88	1.69E+00
RB-88	9.16E-03
SR-89	8.10E-08
SR-90	1.87E-08
SR-91	1.30E-07
NB-95	5.61E-06
ZR-95	3.40E-06
MO-99	2.30E-06
TC-99M	8.30E-08
RU-103	4.60E-08
AG-110M	8.21E-08
SN-113	4.40E-10
I-131	2.02E-03
XE-131M	3.74E-01
I-132	6.19E-05
I-133	7.62E-04
XE-133	1.05E+03
XE-133M	1.96E+00
CS-134	2.23E-05
I-134	9.83E-05
I-135	1.13E-03
XE-135	5.32E+01
XE-135M	2.05E+00
CS-136	2.94E-06
CS-137	8.92E-04
CS-138	2.90E-04
XE-138	1.29E+00

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION:ZION 1&2

LOCATION:6 MI N WAUKEGAN, IL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
AIRBORNE AND LIQUID EFFLUENTS

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BA-139	1.44E-06
BA-140	2.80E-07
LA-140	6.51E-08
W-187	5.38E-07

TOTAL AIRBORNE TRITIUM RELEASE 6.92E+01

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1989
SOLID EFFLUENTS

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
1	CNSI	CHANNAHON IL
33	N/R	BARNWELL SC
1	N/R	SEG, OAK RIDGE TN

TYPE OF WASTE

	UNIT	YEAR	TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR	M3		1.45E+02
BOTTOMS, ETC.	CI		3.27E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED	M3		6.89E+01 *
EQUIPMENT, ETC.	CI		3.07E+02
C. IRRADIATED COMPONENTS, CONTROL	M3		
RODS, ETC.	CI		
D. OTHER	M3		
	CI		

*VOLUME AFTER REDUCTION

N/A=NOT APPLICABLE
N/D=NOT DETECTED
N/R=NOT REPORTED

<p>NRC FORM 335 (2-89) NRCM 1102, 3201, 3202</p> <p style="text-align: center;">U.S. NUCLEAR REGULATORY COMMISSION</p> <p style="text-align: center;">BIBLIOGRAPHIC DATA SHEET</p> <p style="text-align: center;"><i>(See instructions on the reverse)</i></p>		<p>1. REPORT NUMBER (Assigned by NRC. Add Vol., Supp., Rev., and Addendum Numbers, if any.)</p> <p>NUREG/CR-2907 BNL-NUREG-51531 Vol. 10</p>					
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September	1992						
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<p>11. ABSTRACT (200 words or less)</p> <p>Releases of radioactive materials in airborne and liquid effluents from commercial light water reactors during 1989 have been compiled and reported. Data on solid waste shipments as well as selected operating information have been included. This report supplements earlier annual reports issued by the former Atomic Energy Commission and the Nuclear Regulatory Commission. The 1989 release data are summarized in tabular form. Data covering specific radionuclides are summarized.</p>							
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