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Vol. 1

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# Radioactive Materials Released from Nuclear Power Plants

Annual Report 1980

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Prepared by J. Tichler, C. Benkovitz

Brookhaven National Laboratory

Prepared for  
U.S. Nuclear Regulatory  
Commission

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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.

#### ABSTRACT

Releases of radioactive materials in airborne and liquid effluents from commercial light water reactors during 1980 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 1980 release data are summarized in tabular form. Data covering specific radionuclides are summarized.

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## 1.0 Introduction

### 1.1 Purpose

This report, prepared annually by the staff of the U.S. Nuclear Regulatory Commission, presents measured data on radioactive materials in effluents from licensed commercial reactor power plants. These data were reported by licensees for plant operations during 1980. This information supplements earlier annual reports issued by the former Atomic Energy Commission and Nuclear Regulatory Commission.<sup>1</sup>

### 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 Inspection and Enforcement, 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 70 licensed nuclear power plants that were declared by the utilities to be in commercial operation as of December 31, 1980. Data are included for several licensed facilities which are permanently or indefinitely shut down (Dresden 1, Humboldt Bay, Indian Point 1, Three Mile Island 2).

### 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, 1717 H Street, NW, 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. This variability will diminish as changes in the Technical Specification for each plant will require adoption of the reporting format of Regulatory Guide 1.21, "Measuring, Evaluating and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light Water Cooled Nuclear Power Plants," June 1974.

Data from prior years used in the comparison tables were obtained from the eight previous annual summaries.<sup>1</sup>

<sup>1</sup>"Report on Releases of Radioactivity in Effluents and Solid Wastes from Nuclear Power Plants for 1972," Directorate of Regulatory Operations, August 1973. "Summary of Radioactivity Releases in Effluents from Nuclear Power Plants During 1973," NUREG-75/001, January 1975. "Radioactive Materials Released from Nuclear Power Plants 1974," NUREG-0077, June 1976. "Radioactive Materials Released from Nuclear Power Plants 1975," NUREG-0218, March 1977. "Radioactive Materials Released from Nuclear Power Plants, 1976," NUREG-0367, March 1978. "Radioactive Materials Released from Nuclear Power Plants, 1977," NUREG-0521, January 1979. "Radioactive Materials Released from Nuclear Power Plants, 1978," NUREG/CR-1497, BNL-NUREG-51192, March, 1981. "Radioactive Materials Released from Nuclear Power Plants, 1979," NUREG/CR-2227, BNL-NUREG-51416, November 1981.

## 2.0 Tabulated Data

### 2.1 Airborne and Liquid Effluents

Table 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 1980. Tables 5 through 8 list the total measured quantities of tritium and of mixed fission and activation products released in liquid effluents in each of the years.

### 2.2 Solid Waste

The total volumes, activity and the number of shipments of solid waste for each plant during 1980 are summarized in Tables 9 and 10. A comparison for the years 1972 through 1980 is made in Tables 11 and 12.

### 2.3 Energy Generation

Tables 15 and 16 present a summary of the thermal energy generated by each plant during 1980 and previous years from 1970. Tables 13 and 14 present a summary of net electrical energy generated by each plant during 1978-1980. 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 such as 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. The activity released for each nuclide for the year for both airborne and liquid effluents is calculated by summing releases for each quarter. Values which represent minimum detectable levels are not included in the summation unless they are the only type of values present, in which case the annual value is the summation of quarterly minimum detectable levels and is preceded by a < sign. More detailed summaries in the format of Regulatory Guide 1.21 such as were used in the 1978 report<sup>2</sup> can be made available since all the data for 1978-1980 are stored in a computerized data base. Individuals interested in obtaining the more detailed summaries should contact the Office of Management and Program Analysis of the Nuclear Regulatory Commission.

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

## 2.5 Notation

The following notation is used:

$$1.86E+06 = 1.86 \times 10^6$$

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

NR = Not Reported

ND = Not Detected

< = Value is less than the ability of the measuring instrumentation to detect. Value shown is the instrument detection limit.

## 3.0 Summary

Nearly all of the radioactive material reported as being released in effluents is planned and results from normal operation or is the result of anticipated operational occurrences, i.e., unplanned releases of radioactive materials from miscellaneous actions such as equipment failure, operator error, or procedure error that are not of such consequence so 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.

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TABLE 1

## AIRBORNE EFFLUENTS COMPARISON BY YEAR

BOILING WATER REACTORS FACILITY	FISSION AND ACTIVATION GASES (TOTAL CURIES)									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
PIG ROCK POINT	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
BROWN'S FERRY	-	-	-	-	6.40E+04	9.24E+04	<8.05E+04	<1.66E+05	1.57E+05	<2.71E+05
BRUNSWICK	-	-	-	-	-	1.90E+02	1.90E+04	2.46E+05	9.14E+04	1.16E+05
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
EDWIN I. HATCH	-	-	-	-	-	2.70E+02	2.80E+03	1.90E+03	1.62E+03	1.71E+03
FORT ST. VRAIN *	-	-	-	-	-	-	-	-	-	9.30E+01
HUMBOLDT BAY	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
JAMES A. FITZPATRICK	-	-	-	-	-	4.08E+03	4.41E+04	2.33E+04	5.88E+03	3.38E+03
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
MILLSTONE POINT 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	1.00E+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
OYSTER CREEK	1.10E+05	5.16E+05	8.66E+05	8.10E+05	2.79E+05	2.06E+05	1.67E+05	1.77E+05	9.93E+05	1.01E+06
PEACH BOTTOM	-	-	-	<1.00E+03	<1.00E+00	1.30E+04	2.09E+05	7.11E+04	3.85E+04	1.90E+05
PILGRIM	-	-	1.80E+04	2.30E+05	5.46E+05	4.60E+04	1.83E+05	4.13E+05	3.27E+04	1.59E+04
QUAD-CITIES	-	-	1.32E+05	9.00E+05	9.50E+05	1.10E+05	3.36E+04	2.56E+04	3.24E+04	3.48E+04
VERMONT YANKEE	-	-	5.50E+04	1.80E+05	6.40E+04	4.08E+03	3.03E+03	3.35E+03	4.94E+03	<8.08E+03

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R-NOT REPORTED

TABLE 1

## AIRBORNE EFFLUENTS COMPARISON BY YEAR

BOILING WATER REACTORS	FISSION AND ACTIVATION GASES (TOTAL CURIES)
FACILITY	1980
BIG ROCK POINT	2.15E+04
BROWN'S FERRY	<1.66E+05
BRUNSWICK	6.93E+04
COOPER	5.03E+03
DRESDEN 1	7.03E+01
DRESDEN 2-3	4.30E+04
DUANE ARNOLD	2.70E+03
EDWIN I. HATCH 1	3.82E+04
EDWIN I. HATCH 2	2.95E+02
FORT ST. VRAIN *	9.13E+01
HUMBOLDT BAY	<4.40E-05
JAMES A. FITZPATRICK	7.68E+04
LACROSSE	4.71E+03
MILLSTONE 1	1.19E+04
MONTICELLO	3.83E+03
NINE MILE POINT	5.87E+02
OYSTER CREEK	3.12E+04
PEACH BOTTOM	1.53E+04
PILGRIM	2.62E+04
QUAD-CITIES	2.15E+04
VERMONT YANKEE	1.63E+03

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED

TABLE 2  
AIRBORNE EFFLUENTS COMPARISON BY YEAR

PRESSURIZED WATER REACTORS	FISSION AND ACTIVATION GASES (TOTAL CURIES)									
	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	-	-	-	-	-	-	1.07E+00	4.73E+01	3.90E+02	1.75E+03
CALVERT CLIFFS	-	-	-	-	-	7.72E+03	9.40E+03	2.23E+04	2.76E+04	1.02E+04
CRYSTAL RIVER	-	-	-	-	-	-	-	3.35E+03	6.86E+03	7.26E+04
DAVIS-BESSE	-	-	-	-	-	-	-	1.27E+03	2.10E+03	<1.68E+03
DONALD C. COOK	-	-	-	-	-	2.64E+00	9.75E+02	3.80E+03	4.85E+04	1.09E+04
FORT CALHOUN	-	-	-	6.70E+01	3.03E+02	4.29E+02	1.94E+03	3.81E+03	1.36E+03	7.06E+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
H.B.ROBINSON	-	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
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 W/OTHER UNIT	-	8.09E+02	2.47E+02
JOSEPH M. FARLEY	-	-	-	-	-	-	-	-	3.53E+03	3.18E+03
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	2.86E+02	1.43E+03	1.98E+03
MILLSTONE POINT 2	-	-	-	-	-	-	1.57E+03	2.28E+03	7.64E+02	3.59E+02
NORTH ANNA	-	-	-	-	-	-	-	-	1.51E+04	6.28E+03
OCONEE	-	-	-	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
POINT BEACH	-	<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	-	-	-	8.72E+00	3.62E+02	2.17E+03	1.74E+03	6.73E+02	1.26E+03	6.97E+02
RANCHO SECO	-	-	-	-	-	1.18E+02	1.27E+02	2.00E+03	7.10E+03	8.81E+03
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
SALEM	-	-	-	-	-	-	<1.00E-02	1.96E+01	1.02E+01	2.49E+02
SAN ONOFRE	<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
ST. LUCIE	-	-	-	-	-	-	1.72E+03	2.54E+04	2.93E+04	1.54E+04
SURRY	-	-	<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
TROJAN	-	-	-	-	-	-	6.66E+02	3.07E+03	3.05E+02	9.27E+02
TURKEY POINT	-	-	-	5.30E+02	4.66E+03	1.34E+04	1.56E+04	2.33E+04	2.35E+04	1.06E+04
YANKEE ROWE	<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	-	-	-	4.00E+00	2.99E+03	4.88E+04	1.14E+05	3.22E+04	6.77E+04	3.41E+04

N/R=NOT REPORTED

TABLE 2

## AIRBORNE EFFLUENTS COMPARISON BY YEAR

PRESSURIZED WATER REACTORS      FISSION AND ACTIVATION GASES (TOTAL CURIES)

FACILITY	1980
ARKANSAS ONE 1	5.80E+04
ARKANSAS ONE 2	9.37E+03
BEAVER VALLEY	8.64E+01
CALVERT CLIFFS	2.96E+03
CRYSTAL RIVER	5.65E+04
DAVIS-BESSE	<3.35E+03
DONALD C. COOK	5.76E+03
FORT CALHOUN	2.97E+02
HADDAM NECK	2.68E+03
H. B. ROBINSON	5.82E+02
INDIAN POINT 1-2	9.38E+03
INDIAN POINT 3	1.11E+03
JOSEPH M. FARLEY	1.92E+04
KEWAUNEE	1.22E+02
MAINE YANKEE	5.87E+03
MILLSTONE 2	1.33E+03
NORTH ANNA	5.50E+03
OCONEE	1.92E+04
PALISADES	1.40E+02
POINT BEACH	6.41E+02
PRAIRIE ISLAND	2.60E+02
RANCHO SECO	1.58E+03
R. E. GINNA	8.61E+02
SALEM 1	7.82E+01
SALEM 2	7.74E+00
SAN ONOFRE	1.05E+03
SEQUOYAH	3.01E+03
ST. LUCIE	8.97E+03
SURRY	6.17E+03
THREE MILE ISLAND 1	4.64E-03
THREE MILE ISLAND 2	4.72E+04
TMI 2/EPICOR	2.16E+00
TROJAN	5.91E+02
TURKEY POINT	4.24E+03
YANKEE ROWE	7.07E+01
ZION	5.78E+03



TABLE 3  
 AIRBORNE EFFLUENTS COMPARISON BY YEAR (CURIES)  
 I-131 AND PARTICULATES  
 (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	1.30E-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
BROWN'S FERRY	-	-	-	-	1.20E-01	2.70E-01	<7.00E-02	1.04E-01	2.27E-01	5.05E-02
BRUNSWICK	-	-	-	-	-	<1.00E-02	4.60E-01	9.32E-01	4.07E-01	9.52E-01
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
EDWIN I. HATCH	-	-	-	-	-	<1.00E-02	<1.00E-02	5.67E-03	4.13E-03	2.59E-02
FORT ST. VRAIN *	-	-	-	-	-	-	-	-	-	6.89E-07
HUMBOLDT BAY	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
JAMES A. FITZPATRICK	-	-	-	-	-	<4.00E-02	6.80E-01	1.73E-01	2.79E-01	1.42E-02
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
MILLSTONE POINT 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	<1.00E-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
OYSTER CREEK	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	-	-	-	<1.00E-02	1.00E-02	4.00E-02	9.75E-01	2.73E-01	9.62E-02	2.58E-01
PILGRIM	-	-	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	-	-	7.50E-01	5.50E+00	8.88E+00	1.31E+00	1.33E+00	1.69E+00	2.15E+00	1.57E+00
VERMONT YANKEE	-	-	1.70E-01	7.00E-02	3.60E-01	1.00E-02	<1.00E-02	1.44E-02	2.18E-01	4.43E-01

\* HIGH TEMPERATURE GAS COOLED REACTOR  
 N/R=NOT REPORTED

TABLE 3  
 AIRBORNE EFFLUENTS COMPARISON BY YEAR (CURIES)  
 I-131 AND PARTICULATES  
 (HALF-LIFE EQUAL TO OR GREATER THAN 8 DAYS)

BOILING WATER REACTORS FACILITY	1980
BIG ROCK POINT	2.94E-02
BROWN'S FERRY	1.05E-01
BRUNSWICK	2.12E+00
COOPER	<1.52E-01
DRESDEN 1	1.46E-02
DRESDEN 2-3	1.10E+01
DUANE ARNOLD	8.50E-02
EDWIN I. HATCH 1	4.29E-01
EDWIN I. HATCH 2	1.53E-02
FORT ST. VRAIN *	1.25E-06
HUMBOLDT BAY	5.11E-04
JAMES A. FITZPATRICK	1.25E-01
LACROSSE	1.52E-02
MILLSTONE 1	5.32E-01
MONTICELLO	2.83E-02
NINE MILE POINT	2.55E-02
OYSTER CREEK	1.25E+00
PEACH BOTTOM	2.94E-02
PILGRIM	1.04E-01
QUAD-CITIES	5.90E-01
VERMONT YANKEE	1.70E-02

\* HIGH TEMPERATURE GAS COOLED REACTOR  
 N/R=NOT REPORTED

TABLE 4  
AIRBORNE EFFLUENTS COMPARISON BY YEAR (CURIES)

FACILITY	1-131 AND PARTICULATES									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
PRESSURIZED WATER REACTORS										
(HALF-LIFE EQUAL TO OR GREATER THAN 8 DAYS)										
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	-	-	-	-	-	-	<1.00E-02*	1.52E-04	7.21E-02	4.07E-04
CALVERT CLIFFS	-	-	-	-	-	7.00E-02	1.38E-01	3.07E-01	1.35E-01	2.05E+00
CRYSTAL RIVER	-	-	-	-	-	-	-	2.53E-03	1.05E-03	1.88E-02
DAVIS-BESSE	-	-	-	-	-	-	-	2.57E-04	4.30E-04	5.69E-03
DONALD C. COOK	-	-	-	-	-	-	-	7.45E-02	1.10E-01	7.86E-02
FORT CALHOUN	-	-	-	<1.00E-02	<1.00E-02	<1.00E-02	<1.00E-02	8.30E-03	8.30E-03	1.58E-03
HADDAM NECK	-	-	2.00E-02	<1.00E-02	<1.00E-02	<1.00E-02	<1.00E-02	5.21E-03	5.21E-03	4.77E-02
H. B. ROBINSON	<1.00E-02	-	3.00E-02	3.00E-01	5.00E-02	2.00E-02	9.96E-02	3.88E-03	9.26E-04	4.10E-04
INDIAN POINT 1-2	-	-	-	<1.00E-02	4.30E-01	1.62E+00	2.42E-01	5.59E-02	2.05E-01	4.30E-01
INDIAN POINT 3	-	-	-	-	-	-	SHOWN W/OTHER UNIT	1.29E-02	1.29E-02	3.89E-03
JOSEPH M. FARLEY	-	-	-	-	-	-	-	4.11E-02	4.11E-02	2.20E-02
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	5.05E-03	2.07E-03	5.52E-02
MILLSTONE POINT 2	-	-	-	-	-	1.00E-02	1.25E-02	4.47E-03	2.97E-03	9.79E-03
NORTH ANNA	-	-	-	-	-	-	-	-	3.19E-02	5.71E-02
OCONEE	-	-	-	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
POINT BEACH	-	-	<1.00E-02	5.50E-01	1.60E-01	7.00E-02	1.85E-02	5.02E-03	2.88E-02	1.35E-02
PRAIRIE ISLAND	-	<1.00E-02	3.00E-02	<1.00E-02	1.00E-02	2.12E-02	1.14E-02	7.56E-03	8.96E-04	3.86E-03
RANCHO SECO	-	-	-	<1.00E-02	<1.00E-02	<1.00E-02	<1.00E-02	5.02E-03	3.21E-02	5.75E-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
SALEM	-	-	-	-	-	-	ND	3.34E-07	4.01E-02	7.68E-03
SAN ONOFRE	<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
ST. LUCIE	-	-	-	-	-	-	<1.00E-02	1.48E-01	5.17E-01	2.02E-01
SURRY	-	-	<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
TROJAN	-	-	-	-	-	-	-	-	1.03E-02	3.59E-02
TURKEY POINT	-	-	-	6.00E-02	3.63E+00	4.30E-01	4.22E-01	1.04E+00	4.59E-01	7.91E-02
YANKEE ROWE	<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	2.40E-04
ZION	-	-	-	<1.00E-02	1.00E-02	1.40E-01	9.00E-02	5.38E-02	8.91E-02	6.74E-02

ND=NOT DETECTABLE  
N/R=NOT REPORTED

TABLE 4

## AIRBORNE EFFLUENTS COMPARISON BY YEAR (CURIES)

## I-131 AND PARTICULATES

## PRESSURIZED WATER REACTORS

(HALF-LIFE EQUAL TO OR GREATER THAN 8 DAYS)

FACILITY	1980
ARKANSAS ONE 1	1.66E-01
ARKANSAS ONE 2	6.90E-03
BEAVER VALLEY	1.91E-03
CALVERT CLIFFS	7.44E-02
CRYSTAL RIVER	6.77E-03
DAVIS-BESSE	2.01E-03
DONALD C. COOK	6.88E-02
FORT CALHOUN	2.42E-03
HADDAM NECK	8.01E-03
H.B. ROBINSON	1.13E-03
INDIAN POINT 1-2	6.42E-02
INDIAN POINT 3	2.53E-02
JOSEPH M. FARLEY	2.37E-03
KEWAUNEE	2.61E-04
MAINE YANKEE	1.88E-03
MILLSTONE 2	1.94E-02
NORTH ANNA	1.26E-02
OCONEE	1.33E-01
PALISADES	2.76E-02
POINT BEACH	1.28E-03
PRAIRIE ISLAND	1.83E-03
RANCHO SECO	9.96E-03
R.E. GINNA	9.00E-03
SALEM 1	2.17E-01
SALEM 2	5.44E-05
SAN ONOFRE	8.41E-01
SEQUOYAH	2.57E-03
ST. LUCIE	6.20E-02
SURRY	1.85E-02
THREE MILE ISLAND 1	2.93E-04
THREE MILE ISLAND 2	5.67E-04
TMI 2/EPICOR	6.83E-06
TROJAN	2.51E-02
TURKEY POINT	7.05E-02
YANKEE ROWE	9.56E-05
ZION	3.00E-03

TABLE 5  
LIQUID EFFLUENTS COMPARISON BY YEAR (CURIES)

BOILING WATER REACTORS FACILITY	TRITIUM									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
BIG ROCK POINT	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
BROWN'S FERRY	-	-	-	-	2.80E+00	1.04E+01	<4.02E+00	2.40E+01	3.08E+01	1.32E+01
BRUNSWICK	-	-	-	-	-	3.20E+00	5.90E+00	8.93E+00	1.41E+01	3.09E+01
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
EDWIN I. HATCH	-	-	-	-	-	6.12E+00	8.98E+00	1.20E+01	9.00E+00	1.23E+01
FORT ST. VRAIN *	-	-	-	-	-	-	-	-	-	1.23E+02
HUMBOLDT BAY	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
JAMES A. FITZPATRICK	-	-	-	-	-	5.03E+00	4.20E+00	3.35E+00	1.90E+00	1.52E+00
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
MILLSTONE POINT 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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NINE MILE POINT	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/R	6.78E+00
OYSTER CREEK	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	-	-	-	<1.00E-01	1.00E+01	3.08E+01	7.37E+01	7.09E+01	3.24E+01	4.28E+01
PILGRIM	-	-	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	-	-	4.70E+00	2.45E+01	3.40E+01	5.37E+01	4.98E+01	2.64E+01	1.72E+01	1.76E+01
VERMONT YANKEE	-	-	-	1.00E-01	0.00E+00	0.00E+00	1.60E+00	8.44E-01	N/R	4.04E+00

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED

TABLE 5  
LIQUID EFFLUENTS COMPARISON BY YEAR (CURIES)

BOILING WATER REACTORS	
FACILITY	1980
BIG ROCK POINT	6.18E+00
BROWN'S FERRY	2.18E+01
BRUNSWICK	1.28E+01
COOPER	8.77E+00
DRESDEN 1	N/R
DRESDEN 2-3	6.20E+01
DUANE ARNOLD	N/R
EDWIN I. HATCH 1	1.42E+01
EDWIN I. HATCH 2	1.07E+01
FORT ST. VRAIN *	2.06E+02
HUMBOLDT BAY	9.70E-02
JAMES A. FITZPATRICK	2.81E+00
LACROSSE	7.20E+01
MILLSTONE 1	2.73E+01
MONTICELLO	0.
NINE MILE POINT	N/R
OYSTER CREEK	1.54E+02
PEACH BOTTOM	3.73E+01
PILGRIM	4.00E+01
QUAD-CITIES	1.03E+01
VERMONT YANKEE	N/R

TRITIUM

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED

TABLE 6  
LIQUID EFFLUENTS COMPARISON BY YEAR (CURIES)

PRESSURIZED WATER REACTORS FACILITY	TRITIUM									
	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	-	-	-	-	-	-	8.60E+00	1.08E+02	3.49E+02	9.59E+01
CALVERT CLIFFS	-	-	-	-	-	2.63E+02	2.74E+02	5.75E+02	4.56E+02	5.14E+02
CRYSTAL RIVER	-	-	-	-	-	-	-	1.66E+02	1.54E+02	1.66E+02
DAVIS-BESSE	-	-	-	-	-	-	-	9.01E+00	2.15E+02	2.45E+02
DONALD C. COOK	-	-	-	-	-	5.64E+01	1.92E+02	2.86E+02	6.24E+02	1.22E+03
FORT CALHOUN	-	-	-	1.58E+01	1.24E+02	1.11E+02	1.22E+02	1.57E+02	1.50E+02	2.58E+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	5.94E+03	3.55E+03
H.B. ROBINSON	-	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
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 W/OTHER UNIT		2.56E+02	1.15E+02
JOSEPH M. FARLEY	-	-	-	-	-	-	-	-	5.91E+01	9.40E+01
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
MILLSTONE POINT 2	-	-	-	-	-	7.60E+00	2.77E+02	2.11E+02	2.01E+02	2.54E+02
NORTH ANNA	-	-	-	-	-	-	-	-	2.82E+02	3.13E+02
OCONEE	-	-	-	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
POINT BEACH	-	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	-	-	-	<1.00E-01	1.42E+02	4.54E-01	1.00E-01	1.35E+03	5.51E+02	6.25E+02
RANCHO SECO	-	-	-	-	-	1.32E+02	0.00E+00	8.55E-02	N/R	N/R
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
SALEM	-	-	-	-	-	-	4.00E-02	2.96E+02	4.46E+02	7.26E+02
SAN ONOFRE	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
ST. LUCIE	-	-	-	-	-	-	1.33E+01	2.42E+02	1.28E+02	1.28E+02
SURRY	-	-	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
TROJAN	-	-	-	-	-	-	3.60E+01	3.11E+02	1.59E+02	6.80E+01
TURKEY POINT	-	-	-	3.29E+02	5.80E+02	7.97E+02	7.71E+02	9.24E+02	1.17E+03	9.40E+02
YANKEE ROWE	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	-	-	-	1.00E-01	2.74E+02	1.03E+03	7.47E+02	7.24E+02	7.25E+02	6.01E+02

N/R=NOT REPORTED

TABLE 6  
LIQUID EFFLUENTS COMPARISON BY YEAR (CURIES)

PRESSURIZED WATER REACTORS

TRITIUM

FACILITY	1980
ARKANSAS ONE 1	2.12E+02
ARKANSAS ONE 2	2.89E+02
BEAVER VALLEY	3.98E+01
CALVERT CLIFFS	4.91E+02
CRYSTAL RIVER	1.95E+02
DAVIS-BESSE	1.08E+02
DONALD C. COOK	7.82E+02
FORT CALHOUN	5.44E+01
HADDAM NECK	3.29E+03
H.B.ROBINSON	1.89E+02
INDIAN POINT 1-2	2.76E+02
INDIAN POINT 3	4.27E+02
JOSEPH M. FARLEY	5.70E+02
KEWAUNEE	2.33E+02
MAINE YANKEE	2.18E+02
MILLSTONE 2	2.68E+02
NORTH ANNA	4.03E+02
OCONEE	7.12E+02
PALISADES	7.47E+01
POINT BEACH	7.61E+02
PRAIRIE ISLAND	5.43E+02
RANCHO SECO	1.47E-02
R.E.GINNA	1.60E+02
SALEM 1	0.
SALEM 2	N/R
SAN ONOFRE	1.03E+03
SEQUOYAH	3.23E-01
ST. LUCIE	2.72E+02
SURRY	3.85E+02
THREE MILE ISLAND 1	3.26E+01
THREE MILE ISLAND 2	6.10E-04
TMI 2/EPICOR	N/R
TROJAN	1.24E+02
TURKEY POINT	7.49E+02
YANKEE ROWE	5.84E+01
ZION	7.45E+02



TABLE 7  
LIQUID EFFLUENTS COMPARISON BY YEAR (CURIES)

BOILING WATER REACTORS FACILITY	MIXED FISSION AND ACTIVATION PRODUCTS									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
BIG ROCK POINT	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
BROWN'S FERRY	-	-	-	-	8.00E-01	2.70E+00	<3.95E+00	1.19E+00	1.32E+01	1.02E+01
BRUNSWICK	-	-	-	-	-	1.89E+00	3.29E+00	6.22E+00	3.48E+00	5.10E+00
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
EDWIN I. HATCH	-	-	-	-	-	6.00E-02	4.00E-02	2.50E+01	4.03E-02	4.82E-02
FORT ST. VRAIN *	-	-	-	-	-	-	-	-	-	1.85E-04
HUMBOLDT BAY	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
JAMES A. FITZPATRICK	-	-	-	-	-	5.32E+00	6.01E+00	8.85E-01	1.58E+00	6.46E-01
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
MILLSTONE POINT 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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NINE MILE POINT	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/R	1.89E+00
OYSTER CREEK	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	-	-	-	<1.00E-01	9.00E-01	9.30E-01	3.38E+00	2.23E+00	5.11E+00	1.95E+01
PILGRIM	-	-	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	-	-	2.40E+00	2.14E+01	3.88E+01	1.71E+01	6.99E+00	1.34E+00	2.24E+00	1.31E+00
VERMONT YANKEE	-	-	-	<1.00E-01	0.00E+00	<1.00E-02	<1.00E-02	1.55E-01	N/R	2.40E-04

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED

TABLE 7  
LIQUID EFFLUENTS COMPARISON BY YEAR (CURIES)  
MIXED FISSION AND ACTIVATION PRODUCTS

BOILING WATER REACTORS	1980
FACILITY	
BIG ROCK POINT	7.82E-01
BROWN'S FERRY	9.38E+00
BRUNSWICK	1.26E+00
COOPER	< 1.10E+01
DRESDEN 1	N/R
DRESDEN 2-3	7.16E-01
DUANE ARNOLD	N/R
EDWIN I. HATCH 1	6.89E-02
EDWIN I. HATCH 2	4.57E-02
FORT ST. VRAIN *	6.37E-05
HUMBOLDT BAY	1.59E-01
JAMES A. FITZPATRICK	1.51E+00
LACROSSE	2.13E+00
MILLSTONE 1	7.24E-01
MONTICELLO	0.
NINE MILE POINT	N/R
OYSTER CREEK	5.06E-01
PEACH BOTTOM	1.90E+00
PILGRIM	2.79E+00
QUAD-CITIES	1.31E+01
VERMONT YANKEE	N/R

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED

TABLE 8  
LIQUID EFFLUENTS COMPARISON BY YEAR (CURIES)

FACILITY	MIXED FISSION AND ACTIVATION PRODUCTS									
	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	-	-	-	-	-	-	1.70E-01	6.52E-01	2.63E-01	1.21E-01
CALVERT CLIFFS	-	-	-	-	-	1.44E+00	1.18E+00	3.48E+00	6.13E+00	7.80E+00
CRYSTAL RIVER	-	-	-	-	-	-	-	1.54E-02	2.96E-02	4.16E-01
DAVIS-BESSE	-	-	-	-	-	-	-	2.60E-02	9.01E-02	4.28E-02
DONALD C. COOK	-	-	-	-	-	-	-	1.52E+00	1.48E+00	2.58E+00
FORT CALHOUN	-	-	-	<1.00E-01	2.30E+00	2.60E-01	1.87E+00	1.48E+00	1.48E+00	2.58E+00
HADDAM NECK	6.70E+00	5.90E+00	4.80E+00	3.00E+00	2.20E+00	3.60E-01	5.50E-01	3.63E-01	5.95E-01	2.45E-01
H. B. ROBINSON	-	7.00E-01	8.00E-01	6.00E-01	2.50E+00	4.50E-01	3.80E-01	1.71E+00	9.50E-01	8.67E-01
INDIAN POINT 1-2	-	-	-	2.20E+00	4.20E+00	4.93E+00	<4.98E+00	3.29E-01	1.78E-01	2.99E-01
INDIAN POINT 3	-	-	-	-	-	-	SHOWN W/ OTHER UNIT	1.99E+00	1.99E+00	1.94E+00
JOSEPH M. FARLEY	-	-	-	-	-	-	-	1.03E+00	1.03E+00	4.02E-01
KEWAUNEE	-	-	-	-	4.00E-01	7.20E-01	2.83E+00	1.26E+00	1.03E-01	5.86E-02
MAINE YANKEE	-	-	<1.00E-01	<1.00E-01	4.00E+00	3.21E+00	<2.84E+00	4.42E-01	6.99E-01	8.94E-01
MILLSTONE POINT 2	-	-	-	-	-	2.00E-02	2.60E-01	1.56E+00	1.04E-01	4.63E-01
NORTH ANNA	-	-	-	-	-	-	-	-	2.79E+00	4.87E+00
OCONEE	-	-	-	2.80E+00	1.90E+00	5.05E+00	7.93E+00	3.62E+01	2.68E-01	5.89E-01
PALISADES	-	-	6.80E+00	2.78E+01	5.90E+00	3.45E+00	4.40E-01	9.29E-02	6.51E+00	9.24E-01
POINT BEACH	-	1.00E-01	1.50E+00	8.00E-01	2.00E-01	2.34E+00	3.24E+00	1.50E+00	9.65E-02	1.28E-01
PRAIRIE ISLAND	-	-	-	<1.00E-01	<1.00E-01	4.50E-01	1.00E-01	1.33E-02	6.86E-01	7.25E-01
RANCHO SECO	-	-	-	-	-	<1.00E-02	0.00E+00	0.00E+00	4.94E-03	9.00E-03
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	N/R	N/R
SALEM	-	-	-	-	-	-	<1.00E-02	6.47E-02	6.07E-02	8.63E-02
SAV ONOFRE	7.60E+00	1.50E+00	3.03E+01	1.60E+01	5.00E+00	1.22E+00	7.43E+00	2.88E+00	4.02E+00	3.98E+00
ST. LUCIE	-	-	-	-	-	-	8.00E-02	9.84E+00	1.18E+01	1.10E+01
SURRY	-	-	2.00E-01	1.00E-01	3.80E+00	9.27E+00	3.37E+01	5.80E+00	2.80E+00	2.67E+00
THREE MILE ISLAND 1	-	-	-	-	1.30E+00	7.00E-02	1.00E-01	6.55E+01	2.41E+00	2.53E+00
THREE MILE ISLAND 2	-	-	-	-	-	-	-	1.94E-01	6.14E-01	4.91E-01
TROJAN	-	-	-	-	-	-	-	3.92E-01	3.92E-01	3.31E-01
TURKEY POINT	-	-	-	<1.00E-01	1.60E+00	3.07E+00	<8.65E+00	4.19E+00	7.07E-01	5.55E-01
YANKEE ROWE	<1.00E-01	<1.00E-01	<1.00E-01	<1.00E-01	<1.00E-01	2.00E-02	<1.00E-02	1.80E-02	3.32E+00	4.10E-01
ZION	-	-	-	<1.00E-01	<1.00E-01	<1.00E-02	1.60E-01	9.50E-01	8.14E-02	1.17E-02
									9.51E-01	7.00E-01

N/R=NOT REPORTED

TABLE 8  
LIQUID EFFLUENTS COMPARISON BY YEAR (CURIES)  
MIXED FISSION AND ACTIVATION PRODUCTS

PRESSURIZED WATER REACTORS

FACILITY	1980
ARKANSAS ONE 1	3.42E+00
ARKANSAS ONE 2	4.13E+00
BEAVER VALLEY	1.04E-01
CALVERT CLIFFS	4.53E+00
CRYSTAL RIVER	1.46E-01
DAVIS-BESSE	2.07E-01
DONALD C. COOK	1.37E+00
FORT CALHOUN	5.04E-01
HADDAM NECK	2.76E-01
H.B. ROBINSON	3.58E-01
INDIAN POINT 1-2	1.26E+00
INDIAN POINT 3	2.90E+00
JOSEPH M. FARLEY	5.18E-02
KEWAUNEE	6.17E-01
MAINE YANKEE	2.97E-01
MILLSTONE 2	2.81E+00
NORTH ANNA	1.05E+00
OCONEE	1.54E+00
PALISADES	8.73E-05
POINT BEACH	6.29E-01
PRAIRIE ISLAND	1.32E-02
RANCHO SECO	3.78E-05
R.E. GINNA	1.96E-02
SALEM 1	2.65E+00
SALEM 2	3.89E-01
SAN ONOFRE	1.12E+01
SEQUOYAH	N/R
ST. LUCIE	2.36E+00
SURRY	3.85E+00
THREE MILE ISLAND 1	1.83E-01
THREE MILE ISLAND 2	1.45E-05
TMI 2/EPICOR	N/R
TROJAN	7.87E-01
TURKEY POINT	6.78E-01
YANKEE ROWE	1.75E-02
ZION	4.74E-01

TABLE 9

## BOILING WATER REACTORS

## SOLID WASTE SUMMARY 1980

FACILITY	VOLUME (CUBIC METERS)	ACTIVITY (CURIES)	NO. OF SHIPMENTS
BIG ROCK POINT	4.20E+01	3.09E+01	6
BROWN'S FERRY	2.49E+03	6.46E+03	210
BRUNSWICK	6.73E+03	7.55E+03	456
COOPER	4.35E+02	7.05E+02	68
DRESDEN 1	SHOWN W/OTHER UNIT	SHOWN W/OTHER UNIT	SHOWN W/OTHER UNIT
DRESDEN 2-3	1.16E+03	4.46E+03	267
DUANE ARNOLD	7.35E+02	7.00E+02	86
EDWIN I. HATCH 1	4.64E+02	9.62E+02	87
EDWIN I. HATCH 2	2.59E+02	8.27E+01	42
FORT ST. VRAIN *	0.	0.	N/R
HUMBOLDT BAY	8.20E+01	6.95E+01	9
JAMES A. FITZPATRICK	7.50E+02	8.86E+02	82
LACROSSE	4.32E+01	2.02E+01	5
MILLSTONE 1	2.30E+03	2.36E+03	179
MONTICELLO	7.42E+02	7.57E+02	69
NINE MILE <sup>UNIT</sup>	8.14E+02	2.32E+04	65
OYSTER CREEK	2.03E+03	1.32E+03	167
PEACH BOTTOM	2.64E+03	6.69E+03	347
PILGRIM	2.94E+03	1.60E+03	152
QUAD-CITIES	1.67E+03	4.07E+03	325
VERMONT YANKEE	4.84E+02	9.20E+02	50

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED

TABLE 10

## PRESSURIZED WATER REACTORS

## SOLID WASTE SUMMARY 1980

FACILITY	VOLUME (CUBIC METERS)	ACTIVITY (CURIES)	NO. OF SHIPMENTS
ARKANSAS ONE 1	N/R	N/R	N/R
ARKANSAS ONE 2	N/R	N/R	N/R
BEAVER VALLEY	2.84E+02	5.54E+02	29
CALVERT CLIFFS	2.51E+02	1.48E+04	42
CRYSTAL RIVER	9.27E+02	2.05E+03	92
DAVIS-BESSE	3.30E+02	3.00E+01	28
DONALD C. COOK	2.10E+03	1.04E+03	102
FORT CALHOUN	4.06E+02	1.32E+03	37
HADDAM NECK	1.26E+03	4.89E+02	74
H.B. ROBINSON	3.99E+03	3.08E+02	92
INDIAN POINT 1-2	1.03E+03	3.32E+02	91
INDIAN POINT 3	3.47E+02	2.02E+02	31
JOSEPH M. FARLEY	4.41E+02	2.26E+02	33
KEWAUNEE	1.03E+02	1.37E+03	28
MAINE YANKEE	4.57E+02	4.79E+03	51
MILLSTONE 2	7.51E+00	2.28E+02	3
NORTH ANNA	2.64E+02	1.54E+02	27
OCONEE	1.32E+03	2.91E+03	138
PALISADES	7.31E+02	1.18E+02	32
POINT BEACH	4.49E+02	9.35E+02	29
PRAIRIE ISLAND	5.25E+02	1.98E+02	28
RANCHO SECO	4.60E+02	1.12E+02	30
R.E. GINNA	4.00E+02	4.60E+02	26
SALEM 1	1.01E+03	4.59E+02	87
SALEM 2	SHOWN W/OTHER UNIT	SHOWN W/OTHER UNIT	SHOWN W/OTHER UNIT
SAN ONOFRE	7.12E+02	4.35E+02	36
SEQUOYAH	N/R	N/R	N/R
ST. LUCIE	3.12E+02	7.46E+02	26
SURRY	2.01E+03	7.06E+02	110
THREE MILE ISLAND 1	4.62E+02	2.30E+02	18
THREE MILE ISLAND 2	7.67E+02	1.26E+02	42
TMI 2/EPICOR	N/R	N/R	N/R
TROJAN	5.14E+02	4.59E+01	26
TURKEY POINT	7.24E+02	1.61E+02	67
YANKEE ROWE	2.07E+02	9.57E+01	16
ZION	1.64E+03	2.55E+03	N/R

TABLE 11

## SOLID WASTE COMPARISON BY YEAR

BOILING WATER REACTORS		VOLUME (CUBIC METERS) - ACTIVITY (CURIES)									
FACILITY		1975	1976		1977		1978		1979		
BIG ROCK POINT	N/R	N/R	2.88E+01	3.69E+00	7.22E+01	9.68E+02	3.10E+01	2.56E+01	8.99E+01	2.77E+02	
BROWN'S FERRY	N/R	N/R	3.20E+02	1.03E+02	1.82E+03	1.10E+04	2.90E+03	1.33E+03	2.29E+02	4.17E+03	
BRUNSWICK	N/R	N/R	1.79E+03	6.46E+02	2.47E+03	3.24E+03	2.02E+03	2.14E+03	3.09E+03	4.29E+03	
COOPER	N/R	N/R	3.01E+02	3.20E+02	2.83E+02	2.85E+02	3.29E+02	3.84E+02	5.65E+02	9.69E+01	
DRESDEN 1	N/R	N/R	SHOWN W/OTHER UNIT		SHOWN W/OTHER UNIT		SHOWN W/OTHER UNIT		SHOWN W/OTHER UNIT		
DRESDEN 2-3	N/R	N/R	7.12E+03	4.33E+03	2.25E+03	1.13E+04	1.77E+03	1.88E+03	1.04E+03	8.45E+02	
DUANE ARNOLD	N/R	N/R	5.95E+02	1.87E+02	5.45E+02	4.98E+02	1.10E+03	1.86E+03	7.99E+02	8.01E+02	
EDWIN I. HATCH	N/R	N/R	4.12E+02	2.91E+02	5.39E+02	3.81E+02	7.50E+02	1.09E+04	9.78E+02	2.70E+02	
FORT ST. VRAIN *	N/R	N/R	-	-	-	-	-	-	0.	0.	
HUMBOLDT BAY	N/R	N/R	8.49E+01	4.09E+00	3.77E+02	2.00E+01	1.78E+02	7.91E-01	9.06E+01	3.35E+03	
JAMES A. FITZPATRICK	N/R	N/R	6.19E+02	3.41E+02	1.23E+03	6.17E+03	8.70E+02	3.19E+02	8.04E+02	1.06E+03	
LACROSSE	N/R	N/R	NR	NR	4.65E+00	5.88E+02	3.80E+01	6.18E+01	5.09E+00	1.25E+02	
MILLSTONE POINT 1	N/R	N/R	1.33E+03	1.70E+03	1.77E+03	3.03E+03	2.00E+03	8.15E+04	2.11E+03	1.16E+03	
MONTICELLO	N/R	N/R	2.85E+02	3.79E+03	5.73E+02	2.91E+04	4.99E+02	6.35E+04	4.74E+02	1.31E+04	
NINE MILE POINT	N/R	N/R	5.38E+02	2.51E+03	6.65E+02	2.51E+04	3.85E+02	2.24E+04	4.97E+02	1.52E+03	
OYSTER CREEK	N/R	N/R	1.20E+03	1.29E+03	1.74E+03	2.73E+02	1.54E+03	1.15E+03	1.13E+03	1.34E+03	
PEACH BOTTOM	N/R	N/R	1.20E+03	5.85E+02	2.52E+03	1.82E+03	1.96E+03	4.97E+03	2.40E+03	8.03E+03	
PILGRIM	N/R	N/R	9.12E+02	3.69E+04	5.84E+02	5.70E+03	1.97E+03	4.92E+04	3.03E+03	2.22E+04	
QUAD-CITIES	N/R	N/R	1.00E+03	2.35E+03	1.20E+03	7.53E+03	1.34E+03	3.27E+03	7.82E+02	4.26E+03	
VERMONT YANKEE	N/R	N/R	2.38E+02	2.93E+01	1.08E+02	1.76E+02	3.99E+02	5.39E+04	2.71E+02	9.99E+02	

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED

TABLE 11

## SOLID WASTE COMPARISON BY YEAR

BOILING WATER REACTORS FACILITY	VOLUME(CUBIC METERS) - ACTIVITY(CURIES)	
	1980	
BIG ROCK POINT	4.20E+01	3.09E+01
BROWN'S FERRY	2.49E+03	6.46E+03
BRUNSWICK	6.73E+03	7.55E+03
COOPER	4.35E+02	7.05E+02
DRESDEN 1	SHOWN W/OTHER UNIT	
DRESDEN 2-3	1.16E+03	4.46E+03
DUANE ARNOLD	7.35E+02	7.00E+02
EDWIN I. HATCH 1	4.64E+02	9.62E+02
EDWIN I. HATCH 2	2.59E+02	8.27E+01
FORT ST. VRAIN *	0.	0.
HUMBOLDT BAY	8.20E+01	6.95E+01
JAMES A. FITZPATRICK	7.50E+02	8.86E+02
LACROSSE	4.32E+01	2.02E+01
MILLSTONE 1	2.30E+03	2.36E+03
MONTICELLO	7.42E+02	7.57E+02
NINE MILE POINT	8.14E+02	2.32E+04
OYSTER CREEK	2.03E+03	1.32E+03
PEACH BOTTOM	2.64E+03	6.69E+03
PILGRIM	2.94E+03	1.60E+03
QUAD-CITIES	1.67E+03	4.07E+03
VERMONT YANKEE	4.84E+02	9.20E+02

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED



TABLE 12

## SOLID WASTE COMPARISON BY YEAR

## PRESSURIZED WATER REACTORS

## VOLUME(CUBIC METERS) - ACTIVITY(CURIES)

FACILITY	1975	1976	1977	1978	1979
ARKANSAS ONE 1	N/R	N/R	NR	NR	3.17E+02 1.26E+02
ARKANSAS ONE 2	N/R	N/R	-	-	N/R N/R
BEAVER VALLEY	N/R	N/R	4.30E+01 4.26E-02	2.67E+02 8.18E+00	4.39E+02 2.25E+02 2.44E+02 2.95E+02
CALVERT CLIFFS	N/R	N/R	1.18E+02 1.22E+02	3.09E+02 9.83E+02	6.03E+02 1.12E+03 4.32E+02 9.71E+02
CRYSTAL RIVER	N/R	N/R	-	4.48E+02 3.48E+00	6.87E+02 2.72E+04 1.24E+03 1.20E+03
DAVIS-BESSE	N/R	N/R	-	0.00E+00 0.00E+00	3.40E+02 3.30E+00 2.60E+02 2.86E+00
DONALD C. COOK	N/R	N/R	1.69E+02 2.62E-01	6.84E+02 8.28E+01	1.28E+03 2.25E+02 1.09E+03 3.37E+02
FORT CALHOUN	N/R	N/R	7.57E+02 1.27E+02	5.97E+02 6.46E+02	5.84E+02 1.06E+02 2.44E+02 2.99E+01
HADDAM NECK	N/R	N/R	7.67E+02 7.46E+02	1.68E+03 8.41E+02	2.29E+02 1.44E+02 1.25E+03 3.05E+02
H.B. ROBINSON	N/R	N/R	3.16E+02 6.29E+01	2.59E+02 1.24E+03	8.22E+02 2.40E+02 8.34E+02 8.72E+01
INDIAN POINT 1-2	N/R	N/R	9.19E+02 9.46E+02	1.06E+03 1.45E+03	8.43E+03 2.37E+03 1.17E+03 2.16E+03
INDIAN POINT 3	N/R	N/R	SHOWN W/OTHER UNIT	SHOWN W/OTHER UNIT	5.94E+02 6.49E+01 2.25E+02 1.63E+02
JOSEPH M. FARLEY	N/R	N/R	-	-	2.69E+02 5.72E+00 1.11E+03 2.32E+02
KEWAUNEE	N/R	N/R	5.94E+02 4.94E+01	3.37E+01 3.66E+02	7.98E+01 1.50E+03 1.70E+02 3.54E+02
MAINE YANKEE	N/R	N/R	1.84E+02 5.04E+02	1.84E+02 1.53E+04	5.81E+02 4.14E+03 3.63E+02 2.77E+03
MILLSTONE POINT 2	N/R	N/R	2.80E+02 1.80E+00	9.35E+01 5.80E+01	1.55E+02 1.70E+01 2.46E+02 1.78E+03
NORTH ANNA	N/R	N/R	-	-	2.14E+01 3.59E+00 2.95E+02 5.89E+01
OCONEE	N/R	N/R	2.22E+03 7.83E+02	1.07E+03 7.37E+03	1.58E+03 5.93E+03 1.63E+03 2.59E+03
PALISADES	N/R	N/R	6.81E+01 9.58E+01	4.43E+02 8.71E+01	7.17E+02 3.40E+03 6.84E+02 3.92E+02
POINT BEACH	N/R	N/R	1.99E+02 3.04E+02	6.84E+03 5.68E+02	1.61E+02 1.51E+03 2.69E+02 1.22E+03
PRAIRIE ISLAND	N/R	N/R	1.52E+02 6.53E+01	6.43E+02 2.46E+02	1.95E+02 1.53E+02 1.99E+01 8.83E+01
RANCHO SECO	N/R	N/R	1.11E+02 2.80E+01	5.06E+01 1.21E+03	1.29E+02 1.27E+03 1.01E+02 4.03E+00
R.E.GINNA	N/R	N/R	2.80E+02 9.78E+01	3.49E+02 6.90E+02	5.96E+01 6.27E+02 3.08E+02 1.53E+02
SALEM	N/R	N/R	0.00E+00 0.00E+00	4.25E+02 2.20E+00	2.27E+02 1.94E+02 6.86E+02 1.28E+02
SAN ONOFRE	N/R	N/R	1.45E+02 6.98E+02	3.68E+02 6.02E+01	1.31E+02 7.17E+00 8.35E+01 9.24E+01
ST. LUCIE	N/R	N/R	8.68E+01 1.57E+00	3.85E+02 3.27E+03	3.58E+02 1.26E+04 3.08E+02 1.79E+02
SURRY	N/R	N/R	7.00E+02 6.17E+02	7.93E+02 6.10E+02	6.03E+02 5.66E+02 2.74E+03 3.45E+02
THREE MILE ISLAND 1	N/R	N/R	4.06E+02 1.85E+02	2.18E+02 4.73E+01	3.89E+02 2.34E+02 7.51E+02 3.12E+01
THREE MILE ISLAND 2	N/R	N/R	-	-	SHOWN W/OTHER UNIT SHOWN W/OTHER UNIT
TROJAN	N/R	N/R	4.37E+01 4.32E+00	1.01E+02 8.31E+01	2.26E+02 4.48E+02 6.37E+02 3.30E+02
TURKEY POINT	N/R	N/R	1.44E+03 4.77E+02	1.07E+03 4.26E+02	1.75E+03 1.72E+03 9.20E+02 2.48E+02
YANKEE ROWE	N/R	N/R	3.60E+02 2.65E+01	2.81E+02 3.54E+00	2.60E+02 9.75E+00 2.36E+02 1.63E+02
ZION	N/R	N/R	2.06E+03 6.82E+01	1.97E+03 2.25E+02	1.63E+03 1.86E+03 5.97E+02 2.69E+03

N/R=NOT REPORTED

TABLE 12

## SOLID WASTE COMPARISON BY YEAR

PRESSURIZED WATER REACTORS	VOLUME(CUBIC METERS) - ACTIVITY(CURIES)	
FACILITY	1980	
ARKANSAS ONE 1	N/R	N/R
ARKANSAS ONE 2	N/R	N/R
BEAVER VALLEY	2.84E+02	5.34E+02
CALVERT CLIFFS	2.51E+02	1.48E+04
CRYSTAL RIVER	9.27E+02	2.05E+03
DAVIS-BESSE	3.30E+02	3.00E+01
DONALD C. COOK	2.10E+03	1.04E+03
FORT CALHOUN	4.06E+02	1.32E+03
HADDAM NECK	1.26E+03	4.89E+02
H. B. ROBINSON	3.99E+03	3.08E+02
INDIAN POINT 1-2	1.03E+03	3.32E+02
INDIAN POINT 3	3.47E+02	2.02E+02
JOSEPH M. FARLEY	4.41E+02	2.26E+02
KEWAUNEE	1.03E+02	1.37E+03
MAINE YANKEE	4.57E+02	4.79E+03
MILLSTONE 2	7.51E+00	2.28E+02
NORTH ANNA	2.64E+02	1.54E+02
OCONEE	1.32E+03	2.91E+03
PALISADES	7.31E+02	1.18E+02
POINT BEACH	4.49E+02	9.35E+02
PRAIRIE ISLAND	5.25E+02	1.98E+02
RANCHO SECO	4.60E+02	1.12E+02
R. E. GINNA	4.00E+02	4.60E+02
SALEM 1	1.01E+03	4.59E+02
SALEM 2	SHOWN W/OTHER UNIT	
SAN ONOFRE	7.12E+02	4.35E+02
SEQUOYAH	N/R	N/R
ST. LUCIE	3.12E+02	7.46E+02
SURRY	2.01E+03	7.06E+02
THREE MILE ISLAND 1	4.62E+02	2.30E+02
THREE MILE ISLAND 2	7.67E+02	1.26E+02
TMI 2/EPICOR	N/R	N/R
TROJAN	5.14E+02	4.59E+01
TURKEY POINT	7.24E+02	1.61E+02
YANKEE ROWE	2.07E+02	9.57E+01
ZION	1.64E+03	2.55E+03

TABLE 13  
NET ELECTRICAL ENERGY GENERATION COMPARISON BY YEAR

BOILING WATER REACTORS		MEGAWATT HOURS									
FACILITY	INITIAL CRITICALITY	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
BIG ROCK POINT	09/27/62									4.01E+05	1.14E+05
BROWN'S FERRY	08/17/73									1.69E+07	2.04E+07
	07/20/74										
	08/08/76										
BRUNSWICK	10/08/76									9.91E+06	6.82E+06
	03/20/75										
COOPER	02/21/74									4.89E+06	4.99E+06
DRESDEN 1	10/15/59									7.59E+05	0.00
DRESDEN 2-3	06/09/72									9.53E+06	8.42E+06
	11/16/71										
DUANE ARNOLD	03/23/74									1.23E+06	2.90E+06
EDWIN I. HATCH	09/12/74									4.77E+06	5.10E+06
	07/04/78										
FORT ST. VRAIN *	01/31/74									6.09E+05	1.24E+05
HUMBOLDT BAY	02/16/63									0.00	0.00
JAMES A. FITZPATRICK	11/17/74									4.20E+06	2.96E+06
LACROSSE	07/11/67									1.74E+05	2.01E+05
MILLSTONE POINT 1	10/26/70									4.65E+06	4.22E+06
MONTICELLO	12/10/70									3.86E+06	4.40E+06
NINE MILE POINT	09/05/69									4.47E+06	3.00E+06
OYSTER CREEK	05/03/69									3.65E+06	4.56E+06
PEACH BOTTOM	09/16/73									1.38E+07	1.47E+07
	08/07/74										
PILGRIM	06/16/72									4.38E+06	4.84E+06
QUAD-CITIES	10/18/71									9.15E+06	8.76E+06
	04/26/72										
VERMONT YANKEE	03/24/72									3.24E+06	3.45E+06

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED

TABLE 13

## NET ELECTRICAL ENERGY GENERATION COMPARISON BY YEAR

BOILING WATER REACTORS		MEGAWATT HOURS	
FACILITY	INITIAL CRITICALITY	1980	
BIG ROCK POINT	09/27/62	4.05E+05	
BROWN'S FERRY	08/17/73	6.06E+06	
	07/20/74	5.62E+06	
	08/08/76	6.94E+06	
BRUNSWICK	10/08/76	3.94E+06	
	03/20/75	1.86E+05	
COOPER	02/21/74	3.79E+06	
DRESDEN 1	10/15/59	0.	
DRESDEN 2-3	06/09/72	4.58E+06	
	11/16/71	4.33E+06	
DUANE ARNOLD	03/23/74	2.80E+06	
EDWIN I. HATCH 1	09/12/74	4.79E+06	
EDWIN I. HATCH 2	07/04/78	3.64E+06	
FORT ST. VRAIN *	01/31/74	6.76E+05	
HUMBOLDT BAY	02/16/63	0.	
JAMES A. FITZPATRICK	11/17/74	4.33E+06	
LACROSSE	07/11/67	2.15E+06	
MILLSTONE 1	10/26/70	3.40E+06	
MONTICELLO	12/10/70	3.45E+06	
NINE MILE POINT	09/05/69	4.54E+06	
OYSTER CREEK	05/03/69	1.96E+06	
PEACH BOTTOM	09/16/73	4.34E+06	
	08/07/74	7.23E+06	
PILGRIM	06/16/72	3.04E+06	
QUAD-CITIES	10/18/71	3.44E+06	
	04/26/72	3.61E+06	
VERMONT YANKEE	03/24/72	2.98E+06	

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED

TABLE 14

## NET ELECTRICAL ENERGY GENERATION COMPARISON BY YEAR

## PRESSURIZED WATER REACTORS

## MEGAWATT HOURS

FACILITY	INITIAL CRITICALITY	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
ARKANSAS ONE 1	08/06/74									5.25E+06	3.32E+06
ARKANSAS ONE 2	12/05/78									3.98E+03	8.81E+05
BEAVER VALLEY	05/10/76									2.48E+06	1.79E+06
CALVERT CLIFFS	10/07/74									9.91E+06	9.68E+06
	11/30/76										
CRYSTAL RIVER	01/14/77									2.59E+06	3.76E+06
DAVIS-BESSE	08/12/77									2.61E+06	3.13E+06
DONALD C. COOK	01/18/75									1.01E+07	1.16E+07
	07/01/78										
FORT CALHOUN	08/06/73									2.85E+06	3.67E+06
HADDAM NECK	07/24/67									4.71E+06	4.12E+06
H.B. ROBINSON	09/20/70									3.98E+06	4.00E+06
INDIAN POINT 1-2	08/02/62									4.37E+06	4.80E+06
	05/22/73										
INDIAN POINT 3	04/06/76									5.46E+06	4.79E+06
JOSEPH M. FARLEY	08/09/77									5.92E+06	1.74E+06
KEWAUNEE	03/07/74									3.89E+06	3.44E+06
MAINE YANKEE	10/23/72									5.35E+06	4.54E+06
MILLSTONE POINT 2	10/17/75									4.50E+06	4.36E+06
NORTH ANNA	04/05/78									3.66E+06	4.19E+06
OCONEE	04/19/73									1.59E+07	1.32E+07
	11/11/73										
	09/05/74										
PALISADES	05/24/71									2.62E+06	3.43E+06
POINT BEACH	11/02/70									7.65E+06	6.77E+06
	05/30/72										
PRAIRIE ISLAND	12/01/73									7.73E+06	7.10E+06
	12/17/74										
RANCHO SECO	09/16/74									4.99E+06	5.71E+06
R.E. GINNA	11/08/69									3.22E+06	2.96E+06
SALEM	12/11/76									4.53E+06	2.04E+06
SAN ONOFRE	06/14/67									2.68E+06	3.36E+06
ST. LUCIE	04/22/76									5.00E+06	4.88E+06
SURRY	07/01/72									1.01E+07	2.87E+06
	03/07/73										
THREE MILE ISLAND 1	06/05/74									5.67E+06	8.48E+05
THREE MILE ISLAND 2	03/28/78									5.77E+05	N/R
TROJAN	12/15/75									1.67E+06	5.27E+06
TURKEY POINT	10/20/72									8.29E+06	6.71E+06
	06/11/73										
YANKEE ROWE	08/19/60									1.19E+06	1.23E+06
ZION	06/19/73									1.35E+07	1.03E+07
	12/24/73										

N/R=NOT REPORTED

TABLE 14

## NET ELECTRICAL ENERGY GENERATION COMPARISON BY YEAR

## PRESSURIZED WATER REACTORS

## MEGAWATT HOURS

FACILITY	INITIAL CRITICALITY	1980
ARKANSAS ONE 1	08/06/74	3.78E+06
ARKANSAS ONE 2	12/05/78	3.65E+06
BEAVER VALLEY	05/10/76	3.01E+05
CALVERT CLIFFS	10/07/74	4.53E+06
	11/30/76	6.41E+06
CRYSTAL RIVER	01/14/77	3.35E+06
DAVIS-BESSE	08/12/77	2.09E+06
DONALD C. COOK	01/18/75	6.46E+06
	07/01/78	6.70E+06
FORT CALHOUN	08/06/73	2.01E+06
HADDAM NECK	07/24/67	3.56E+06
H.B. ROBINSON	09/20/70	3.21E+06
INDIAN POINT 1-2	08/02/62	0.
	05/22/73	4.26E+06
INDIAN POINT 3	04/06/76	3.07E+06
JOSEPH M. FARLEY	08/09/77	4.60E+06
KEWAUNEE	03/07/74	3.63E+06
MAINE YANKEE	10/23/72	4.40E+06
MILLSTONE 2	10/17/75	4.88E+06
NORTH ANNA	04/05/78	5.63E+06
	06/12/80	3.50E+05
OCONEE	04/19/73	5.12E+06
	11/11/73	3.88E+06
	09/05/74	5.22E+06
PALISADES	05/24/71	2.38E+06
POINT BEACH	11/02/70	2.48E+06
	05/30/72	3.59E+06
PRAIRIE ISLAND	12/01/73	3.11E+06
	12/17/74	3.47E+06
RANCHO SECO	09/16/74	4.42E+06
R.E. GINNA	11/08/69	3.09E+06
SALEM 1	12/11/76	5.68E+06
SALEM 2	08/02/80	0.
SAN ONOFRE	06/14/67	8.17E+05
SEQUOYAH	07/05/80	5.18E+05
ST. LUCIE	04/22/76	5.20E+06
SURRY	07/01/72	2.47E+06
	03/07/73	2.24E+06
THREE MILE ISLAND 1	06/05/74	0.
THREE MILE ISLAND 2	03/28/78	0.
TMI 2/EPICOR	03/28/78	0.
TROJAN	12/15/75	6.07E+06
TURKEY POINT	10/20/72	4.39E+06
	06/11/73	3.85E+06
YANKEE ROWE	08/19/60	2.92E+05
ZION	06/19/73	6.51E+06
	12/24/73	5.28E+06

TABLE 15

## THERMAL ENERGY GENERATION COMPARISON BY YEAR

## BOILING WATER REACTORS

## MEGAWATT HOURS

FACILITY	INITIAL CRITICALITY	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
BIG ROCK POINT	09/27/62	1.18E+06	1.21E+06	1.20E+06	1.41E+06	1.13E+06	9.80E+05	8.30E+05	1.23E+06	1.37E+06	3.96E+05
BROWN'S FERRY	08/17/73				1.37E+06	1.64E+07	8.75E+06	1.34E+07	5.37E+07	5.32E+07	6.31E+07
	07/20/74										
	08/08/76										
BRUNSWICK	10/08/76						4.72E+06	7.81E+06	1.59E+07	3.07E+07	2.12E+07
	03/20/75										
COOPER	02/21/74					6.90E+06	1.24E+07	1.19E+07	1.45E+07	1.54E+07	1.58E+07
DRESDEN 1	10/15/59	4.77E+06	2.38E+06	3.76E+06	2.43E+06	1.36E+06	2.56E+06	3.42E+06	2.21E+06	2.73E+06	0.00
DRESDEN 2-3	06/09/72	4.11E+06	1.23E+07	2.52E+07	2.83E+07	2.18E+07	1.70E+07	2.74E+07	2.89E+07	3.13E+07	2.77E+07
	11/16/71										
DUANE ARNOLD	03/23/74						7.42E+06	8.02E+06	9.32E+06	3.96E+06	9.07E+06
EDWIN I. HATCH	09/12/74						9.75E+06	1.38E+07	1.22E+07	3.37E+07	1.62E+07
	07/04/78										
FORT ST. VRAIN *	01/31/74									2.04E+06	4.78E+05
HUMBOLDT BAY	02/16/63	1.40E+06	1.14E+06	1.25E+06	1.47E+06	1.27E+06	1.32E+06	6.80E+05	0.00	0.00	0.00
JAMES A. FITZPATRICK	11/17/74						6.81E+06	1.26E+07	1.18E+07	1.30E+07	8.97E+06
LACROSSE	07/11/67	4.50E+05	7.10E+05	8.20E+05	6.90E+05	1.08E+06	9.20E+05	6.10E+05	3.43E+05	6.54E+05	7.48E+05
MILLSTONE POINT 1	10/26/70	2.60E+05	1.11E+07	9.69E+06	5.96E+06	1.12E+07	1.21E+07	1.16E+07	1.48E+07	1.43E+07	1.30E+07
MONTECELLO	12/10/70		4.37E+06	1.10E+07	9.90E+06	8.28E+06	8.88E+06	1.23E+07	1.10E+07	1.18E+07	1.35E+07
NINE MILE POINT	09/05/69	5.94E+06	9.94E+06	1.00E+07	1.10E+07	1.05E+07	9.68E+06	1.31E+07	9.15E+06	1.59E+07	9.67E+06
OYSTER CREEK	05/03/69	1.06E+07	1.17E+07	1.30E+07	1.09E+07	1.13E+07	9.81E+06	1.18E+07	9.82E+06	1.10E+07	1.38E+07
PEACH BOTTOM	09/16/73					1.23E+07	3.34E+07	3.72E+07	2.86E+07	4.39E+07	4.58E+07
	08/07/74										
PILGRIM	06/16/72			2.65E+06	1.25E+07	6.00E+06	8.10E+06	7.60E+06	8.26E+06	1.33E+07	1.47E+07
QUAD-CITIES	10/18/71			1.25E+07	3.17E+07	2.61E+07	2.31E+07	2.59E+07	2.68E+07	3.14E+07	3.00E+07
	04/26/72										
VERMONT YANKEE	03/24/72			1.48E+06	6.08E+06	8.20E+06	1.13E+07	1.02E+07	1.11E+07	1.00E+07	1.08E+07

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED

TABLE 15

## THERMAL ENERGY GENERATION COMPARISON BY YEAR

BOILING WATER REACTORS		MEGAWATT HOURS	
FACILITY	INITIAL CRITICALITY	1980	
BIG ROCK POINT	09/27/62	1.40E+06	
BROWN'S FERRY	08/17/75	1.92E+07	
	07/20/74	1.74E+07	
	08/08/76	2.13E+07	
BRUNSWICK	10/08/76	1.23E+07	
	05/20/75	5.38E+06	
COOPER	02/21/74	1.36E+07	
DRESDEN 1	10/15/59	0.	
DRESDEN 2-3	06/09/72	1.57E+07	
	11/16/71	1.42E+07	
DUANE ARNOLD	03/23/74	8.87E+06	
EDWIN I. HATCH 1	09/12/74	1.54E+07	
EDWIN I. HATCH 2	07/04/78	1.16E+07	
FORT ST. VRAIN *	01/31/74	2.23E+06	
HUMBOLDT BAY	02/16/63	0.	
JAMES A. FITZPATRICK	11/17/74	1.30E+07	
LACROSSE	07/11/67	8.00E+05	
MILLSTONE 1	10/26/70	1.04E+07	
MONTICELLO	12/10/70	1.07E+07	
NINE MILE POINT	09/05/69	1.41E+07	
OYSTER CREEK	05/03/69	6.27E+06	
PEACH BOTTOM	09/16/73	1.37E+07	
	08/07/74	2.26E+07	
PILGRIM	06/16/72	9.20E+06	
QUAD-CITIES	10/18/71	1.17E+07	
	04/26/72	1.22E+07	
VERMONT YANKEE	03/24/72	9.38E+06	

\* HIGH TEMPERATURE GAS COOLED REACTOR  
N/R=NOT REPORTED



TABLE 16

## THERMAL ENERGY GENERATION COMPARISON BY YEAR

## PRESSURIZED WATER REACTORS

## MEGAWATT HOURS

FACILITY	INITIAL CRITICALITY	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
ARKANSAS ONE 1	08/06/74					1.99E+06	1.54E+07	1.21E+07	1.64E+07	1.64E+07	1.05E+07
ARKANSAS ONE 2	12/05/78									4.45E+04	3.45E+06
BEAVER VALLEY	05/10/76							1.97E+06	1.01E+07	8.80E+06	6.11E+06
CALVERT CLIFFS	10/07/74						1.40E+07	1.98E+07	2.97E+07	3.14E+07	3.15E+07
	11/30/76										
CRYSTAL RIVER	01/14/77								1.26E+07	7.97E+06	1.17E+07
DAVIS-BESSE	08/12/77								1.66E+06	8.52E+06	1.00E+07
DONALD C. COOK	01/18/75						1.46E+07	2.15E+07	1.55E+07	3.29E+07	3.68E+07
	07/01/78										
FORT CALHOUN	08/06/73				2.03E+06	7.58E+06	6.71E+06	7.15E+06	9.40E+06	8.98E+06	1.16E+07
HADDAM NECK	07/24/67	1.14E+07	1.34E+07	1.38E+07	7.73E+06	1.42E+07	1.34E+07	1.30E+07	1.31E+07	1.51E+07	1.32E+07
H.B. ROBINSON	09/20/70	6.00E+04	7.85E+06	1.55E+07	1.25E+07	1.56E+07	1.36E+07	1.59E+07	1.43E+07	1.33E+07	1.30E+07
INDIAN POINT 1-2	08/02/62				1.47E+06	1.15E+07	1.64E+07	7.60E+06	3.50E+07	1.48E+07	1.61E+07
	05/22/73										
INDIAN POINT 3	04/06/76									1.70E+07	1.57E+07
JOSEPH M. FARLEY	08/09/77									1.95E+07	5.77E+06
KEWAUNEE	03/07/74					5.03E+06	1.08E+07	1.08E+07	1.11E+07	1.24E+07	1.09E+07
MAINE YANKEE	10/23/72			1.44E+06	1.08E+07	1.14E+07	1.47E+07	1.94E+07	1.69E+07	1.69E+07	1.41E+07
MILLSTONE POINT 2	10/17/75						6.40E+05	1.52E+07	1.42E+07	1.44E+07	1.38E+07
NORTH ANNA	04/05/78									1.22E+07	1.41E+07
OCONEE	04/19/73				6.62E+06	1.70E+07	4.68E+07	3.97E+07	4.00E+07	4.84E+07	4.37E+07
	11/11/73										
	09/05/74										
PALISADES	05/24/71			5.91E+06	7.80E+06	4.00E+05	8.91E+06	9.66E+06	1.73E+07	9.44E+06	1.20E+07
POINT BEACH	11/02/70	6.30E+05	1.00E+07	9.96E+06	1.84E+07	2.04E+07	2.09E+07	2.18E+07	2.23E+07	2.33E+07	2.08E+07
	05/30/72										
PRAIRIE ISLAND	12/01/73				1.28E+05	5.26E+06	2.25E+07	2.06E+07	2.46E+07	2.52E+07	1.12E+08
	12/17/74										
RANCHO SECO	09/16/74						4.11E+06	6.91E+06	1.81E+07	1.59E+07	1.79E+07
R.E. GINNA	11/08/69	6.84E+06	8.50E+06	7.71E+06	1.08E+07	6.71E+06	9.71E+06	6.98E+06	1.11E+07	1.05E+07	9.35E+06
SALEM	12/11/76							5.00E+04	6.70E+06	1.43E+07	6.60E+06
SAN ONOFRE	06/14/67	9.19E+06	9.60E+06	8.53E+06	7.09E+06	9.73E+06	1.00E+07	7.75E+06	7.29E+06	8.54E+06	1.05E+07
ST. LUCIE	04/22/76							3.50E+05	1.75E+07	1.64E+07	1.60E+07
SURRY	07/01/72			1.29E+06	2.26E+07	1.92E+07	2.90E+07	2.51E+07	3.10E+07	3.27E+07	9.32E+06
	03/07/73										
THREE MILE ISLAND 1	06/05/74					6.20E+06	1.76E+07	1.39E+07	1.76E+07	1.83E+07	2.83E+06
THREE MILE ISLAND 2	03/28/78									3.16E+06	N/R
TROJAN	12/15/75							7.54E+06	2.12E+07	5.63E+06	1.70E+07
TURKEY POINT	10/20/72			2.90E+05	1.53E+07	2.55E+07	2.78E+07	2.68E+07	2.70E+07	2.81E+07	2.28E+07
	06/11/73										
YANKEE ROWE	08/19/60	4.13E+06	5.02E+06	2.40E+06	3.57E+06	3.07E+06	4.02E+06	4.25E+06	3.52E+06	4.16E+06	4.17E+06
ZION	06/19/73				2.73E+06	1.69E+07	3.28E+07	3.11E+07	3.66E+07	4.30E+07	3.31E+07
	12/24/73										

N/R=NOT REPORTED

TABLE 16

## THERMAL ENERGY GENERATION COMPARISON BY YEAR

## PRESSURIZED WATER REACTORS

## MEGAWATT HOURS

FACILITY	INITIAL CRITICALITY	1980
ARKANSAS ONE 1	08/06/74	1.29E+07
ARKANSAS ONE 2	12/05/78	1.18E+07
BEAVER VALLEY	05/10/76	1.13E+06
CALVERT CLIFFS	10/07/74	1.52E+07
	11/30/76	2.05E+07
CRYSTAL RIVER	01/14/77	1.04E+07
DAVIS-BESSE	08/12/77	6.71E+06
DONALD C. COOK	01/18/75	2.02E+07
	07/01/78	2.14E+07
FORT CALHOUN	08/06/73	6.48E+06
HADDAM NECK	07/24/67	1.14E+07
H.B. ROBINSON	09/20/70	1.07E+07
INDIAN POINT 1-2	08/02/62	0.
	05/22/73	1.50E+07
INDIAN POINT 3	04/06/76	1.15E+07
JOSEPH M. FARLEY	08/09/77	1.54E+07
KEWAUNEE	03/07/74	1.15E+07
MAINE YANKEE	10/23/72	1.41E+07
MILLSTONE 2	10/17/75	1.55E+07
NORTI ANNA	04/05/78	1.89E+07
	06/12/80	1.12E+06
OCONEE	04/19/73	1.52E+07
	11/11/73	1.20E+07
	09/05/74	1.59E+07
PALISADES	05/24/71	8.19E+06
POINT BEACH	11/02/70	8.09E+06
	05/30/72	1.11E+07
PRAIRIE ISLAND	12/01/73	1.06E+07
	12/17/74	1.14E+07
RANCHO SECO	09/16/74	1.39E+07
R. E. GINNA	11/08/69	9.93E+06
SALEM 1	12/11/76	1.84E+07
SALEM 2	04/02/80	0.
SAN ONOFRE	06/14/67	2.55E+06
SEQUOYAH	07/05/80	1.67E+06
ST. LUCIE	04/22/76	1.70E+07
SURRY	07/01/72	8.67E+06
	03/07/73	7.26E+06
THREE MILE ISLAND 1	06/05/74	0.
THREE MILE ISLAND 2	03/28/78	0.
TMI 2/EPICOR	03/28/78	0.
TROJAN	12/15/75	1.97E+07
TURKEY POINT	10/20/72	1.47E+07
	06/11/73	1.32E+07
YANKEE ROWE	08/19/60	1.13E+06
ZION	06/19/73	2.22E+07
	12/24/73	1.75E+07

APPENDIX A

INDIVIDUAL PLANT SUMMARIES

INSTALLATION ARKANSAS ONE 1

LOCATION 6 MI WNW RUSSELLVILLE, AR

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-313  
COOLING WATER SOURCE DARDANELLE RESERVOIR

LICENSEE ARKANSAS POWER & LIGHT  
LICENSED POWER (MWT) 2568.0  
INITIAL CRITICALITY 08/06/74

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (C1)
BE-7	0.
NA-24	0.
K-40	6.91E-06
AR-41	0.
CR-51	7.57E-07
MN-54	0.
MN-56	0.
CO-57	0.
CO-58	7.64E-06
FE-59	0.
CO-60	1.69E-05
CU-64	0.
NI-65	0.
ZN-65	0.
SE-75	0.
BR-84	0.
KR-85	1.00E+02
KR-85M	6.88E+01
SR-85	0.
KR-87	0.
KR-88	4.38E+01
RB-88	0.
Y-88	0.
RB-89	0.
SR-89	6.88E-05
SR-90	0.
SR-91	0.
Y-91M	0.
SR-92	0.
Y-92	0.
NB-94	0.
NB-95	0.
ZR-95	0.
NB-97	0.
ZR-97	0.
MO-99	0.
TC-99M	1.48E-07
RU-103	0.
RU-106	0.
CD-109	0.
AG-110M	0.
CD-113M	0.
SN-113	0.
SB-122	0.
SB-124	0.

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

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
SB-125	0.
I-131	1.66E-01
XE-131M	6.44E+01
I-132	0.
TE-132	0.
BA-133	0.
I-133	1.46E-03
XE-133	3.72E+04
XE-133M	8.97E+01
CS-134	6.44E-06
I-134	0.
I-135	0.
XE-135	5.20E+02
XE-135M	0.
CS-136	0.
CS-137	1.98E-05
CS-138	0.
XE-138	0.
BA-139	0.
CE-139	0.
BA-140	0.
LA-140	0.
CE-144	0.
EU-152	0.
W-187	0.
HG-203	0.
BI-214	0.
PB-214	0.
RA-226	1.34E-06
TH-228	1.73E-06
U-235	0.
NP-239	0.

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	1.66E-03
NA-24	4.82E-04
CR-51	9.89E-02
MN-54	1.58E-02
MN-56	0.
CO-57	6.66E-04
CO-58	8.47E-01
FE-59	7.82E-03
CO-60	4.01E-01
CU-64	0.
NI-65	0.
ZN-65	4.47E-05
SE-75	1.61E-04
KR-85	2.75E+00
KR-85M	3.25E-03

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

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
KR-87		2.99E-05
KR-88		1.75E-04
SR-89		4.98E-02
SR-90		0.
SR-91		2.13E-06
SR-92		8.33E-04
NB-95		2.64E-02
ZR-95		1.08E-02
NB-97		1.80E-02
ZR-97		8.85E-05
MO-99		3.26E-02
RU-103		1.37E-02
RU-106		6.25E-04
AG-110M		2.61E-02
I-131		7.77E-01
XE-131M		6.86E+00
I-132		1.72E-04
BA-133		2.40E-05
I-133		1.82E-02
XE-133		6.99E+02
XE-133M		2.64E+00
CS-134		3.89E-01
I-134		0.
I-135		1.52E-03
XE-135		5.52E-01
CS-136		9.63E-03
CS-137		6.34E-01
CS-138		6.87E-04
BA-140		7.01E-04
LA-140		4.74E-02
CE-144		1.62E-03
EU-152		0.
W-187		1.39E-04
NP-239		5.80E-07

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.29E+02
TOTAL LIQUID RELEASE	2.12E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	4.98E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.20E+12

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

INSTALLATION= ARKANSAS ONE 1

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 CI	
D. OTHER	M3 CI	

A-5

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

INSTALLATION ARKANSAS ONE 2

LOCATION 6 MI WNW RUSSELVILLE, AR

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-368  
COOLING WATER SOURCE COOLING TOWER

LICENSEE ARKANSAS POWER & LIGHT  
LICENSED POWER (MWT) 2815.0  
INITIAL CRITICALITY 12/05/78

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	3.34E-05
NA-24	0.
K-40	1.11E-06
AR-41	3.40E+01
CR-51	2.18E-06
MN-54	0.
MN-56	0.
CO-57	0.
CO-58	6.10E-06
FE-59	0.
CO-60	1.01E-05
CU-64	0.
NI-65	0.
ZN-65	0.
SE-75	0.
BR-84	0.
KR-85	4.82E+00
KR-85M	1.86E+01
SR-85	0.
KR-87	0.
KR-88	2.35E+01
RB-88	0.
Y-88	0.
RB-89	0.
SR-89	7.90E-05
SR-90	1.08E-05
SR-91	0.
Y-91M	0.
SR-92	0.
Y-92	0.
NB-94	0.
NB-95	0.
ZR-95	0.
NB-97	0.
ZR-97	0.
MO-99	0.
TC-99M	4.94E-07
RU-103	0.
RU-106	0.
CD-109	0.
AG-110M	0.
CD-113M	0.
SN-113	0.
SB-122	0.
SB-124	0.

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



EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

## AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
SB-125	0.
I-131	6.38E-03
XE-131M	1.39E+01
I-132	1.43E-06
TE-132	0.
BA-133	0.
I-133	5.14E-04
XE-133	9.01E+03
XE-133M	9.95E+00
CS-134	1.65E-05
I-134	0.
I-135	6.96E-06
XE-135	2.49E+02
XE-135M	0.
CS-136	0.
CS-137	1.19E-05
CS-138	0.
XE-138	0.
BA-139	0.
CE-139	0.
BA-140	0.
LA-140	0.
CE-144	0.
EU-152	0.
W-187	0.
HG-203	0.
BI-214	1.59E-05
PB-214	0.
RA-226	0.
TH-228	2.65E-06
U-235	0.
NP-239	0.

## LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	4.40E-03
NA-24	2.85E-03
CR-51	4.09E-02
MN-54	1.78E-02
MN-56	0.
CO-57	1.13E-04
CO-58	4.62E-01
FE-59	9.34E-03
CO-60	2.28E-02
CU-64	0.
NI-65	0.
ZN-65	5.82E-04
SE-75	2.00E-05
KR-85	5.35E+00
KR-85M	6.97E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
KR-87		1.15E-04
KR-88		4.15E-05
SR-89		1.68E-02
SR-90		0.
SR-91		3.86E-06
SR-92		6.48E-05
NB-95		6.87E-03
ZR-95		4.85E-03
NB-97		7.84E-04
ZR-97		1.15E-04
MO-99		2.90E-03
RU-103		9.36E-04
RU-106		0.
AG-110M		5.89E-03
I-131		2.10E+00
XE-131M		6.97E-01
I-132		1.21E-04
BA-133		1.42E-04
I-133		3.76E-02
XE-133		1.75E+02
XE-133M		1.01E+00
CS-134		2.41E-01
I-134		0.
I-135		4.44E-04
XE-135		3.66E-01
CS-136		1.49E-02
CS-137		1.12E+00
CS-138		0.
BA-140		1.74E-04
LA-140		5.33E-03
CE-144		4.35E-03
EU-152		0.
W-187		1.19E-03
NP-239		0.

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	2.24E+00
TOTAL LIQUID RELEASE	2.89E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	1.20E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.20E+12

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

INSTALLATION= ARKANSAS ONE 2

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 CI	
D. OTHER	M3 CI	

A-9

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

INSTALLATION BEAVER VALLEY

LOCATION SHIPPINGPORT, PA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-334  
COOLING WATER SOURCE OHIO RIVER

LICENSEE DUQUESNE LIGHT + OHIO EDISON + PENNSYLVANIA POWER  
LICENSED POWER (MWT) 2652.0  
INITIAL CRITICALITY 05/10/76

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	1.28E-05
KR-85	5.11E-02
KR-85M	N/D
KR-87	N/D
KR-88	N/D
SR-89	5.33E-07
SR-90	1.20E-08
I-131	4.45E-04
XE-131M	6.49E-01
I-133	1.38E-06
XE-133	8.52E+01
XE-133M	4.17E-01
CS-134	N/D
I-135	N/D
XE-135	4.30E-02
XE-135M	N/D
CS-137	2.37E-06
XE-138	N/D
BA-LA-140	N/D
CE-144	4.39E-04

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	N/D
MN-54	3.00E-03
CO-58	9.61E-03
FE-59	N/D
CO-60	8.45E-02
ZN-65	N/D
SR-89	3.70E-04
SR-90	2.75E-05
ZR-NB-95	1.21E-04
MO-99	N/D
TC-99M	N/D
I-131	N/D
XE-133	N/D
CS-134	9.85E-04
XE-135	N/D
CS-137	4.83E-03
BA-LA-140	N/D
CE-141	N/D

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

INSTALLATION BEAVER VALLEY

LOCATION SHIPPINGPORT, PA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

TRITIUM	(CI)		
TOTAL AIRBORNE RELEASE	4.77E+00		
TOTAL LIQUID RELEASE	3.98E+01		
VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	2.69E+06	
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.54E+09	

A-11

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

INSTALLATION= BEAVER VALLEY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
0

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
29 TRUCK BARNWELL S.C.

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

A			
CO-60	%	7.19E+01	9.19E+01
CS-137	%	1.08E+01	4.60E+00
MN-54	%	8.60E+00	3.50E+00
B			
CO-58	%	1.02E+01	3.00E+00
CO-60	%	7.12E+01	9.15E+01
MN-54	%	8.20E+00	4.75E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	8.69E+01 5.33E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	1.97E+02 1.13E+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

INSTALLATION BIG ROCK POINT

LOCATION 4 MI NE CHARLEVOIX, MI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-155  
COOLING WATER SOURCE LAKE MICHIGAN

LICENSEE CONSUMERS POWER  
LICENSED POWER (MWT) 240.0  
INITIAL CRITICALITY 09/27/62

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
N-13	1.56E+03
MN-54	2.47E-05
CO-58	8.20E-07
FE-59	4.73E-06
CO-60	1.18E-04
ZN-65	3.20E-06
BR-82	6.56E-03
KR-83M	3.83E+02
KR-85	2.45E-02
KR-85M	4.44E+02
KR-87	1.64E+03
KR-88	9.55E+02
KR-89	1.06E+03
KR-90	1.19E+03
KR-91	1.48E+01
SR-91	1.43E-02
I-131	1.07E-03
XE-131M	1.34E-01
I-133	1.00E-02
XE-133	9.11E+01
XE-133M	6.69E+00
I-135	1.26E-02
XE-135	1.30E+03
XE-135M	2.19E+03
CS-136	1.32E-04
CS-137	1.09E-04
XE-137	1.69E+03
XE-138	7.62E+03
XE-139	1.59E+03
BA+LA-140	1.18E-03
BA-140	4.50E-03
LA-140	1.45E-02
XE-140	1.60E+02
NP-239	5.34E-05
UNIDENTIFIED	7.90E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	7.13E-03
MN-54	1.66E-02
FE-59	2.06E-03
CO-60	5.25E-02
SR-89	4.30E-04
SR-90	1.11E-03
I-131	4.34E-04

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

INSTALLATION BIG ROCK POINT

LOCATION 4 MI NE CHARLEVOIX, MI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS	
NUCLIDES RELEASED	ACTIVITY (CI)
CS-134	3.36E-02
CS-137	5.53E-01
LA-140	1.38E-05
UNIDENTIFIED	1.14E-01

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.26E+01
TOTAL LIQUID RELEASE	6.18E+00

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	2.25E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	8.28E+10

A-14

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



INSTALLATION= BIG ROCK POINT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)  
NUMBER OF SHIPMENTS    MODE OF TRANSPORTATION    DESTINATION  
0

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS    MODE OF TRANSPORTATION    DESTINATION  
5                            TRUCK                        BARNWELL S.C.  
1                            TRUCK                        RICHLAND WA.

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	MS CI	1.20E+01 3.01E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	MS CI	3.00E+01 8.70E-01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	MS CI	
D. OTHER	MS CI	

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

INSTALLATION BROWN'S FERRY

LOCATION 10 MI NW DECATUR, AL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-259  
COOLING WATER SOURCE TENNESSEE RIVER  
UNIT NUMBER 2  
TYPE BWR  
DOCKET NO. 50-260  
COOLING WATER SOURCE TENNESSEE RIVER  
UNIT NUMBER 3  
TYPE BWR  
DOCKET NO. 50-296  
COOLING WATER SOURCE TENNESSEE RIVER

LICENSEE TENNESSEE VALLEY AUTHORITY  
LICENSED POWER (MWT) 3293.0  
INITIAL CRITICALITY 08/17/75

LICENSEE TENNESSEE VALLEY AUTHORITY  
LICENSED POWER (MWT) 3293.0  
INITIAL CRITICALITY 07/20/74

LICENSEE TENNESSEE VALLEY AUTHORITY  
LICENSED POWER (MWT) 3293.0  
INITIAL CRITICALITY 08/08/76

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	3.56E+01
MN-54	7.09E-04
CO-58	6.18E-04
FE-59	1.16E-03
CO-60	2.84E-02
ZN-65	1.27E-02
KR-85	7.54E-03
KR-85M	2.44E+01
KR-87	6.65E+01
KR-88	3.57E+02
SR-89	1.54E-03
SR-90	4.85E-03
NB-95	1.02E-03
ZR-95	1.91E-03
I-131	6.85E-02
I-133	<6.96E-02
XE-133	3.00E+04
CS-134	1.10E-04
I-135	<9.28E-02
XE-135	5.08E+02
XE-135M	5.55E+02
CS-137	1.19E-04
XE-138	3.14E+03
BA-140	4.82E-04
LA-140	4.93E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	<1.71E-01
CR-51	<1.79E-01
MN-54	<2.61E-02
MN-56	3.39E-04
CO-58	<1.68E-02
FE-59	<1.70E-02
CO-60	2.13E-02
CU-64	<1.55E-01
ZN-65	2.52E-02

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS	NUCLIDES RELEASED	ACTIVITY (CI)		
	SR-89	5.08E-02		
	SR-90	4.77E-03		
	ZR-NB-95	<1.54E-02		
	MO-99	<6.49E-03		
	TC-99M	<6.49E-03		
	SB-124	<1.08E-02		
	I-131	<6.32E-02		
	I-133	<1.81E-02		
	XE 133	5.18E-02		
	CS-134	<1.33E-01		
	XE-135	<1.27E-01		
	CS-136	<1.18E-02		
	CS-137	<1.63E-01		
	BA-LA-140	<2.83E-03		
	CE-141	<2.84E-02		
TRITIUM		(CI)		
	TOTAL AIRBORNE RELEASE	5.07E+01		
	TOTAL LIQUID RELEASE	2.18E+01		
	VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)		LITERS	3.82E+07
	VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS	5.68E+11

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

INSTALLATION= BROWN'S FERRY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS 210      MODE OF TRANSPORTATION TRUCK      DESTINATION BARNWELL S.C.

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

A		
AG-110M	%	1.59E+00
CO-58	%	1.73E+00
CO-60	%	7.75E+00
CR-51	%	3.28E+01
CS-134	%	1.06E+01
CS-137	%	1.21E+01
FE-59	%	5.98E-01
I-131	%	2.22E+00
LA-140	%	2.02E-01
MN-54	%	1.33E+00
NB-95	%	8.10E-01
OTHERS	%	4.42E-01
SB-124	%	6.20E-02
SR-90	%	2.90E-02
ZN-65	%	2.55E+01
ZR-95	%	4.08E-01
B		
AG-110M	%	1.74E+00
CO-58	%	1.80E+00
CO-60	%	8.57E+00
CR-51	%	2.90E+01
CS-134	%	1.04E+01
CS-137	%	1.23E+01
FE-59	%	8.15E-01
I-131	%	2.10E+00
LA-140	%	2.54E-01
MN-54	%	1.49E+00
NB-95	%	8.71E-01
OTHERS	%	5.56E-01
SB-124	%	6.03E-02
SR-90	%	2.92E-02
ZN-65	%	2.86E+01
ZR-95	%	4.08E-01
C		
AG-110M	%	2.83E+00
CO-58	%	1.79E+00
CO-60	%	8.61E+00
CR-51	%	3.09E+01
CS-134	%	1.17E+01
CS-137	%	1.47E+01
FE-59	%	1.48E+00
I-131	%	1.29E+00
LA-140	%	3.88E-01
MN-54	%	1.44E+00
NB-95	%	1.12E+00
OTHERS	%	6.91E-01

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION= BROWN'S FERRY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

SB-124	%	6.94E-01
SR-90	%	2.86E-02
ZN-65	%	2.41E+01
ZR-95	%	4.25E-01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	7.74E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	6.01E+03
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	1.06E+03
D. OTHER	CI	4.47E+02
	M3	6.54E+02
	C'	3.53E+00
	M3	
	CI	

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-325  
COOLING WATER SOURCE CAPE FEAR RIVER  
UNIT NUMBER 2  
TYPE BWR  
DOCKET NO. 50-324  
COOLING WATER SOURCE CAPE FEAR RIVER

LICENSEE CAROLINA POWER & LIGHT  
LICENSED POWER (MWT) 2436.0  
INITIAL CRITICALITY 10/08/76

LICENSEE CAROLINA POWER & LIGHT  
LICENSED POWER (MWT) 2436.0  
INITIAL CRITICALITY 03/20/75

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.59E+03
CR-51	2.57E-01
MN-54	1.26E-01
CO-57	4.74E-04
CO-58	1.38E-02
FE-59	3.79E-03
CO-60	7.77E-02
ZN-65	6.02E-04
ZN-69M	N/D
K-85	N/D
KR-85M	3.63E+03
SR-85	N/D
KR-87	6.41E+03
KR-88	5.13E+03
Y-88	N/D
SR-89	2.89E-03
SR-90	2.37E-05
ZR-NB-95	N/D
MO-99	2.78E-03
TC-99M	5.81E-02
RU-103	9.40E-05
CD-109	N/D
RH-109	1.47E-03
AG-110M	1.01E-03
SN-113	N/D
SN-113M	N/D
SN-117M	2.17E-04
SN-122	2.46E-05
I-131	2.68E-01
I-132	7.81E-02
I-133	2.37E-01
XE-133	1.59E+04
XE-133M	6.49E+02
CS-134	4.38E-01
I-135	2.59E-01
XE-135	2.02E+04
XE-135M	7.06E+03
CS-136	2.50E-03
CS-137	5.20E-01
XE-138	7.38E+03
CE-139	8.32E-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 1980  
AIRBORNE AND LIQUID EFFLUENTS

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
BA-LA-140	3.56E-02
CE-144	2.66E-04
HG-203	N/D
UNIDENTIFIED	4.12E+03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	3.96E-02
NA-24	1.73E-01
AR-41	8.56E-04
CR-51	1.23E-01
MN-54	1.45E-01
MN-56	1.11E-04
CO-57	N/D
CO-58	1.72E-02
FE-59	7.10E-03
CO-60	2.20E-01
CU-64	6.22E-02
NI-65	N/D
ZN-65	1.71E-03
AS-76	1.76E-03
KR-85	7.91E-04
KR-85M	3.11E-05
SR-85	3.19E-06
SR-89	1.84E-03
SR-90	7.30E-04
SR-91	N/D
Y-91M	1.21E-04
SR-92	1.86E-05
ZR-NB-95	1.18E-04
NB-97	5.67E-04
NB-97M	3.90E-06
ZR-97	4.06E-06
MO-99	6.28E-04
TC-99M	1.67E-03
TC-101	N/D
AG-110M	2.74E-04
IN-113M	N/D
SN-113	N/D
SN-117M	N/D
SB-122	9.21E-03
SB-124	N/D
TE-129M	N/D
I-131	1.15E-01
XE-131M	5.98E-03
I-132	3.47E-04
TE-132	9.89E-04
I-133	1.23E-02
XE-133	1.61E-01
XE-133M	2.90E-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 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS	
NUCLIDES RELEASED	ACTIVITY (CI)
CS-134	1.18E-01
XE-135	3.44E-02
XE-135M	9.34E-04
CS-136	1.53E-03
CS-137	1.68E-01
CS-138	N/D
BA-139	7.69E-05
CE-139	N/D
BA-LA-140	1.46E-05
CE-141	N/D
CE-144	N/D
W-187	N/D
NP-239	8.61E-03
UNIDENTIFIED	3.26E-02

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	8.80E+00
TOTAL LIQUID RELEASE	1.28E+01

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	3.75E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.55E+11

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



INSTALLATION= BRUNSWICK

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
422	TRUCK	BARNWELL S.C.
34	TRUCK	WASHINGTON STATE

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

A+B	%	4.25E+00	2.25E+00
CO-58	%	1.32E+01	2.24E+01
CO-60	%	3.69E+01	1.94E+01
CR-51	%	7.64E+00	5.20E+00
CS-134	%	8.00E-04	
CS-136	%	8.50E+00	7.23E+00
CS-137	%	4.68E+00	2.05E+00
FE-59	%	6.95E+00	7.90E+00
I-131	%		5.00E-02
I-135	%		6.00E-02
LA-140	%	1.65E+01	2.04E+01
MN-54	%		3.70E-01
NA-24	%		
NB-95	%	8.00E-02	
SB-122	%	5.70E-01	5.10E-01
SR-92	%		2.00E-02
TC-99M	%		4.87E+00
ZN-65	%	7.00E-01	6.30E-01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.20E+03
	CI	7.39E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	5.53E+03
	CI	1.60E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.
	CI	0.
D. OTHER	M3	0.
	CI	0.

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

INSTALLATION CALVERT CLIFFS

LOCATION 45 MI SE WASHINGTON, D.C.

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-317  
COOLING WATER SOURCE CHESAPEAKE BAY  
UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-318  
COOLING WATER SOURCE CHESAPEAKE BAY

LICENSEE BALTIMORE GAS & ELECTRIC  
LICENSED POWER (MWT) 2700.0  
INITIAL CRITICALITY 10/07/74

LICENSEE BALTIMORE GAS & ELECTRIC  
LICENSED POWER (MWT) 2700.0  
INITIAL CRITICALITY 11/30/76

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	3.74E-01
MN-54	1.83E-06
MN-56	2.05E-05
CO-58	1.84E-02
BR-82	4.70E-05
KR-85M	7.23E+00
KR-87	2.80E-03
KR-88	2.18E-01
RB-88	1.30E-02
SR-89	3.52E-05
SR-90	3.91E-05
SR-91	6.57E-06
MO-99	1.10E-06
RU-103	9.51E-08
RU-106	7.23E-06
SB-125	1.55E-06
I-131	5.54E-02
XE-133M	6.88E+00
I-132	1.70E-03
I-133	2.23E-02
XE-133	2.86E+03
XE-133M	3.51E+00
I-134	2.38E-05
I-135	2.84E-02
XE-135	8.29E+01
CS-138	1.33E-02
BA-139	8.54E-06
BA-140	6.79E-05
LA-140	5.70E-05
CE-141	7.00E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	7.37E-01
MN-54	8.67E-02
MN-56	1.24E-03
CO-57	8.17E-04
CO-58	2.00E+00
FE-59	7.37E-03
CO-60	4.41E-01
ZN-65	2.40E-02

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

INSTALLATION CALVERT CLIFFS

LOCATION 45 MI SE WASHINGTON, D.C.

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
KR-85M		1.79E-04
SR-89		1.41E-02
SR-90		2.30E-02
SR-91		6.13E-04
NB-95		3.84E-02
ZR-95		2.12E-01
ZR-97		5.84E-04
MO-99		8.73E-04
RU-103		2.48E-02
RU-106		7.33E-04
AG-110M		3.01E-02
SN-113		4.15E-03
SB-124		1.67E-02
SB-125		2.05E-01
I-131		1.58E-01
I-132		1.62E-03
I-133		6.95E-02
XE-133		1.55E+01
XE-133M		1.06E-01
CS-134		1.06E-01
I-135		7.03E-03
XE-135		2.10E-01
XE-135M		3.22E-03
CS-137		1.83E-01
BA-140		6.05E-03
LA-140		3.13E-02
CE-141		2.69E-03
UNIDENTIFIED		1.04E-01

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	2.79E+01
TOTAL LIQUID RELEASE	4.91E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	1.24E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.39E+12

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

INSTALLATION= CALVERT CLIFFS

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)  
NUMBER OF SHIPMENTS    MODE OF TRANSPORTATION    DESTINATION  
0

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS    MODE OF TRANSPORTATION    DESTINATION  
31                            MOTOR TRANSIT            BARNWELL S.C.  
11                            TRUCK                      BARNWELL S.C.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
<b>A</b>			
BA-140	%	1.47E+00	2.49E+00
CO-58	%	4.98E+01	4.42E+01
CO-60	%	6.72E+00	6.75E+00
CS-134	%	1.17E+01	5.43E+00
CS-137	%	2.11E+01	5.35E+00
I-131	%	1.01E+00	2.37E+01
LA-140	%		4.45E+00
MN-54	%	6.34E+00	7.54E+00
<b>B</b>			
CO-60	%	1.00E+02	1.00E+02
<b>C</b>			
CO-60	%	1.00E+02	1.00E+02

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	4.73E+01
	CI	5.04E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.34E+02
	CI	1.10E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	6.92E+01
	CI	1.43E+04
D. OTHER	M3	
	CI	

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

INSTALLATION DONALD C. COOK

LOCATION 11 MI SSW ST. JOSEPH, MI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-315  
COOLING WATER SOURCE LAKE MICHIGAN  
UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-316  
COOLING WATER SOURCE LAKE MICHIGAN

LICENSEE INDIANA & MICHIGAN ELECTRIC  
LICENSED POWER (MWT) 3250.0  
INITIAL CRITICALITY 01/18/75

LICENSEE INDIANA & MICHIGAN ELECTRIC  
LICENSED POWER (MWT) 3391.0  
INITIAL CRITICALITY 07/01/78

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.64E-02
AR-41	2.52E-01
CR-51	1.46E-05
MN-54	1.26E-04
CO-58	1.85E-04
CO-60	1.30E-03
ZN-65	1.03E-05
KR-85	2.16E+03
KR-85M	1.58E-01
KR-87	4.75E-02
KR-88	3.75E-02
RB-88	2.33E-05
YB-88	2.77E-07
RB-89	5.48E-05
SR-89	1.47E-07
SR-90	8.86E-07
NB-95	1.85E-05
AG-110M	1.29E-06
I-130	1.99E-06
I-131	1.27E-02
I-133	1.40E-02
XE-133	1.49E+03
XE-133M	4.10E+00
CS-134	3.34E-04
I-135	1.38E-05
XE-135	1.11E+02
CS-137	1.46E-03
CE-139	1.23E-02

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.46E-02
CR-51	3.38E-02
MN-54	5.33E-02
CO-57	1.75E-03
CO-58	5.48E-01
FE-59	4.28E-03
CO-60	3.14E-01
ZN-65	3.17E-03
SR-89	1.19E-03
SR-90	2.31E-03

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

INSTALLATION DONALD C. COOK

LOCATION 11 MI SSW ST. JOSEPH, MI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
ZR-NB-95		2.20E-02
ZR-97		6.40E-04
CD-109		1.06E-03
AG-110M		2.27E-02
SN-113		1.06E-03
SB-124		4.12E-03
SB-125		6.37E-04
I-131		7.31E-02
I-133		2.03E-02
CS-134		1.82E-02
CS-136		1.01E-03
CS-137		2.41E-02
CE-144		8.90E-04

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.11E+00
TOTAL LIQUID RELEASE	7.82E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	2.11E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.20E+12

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

INSTALLATION= DONALD C. COOK

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
77	TRUCK	BARNWELL S.C.
21	TRUCK	BEATTY NV.
4	TRUCK	RICHLAND WA.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)

		JAN-JUNE	JULY-DEC
A			
CO-58	%	3.50E+01	4.50E+01
CO-60	%	2.50E+01	1.00E+01
CS-134	%	1.50E+01	2.00E+01
CS-137	%	2.50E+01	2.50E+01
B			
CO-58	%	1.50E+01	7.50E+01
CO-60	%	5.00E+01	5.00E+00
CS-137	%	3.50E+01	2.00E+01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	8.43E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	9.06E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	1.26E+03
D. OTHER	CI	1.30E+02

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

INSTALLATION COOPER

LOCATION 70 MI S OMAHA, NB

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-298  
COOLING WATER SOURCE MISSOURI RIVER

LICENSEE NEBRASKA PUBLIC POWER & IOWA POWER & LIGHT  
LICENSED POWER (MWT) 2381.0  
INITIAL CRITICALITY 02/21/74

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	6.38E-04
MN-54	1.20E-03
CO-58	3.40E-04
CO-60	4.38E-03
ZN-65	1.15E-04
KR-83M	1.13E+02
KR-85	9.63E+01
KR-85M	3.83E+02
KR-87	4.48E+02
KR-88	8.32E+02
KR-89	3.39E-01
SR-89	3.45E-04
SR-90	3.42E-05
I-131	1.71E-02
XE-131M	6.18E+00
I-133	6.95E-03
XE-133	1.31E+03
XE-133M	3.73E+01
CS-134	<5.80E-04
I-135	<1.05E-01
XE-135	1.50E+03
XE-135M	5.00E+01
CS-137	<8.64E-04
XE-137	1.52E+00
XE-138	2.45E+02
BA-LA-140	7.56E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	5.53E-03
CR-51	<3.15E-01
MN-54	3.34E-01
CO-58	6.22E-02
FE-59	1.27E-02
CO-60	4.20E+00
ZN-65	<5.81E-02
SR-89	4.45E-02
SR-90	6.55E-03
SR-92	1.29E-03
NB-95	<1.27E-02
ZR-NB-95	<1.27E-02
ZR-95	<2.75E-02
MO-99	5.85E-03
TC-99M	<2.14E-02
AG-110M	6.74E-03

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



INSTALLATION COOPER

LOCATION 70 MI S OMAHA, NB

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR '980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
SB-124	1.09E-02
I-131	<1.93E+00
XE-133	<8.98E+00
CS-134	4.58E-01
XE-135	<1.47E-01
CS-136	8.35E-02
CS-137	7.30E-01
BA-LA-140	<4.79E-02
CE-141	<3.36E-02
UNIDENTIFIED	<6.15E-01

TRITIUM	(CI)		
TOTAL AIRBORNE RELEASE	3.91E+00		
TOTAL LIQUID RELEASE	8.77E+00		
VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)		LITERS	7.87E+06
VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS	4.27E+10

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

INSTALLATION= COOPER

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
0

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
68 TRUCK BEATTY NV.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
A			
AG-110M	%	8.39E-01	1.67E+00
BA-LA-140	%	7.57E-02	
CO-58	%	2.18E+00	1.37E+00
CO-60	%	2.66E+01	2.57E+01
CR-51	%	7.18E+00	2.43E+01
CS-134	%	1.91E+01	1.43E+01
CS-136	%	1.07E-01	
CS-137	%	2.44E+01	2.00E+01
FE-59	%		5.30E-02
I-131	%	6.92E+00	1.04E-01
MN-54	%	1.08E+01	1.14E+01
SB-124	%	1.02E-01	
ZN-65	%	1.53E+00	9.14E-01
ZR-NB-95	%	1.84E-01	1.65E-01
B			
AG-110M	%	6.29E-01	6.91E-01
CO-58	%	2.73E+00	1.88E+00
CO-60	%	3.17E+01	3.53E+01
CR-51	%	2.29E+00	3.14E+00
CS-134	%	2.05E+01	1.88E+01
CS-137	%	2.48E+01	2.39E+01
FE-59	%	1.87E-01	5.13E-02
I-131	%	2.27E+00	3.01E+00
MN-54	%	1.39E+01	1.20E+01
ZN-65	%	1.01E+00	1.14E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RES'NS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.44E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	7.03E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	2.91E+02
D. OTHER	CI	1.67E+00
	M3	0.
	CI	0.

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

INSTALLATION CRYSTAL RIVER

LOCATION 70 MI N TAMPA, FL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 3  
TYPE PWF  
DOCKET NO. 50-802  
COOLING WATER SOURCE GULF OF MEXICO

LICENSEE FLORIDA POWER  
LICENSED POWER (MWT) 2452.0  
INITIAL CRITICALITY 01/14/77

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.71E+02
CR-51	<9.05E-05
MN-54	<1.38E-05
CO-57	<6.14E-06
CO-58	2.60E-05
FE-59	<3.54E-05
CO-60	3.20E-06
ZN-65	<2.81E-05
KR-85	3.89E+02
KR-85M	1.25E+02
KR-87	2.35E+01
KR-88	1.14E+02
KR-89	3.68E+03
SR-89	6.69E-05
SR-90	1.01E-05
NB-95	<1.34E-05
ZR-95	<1.90E-05
AG-110M	<1.81E-05
SB-126	<1.12E-05
I-131	6.66E-03
XE-131M	2.57E+02
I-133	5.24E-04
XE-133	2.87E+04
XE-133M	6.20E+02
CS-134	2.83E-07
I-135	<2.09E+00
XE-135	2.24E+03
XE-135M	3.84E+00
CS-137	1.17E-06
XE-137	3.87E+01
XE-138	2.27E-03
BA-LA-140	<1.62E-04
CE-141	<1.39E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	<1.72E-03
CR-51	5.17E-03
MN-54	3.62E-03
CO-57	4.23E-06
CO-58	4.43E-02
FE-59	4.61E-04
CO-60	3.62E-02
CU-64	<3.03E-01
ZN-65	<8.50E-03

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION CRYSTAL RIVER

LOCATION 70 MI N TAMPA, FL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)		
ZN-69M		2.46E-05		
AS-76		<4.26E-03		
SR-89		1.27E-03		
SR-90		7.03E-05		
ZR-NB-95		1.46E-02		
ZR-NB-97		1.44E-03		
MO-99		4.86E-06		
TC-99M		9.67E-04		
RU-103		4.00E-06		
AG-110M		1.55E-02		
SB-124		2.45E-05		
SB-126		1.42E-05		
I-131		1.53E-02		
I-132		2.02E-06		
I-133		9.13E-05		
XE-133		6.22E-01		
CS-134		5.25E-03		
I-135		2.60E-05		
XE-135		1.48E-03		
CS-136		1.54E-04		
CS-137		7.83E-03		
BA-LA-140		4.23E-03		
CE-141		2.62E-05		
CE-144		3.55E-04		
NP-239		3.04E-05		
TRITIUM		(CI)		
TOTAL AIRBORNE RELEASE		2.12E+01		
TOTAL LIQUID RELEASE		1.95E+02		
VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)		LITERS	6.82E+07	
VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS	3.68E+11	

A-34

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



INSTALLATION DAVIS-BESSE

LOCATION 21 MI E TOLEDO, OH

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-346  
COOLING WATER SOURCE LAKE ERIE

LICENSEE TOLEDO EDISON AND CLEVELAND ELECTRIC ILLUMINATING  
LICENSED POWER (MWT) 2772.0  
INITIAL CRITICALITY 08/12/77

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.53E-07
KR-85	<1.49E+03
KR-85M	2.87E-02
KR-87	<8.65E+00
KR-88	<1.10E+01
SR-89	<4.57E-06
SR-90	<8.11E-06
I-131	2.01E-03
I-133	6.21E-04
XE-133	2.35E+01
XE-133M	5.40E-02
CS-134	<1.56E-04
I-135	<1.08E-03
XE-135	4.62E-01
XE-135M	<8.49E+00
CS-137	<1.14E-04
XE-138	1.12E-02
BA-LA-140	<7.97E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.92E-05
CR-51	5.45E-04
MN-54	9.45E-03
CO-58	1.42E-01
FE-59	6.88E-04
CO-60	1.70E-02
ZN-65	7.74E-06
SR-89	<5.72E-05
SR-90	<9.32E-05
Y-91	6.36E-03
ZR-NB-95	1.17E-04
ZR-97	1.26E-05
MO-99	<9.97E-04
TC-99M	1.19E-05
I-131	5.05E-03
I-133	3.41E-04
XE-133	<3.31E-04
CS-134	6.82E-03
XE-135	<1.20E-04
CS-136	1.81E-04
CS-137	1.70E-02
BA-LA-140	1.75E-05
CE-141	<1.99E-04

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

INSTALLATION DAVIS-BESSE

LOCATION 21 MI E TOLEDO, OH

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

TRITIUM	(CI)		
TOTAL AIRBORNE RELEASE	5.94E+00		
TOTAL LIQUID RELEASE	1.08E+02		
VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)		LITERS	4.23E+06
VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS	3.69E+10

A-37

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

INSTALLATION= DAVIS-BESSE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
28	TRUCK	BARNWELL S.C.

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

A			
CO-58	%	7.18E+01	4.43E+01
CS-137	%	8.20E+00	1.64E+01
SR-90	%	8.30E+00	2.23E+01
B			
CO-58	%	8.50E+01	8.50E+01
CO-60	%	5.00E+00	5.00E+00
MN-54	%	1.00E+01	1.00E+01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.37E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	1.96E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	1.93E+02
D. OTHER	CI	2.81E+01
	M3	0.
	CI	0.

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-10  
COOLING WATER SOURCE KANKAKEE RIVER

LICENSEE COMMON WEALTH EDISON  
LICENSED POWER (MWT) 700.0  
INITIAL CRITICALITY 10/15/59

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	0.
MN-54	9.90E-04
CO-58	0.
CO-60	4.84E-05
KR-85M	0.
KR-87	0.
KR-88	0.
SR-89	1.46E-05
SR-90	6.50E-04
NB-95	0.
ZR-95	0.
RU-103	0.
I-131	3.63E-03
I-133	0.
XE-133	6.01E+01
CS-134	1.70E-03
I-135	0.
XE-135	0.
XE-135M	0.
CS-137	4.08E-03
XE-138	0.
BA-140	0.
CE-141	0.
CE-144	0.

LIQUID EFFLUENTS  
NUCLIDES RELEASED

ACTIVITY (CI)

TRITIUM

(CI)

TOTAL AIRBORNE RELEASE  
TOTAL LIQUID RELEASE

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)  
VOLUME OF DILUTION WATER USED DURING PERIOD

LITERS  
LITERS

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

INSTALLATION DRESDEN 2-3

LOCATION 14 MI SW JOLIET, IL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 2  
TYPE BWR  
DOCKET NO. 50-237  
COOLING WATER SOURCE KANKAKEE RIVER  
UNIT NUMBER 3  
TYPE BWR  
DOCKET NO. 50-249  
COOLING WATER SOURCE KANKAKEE RIVER

LICENSEE COMMONWEALTH EDISON  
LICENSED POWER (MWT) 2527.0  
INITIAL CRITICALITY 06/09/72

LICENSEE COMMONWEALTH EDISON  
LICENSED POWER (MWT) 2527.0  
INITIAL CRITICALITY 11/16/71

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.15E-01
MN-54	9.61E-02
CO-58	2.23E-02
FE-59	1.81E-02
CO-60	6.39E-01
ZN-65	9.15E-03
KR-85M	9.25E+02
KR-87	4.21E+02
KR-88	1.74E+03
SR-89	1.44E+00
SR-90	1.12E-02
NB-95	2.15E-02
ZR-95	3.09E-02
RU-103	3.10E-02
AG-110M	5.10E-04
SB-124	1.53E-03
I-131	3.53E+00
I-133	1.09E+01
XE-133	1.08E+04
CS-134	1.47E-02
I-135	1.82E+01
XE-135	1.08E+04
XE-135M	3.19E+03
CS-136	5.16E-03
CS-137	7.98E-02
XE-138	1.50E+04
BA-140	4.65E+00
LA-140	3.72E-02
CE-141	1.58E-01
CE-144	5.83E-02

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.63E-02
MN-54	4.01E-02
CO-58	8.93E-03
FE-59	6.97E-03
CO-60	1.96E-01
ZN-65	0.
SR-89	5.79E-03
SR-90	1.92E-03

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

INSTALLATION DRESDEN 2-3

LOCATION 14 MI SW JOLIET, IL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
NB-95	2.59E-02
ZR-95	1.48E-02
RU-103	1.13E-02
AG-110M	1.44E-03
SB-124	1.30E-04
I-131	3.58E-02
CS-134	1.08E-02
CS-137	3.72E-02
BA-140	1.89E-03
LA-140	2.15E-03
CE-141	4.25E-02
CE-144	2.10E-02

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.18E+03
TOTAL LIQUID RELEASE	6.20E+01

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	8.51E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.80E+12

A  
-  
41

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

INSTALLATION= DRESDEN 1 & DRESDEN 2-3

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)		
NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION		
NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
256	TRUCK	BARNWELL S.C.
31	TRUCK	RICHLAND WA.

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	MS CI	5.57E+02 4.42E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	MS CI	6.21E+02 4.09E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	MS CI	
D. OTHER	MS CI	

A - 42

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

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1 LICENSEE IOWA ELECTRIC LIGHT & POWER  
TYPE BWR LICENSED POWER (MWT) 1658.1  
DOCKET NO. 50-351 INITIAL CRITICALITY 05/23/74  
COOLING WATER SOURCE CEDAR RAPIDS RIVER & CIRC WATER SYSTEM

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
N-13	8.89E+01
AR-41	8.86E+00
CR-51	1.94E-02
MN-54	4.24E-03
CO-57	8.26E-06
CO-58	4.58E-04
FE-59	7.60E-04
CO-60	6.05E-03
KR-85	2.61E+01
KR-85M	1.14E+02
KR-87	5.57E+00
KR-88	9.46E+01
SR-89	6.46E-04
SR-90	1.10E-04
I-131	4.48E-02
I-133	1.66E-01
XE-133	2.03E+03
CS-134	1.17E-04
I-135	9.84E-02
XE-135	9.74E+01
XE-135M	2.53E+01
CS-137	1.54E-04
XE-138	1.96E+02
BA-140	5.51E-04
CE-141	1.69E-04
UNIDENTIFIED	8.12E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
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TRITIUM (CI)  
TOTAL AIRBORNE RELEASE 3.62E+00  
TOTAL LIQUID RELEASE

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

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

INSTALLATION= DUANE ARNOLD

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

SOLID WASTE DISPOSITION	MODE OF TRANSPORTATION	DESTINATION
NUMBER OF SHIPMENTS	TRUCK	BARWELL S. C.
85	TRUCK	BEATTY NV.
1		

  

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	7.35E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	7.00E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
D. OTHER	CI	

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

INSTALLATION JOSEPH W. FARLEY

LOCATION DOTHAN, AL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-348  
COOLING WATER SOURCE

LICENSEE ALABAMA POWER  
LICENSED POWER (MWT) 2652.0  
INITIAL CRITICALITY 08/09/77

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	5.79E+03
CR-51	2.04E-07
MN-54	3.85E-07
CO-58	2.74E-05
FE-59	1.26E-11
CO-60	2.74E-05
ZN-65	9.32E-09
KR-85	2.15E+01
KR-85M	6.59E+00
KR-87	1.41E+00
KR-88	2.37E-02
KR-89	0.
SR-89	2.12E-03
KR-90	2.72E-01
SR-90	2.40E-13
ZR-95	1.35E-11
SB-124	2.54E-11
I-131	1.88E-04
XE-131M	9.50E+01
I-133	4.90E-04
XE-133	1.28E+04
XE-133M	3.67E+01
CS-134	2.81E-07
XE-135	4.06E+02
XE-135M	1.54E-01
CS-136	1.04E-11
CS-137	4.11E-06
XE-137	1.26E-01
XE-138	1.08E-01
BA-140	3.22E-11
CE-141	7.20E-09

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	2.47E-03
CR-51	1.61E-03
MN-54	2.38E-03
CO-57	4.02E-05
CO-58	1.30E-02
FE-59	3.48E-04
CO-60	1.92E-02
CU-64	1.89E-05
NI-65	4.24E-06
ZN-65	1.70E-06
AS-76	0.

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

INSTALLATION JOSEPH M. FARLEY LOCATION DOTHAN, AL  
 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
 AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES RELEASED	EFFLUENTS ACTIVITY (CI)
SR-89	1.68E-04
SR-90	4.69E-05
SR-91	0.
NB-95	3.69E-04
ZR-95	1.57E-05
ZR-97	3.90E-06
MO-99	1.12E-05
TC-99M	1.35E-06
RU-103	1.40E-06
RU-106	1.08E-03
AG-110M	1.34E-03
I-131	2.06E-03
I-132	3.63E-03
I-133	4.61E-03
XE-133	7.29E-03
CS-134	3.81E-03
I-135	3.32E-03
XE-135	9.14E-04
CS-136	2.15E-05
CS-137	4.20E-03
BA-140	4.55E-06
LA-140	4.35E-05
CE-141	0.
CE-144	8.71E-06
NP-239	9.95E-06

TRITIUM		
TOTAL AIRBORNE RELEASE	(CI)	
TOTAL LIQUID RELEASE	6.13E+02	
	5.70E+02	
VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)		LITERS
VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS
		6.38E+07
		5.49E+10

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



INSTALLATION= JOSEPH M. FARLEY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
0

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
33 TRUCK BARNWELL S.C.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
A			
	CO-58	% 1.60E+01	7.90E+00
	CO-60	% 6.60E+01	5.60E+01
	H-3	%	3.00E+01
	MN-54	% 1.20E+01	
B			
	CO-58	% 5.00E+00	2.80E+01
	CO-60	%	2.30E+01
	FE-59	% 7.00E+01	3.50E+01
	MN-54	% 1.20E+01	

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	1.61E+02 1.90E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	2.80E+02 3.58E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 CI	0. 0.
D. OTHER	M3 CI	0. 0.

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-333  
COOLING WATER SOURCE LAKE ONTARIO

LICENSEE POWER AUTHORITY OF THE STATE OF NEW YORK  
LICENSED POWER (MWT) 2436.0  
INITIAL CRITICALITY 11/17/74

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
N-13	1.31E+03
AR-41	2.17E+02
CR-51	1.76E-02
MN-54	5.83E-03
CO-58	5.96E-03
CO-60	1.46E-02
ZN-65	3.94E-04
KR-85M	5.22E+03
KR-87	6.07E+03
KR-88	9.67E+03
SR-89	2.42E-03
SR-90	5.76E-05
ZR-NB-95	1.67E-05
I-131	7.67E-02
XE-131M	1.10E+04
I-133	1.34E-01
XE-133	1.52E+04
XE-133M	1.52E+02
CS-134	3.21E-04
I-135	8.29E-02
XE-135	2.06E+04
XE-135M	2.28E+03
JS-137	4.19E-04
XE-138	5.15E+03
BA-LA-140	2.15E-03
CE-141	2.30E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.79E-02
CR-51	4.63E-02
MN-54	2.10E-01
CO-58	1.07E-01
FE-59	1.31E-02
CO-60	8.03E-01
CU-64	3.42E-02
ZN-65	3.11E-02
AS-76	2.46E-04
KR-85M	2.88E-04
SR-90	3.47E-05
ZR-NB-95	2.14E-03
MO-99	1.41E-02
TC-99M	1.81E-04
AG-110M	1.12E-04
SB-124	4.87E-03

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

INSTALLATION JAMES A. FITZPATRICK

LOCATION 36 MI N SYRACUSE, NY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
I-131		2.77E-02
I-133		1.22E-03
XE-133		9.65E-03
CS-134		7.30E-02
I-135		4.97E-05
XE-135		3.28E-03
CS-137		1.06E-01
BA-LA-140		4.61E-04
CE-141		1.72E-05
CE-144		6.33E-05
NP-239		2.24E-03

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	4.39E+00
TOTAL LIQUID RELEASE	2.81E+00

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	1.57E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.55E+11

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

INSTALLATION= JAMES A. FITZPATRICK

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
78	TRUCK	BARNWELL S.C.
4	TRUCK	RICHLAND WA.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
A			
CO-58	%	5.40E+00	7.20E+00
CO-60	%	5.79E+01	6.56E+01
CR-51	%	2.80E+00	1.10E+00
CS-134	%	4.40E+00	2.40E+00
CS-137	%	8.60E+00	4.50E+00
FE-59	%	9.00E-01	3.00E-01
I-131	%	1.00E-01	
MN-54	%	1.68E+01	1.22E+01
NA-24	%	<1.00E-01	
SB-124	%	4.00E-01	3.00E-01
ZN-65	%	2.70E+00	5.80E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	3.48E+02 8.42E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	3.87E+02 4.45E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 CI	
D. OTHER	M3 CI	1.51E+01 3.48E-04

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

INSTALLATION FORT CALHOUN

LOCATION 19 MI N OMAHA, NB

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-285  
COOLING WATER SOURCE MISSOURI RIVER

LICENSEE OMAHA PUBLIC POWER  
LICENSED POWER (MWT) 1420.0  
INITIAL CRITICALITY 08/06/73

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.47E+00
MN-54	1.38E-06
CO-58	1.60E-05
CO-60	4.71E-06
KR-85	6.10E+00
KR-85M	3.58E-02
KR-87	3.83E-02
KR-88	4.81E-02
SR-89	4.20E-07
SR-90	4.68E-07
I-131	2.29E-03
XE-131M	1.34E+00
I-133	1.21E-04
XE-133	2.85E+02
XE-133M	1.62E+00
CS-134	2.29E-05
I-135	6.26E-05
XE-135	1.23E+00
XE-135M	2.63E-02
CS-137	3.67E-05
XE-138	8.65E-02
BA-140	3.27E-05
LA-140	1.29E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	<1.40E-02
MN-54	5.92E-03
CO-57	<1.63E-03
CO-58	4.43E-02
FE-59	<2.02E-05
CO-60	4.89E-03
ZN-65	<2.40E-03
SR-89	5.06E-03
SR-90	1.02E-02
NB-95	<2.38E-03
ZR-95	<2.08E-03
MO-99	<1.11E-03
TC-99M	<5.41E-04
RU-103	<1.64E-03
SN-117M	<1.39E-03
SB-124	<1.42E-03
I-131	5.92E-02
I-133	2.96E-04
XE-133	1.03E+00

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

INSTALLATION FORT CALHOUN

LOCATION 19 MI N OMAHA, NB

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-134	1.20E-01
XE-135	1.02E-02
CS-136	<2.82E-05
CS-137	2.14E-01
BA-140	<3.95E-03
LA-140	<9.93E-04
CE-141	<9.20E-05

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.30E+00
TOTAL LIQUID RELEASE	5.44E+01

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	5.82E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	8.97E+11

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

INSTALLATION- FORT CALHOUN

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
52	TRUCK	BARNWELL S.C.
5	TRUCK	RICHLAND WA.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
A		
CO-58	7.28E+00	2.00E+00
CS-134	4.22E+01	3.10E+01
CS-137	4.96E+01	6.20E+01
MN-54	9.38E-01	5.00E+00
B		
CO-58	7.28E+00	2.00E+00
CS-134	4.22E+01	3.10E+01
CS-137	4.96E+01	6.20E+01
MN-54	9.38E-01	5.00E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.75E+02
	CI	1.29E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.51E+02
	CI	3.18E+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

INSTALLATION FORT ST. VRAIN LOCATION 35 MI N DENVER, CO

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1 LICENSEE PUBLIC SERVICE CO OF COLORADO  
TYPE HTG LICENSED POWER (MWT) 842.0  
DOCKET NO. 50-267 INITIAL CRITICALITY 01/31/74  
COOLING WATER SOURCE SOUTH PLATTE RIVER/SHALLOW WELLS

AIRBORNE EFFLUENTS	
NUCLIDES RELEASED	ACTIVITY (CI)
KR-85M	1.19E-02
KR-87	1.66E-02
KR-88	1.39E-02
I-131	1.25E-06
XE-131M	3.81E-01
XE-133	9.05E+01
XE-135M	3.27E-01
XE-135	7.29E-02

LIQUID EFFLUENTS	
NUCLIDES RELEASED	ACTIVITY (CI)
XE-133	8.92E-04

TRITIUM (CI)	
TOTAL AIRBORNE RELEASE	9.86E-01
TOTAL LIQUID RELEASE	2.06E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	3.81E+05
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.25E+08

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



INSTALLATION= FORT ST. VRAIN

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 C1	0. 0.
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 C1	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 C1	
D. OTHER	M3 C1	

A - 55

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-244  
COOLING WATER SOURCE LAKE ONTARIO

LICENSEE ROCHESTER GAS&ELEC  
LICENSED POWER (MWT) 1520.1  
INITIAL CRITICALITY 11/08/69

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	3.82E-01
MN-54	1.85E-06
CO-58	1.48E-07
CO-60	1.61E-06
KR-85	3.56E+00
KR-85M	2.88E+00
KR-87	1.01E-03
KR-88	3.07E-01
NB-95	6.15E-06
AG-110M	9.82E-08
SB-129	1.36E-07
I-131	3.49E-03
XE-131M	7.86E+00
I-132	4.04E-03
I-133	1.69E-03
XE-133	7.21E+02
XE-133M	2.77E-01
CS-134	2.89E-07
XE-135	2.41E+01
XE-135M	2.91E-02
CS-137	2.74E-06
XE-138	1.50E-03
CE-141	4.34E-09
CE-144	1.61E-08
NP-239	4.99E-07

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	2.47E-04
MN-54	2.62E-04
CO-58	8.77E-04
FE-59	1.90E-06
CO-60	6.54E-03
NB-95	1.90E-05
ZR-95	4.20E-06
MO-99	6.70E-05
RU-103	1.20E-04
RU-106	2.10E-04
AG-110M	2.19E-05
SB-125	5.60E-05
TE-127M	1.70E-06
TE-129M	2.24E-05
I-131	5.19E-05
TE-132	2.00E-06
CS-134	3.13E-03

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CS-136	1.39E-04
CS-137	7.42E-03
BA-LA-140	2.13E-04
CE-141	4.25E-05
CE-PR-144	1.37E-04

TRITIUM

	(CI)
TOTAL AIRBORNE RELEASE	5.96E+01
TOTAL LIQUID RELEASE	1.60E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	2.15E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.98E+12

A - 57

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

INSTALLATION- R.E.GINNA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
24	TRUCK	BARNWELL S.C.
2	TRUCK	BEATTY NV.

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	4.00E+02 4.60E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 CI	
D. OTHER	M3 CI	

A - 58

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-213  
COOLING WATER SOURCE CONNECTICUT RIVER

LICENSEE CONNECTICUT YANKEE ATOMIC POWER  
LICENSED POWER (MWT) 1825.0  
INITIAL CRITICALITY 07/24/67

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
C-14	1.15E+02
AR-37	2.52E+01
AR-41	5.04E-02
CR-51	7.32E-04
MN-54	1.60E-04
CO-58	1.77E-03
CO-60	1.06E-03
KR-85	6.07E+02
KR-85M	9.55E-01
KR-87	1.55E+00
KR-88	1.52E+00
SR-89	8.14E-06
SR-90	4.12E-06
ZR-NB-95	1.27E-04
RU-103	1.14E-04
RU-106	3.25E-04
I-131	2.02E-03
XE-131M	1.65E+00
I-133	1.34E-04
XE-133	1.88E+03
XE-133M	5.31E+00
CS-134	2.26E-04
I-135	N/D
XE-135	2.51E+01
XE-135M	1.02E+00
CS-137	4.80E-04
XE-137	1.90E+00
XE-138	3.39E+00
BA-LA-140	N/D
CE-141	3.51E-05
CE-144	8.13E-04

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	N/D
AR-37	1.24E-04
CR-51	N/D
MN-54	1.12E-03
CO-57	N/D
CO-58	6.02E-03
FE-59	N/D
CO-60	4.97E-02
ZN-65	N/D
KR-85	1.09E-03
SR-89	1.61E-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 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
SR-90		2.85E-03
ZR-NB-95		5.17E-04
MO-99		N/D
TC-99M		N/D
RU-103		N/D
RU-106		1.10E-02
AG-110M		N/D
SB-125		2.11E-02
I-131		3.88E-03
I-133		N/D
XE-133		4.46E-02
CS-134		5.90E-02
XE-135		3.35E-03
CS-137		9.77E-02
BA-LA-140		N/D
CE-141		N/D
CE-144		2.14E-02
EU-154		N/D

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	6.25E+01
TOTAL LIQUID RELEASE	3.29E+03

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	6.07E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.68E+11

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

INSTALLATION= HADDAM NECK

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		
3	TRUCK	WEST JEFFERSON OH.

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
71	TRUCK	BARNWELL S.C.

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

A	%	JAN-JUNE	JULY-DEC
CE-141	%		9.43E-01
CE-144	%	1.01E+01	2.00E+01
CO-57	%		3.30E-01
CO-58	%	5.52E+00	1.33E+01
CO-60	%	4.53E+00	1.38E+01
CR-51	%		5.07E+00
CS-134	%	3.35E+01	3.92E+00
CS-137	%	4.07E+01	4.33E+00
MN-54	%	2.76E+00	3.40E+00
NB-95	%	8.15E-01	6.17E+00
RU-103	%		2.05E+00
RU-106	%		2.06E+01
ZR-95	%	4.56E-01	4.68E+00
B			
CE-141	%		2.04E-01
CE-144	%	9.06E+00	2.01E+01
CO-57	%		2.88E-01
CO-58	%	1.37E+01	8.75E+00
CO-60	%	5.82E+00	1.34E+01
CR-51	%		4.35E+00
CS-134	%	2.41E+01	1.52E+00
CS-137	%	2.90E+01	2.49E+00
MN-54	%	2.75E+00	1.98E+00
NB-95	%	1.17E+00	1.85E+00
RU-103	%		1.45E+00
RU-106	%	1.29E+01	4.11E+01
ZR-95	%		1.15E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.71E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	4.68E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	9.91E+02
D. OTHER	CI	2.11E+01

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

INSTALLATION EDWIN I. HATCH 1

LOCATION 11 MI N BAXLEY, GA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
LOCKET NO. 50-521  
COOLING WATER SOURCE ALTAMAHA RIVER

LICENSEE GEORGIA POWER  
LICENSED POWER (MWT) 2436.0  
INITIAL CRITICALITY 09/12/74

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
N-15	8.30E+02
AR-41	8.31E+01
CR-51	3.87E-04
MN-54	7.81E-06
CO-58	3.03E-05
FE-59	0.
CO-60	2.61E-04
KR-85	0.
KR-85M	6.24E+03
KR-87	4.35E+02
KR-88	2.11E+03
KR-89	0.
SR-89	2.22E-03
SR-90	1.63E-05
NB-95	1.03E-05
ZR-95	1.99E-09
SN-113	1.05E-06
I-131	1.28E+00
XE-131M	1.56E+03
I-133	2.42E-01
XE-133	2.20E+04
XE-133M	1.91E+02
CS-134	5.01E-03
I-135	6.15E-02
XE-135	1.54E+03
XE-135M	1.49E+03
CS-137	5.86E-03
XE-137	1.04E+02
XE-138	1.62E+03
BA-140	2.85E-04
LA-140	6.67E-04
CE-141	0.
CE-144	1.35E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	1.35E-03
NA-24	2.11E-04
P-32	0.
CR-51	1.59E-03
MN-54	4.61E-05
FE-55	2.14E-02
MN-56	0.
CO-58	8.09E-05
FE-59	1.68E-05

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



INSTALLATION EDWIN I. HATCH 1 LOCATION 11 MI N BAXLEY, CA  
 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
 AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
CO-60	2.77E-03
CU-64	6.20E-03
NI-65	1.48E-03
ZN-65	1.90E-03
ZN-69M	0.
AS-76	6.69E-05
KR-85M	8.61E-06
KR-87	1.76E-05
KR-87	2.70E-05
KR-87	4.42E-05
SR-89	1.97E-04
SR-90	1.67E-04
NB-95	6.25E-05
ZR-95	8.29E-05
NB-97	3.08E-06
ZR-97	0.
MO-99	1.64E-04
TC-99M	6.62E-04
TC-104	3.98E-06
AC-110M	3.42E-05
I-131	1.76E-02
XE-131M	6.98E-03
I-132	2.90E-07
I-133	1.94E-03
XE-133	1.99E-01
XE-133M	4.36E-03
CS-134	4.12E-03
CS-134M	4.36E-06
I-135	4.78E-05
XE-135	1.23E-01
XE-135M	1.59E-06
CS-136	2.10E-04
CS-137	5.34E-03
CS-138	4.75E-05
XE-138	2.04E-02
BA-140	0.
LA-140	2.19E-05
CE-141	0.
CE-144	1.93E-03
W-187	2.02E-05
NP-239	0.

TRITIUM	(CI)	
TOTAL AIRBORNE RELEASE	8.60E+00	
TOTAL LIQUID RELEASE	1.42E+01	
VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.32E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	4.41E+09
N/A=NOT APPLICABLE		
N/D=NOT DETECTED		
N/R=NOT REPORTED		

INSTALLATION- EDWIN I. HATCH 1

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
87	TRUCK	BARNWELL S.C.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

		JAN-JUNE	JULY-DEC
<b>A</b>			
CO-60	%	1.51E+01	2.70E+00
CR-51	%		1.40E+00
CS-134	%	1.83E+01	2.55E+01
CS-137	%	2.68E+01	3.31E+01
I-131	%	1.42E+01	2.55E+01
OTHERS	%	5.41E+00	9.00E-01
XE-133	%		1.75E+00
ZN-65	%	2.02E+01	9.20E+00
<b>B</b>			
CO-58	%		9.70E+00
CO-60	%	1.51E+01	8.10E+00
CR-51	%		9.30E+00
CS-134	%	1.83E+01	
CS-137	%	2.68E+01	
I-131	%	1.42E+01	
MN-54	%		1.20E+00
NB-65	%		6.60E+00
OTHERS	%	5.41E+00	1.00E+00
ZN-65	%	2.02E+01	6.10E+01
ZR-95	%		3.50E+00

49 - 64

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.81E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	9.59E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	1.83E+02
D. OTHER	CI	3.32E+00
	M3	
	CI	

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

INSTALLATION EDWIN I. HATCH 2

LOCATION 11 MI N BAXLEY, GA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 2  
TYPE BWR  
DOCKET NO. 50-366  
COOLING WATER SOURCE ALTAMAHA RIVER

LICENSEE GEORGIA POWER  
LICENSED POWER (MWT) 2436.0  
INITIAL CRITICALITY 07/04/78

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
N-13	1.61E+01
AR-41	3.72E-01
CR-51	0.
MN-54	1.99E-07
CO-58	0.
FE-59	0.
CO-60	2.43E-05
KR-85	0.
KR-85M	1.93E+01
KR-87	3.48E+00
KR-88	1.02E+01
KR-89	1.18E+01
SR-89	1.09E-04
SR-90	6.87E-07
NB-95	4.95E-07
ZR-95	0.
SN-113	0.
I-131	1.44E-02
XE-131M	1.81E+00
I-133	4.10E-01
XE-133	1.57E+02
XE-133M	6.53E-01
CS-134	2.14E-06
I-135	4.58E+00
XE-135	5.93E+01
XE-135M	3.60E+00
CS-137	1.34E-05
XE-137	2.88E+00
XE-138	6.85E+00
BA-140	2.16E-05
LA-140	2.26E-05
CE-141	1.16E-07
CE-144	5.44E-06

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
F-18	2.13E-03
NA-22	2.07E-06
NA-24	5.59E-03
P-32	0.
CR-51	2.19E-03
MN-54	2.93E-04
FE-55	2.29E-02
MN-56	5.06E-06
CO-58	2.25E-03

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

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
FE-59		1.94E-05
CO-60		2.63E-03
CU-64		0.
NI-65		1.87E-05
ZN-65		4.61E-03
ZN-69M		0.
AS-76		1.50E-04
KR-85M		0.
KR-87		0.
KR-88		0.
RB-88		6.95E-05
SR-89		0.
SR-90		2.11E-04
NB-95		2.20E-04
ZR-95		4.86E-05
NB-97		1.10E-06
ZR-97		3.09E-06
MO-99		1.19E-05
TC-99M		1.25E-04
AG-110M		0.
I-131		1.04E-03
I-132		8.00E-06
I-133		4.51E-04
XE-133		2.09E-02
XE-133M		1.11E-04
CS-134		1.64E-04
I-135		1.52E-04
XE-135		8.25E-03
XE-135M		5.82E-07
CS-136		5.35E-06
CS-137		3.25E-04
CS-138		9.39E-05
XE-138		5.31E-08
BA-140		0.
LA-140		5.22E-06
CE-141		0.
CE-144		3.17E-05
W-187		8.29E-06
NP-239		0.

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	4.42E+01
TOTAL LIQUID RELEASE	1.07E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	2.34E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	4.93E+09

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

INSTALLATION= EDWIN I. HATCH 2

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
42	TRUCK	BARNWELL S.C.

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

		JAN-JUNE	JULY-DEC
A			
BA-LA-140	%		5.43E+00
CO-58	%		1.37E+01
CO-60	%		7.95E+00
CR-51	%		4.76E+00
CS-134	%	1.67E+01	
CS-137	%	1.93E+01	
I-131	%		4.61E+00
LA-140	%		4.95E+00
MN-54	%		1.22E+00
NB-95	%	1.18E+01	
OTHERS	%	2.07E+01	7.00E-01
ZN-65	%	3.15E+01	5.67E+01
B			
CO-60	%		1.19E+00
CS-134	%	1.67E+01	3.89E+01
CS-137	%	1.93E+01	5.09E+01
I-131	%		4.60E+00
NB-95	%	1.18E+01	
OTHERS	%	2.07E+01	
ZN-65	%	3.15E+01	3.90E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.24E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	8.22E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	3.53E+01
D. OTHER	CI	5.32E-01

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

INSTALLATION HUMBOLDT BAY

LOCATION 4 MI SW EUREKA, CA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-133  
COOLING WATER SOURCE HUMBOLDT BAY

LICENSEE PACIFIC GAS & ELECTRIC  
LICENSED POWER (MWT) 220.0  
INITIAL CRITICALITY 02/16/63

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	2.68E-06
CO-60	2.88E-04
KR-83M	N/D
KR-85M	N/D
KR-87	N/D
KR-88	N/D
KR-89	N/D
SR-89	N/D
SR-90	1.09E-06
I-131	N/D
I-133	N/D
XE-133	N/D
XE-133M	N/D
CS-134	N/D
I-135	N/D
XE-135	N/D
XE-135M	N/D
CS-137	6.85E-05
XE-137	N/D
XE-138	N/D
BA-LA-140	N/D
CE-144	N/D

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	N/D
MN-54	1.00E-03
CO-58	N/D
CO-60	3.17E-02
ZN-65	N/D
SR-89	N/D
SR-90	3.11E-06
ZR-NB-95	N/D
MO-99	N/D
TC-99M	N/D
I-131	N/D
XE-133	N/D
CS-134	8.06E-03
XE-135	N/D
CS-137	8.24E-02
BA-LA-140	N/D
CE-144	3.77E-03
NP-239	N/D

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

INSTALLATION HUMBOLDT BAY LOCATION 4 MI SW EUREKA, CA  
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

TRITIUM			
TOTAL AIRBORNE RELEASE	(CI) 4.00E-02		
TOTAL LIQUID RELEASE	9.70E-02		
VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)		LITERS	4.85E+05
VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS	9.03E+10

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

INSTALLATION= HUMBOLDT BAY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
9	TRUCK	RICHLAND WA.

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

A			
CO-60	\$		1.07E+00
CS-134	\$		6.61E+00
CS-137	\$		8.83E+01
MN-54	\$		5.61E-02
UNIDENTIFIED	\$		3.94E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	8.20E+01 6.95E+01
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



INSTALLATION INDIAN POINT 1-2

LOCATION 3 MI SW PEEKSKILL, NY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-3  
COOLING WATER SOURCE  
UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-247  
COOLING WATER SOURCE

LICENSEE CONSOLIDATED EDISON  
LICENSED POWER (MWT) 615.0  
INITIAL CRITICALITY 08/02/62

LICENSEE CONSOLIDATED EDISON  
LICENSED POWER (MWT) 2758.0  
INITIAL CRITICALITY 05/22/73

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
P-32	2.69E-05
CR-51	4.87E-05
MN-54	2.38E-05
FE-55	1.57E-04
CO-57	7.86E-07
CO-58	8.31E-04
CO-60	7.83E-04
NI-63	4.18E-04
ZN-65	2.12E-06
KR-85	1.14E+03
KR-85M	1.34E+01
KR-87	1.71E+00
KR-88	1.89E+01
SR-89	<5.53E-05
SR-90	<8.50E-06
NB-95	5.20E-07
I-131	6.06E-02
XE-131M	2.59E+02
I-133	1.32E-02
XE-133	7.72E+03
XE-133M	6.77E+01
CS-134	2.67E-04
I-135	3.14E-02
XE-135	1.29E+02
XE-135M	6.10E+00
CS-137	7.26E-04
XE-137	2.19E+01
XE-138	3.34E+00
BA-LA-140	<2.21E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
P-32	2.51E-02
CR-51	6.10E-02
MN-54	1.76E-02
FE-55	2.41E-01
CO-57	3.77E-04
CO-58	1.59E-01
FE-59	1.72E-02
CO-60	1.19E-01
NI-63	5.28E-02

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

INSTALLATION INDIAN POINT 1-2

LOCATION 3 MI SW PEEKSKILL, NY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
ZN-65	1.63E-02
SR-89	<3.48E-03
SR-90	<2.60E-03
ZR-NB-95	6.09E-03
MO-99	2.23E-02
TC-99M	1.97E-03
I-131	1.51E-01
XE-133	1.25E-02
CS-134	8.65E-02
XE-135	4.72E-03
CS-136	1.21E-04
CS-137	1.90E-01
BA-LA-140	<3.74E-02
CE-141	3.85E-03

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.10E+01
TOTAL LIQUID RELEASE	2.76E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	7.86E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.01E+12

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

INSTALLATION= INDIAN POINT 1-2

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
0

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
91 TRUCK BARNWELL S.C.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(DY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
A		
CO60-1151-MN54-FE55-NI63	% 2.30E+01	
CO-58	% 9.00E+00	2.30E+01
CO-60	%	1.10E+01
CS-134	% 2.20E+01	1.20E+01
CS-137	% 4.60E+01	4.10E+01
1151-MN54-FE55-NI63	%	1.30E+01
B		
CO60-1151-MN54-FE55-NI63	% 2.30E+01	
CO-58	% 9.00E+00	2.30E+01
CO-60	%	1.10E+01
CS-134	% 2.20E+01	1.20E+01
CS-137	% 4.60E+01	4.10E+01
1151-MN54-FE55-NI63	%	1.30E+01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	6.07E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	2.10E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	4.21E+02
D. OTHER	CI	1.22E+02

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

INSTALLATION INDIAN POINT 3

LOCATION 3 MI SW PEERSKILL, NY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 3  
TYPE PWR  
DOCKET NO. 50-286  
COOLING WATER SOURCE

LICENSEE POWER AUTHORITY OF THE STATE OF NEW YORK  
LICENSED POWER (MWT) 2760.3  
INITIAL CRITICALITY 04/06/76

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
P-32	1.34E-06
CR-51	4.57E-05
MN-54	1.15E-05
FE-55	2.54E-04
CO-57	1.71E-06
CO-58	5.45E-05
CO-60	7.73E-05
NI-63	8.24E-05
KR-85	1.21E+01
KR-85M	1.19E+01
SR-85	9.54E-07
KR-87	5.78E-01
KR-88	6.18E-01
SR-89	1.08E-06
SR-90	1.20E-07
TC-99M	2.37E-07
ZR-99	1.01E-05
CD-109	6.04E-06
SN-113	9.42E-07
SB-122	5.82E-06
I-131	1.25E-02
XE-131M	2.30E+01
BA-133	1.72E-06
I-133	1.22E-03
XE-133	1.02E+03
XE-133M	1.27E+01
CS-134	1.06E-05
XE-135	2.74E+01
XE-135M	2.51E-01
CS-137	3.89E-05
BA-138	1.04E-06
XE-138	8.79E-01
CE-139	6.55E-07
CE-141	5.08E-06
CE-144	7.37E-06
HG-203	3.26E-07
NP-239	9.55E-06

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	6.66E-03
P-32	7.44E-02
CR-51	6.69E-02
MN-54	2.47E-02
FE-55	7.89E-01

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

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
MN-56		1.10E-04
CO-57		9.96E-04
CO-58		4.49E-01
FE-59		7.96E-03
CO-60		1.66E-01
NI-63		1.29E-01
ZN-65		2.37E-03
SR-85		9.78E-05
RB-88		1.64E-02
Y-88		1.63E-03
SR-89		1.14E-03
SR-90		5.78E-03
Y-91M		5.55E-05
SR-92		8.30E-03
Y-92		2.06E-04
ZR-NB-95		1.39E-02
NB-97		1.82E-02
ZR-97		1.42E-05
MO-99		1.01E-02
TC-99M		6.68E-03
KU-103		1.29E-04
RH-106		1.58E-03
CD-109		1.80E-02
AG-110M		1.43E-02
SN-113		4.36E-04
SB-122		2.87E-02
SB-124		1.69E-02
SB-125		3.28E-02
I-131		9.17E-02
I-132		4.18E-04
BA-133		7.99E-05
I-133		4.47E-03
XE-133		2.49E+00
CS-134		2.98E-01
I-134		3.60E-05
I-135		9.56E-04
XE-135		4.63E-02
CS-136		2.22E-02
CS-137		5.28E-01
CS-138		1.60E-04
CE-139		1.04E-03
BA-LA-140		1.13E-02
CE-141		3.09E-03
CE-144		1.01E-03
W-187		5.04E-04
HG-203		1.63E-05
HG-208		3.71E-06

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

INSTALLATION INDIAN POINT 3 LOCATION 3 MI SW PEEKSKILL, NY  
 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
 AIRBORNE AND LIQUID EFFLUENTS

TRITIUM		
TOTAL AIRBORNE RELEASE	(CI) 4.92E+00	
TOTAL LIQUID RELEASE	4.27E+02	
VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)		LITERS 1.04E+08
VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS 1.01E+12

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

INSTALLATION= INDIAN POINT 3

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
29	TRUCK	BARNWELL S.C.
1	TRUCK	BEATTY NV.
1	TRUCK	RICHLAND WA.

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

	%	JAN-JUNE	JULY-DEC
A			
CO-58	%	3.30E+01	2.10E+01
CO-60	%	3.10E+01	1.70E+01
CS-134	%		1.90E+01
CS-137	%	1.60E+01	2.70E+01
RU-106	%		1.60E+01
B			
CO-58	%	2.50E+01	5.00E+00
CO-60	%	5.00E+01	1.60E+01
CS-134	%		2.30E+01
CS-137	%	1.20E+01	5.20E+01
MN-54	%		4.00E+00
D			
CO-58	%	5.00E+01	
CO-60	%	1.70E+01	
CS-137	%	1.70E+01	

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	7.48E+01
	CI	1.78E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.72E+02
	CI	2.43E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	2.12E-01
	CI	4.70E-02

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

INSTALLATION KEWAUNEE

LOCATION 27 MI ESE GREEN BAY, WI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-305  
COOLING WATER SOURCE LAKE MICHIGAN

LICENSEE WISCONSIN PUBLIC SERVICE  
LICENSED POWER (MWT) 1650.0  
INITIAL CRITICALITY 03/07/74

AIRBORNE EFFLUENTS	
NUCLIDES RELEASED	ACTIVITY (Ci)
AR-41	4.15E+00
CO-58	7.21E-07
CO-60	3.35E-05
KR-85	1.51E-03
KR-85M	2.28E-02
KR-88	2.08E-05
RB-88	7.27E-06
SR-89	<2.29E-06
SR-90	<2.29E-06
I-131	1.82E-04
I-132	9.35E-04
I-133	7.61E-04
XE-133	2.17E+01
XE-133M	3.27E-03
CS-134	1.82E-06
I-134	3.27E-06
I-135	4.55E-06
XE-135	5.75E+00
XE-135M	2.08E-06
CS-137	3.85E-05
RN-222	4.08E-04
UNIDENTIFIED	8.81E+01

LIQUID EFFLUENTS	
NUCLIDES RELEASED	ACTIVITY (Ci)
NA-24	1.86E-03
CR-51	5.54E-03
MN-54	4.58E-03
CO-58	1.32E-01
FE-59	2.54E-03
CO-60	1.10E-01
SR-89	1.09E-04
SR-90	5.07E-05
NB-95	5.90E-05
ZR-95	2.66E-05
AG-110M	1.17E-01
SN-113	1.68E-03
SB-122	3.44E-03
SB-124	5.66E-02
SB-125	5.98E-02
I-133	2.40E-05
XE-133	2.03E-03
CS-134	5.03E-02
XE-135	6.75E-04
CS-137	6.84E-02

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



INSTALLATION KEWAUNEE

LOCATION 27 MI ESE GREEN BAY, WI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS

NUCLIDES RELEASED

ACTIVITY (CI)

BA-140

1.29E-04

TRITIUM

(CI)

TOTAL AIRBORNE RELEASE 2.08E+01

TOTAL LIQUID RELEASE 2.33E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)

LITERS 5.75E+06

VOLUME OF DILUTION WATER USED DURING PERIOD

LITERS 5.43E+10

A - 79

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

INSTALLATION= KEWAUNEE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
0

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
28 TRUCK BARNWELL S.C.

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

A		JAN-JUNE	JULY-DEC
AG-110M	%		2.11E-01
CO-57	%	1.22E+00	2.37E-01
CO-58	%	2.63E+00	2.58E+01
CO-60	%	3.41E+01	5.91E+01
CR-51	%		2.69E-01
CS-134	%	1.92E+01	2.88E+00
CS-137	%	3.39E+01	7.02E+00
FE-59	%		8.98E-02
MN-54	%	9.84E+00	4.31E+00
SB-124	%		1.25E-01
SB-125	%		2.27E-01
SN-113	%		1.09E-01
B		JAN-JUNE	JULY-DEC
AG-110M	%		1.92E+00
CO-57	%	5.10E-01	1.71E-01
CO-58	%	1.80E+00	5.24E+01
CO-60	%	3.20E+01	4.81E+01
CR-51	%		2.46E+00
CS-134	%	2.04E+01	2.20E+00
CS-137	%	3.60E+01	4.49E+00
FE-59	%		8.17E-01
MN-54	%	9.51E+00	5.47E+00
SB-124	%		1.14E+00
SB-125	%		2.06E+00
SN-113	%		9.95E-01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	7.62E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	1.37E+03
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	2.65E+01
D. OTHER	CI	6.61E+00

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-409  
COOLING WATER SOURCE MISSISSIPPI RIVER

LICENSEE DAIRYLAND POWER  
LICENSED POWER (MWT) 165.0  
INITIAL CRITICALITY 07/11/67

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.40E-04
MN-54	3.94E-05
CO-57	1.58E-05
CO-58	6.73E-05
FE-59	8.06E-06
CO-60	4.68E-04
ZN-65	5.11E-05
SE-75	1.43E-05
KR-85	1.33E+00
KR-85M	9.66E+01
KR-87	2.38E+02
KR-88	2.19E+02
KR-89	1.85E+00
SR-89	6.30E-04
SR-90	9.86E-05
Y-91	1.95E-03
NB-94	6.40E-06
NB-95	3.31E-05
ZR-95	3.68E-05
RU-103	1.01E-04
RH-106	1.15E-04
CD-109	4.05E-05
AG-110M	4.62E-07
IN-114M	1.18E-06
TE-121	2.55E-06
TI-121	1.04E-07
SB-125	1.16E-05
SE-126	8.90E-07
XE-129M	2.67E-01
I-131	4.37E-03
XE-131M	1.01E+01
I-132	6.17E-05
I-132M	1.78E-05
BA-133	1.51E-05
I-133	1.65E-03
XE-133	7.56E+02
XE-133M	7.79E+01
CS-134	1.76E-05
I-134	1.48E-04
I-135	9.44E-04
XE-135	2.48E+03
XE-135M	3.03E+02
CS-136	1.37E-05
CS-137	1.42E-04
XE-137	1.79E+02

N/A=NOT APP' CABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

## AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
XE-138	5.34E+02
CE-139	1.22E-05
CE-141	5.54E-05
CE-144	8.60E-05
PM-145	2.26E-04
SM-145	6.64E-05
PM-148	1.96E-05
PM-148M	8.14E-06
EU-152	2.42E-06
EU-153	5.39E-06
GD-153	1.85E-06
AM-241	8.85E-06
CM-241	2.44E-05
CM-243	9.72E-06

## LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	2.33E-02
MN-54	1.24E-01
CO-57	3.30E-03
CO-58	2.82E-01
FE-59	4.72E-02
CO-60	9.23E-01
ZN-65	2.68E-02
KR-85M	1.95E-05
KR-87	8.75E-05
SR-89	1.60E-02
SR-90	1.37E-03
SR-91	6.44E-04
Y-91	4.27E-03
Y-91M	1.05E-04
SR-92	3.79E-04
NB-95	2.00E-02
ZR-95	1.27E-02
MO-99	5.16E-03
TC-99M	4.88E-02
RU-103	1.69E-02
RH+RU-105	7.28E-03
RU+RH-105	3.34E-03
RU+RH-106	3.10E-02
CD-109	1.95E-03
SB-122	1.86E-04
SB-124	4.64E-05
TE-127	7.71E-03
I-131	1.11E-02
XE-131M	1.37E-02
I-132	2.70E-04
I-133	1.63E-02
XE-133	1.16E-02
XE-133M	5.98E-04

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (Ci)
CS-134		5.59E-02
I-135		1.15E-02
XE-135		6.76E-03
XE-135M		1.62E-03
CS-137		2.50E-01
BA-LA-140		2.28E-02
CE-141		8.59E-03
CE-144		8.88E-02
PM-145		1.98E-02
ND-147		5.49E-05
NP-239		2.03E-02
CM-241		1.42E-04
AM-242		8.07E-03
CM-245		1.08E-04

TRITIUM	(Ci)
TOTAL AIRBORNE RELEASE	6.46E+00
TOTAL LIQUID RELEASE	7.20E+01

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	2.06E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.38E+11

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

INSTALLATION= LACROSSE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
4	TRUCK	BARNWELL S.C.
1	TRUCK	BEATTY NV.

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	4.21E+01 2.02E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 CI	
D. OTHER	M3 CI	1.08E+00 4.67E-02

A - - 84

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

INSTALLATION MAINE YANKEE

LOCATION 5.9 MI S WICASSETT, ME

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-309  
COOLING WATER SOURCE BACK RIVER

LICENSEE MAINE YANKEE ATOMIC POWER  
LICENSED POWER (MWT) 2440.0  
INITIAL CRITICALITY 10/23/72

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	<1.36E-05
MN-54	1.27E-06
CO-58	7.74E-05
CO-60	4.66E-05
KR-85	1.53E+01
KR-85M	<8.00E-07
KR-87	<2.40E-06
KR-88	<2.80E-06
SR-89	6.28E-06
SR-90	7.91E-08
I-131	1.56E-03
XE-131M	2.63E+03
I-132	<4.40E-12
I-133	1.02E-03
XE-133	1.23E+03
XE-133M	7.05E-01
CS-134	1.08E-06
I-134	<1.28E-11
I-135	6.33E-04
XE-135	6.64E+00
XE-135M	<4.00E-06
CS-137	3.50E-05
XE-138	<1.36E-06
BA-140	<2.88E-13
UNIDENTIFIED	2.62E+00

LIQUID EFFLUENTS  
NUCLIDES RELEASED

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	1.14E-05
CR-51	3.50E-03
MN-54	1.82E-03
CO-58	2.11E-01
FE-59	N/D
CO-60	1.22E-02
ZN-65	N/D
KR-88	2.01E-05
SR-89	1.09E-03
SR-90	1.17E-05
NB-95	5.95E-04
ZR-95	N/D
MO-99	4.54E-05
TC-99M	N/D
I-131	1.39E-02
XE-131M	5.91E-04
I-133	6.28E-04

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

INSTALLATION MAINE YANKEE

LOCATION 3.9 MI S WICASSETT, ME

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS	ACTIVITY
NUCLIDES RELEASED	(Bq)
XE-135	2.99E-02
XE-135M	1.56E-04
CS-134	8.57E-03
XE-135	1.80E-03
CS-137	4.26E-02
BA-140	N/D
CE-141	N/D
CE-144	4.77E-04
UNIDENTIFIED	0.

TRITIUM	(Ci)
TOTAL AIRBORNE RELEASE	3.16E+00
TOTAL LIQUID RELEASE	2.18E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	8.38E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	4.52E+11

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



INSTALLATION= MAINE YANKEE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

SOLID WASTE DISPOSITION NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
49	TRUCK	BARNWELL S.C.
2	TRUCK	BEATTY NV.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
A		
CO-58	\$ 4.50E+01	4.00E+01
CO-60	\$ 5.00E+00	1.00E+01
CS-134	\$ 2.00E+01	1.00E+01
CS-137	\$ 3.00E+01	4.00E+01
B		
CO-58	\$	3.00E+01
CO-60	\$ 3.00E+01	3.00E+01
CS-134	\$	1.00E+01
CS-134-CO-58	\$ 3.00E+01	
CS-137	\$ 4.00E+01	3.00E+01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.91E+02
	CI	4.79E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.66E+02
	CI	9.30E-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

INSTALLATION MILLSTONE 1

LOCATION 3.2 MI WSW NEW LONDON, CT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1

LICENSEE NORTHEAST NUCLEAR ENERGY

TYPE BWR

LICENSED POWER (MWT) 2011.0

DOCKET NO. 50-245

INITIAL CRITICALITY 10/26/70

COOLING WATER SOURCE LONG ISLAND SOUND

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
H-3	9.55E+01
CR-51	3.39E-05
MN-54	1.69E-03
CO-58	6.51E-05
FE-59	3.84E-06
CO-60	6.42E-03
ZN-65	2.22E-05
KR-83M	1.86E+02
KR-85	2.75E-03
KR-85M	4.40E+02
KR-87	1.05E+03
KR-88	1.02E+03
KR-89	6.53E-02
SR-89	1.94E-02
SR-90	1.16E-04
I-131	2.14E-01
XE-131M	1.08E-01
I-133	1.14E+00
XE-133	3.36E+02
XE-133M	1.26E+01
CS-134	1.08E-04
I-135	1.81E+00
XE-135	1.39E+03
XE-135M	1.34E+03
CS-137	1.37E-03
XE-137	2.05E+03
XE-138	4.10E+03
BA-LA-140	8.33E-02

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
H-3	2.73E+01
NA-24	4.55E-05
CR-51	1.22E-03
MN-54	1.79E-02
MN-56	3.33E-05
CO-58	1.44E-03
FE-59	1.23E-04
CO-60	2.11E-01
ZN-65	2.94E-05
SR-89	4.26E-03
SR-90	9.67E-04
SR-92	1.19E-05
NB-95	1.40E-04
ZR-95	4.06E-05

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION MILLSTONE 1

LOCATION 3.2 MI WSW NEW LONDON, CT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)		
MO-99		1.45E-04		
TC-99M		1.21E-05		
RU-105		2.07E-05		
SB-124		5.77E-02		
I-131		1.96E-02		
I-133		6.87E-03		
XE-135		2.26E-01		
CS-134		6.25E-02		
I-134		4.21E-05		
I-135		1.69E-03		
XE-135		2.66E-01		
XE-135M		1.15E-04		
CS-137		3.23E-01		
CS-138		7.98E-05		
BA-LA-140		1.11E-03		
CE-141		1.09E-03		
TRITIUM		(CI)		
TOTAL AIRBORNE RELEASE		9.55E+01		
TOTAL LIQUID RELEASE		2.73E+01		
VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)		LITERS	1.72E+07	
VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS	1.70E+10	

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

INSTALLATION= MILLSTONE I

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)		
NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		
1	TRUCK	PLEASANTON CA.

SOLID WASTE DISPOSITION		
NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
171	TRUCK	BARNWELL S.C.
7	TRUCK	RICHLAND WA.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
A		
CO-60	% 3.20E+01	4.60E+01
CS134-SB124	%	2.20E+01
CS137-CS134	% 1.90E+01	
CS-137	%	2.30E+01
FE-55	% 3.00E+01	
1131-LA140-SR90-CO58-ZN65-NI63-UNIDENTIFIED	% 5.00E+00	
SB124-MN54-SR-89-BA140-CE144	% 1.40E+01	
SR89-SR90-NI63-FE55-UNIDENTIFIED	%	1.00E+00
ZN65-MN54-CO58-CE144	%	8.00E+00
B		
CO60-CO58	% 2.50E+01	
CO-60	%	7.40E+01
CS134-CS137	%	8.00E+00
CS-134	% 2.60E+01	
CS-137	% 3.30E+01	
MN54-FE55-CE144	% 1.00E+01	
MN-54	%	1.70E+01
SR89-NI63-1131-SR90-UNIDENTIFIED	% 6.00E+00	
SR89-SR90-FE55-NI63-UNIDENTIFIED	%	1.00E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	9.16E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	2.30E+03
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	1.39E+03
D. OTHER	CI	5.89E+01
	M3	
	CI	

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

INSTALLATION MILLSTONE 2

LOCATION 5.2 MI WSW NEW LONDON, CT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-336  
COOLING WATER SOURCE LONG ISLAND SOUND

LICENSEE NORTHEAST NUCLEAR ENERGY  
LICENSED POWER (MWT) 2560.0  
INITIAL CRITICALITY 10/17/75

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
H-3	8.50E+02
AR-41	3.70E-01
MN-54	6.98E-05
CO-58	7.60E-04
FE-59	1.17E-06
CO-60	9.70E-04
KR-85	9.66E+00
KR-85M	2.49E+00
KR-88	7.63E+00
SR-89	N/D
SR-90	3.09E-08
I-131	6.29E-03
XE-131M	6.38E-01
I-133	3.29E-03
XE-133	1.28E+03
XE-133M	6.75E-02
CS-134	3.72E-03
I-135	7.32E-03
XE-135	6.28E+01
CS-137	7.64E-03
CS-138	7.40E-05
BA-LA-140	2.38E-06

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
H-3	2.68E+02
NA-24	3.66E-02
CR-51	1.39E-01
MN-54	1.24E-01
MN-56	5.24E-05
CO-58	6.90E-01
FE-59	3.66E-03
CO-60	9.09E-01
ZN-65	2.57E-05
SR-89	3.36E-04
SR-90	2.90E-04
SR-92	1.04E-02
NB-95	4.67E-02
ZR-95	2.28E-02
NB-97	5.88E-02
ZR-97	2.42E-03
MO-TC-99	5.75E-05
MO-99	2.17E-04
TC-99M	1.90E-03
RU-105	3.67E-02

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

INSTALLATION MILLSTONE 2

LOCATION 3.2 MI WSW NEW LONDON, CT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
AG-110M		5.99E-02
SB-124		1.96E-03
SB-125		4.12E-03
I-131		5.03E-02
I-132		1.87E-05
I-133		1.05E-02
XE-133		6.00E+01
CS-134		2.05E-01
I-134		6.25E-05
I-135		1.96E-04
XE-135		2.82E+00
CS-136		5.47E-03
CS-137		2.82E-01
BA-LA-140		1.57E-03
CE-141		1.00E-05
CE-144		2.97E-03
W-187		9.84E-03

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	8.50E+02
TOTAL LIQUID RELEASE	2.68E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	5.24E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	5.07E+11

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

INSTALLATION= MILLSTONE 2

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
2	TRUCK	BARNWELL S.C.
1	TRUCK	DICKERSON MD.

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

NUCLIDE	JAN-JUNE	JULY-DEC
A		
CO-60	%	8.00E+00
CS-134	%	2.80E+01
CS-137	%	6.30E+01
MN54-FE55-SR89-SR90-NI63	%	1.00E+00
C		
CO58-CO60	%	3.70E+01
CR51-NI63-NB95-ZR95-AG110-AG110M-AG108M	%	1.00E+01
FE55-FE59-MN54	%	5.20E+01
RU103-106-RH106-CE141-144-PR144-PM147-CD109	%	1.00E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	7.14E+00
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	1.96E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	3.68E-01
D. OTHER	CI	2.92E+01

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

INSTALLATION MONTICELLO

LOCATION 23 MI SE ST. CLOUD, MN

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-263  
COOLING WATER SOURCE MISSISSIPPI RIVER

LICENSEE NORTHERN STATES POWER  
LICENSED POWER (MWT) 1670.0  
INITIAL CRITICALITY 12/10/70

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	8.24E-05
MN-54	3.71E-05
CO-57	3.10E-07
CO-58	0.
FE-59	2.22E-06
CO-60	1.08E-03
ZN-65	5.08E-05
KR-85M	9.21E+00
KR-85	3.04E+01
KR-85M	8.02E+00
KR-87	4.73E+01
KR-88	2.68E+01
KR-89	8.78E+02
SR-89	1.63E-03
KR-90	2.97E+01
SR-90	3.09E-05
NB-95	2.29E-06
ZR-95	0.
RU-103	0.
SB-124	0.
SB-126	0.
I-131	2.03E-02
XE-131M	5.30E+00
I-133	7.98E-02
XE-133	4.77E+02
XE-133M	2.20E+00
CS-134	1.05E-04
I-135	2.93E-02
XE-135	5.06E+01
XE-135M	6.77E+01
CS-136	0.
CS-137	7.83E-04
XE-137	1.15E+03
XE-138	9.53E+02
XE-139	8.84E+01
BA-140	3.67E-03
CE-141	5.22E-04
CE-144	8.18E-06
ND-147	7.68E-07

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.48E+02
TOTAL LIQUID RELEASE	0.
N/A=NOT APPLICABLE	
N/D=NOT DETECTED	
N/R=NOT REPORTED	



INSTALLATION MONTICELLO LOCATION 23 MI SE ST. CLOUD, MN  
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION) LITERS 0.  
VOLUME OF DILUTION WATER USED DURING PERIOD LITERS 0.

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

INSTALLATION= MONTICELLO

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
36	TRUCK	BARNWELL S. C.
33	TRUCK	RICHLAND WA.

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

A		JAN-JUNE	JULY-DEC
BA-140	%	3.19E+00	7.11E+00
CE-141	%	3.64E-01	2.57E-01
CO-58	%	1.27E+00	2.17E-02
CO-60	%	1.52E+01	1.75E+01
CR-51	%	6.51E+00	2.41E+00
CS-134	%	8.54E+00	5.54E+00
CS-137	%	4.34E+01	3.40E+01
I-131	%		7.95E+00
LA-140	%	3.72E+00	7.58E+00
MN-54	%	1.06E+00	1.76E+00
SR-90	%	3.23E-02	
ZN-65	%	1.49E+01	1.14E+01
B			
CE-141	%	1.51E-01	
CO-58	%		7.04E+00
CO-60	%	5.04E+01	6.76E+01
CR-51	%		1.01E+01
CS-134	%	5.94E+00	
CS-136	%	3.30E+00	
CS-137	%	3.19E+01	1.80E+00
FE-59	%		3.95E+00
MN-54	%	3.35E-01	5.05E+00
SR-90	%	1.67E-01	
ZN-65	%	7.13E+00	4.14E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.54E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	C1	7.26E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	4.87E+02
	C1	3.09E+01
D. OTHER	M3	0.
	C1	0.
	M3	
	C1	

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

INSTALLATION NINE MILE POINT

LOCATION 8 MI NE OSWEGO, NY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-220  
COOLING WATER SOURCE LAKE ONTARIO

LICENSEE NIAGARA MOHAWK POWER  
LICENSED POWER (MWT) 1850.0  
INITIAL CRITICALITY 09/05/69

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	1.17E-04
FE-59	2.33E-05
CO-60	9.73E-03
KR-85M	2.49E+01
KR-88	3.34E+00
SR-89	1.13E-03
SR-90	4.32E-06
I-131	1.19E-02
I-133	8.43E-02
CS-134	1.62E-04
I-135	2.20E-01
XE-135	4.00E+02
XE-135M	1.58E+02
CS-137	2.04E-03
BA-LA-140	3.55E-04

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.08E+02
TOTAL LIQUID RELEASE	

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

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

INSTALLATION= NINE MILE POINT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
0

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
64 TRUCK BARNWELL S.C.  
1 TRUCK RICHLAND WA.

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

A			
CO-60	%	5.00E+01	6.00E+01
CS-134	%	1.00E+01	7.00E+00
CS-137	%	3.50E+01	3.00E+01
MN-54	%	5.00E+00	3.00E+00
B			
CO-60	%	5.00E+01	
CS-134	%	1.00E+01	
CS-137	%	3.50E+01	
MN-54	%	5.00E+00	
C			
CO-60	%		9.30E+01
MN-54	%		7.00E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	7.37E+02
	CI	1.77E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	6.83E+01
	CI	7.43E+00
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	8.50E+00
	CI	2.14E+04
D. OTHER	M3	
	CI	

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

INSTALLATION NORTH ANNA

LOCATION 40 MI NW RICHMOND, VA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-338  
COOLING WATER SOURCE LAKE ANNA  
UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-339  
COOLING WATER SOURCE LAKE ANNA

LICENSEE VIRGINIA ELECTRIC & POWER  
LICENSED POWER (MWT) 2775.0  
INITIAL CRITICALITY 04/05/78

LICENSEE VIRGINIA ELECTRIC & POWER  
LICENSED POWER (MWT) 2775.0  
INITIAL CRITICALITY 06/12/80

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	6.58E-02
CO-58	2.27E-04
CO-60	5.29E-06
KR-85	2.39E+00
KR-85M	6.45E-01
SR-85	2.32E-08
KR-87	1.84E-02
KR-88	2.40E-01
CD-109	3.67E-05
I-131	1.20E-02
XE-131M	6.79E+00
I-133	1.42E-03
XE-133	3.39E+03
XE-133M	1.20E+01
CS-134	1.37E-06
I-135	1.31E-06
XE-135	8.37E+01
CS-137	5.29E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	4.32E-02
CR-51	3.93E-03
MN-54	6.78E-03
CO-57	8.45E-06
CO-58	5.53E-01
CO-60	2.18E-01
KR-85	2.51E-01
SR-85	1.37E-03
ZR-NB-95	5.56E-04
NB-97	1.40E-03
TC-99M	6.98E-05
SB-124	3.52E-02
I-131	2.91E-02
I-133	4.94E-03
XE-133	2.71E+00
XE-133M	1.32E-02
CS-134	5.00E-02
XE-135	1.85E-02
CS-137	9.11E-02
BA-LA-140	1.92E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION NORTH ANNA

LOCATION 40 MI NW RICHMOND, VA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS  
NUCLIDES RELEASED  
TM-170

ACTIVITY (CI)  
9.44E-03

TRITIUM (CI)  
TOTAL AIRBORNE RELEASE 5.61E+01  
TOTAL LIQUID RELEASE 4.03E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION) LITERS 1.67E+08  
VOLUME OF DILUTION WATER USED DURING PERIOD LITERS 1.59E+12

A - 100

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

INSTALLATION= NORTH ANNA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
26	TRUCK	BARNWELL S.C.
1	TRUCK	HANFORD WA.

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

B			
CO-58	%	3.44E+01	2.80E+01
CO-60	%	3.56E+01	3.60E+01
CS-134	%	7.37E+00	1.10E+01
CS-137	%	1.62E+01	1.80E+01
MN-54	%	6.61E+00	5.00E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	6.59E+01
	CI	1.36E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.98E+02
	CI	1.75E+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

INSTALLATION OCONEE

LOCATION 50 MI W GREENVILLE, SC

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1	LICENSEE DUKE POWER
TYPE PWR	LICENSED POWER (MWT) 2568.0
DOCKET NO. 50-269	INITIAL CRITICALITY 04/19/75
COOLING WATER SOURCE KEOWEE LAKE	
UNIT NUMBER 2	LICENSEE DUKE POWER
TYPE PWR	LICENSED POWER (MWT) 2568.0
DOCKET NO. 50-270	INITIAL CRITICALITY 11/11/75
COOLING WATER SOURCE KEOWEE LAKE	
UNIT NUMBER 3	LICENSEE DUKE POWER
TYPE PWR	LICENSED POWER (MWT) 2568.0
DOCKET NO. 50-287	INITIAL CRITICALITY 09/05/74
COOLING WATER SOURCE KEOWEE LAKE	

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
C-14	0.
P-32	0.
AR-41	2.15E+00
CR-51	5.87E-04
MN-54	1.29E-05
FE-55	0.
CO-58	1.77E-04
FE-59	1.67E-05
CO-60	2.27E-03
NI-63	0.
ZN-65	4.04E-05
KR-83M	0.
KR-85	5.32E+02
KR-85M	1.44E+01
RB-86	0.
KR-87	2.62E+00
KR-88	1.63E+00
KR-89	0.
SR-89	1.74E-08
KR-90	0.
SR-90	5.38E-09
Y-91	0.
NB-95	6.03E-06
ZR-95	7.62E-06
MO-99	4.62E-04
RU-103	1.74E-06
RU-106	6.74E-04
AG-110M	1.33E-04
CD-115M	0.
SN-123	0.
SB-124	0.
SB-125	7.09E-05
SN-126	0.
TE-127M	0.
TE-129M	0.
I-131	9.82E-02
XE-131M	2.01E+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 1980  
AIRBORNE AND LIQUID EFFLUENTS

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-133	1.58E-02
XE-133	1.80E+04
XE-133 <sup>1/2</sup>	1.35E+02
CS-134	6.50E-04
I-135	7.85E-03
XE-135	3.49E+02
XE-135M	1.03E+00
CS-136	2.73E-05
CS-137	7.87E-03
XE-137	0.
XE-138	0.
3A-140	2.19E-04
CE-141	0.
CE-144	3.79E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	0.
NA-24	3.92E-04
AR-41	1.82E-04
CR-51	1.43E-02
MN-54	6.17E-03
MN-56	0.
CO-57	4.27E-04
CO-58	3.05E-01
FE-59	5.93E-04
CO-60	8.11E-02
NI-65	1.20E-03
ZN-65	6.41E-04
KE-85	5.53E-01
KR-85M	1.38E-03
KR-87	0.
KR-88	4.88E-05
Y-88	0.
SR-89	1.98E-02
SR-90	2.57E-03
SR-91	2.90E-05
SP-92	5.47E-03
Y-92	0.
NB-95	2.83E-03
ZR-95	4.26E-04
NB-97	4.15E-02
ZR-97	2.60E-04
MO-99	1.75E-03
TC-99M	1.08E-03
RU-103	5.04E-04
RU-103M	0.
RU-106	7.41E-03
AG-108M	0.
CD-109	0.

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
AG-110M		1.73E-02
CD-115		2.11E-04
CD-115M		0.
IN-115M		0.
SB-122		0.
SN-123M		0.
SB-124		0.
SB-125		9.80E-03
SN-125		0.
I-131		1.62E-01
XE-131M		5.28E-02
I-132		1.60E-05
I-133		8.79E-03
XE-133		3.89E+00
XE-133M		3.91E-02
CE-134		0.
CS-134		2.73E-01
I-134		1.24E-02
CS-135M		0.
I-135		1.22E-03
XE-135		6.87E-02
CS-136		5.51E-03
CS-137		5.55E-01
CS-138		8.48E-03
PA-139		0.
BA-LA-140		6.16E-03
CE-141		0.
CE-144		2.98E-03
W-187		6.86E-04
NP-239		7.11E-05

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.07E+01
TOTAL LIQUID RELEASE	7.12E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	7.29E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.09E+12

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

INSTALLATION= OCOONEE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION

50  
87  
BARNWELL S. C.

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

	JAN-JUNE	JULY-DEC
A		
AG-110M	0.00E+00	
CO-57	0.00E+C0	
CO-58	5.57E+01	
CO-60	6.70E+00	
CR-51	3.70E+01	
CS-134	0.00E+00	
CS-137	0.00E+00	
MN-54	5.00E-01	
NB-97	0.00E+00	
SR-92	0.00E+00	
B		
AG-110M	0.00E+00	
CO-57	0.00F+00	
CO-58	1.75E+01	
CO-60	1.97E+01	
CR-51	0.00E+00	
CS-134	2.39E+01	
CS-137	3.58E+01	
I-131	0.00E+00	
MN-54	1.80E+00	
NB-97	0.00E+00	
SR-92	0.00E+00	
TC-99M	0.00E+00	
C		
CO-58	1.75E+01	
CO-60	1.97E+01	
CS-134	2.39E+01	
CS-137	3.58E+01	
I-131	0.00E+00	
I-133	0.00E+00	
I-134	0.00E+00	
LA-140	0.00E+00	
MN-54	1.80E-01	
TC-99M	0.00E+00	
D		
CO-58	5.57E+01	
CO-60	6.70E+00	
CR-51	3.70E+01	
MN-54	5.00E-01	

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

INSTALLATION= OCONEE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	7.48E+02 2.88E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	2.68E+02 1.17E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 CI	3.04E+02 1.94E+01
D. OTHER	M3 CI	9.00E-01 1.35E-01

901 - A

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

INSTALLATION OYSTER CREEK

LOCATION 9 MI S TOMS RIVER, NJ

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-219  
COOLING WATER SOURCE BARNEGAT BAY

LICENSEE JERSEY CENTRAL POWER & LIGHT  
LICENSED POWER (MWT) 1930.0  
INITIAL CRITICALITY 05/03/69

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	2.94E-03
MN-54	1.28E-03
FE-59	3.17E-04
CO-60	8.91E-03
KR-85M	1.26E+03
KR-87	4.26E+03
KR-88	4.06E+03
KR-89	<1.00E+00
SR-89	1.10E-01
SR-90	2.10E-03
SR-91	1.41E+00
MO-99	2.02E-02
TC-99M	4.44E-01
I-131	9.45E-01
I-133	3.23E+00
XE-135	8.61E+02
XE-135M	N/D
CS-134	1.29E-04
I-135	4.79E+00
XE-135	6.98E+03
XE-135M	3.19E+03
CS-137	4.48E-03
XE-137	2.84E+02
XE-138	1.03E+04
BA-140	1.75E-01
LA-140	1.46E-01
CE-141	3.06E-04
CE-144	1.16E-03
NP-239	5.92E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	9.58E-03
MN-54	5.71E-02
CO-57	5.28E-05
CO-58	6.75E-05
FE-59	1.15E-03
CO-60	3.15E-01
ZN-65	3.80E-04
KR-85M	5.46E-05
SR-89	7.66E-04
SR-90	4.59E-04
NB-95	1.38E-03
NB-95M	5.99E-04
MO-99	4.59E-04

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

INSTALLATION OYSTER CREEK

LOCATION 9 MI S TOMS RIVER, NJ

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
TC-99M		8.14E-04
RU-103		6.79E-04
RU-106		6.99E-04
SB-124		3.08E-01
SB-125		1.80E-04
I-131		3.01E-03
I-133		7.81E-03
XE-133		1.27E-01
XE-135M		2.25E-03
CS-134		1.95E-02
XE-135		4.01E-01
CS-137		5.64E-02
BA-140		1.09E-03
LA-140		5.04E-03
CE-141		4.73E-03
CE-143		2.77E-05
CE-144		5.63E-03
PA-233		3.20E-04
NP-239		6.03E-04

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	9.35E+00
TOTAL LIQUID RELEASE	1.54E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	1.94E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.33E+12

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

INSTALLATION= OYSTER CREEK

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
152	TRUCK	BARNWELL S.C.
15	TRUCK	BEATTY NV.

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

		JAN-JUNE	JULY-DEC
<b>A</b>			
CO-60	%	3.16E+01	6.24E+01
CS-137	%	2.20E+00	7.30E+00
LA-140	%		2.30E+00
MN-54	%	6.80E+00	1.21E+01
SR-89	%	5.21E+01	6.20E+00
SR-90	%	3.10E+00	
<b>B</b>			
CE-144	%	1.80E+00	
CO-58	%		1.42E+01
CO-60	%	5.99E+01	5.80E+01
CS-137	%		1.30E+00
FE-59	%	3.30E+00	
MN-54	%	1.72E+01	8.50E+00
SB-124	%	1.38E+01	
SR-89	%		1.07E+01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	7.11E+02
	CI	1.16E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.32E+03
	CI	1.62E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	
	CI	

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

INSTALLATION PALISADES

LOCATION 5 MI S SOUTH HAVEN, MI

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-255  
COOLING WATER SOURCE LAKE MICHIGAN

LICENSEE CONSUMERS POWER  
LICENSED POWER (MWT) 2530.0  
INITIAL CRITICALITY 05/24/71

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.39E-03
MN-54	2.74E-04
CO-57	1.77E-06
CO-58	1.50E-04
FE-59	1.68E-06
CO-60	1.14E-03
KR-85	5.24E+00
KR-85M	3.21E-02
KR-87	2.87E-02
KR-88	4.26E-02
I-131	2.51E-02
XE-131M	2.58E+00
I-132	4.53E-04
I-133	5.32E-03
XE-133	1.32E+02
XE-133M	4.80E-02
CS-134	2.35E-05
I-135	8.67E-03
XE-135	1.69E-01
XE-135M	7.75E-02
CS-137	2.36E-04
UNIDENTIFIED	6.63E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	1.84E-03
CO-58	8.99E-04
CO-60	3.43E-03
NB-95	9.35E-06
I-131	1.61E-04
XE-133	4.67E-04
CS-134	1.65E-04
CS-137	1.19E-03
UNIDENTIFIED	1.03E-03

TRITIUM (CI)  
TOTAL AIRBORNE RELEASE 5.13E+00  
TOTAL LIQUID RELEASE 7.47E+01

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	9.21E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	7.97E+10

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



INSTALLATION= PALISADES

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)		
NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION		
NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
6	TRUCK	BARNWELL S.C.
26	TRUCK	RICHLAND WA.

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	1.85E+02 1.06E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	5.46E+02 1.15E+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

INSTALLATION PEACH BOTTOM

LOCATION 17.9 MI S LANCASTER, PA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 2 LICENSEE PHILADELPHIA ELECTRIC  
TYPE BWR LICENSED POWER (MWT) 3293.0  
DOCKET NO. 50-277 INITIAL CRITICALITY 09/16/73  
COOLING WATER SOURCE CONOWINGO POND/SUSQUEHANNA RIVER  
UNIT NUMBER 3 LICENSEE PHILADELPHIA ELECTRIC  
TYPE BWR LICENSED POWER (MWT) 3293.0  
DOCKET NO. 50-278 INITIAL CRITICALITY 08/07/74  
COOLING WATER SOURCE CONOWINGO POND/SUSQUEHANNA RIVER

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-58	8.25E-05
CO-60	8.70E-03
ZN-65	1.50E-02
KR-85M	1.66E+01
KR-87	3.72E+00
KR-88	6.13E+00
RB-88	3.57E-03
RB-89	7.46E-05
SR-89	1.79E-03
SR-90	<1.23E-04
SR-91	1.45E-03
Y-91M	3.18E-03
I-131	2.94E-02
I-133	5.69E-01
XE-133	1.10E+04
XE-133M	1.15E+02
CS-134	1.78E-03
I-135	5.43E-01
XE-135	1.60E+03
XE-135M	7.65E+01
CS-137	4.50E-03
CS-138	5.35E-02
XE-138	1.07E+02
BA-140	1.29E-03
LA-140	9.85E-04

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	5.78E-01
P-32	1.70E-02
CR-51	9.64E-02
MN-54	8.79E-03
FE-55	2.20E-02
MN-56	6.27E-04
CO-58	2.34E-02
CO-60	1.56E-01
NI-63	5.11E-03
ZN-65	3.06E-01
KR-85M	4.03E-04
SR-89	7.57E-03
SR-90	3.80E-04

N/A=NOT APPLICABLE

N/D=NOT DETECTED

N/R=NOT REPORTED

INSTALLATION PEACH BOTTOM

LOCATION 17.9 MI S LANCASTER, PA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
SR-91		7.11E-03
Y-91M		1.39E-02
SR-92		7.34E-04
NE-95		5.70E-04
ZR-95		4.16E-04
TC-99M		2.19E-02
CD-109		1.71E-03
SB-124		3.15E-05
I-131		6.39E-02
XE-131M		1.85E-02
I-132		7.84E-04
TE-132		2.38E-02
I-133		7.22E-02
XE-133		3.13E-01
XE-133M		2.22E-03
CS-134		5.68E-01
I-134		7.21E-04
I-135		2.36E-02
XE-135		5.21E-01
XE-135M		5.46E-02
CS-137		6.91E-01
BA-140		7.40E-03
LA-140		1.07E-02
NP-239		1.16E-02

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.29E+01
TOTAL LIQUID RELEASE	3.73E+01

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	2.99E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.45E+11

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

INSTALLATION= PEACH BOTTOM

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
319	TRUCK	BARNWELL S.C.
28	TRUCK	BEATTY NV.

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	MS CI	2.64E+03 6.69E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	MS CI	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	MS CI	
D. OTHER	MS CI	

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-293  
COOLING WATER SOURCE CAPE COD BAY

LICENSEE BOSTON EDISON  
LICENSED POWER (MWT) 1998.0  
INITIAL CRITICALITY 06/16/72

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.79E-04
MN-54	1.93E-04
CO-58	2.36E-04
FE-59	5.22E-05
CO-60	1.12E-03
ZN-65	4.68E-06
KR-85	6.45E-02
KR-85M	4.54E+03
KR-87	1.37E+03
KR-88	5.72E+03
SR-89	3.75E-03
SR-90	3.69E-05
ZR-NB-95	5.46E-06
RU-106	1.92E-04
I-131	8.78E-02
I-133	1.65E-01
XE-133	1.32E+04
XE-133M	2.25E+02
CS-134	2.00E-05
I-135	1.86E-01
XE-135	9.27E+02
XE-135M	4.67E+00
CS-137	2.70E-04
XE-138	7.48E+01
BA-LA-140	1.11E-02
CE-141	6.65E-05
CE-144	5.34E-05

LIQUID EFFLUENTS  
NUCLIDES RELEASED

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	4.56E-02
MN-54	7.25E-02
FE-55	5.61E-01
CO-58	3.57E-02
FE-59	1.16E-02
CO-60	7.53E-01
ZN-65	5.60E-03
SR-89	1.64E-02
SR-90	2.10E-03
ZR-NB-95	9.78E-04
MO99-TC99M	3.60E-03
I-131	5.23E-03
I-133	1.67E-03
XE-133	1.41E-03
CS-134	1.09E-01

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS  
NUCLIDES RELEASED

	ACTIVITY (CI)
XE-135	5.15E-03
CS-137	5.31E-01
BA-LA-140	1.08E-02
CE-141	4.78E-03
CE-144	7.54E-04
UNIDENTIFIED	5.57E-01

TRITIUM (CI)  
TOTAL AIRBORNE RELEASE 4.38E+01  
TOTAL LIQUID RELEASE 4.00E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION) LITERS 5.32E+06  
VOLUME OF DILUTION WATER USED DURING PERIOD LITERS 1.82E+10

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

INSTALLATION= PILGRIM

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
0

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS MODE OF TRANSPORTATION DESTINATION  
147 TRUCK BARNWELL S.C.  
5 TRUCK BEATTY NV.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)		JAN-JUNE	JULY-DEC
A			
BA-LA-140	%	4.89E-01	2.70E-01
CE-141	%	8.20E-02	2.00E-02
CO-58	%	1.17E+00	3.61E+00
CO-60	%	3.37E+01	3.17E+01
CR-51	%	8.86E-01	6.18E+00
CS-134	%	4.69E+00	4.10E+00
CS-137	%	1.78E+01	1.85E+01
FE-55	%	3.40E+01	2.54E+01
FE-59	%	2.11E-01	8.60E-01
I-131	%	8.40E-02	2.20E-01
I-133	%		3.00E-02
I-135	%	4.09E-03	
MN-54	%	3.62E+00	4.42E+00
RU-103	%	2.90E-02	3.70E-01
SR-89	%	2.96E+00	2.42E+00
SR-90	%	4.80E-02	1.48E+00
UNIDENTIFIED	%	3.00E-03	3.00E-02
ZN-65	%	1.57E-01	4.20E-01
ZR-NB-95	%	5.00E-03	6.00E-02
B			
CO-58	%	3.87E+01	4.60E+01
CO-60	%	4.45E+01	3.64E+01
CR-51	%	1.84E-01	
CS-137	%	2.08E-01	1.50E-01
FE-55	%	1.42E+00	1.69E+00
FE-59	%	2.43E+00	2.80E+00
MN-54	%	5.84E+00	5.65E+00
RU-103	%	2.11E-01	
UNIDENTIFIED	%	3.49E-01	
ZN-65	%	6.15E+00	7.80E+00
ZR-NB-95	%	4.20E-02	5.00E-02

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	3.47E+02
	CI	1.56E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.59E+03
	CI	4.10E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
N/A=NOT APPLICABLE		
N/D=NOT DETECTED		
N/R=NOT REPORTED		

INSTALLATION- PILGRIM

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

D. OTHER

M3  
CI

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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 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-266  
COOLING WATER SOURCE LAKE MICHIGAN  
UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-301  
COOLING WATER SOURCE LAKE MICHIGAN

LICENSEE WISCONSIN ELECTRIC POWER COMPANY  
LICENSED POWER (MWT) 1518.5  
INITIAL CRITICALITY 11/02/70

LICENSEE WISCONSIN ELECTRIC POWER COMPANY  
LICENSED POWER (MWT) 1518.5  
INITIAL CRITICALITY 05/30/72

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	6.49E-01
NA-24	1.74E-07
AR-41	5.50E+01
CR-51	5.48E-07
MN-54	5.05E-07
CO-57	1.19E-06
CO-58	2.95E-05
CO-60	1.06E-04
ZN-65	1.24E-08
KR-85	1.07E+02
KR-85M	5.86E+01
KR-87	1.72E+01
KR-88	5.70E+01
RB-88	1.92E-02
SR-89	N/D
SR-90	N/D
NB-95	5.24E-07
ZR-95	7.42E-08
RU-103	5.12E-07
RU-106	5.01E-08
CD-109	9.51E-06
SN-113	3.90E-08
SB-125	5.56E-07
I-131	9.98E-04
I-132	3.65E-03
TE-132	1.54E-07
BA-135	5.51E-10
I-135	5.11E-04
XE-135	1.76E+02
XE-135M	5.85E+00
CS-134	2.28E-06
I-134	2.18E-07
I-135	4.55E-07
XE-135	1.75E+02
XE-135M	1.25E+01
CS-137	1.07E-04
CS-138	6.18E-05
XE-138	2.07E+01
CE-139	2.11E-09
BA-140	9.88E-07
CE-141	1.84E-05

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS  
NUCLIDES RELEASED ACTIVITY (CI)

LIQUID EFFLUENTS  
NUCLIDES RELEASED ACTIVITY (CI)

F-18	1.54E-02
NA-24	2.73E-01
CR-51	3.63E-03
MN-54	3.27E-03
CO-57	2.70E-04
CO-58	1.08E-02
CO-60	1.35E-02
KR-85M	1.29E-05
KR-87	1.55E-04
RB-88	7.99E-02
SR-89	2.53E-04
SR-90	4.00E-03
NB-95	9.38E-04
ZR-95	2.28E-04
MO-99	1.11E-05
RU-103	2.29E-05
RU-106	8.97E-04
AG-110M	5.64E-04
SN-113	2.98E-06
SB-125	2.32E-04
I-131	7.11E-02
XE-131M	2.38E-05
I-132	1.32E-02
TE-132	3.54E-06
I-133	7.63E-02
XE-133	9.30E-02
XE-133M	8.94E-04
CS-134	8.53E-03
I-134	1.45E-03
I-135	2.46E-02
XE-135	5.20E-03
CS-137	2.62E-02
CS-138	9.98E-03
XE-138	1.76E-03
BA-140	1.80E-04
LA-140	3.99E-04
CE-141	4.91E-05
CE-139	1.88E-04

TRITIUM (CI)  
TOTAL AIRBORNE RELEASE 6.53E+02  
TOTAL LIQUID RELEASE 7.61E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	3.14E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	6.14E+11
N/A=NOT APPLICABLE		
N/D=NOT DETECTED		
N/R=NOT REPORTED		

INSTALLATION- POINT BEACH

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)  
NUMBER OF SHIPMENTS    MODE OF TRANSPORTATION    DESTINATION  
0

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS    MODE OF TRANSPORTATION    DESTINATION  
29                            TRUCK

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	4.49E+02 9.35E+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

INSTALLATION PRAIRIE ISLAND

LOCATION 26 MI SE MINNEAPOLIS, MN

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-282  
COOLING WATER SOURCE MISSISSIPPI RIVER  
UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-306  
COOLING WATER SOURCE MISSISSIPPI RIVER

LICENSEE NORTHERN STATES POWER  
LICENSED POWER (MWT) 1650.0  
INITIAL CRITICALITY 12/01/73

LICENSEE NORTHERN STATES POWER  
LICENSED POWER (MWT) 1650.0  
INITIAL CRITICALITY 12/17/74

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	1.02E+01
CO-58	4.10E-05
CO-60	2.83E-05
KR-85	6.89E-01
KR-85M	7.90E-01
KR-87	1.83E-00
KR-88	1.78E-02
RB-88	4.80E-03
Y-88	2.89E-08
ZR-97	1.65E-07
I-131	1.76E-03
XE-131M	8.81E-03
I-133	4.20E-06
XE-133	2.39E+02
XE-133M	2.28E+00
XE-135	5.04E+00

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	6.55E-04
CO-58	2.61E-03
CO-60	3.30E-03
KR-87	4.69E-06
SR-89	3.58E-06
ZR-NB-95	2.50E-05
AG-110M	2.98E-05
SB-124	2.78E-05
I-131	2.04E-04
XE-131M	1.04E-03
XE-133	6.88E-02
XE-133M	1.34E-04
CS-134	1.55E-05
XE-135	3.71E-04
CS-137	7.48E-05
CE-139	1.54E-05
CE-144	1.70E-04

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

INSTALLATION PRAIRIE ISLAND LOCATION 26 MI SE MINNEAPOLIS, MN  
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

TRITIUM	(CI)		
TOTAL AIRBORNE RELEASE	8.63E+01		
TOTAL LIQUID RELEASE	5.43E+02		
VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)		LITERS	2.04E+08
VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS	1.04E+12

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

INSTALLATION= PRAIRIE ISLAND

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
3	TRUCK	BARNWELL S.C.
25	TRUCK	RICHLAND WA.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
A		
AG110M-CS134-ZR95	%	3.40E+00
CO-58	%	1.64E+01
CO-60	%	6.50E+01
CS-137	%	1.55E+01
B		
CO-58	%	1.08E+01
CO-60	%	6.81E+01
CS-134	%	1.20E+00
CS-134, MN-54, ETC	%	1.34E+01
CS-137	%	1.49E+01
MN-54	%	6.20E+00
NB-95	%	4.70E+00
ZR-95	%	5.10E+00

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TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.39E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	1.50E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	5.01E+02
D. OTHER	CI	4.76E+01
	M3	
	CI	

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-254  
COOLING WATER SOURCE MISSISSIPPI RIVER  
UNIT NUMBER 2  
TYPE BWR  
DOCKET NO. 50-265  
COOLING WATER SOURCE MISSISSIPPI RIVER

LICENSEE COMMONWEALTH EDISON AND IOWA-ILLINOIS GAS & ELECTRIC  
LICENSED POWER (MWT) 2511.0  
INITIAL CRITICALITY 10/18/71

LICENSEE COMMONWEALTH EDISON AND IOWA-ILLINOIS GAS & ELECTRIC  
LICENSED POWER (MWT) 2511.0  
INITIAL CRITICALITY 04/26/72

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.10E-04
MN-54	4.14E-04
CO-58	1.67E-04
CO-60	2.97E-02
ZN-65	1.10E-04
KR-85M	2.23E+03
KR-87	7.08E+02
KR-88	2.70E+03
SR-89	7.52E-02
SR-90	4.14E-04
NB-95	1.57E-04
ZR-95	4.78E-06
RU-103	3.55E-05
AG-110M	2.36E-05
I-131	3.31E-01
I-133	1.50E+00
XE-133	4.41E+03
CS-134	1.49E-03
I-135	2.69E+00
XE-135	4.64E+03
XE-135M	2.16E+03
CS-137	5.35E-03
XE-138	4.56E+03
BA-140	1.61E-01
LA-140	1.24E-01
CE-141	1.35E-03
CE-144	8.44E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	1.04E-01
CO-58	3.63E-02
CO-60	2.80E+00
ZN-65	3.13E-02
SR-89	1.21E-02
SR-90	7.12E-03
SR-91	3.41E-03
Y-92	9.30E-03
ZR-95	9.50E-04
TC-99M	3.17E-04
AG-110M	7.47E-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 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
I-131	5.55E-02
I-133	1.99E-02
XE-135	8.38E-02
CS-134	2.49E+00
I-135	3.66E-03
XE-135	7.15E-02
CS-137	6.81E+00
BA-140	2.80E-01
LA-140	1.93E-01
CE-141	2.09E-05
NP-239	2.99E-02
UNIDENTIFIED	2.94E-01

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	4.40E+01
TOTAL LIQUID RELEASE	1.03E+01

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.01E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.03E+11

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



INSTALLATION= QUAD-CITIES

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
287	TRUCK	BARNWELL S.C.
6	TRUCK	BEATTY NV.
32	TRUCK	RICHLAND WA.

TYPE OF WASTE

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.67E+03
	CI	4.07E+03
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	
	CI	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	
	CI	

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

INSTALLATION RANCHO SECO

LOCATION 25 MI SE SACRAMENTO, CA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-312  
COOLING WATER SOURCE COOLING TOWERS-FOLSOM CANAL

LICENSEE SACRAMENTO MUNICIPAL UTILITY  
LICENSED POWER (MWT) 2772.0  
INITIAL CRITICALITY 09/16/74

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN54 AND NB95	7.94E-04
AR-41	N/D
CO-58	2.24E-03
CO-60	2.15E-04
KR-85	3.78E+00
KR-85M	N/D
KR-87	1.90E-01
KR-88	N/D
SR-89	N/D
SR-90	N/D
I-131	6.91E-03
XE-131M	7.16E-01
I-133	7.70E-04
XE-133	1.55E+03
XE-133M	5.02E-01
CS-134	1.81E-04
I-135	N/D
XE-135	1.99E+01
XE-135M	N/D
CS-137	2.09E-04
XE-138	N/D
BA-LA-140	N/D
UNIDENTIFIED	N/D

LIQUID EFFLUENTS  
NUCLIDES RELEASED

NUCLIDES RELEASED	ACTIVITY (CI)
H-3	1.47E-02
CR-51	N/D
MN-54	N/D
CO-58	N/D
FE-59	N/D
CO-60	N/D
ZN-65	N/D
SR-89	N/D
SR-90	N/D
ZR-NB-95	N/D
MO-99	N/D
TC-99M	N/D
I-131	N/D
XE-133	N/D
CS-134	1.34E-03
XE-135	N/D
CS-137	2.43E-03
BA-LA-140	N/D
CE-141	N/D

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

INSTALLATION RANCHO SECO

LOCATION 25 MI SE SACRAMENTO, CA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS  
NUCLIDES RELEASED  
UNIDENTIFIED

ACTIVITY (CI)  
N/D

TRITIUM

(CI)  
TOTAL AIRBORNE RELEASE 1.77E+02  
TOTAL LIQUID RELEASE 1.47E-02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)  
VOLUME OF DILUTION WATER USED DURING PERIOD

LITERS 1.76E+06  
LITERS 2.58E+08

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

INSTALLATION= RANCHO SECO

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
7	TRUCK	BEATTY NV.
23	TRUCK	RICHLAND WA.

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

A		
CO-58	%	3.00E+00
CO-60	%	3.00E+00
CS-134	%	9.00E+00
CS-137	%	2.00E+01
H-3	%	6.50E+01
B		
CO-58	%	6.30E+01
CO-60	%	2.00E+01
CR-51+AG-110M	%	1.00E+00
MN-54	%	1.60E+01
D		
CO-58	%	6.30E+01
CO-60	%	2.00E+01
CR-51+AG-110M	%	1.00E+00
MN-54	%	1.60E+01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.82E+02
	CI	5.28E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.03E+02
	CI	2.68E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	0.
	CI	0.
D. OTHER	M3	7.50E+01
	CI	3.25E+01

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

INSTALLATION H.B.ROBINSON

LOCATION 4.5 MI WNW HARTSVILLE, SC

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-261  
COOLING WATER SOURCE ROBINSON INPOUNDMENT

LICENSEE CAROLINA POWER & LIGHT  
LICENSED POWER (MWT) 2300.0  
INITIAL CRITICALITY 09/20/70

AIRBORNE EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	0.
NA-24	0.
AR-41	9.42E+01
CR-51	4.54E-05
MN-54	0.
CO-57	3.37E-08
CO-58	4.73E-04
CO-60	5.51E-04
KR-85M	9.76E-01
TC-99M	0.
CD-109	3.02E-05
I-131	1.58E-05
XE-131M	3.14E-03
I-133	9.12E-06
XE-133	4.31E+02
CS-134	0.
I-135	0.
XE-135	5.56E+01
XE-135M	1.93E-03
CS-137	8.07E-06
CE-139	8.17E-06
CE-141	0.
CE-144	0.
HG-203	0.

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
BE-7	0.
NA-22	1.26E-06
AR-41	7.56E-04
CR-51	4.49E-04
MN-54	1.21E-02
CO-57	6.17E-05
CO-58	1.64E-01
CO-60	3.48E-02
SR-89	8.46E-03
SR-90	4.85E-03
NB-97	2.18E-05
CD-109	9.29E-03
AG-110M	1.03E-04
SN-113	1.26E-05
SB-124	2.90E-02
SB-125	0.
I-131	3.98E-03
XE-133	2.88E-03

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

INSTALLATION H.B. ROBINSON

LOCATION 4.5 MI WNW HARTSVILLE, SC

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
CS-134		4.16E-03
XE-135		6.23E-03
XE-135M		1.35E-04
CS-136		4.07E-05
CS-137		3.69E-02
CE-139		2.01E-04
BA-140		5.34E-05
CE-141		2.72E-04
CE-144		1.05E-04
W-187		2.18E-05
HG-203		1.24E-05

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	6.97E+00
TOTAL LIQUID RELEASE	1.89E+02

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	7.60E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	8.24E+11

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

INSTALLATION= H.B.ROBINSON

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		
5	RAIL	SOUTHPORT N.C.

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
86	TRUCK	BARNWELL S.C.
1	TRUCK	RICHLAND WA.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

		JAN-JUNE	JULY-DEC
A			
	CO57-SB124-NB95-CS134-ZN65-CR51	% 1.00E+00	1.00E+00
	CO57-SB124-NB95-FE59-CS134-ZR97	%	4.24E+01
	CO-58	% 4.30E+01	4.95E+01
	CO-60	% 4.20E+01	2.80E+00
	CS-137	% 9.00E+00	4.30E+00
	MN-54	% 5.00E+00	
B			
	CO57-SB124-NB95-CS134-ZN65-CR51-CS137	% 1.00E+00	1.00E+00
	CO57-SB124-NB95-FE59-CS134-ZR97	%	1.80E+01
	CO-58	% 2.90E+01	6.87E+01
	CO-60	% 6.70E+01	8.30E+00
	CR-51	%	2.70E+00
	CS-137	%	1.30E+00
	MN-54	% 3.00E+00	
D			
	CO-58	%	7.00E+00
	CO-60	%	8.60E+01
	CS-137	%	7.00E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	4.14E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	2.45E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	5.76E+02
D. OTHER	CI	6.24E+01
	M3	0.
	CI	0.
	M3	3.00E+03
	CI	2.47E-02

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

INSTALLATION SALEM 1

LOCATION 20 MI S WILMINGTON, DL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-272  
COOLING WATER SOURCE DELAWARE RIVER

LICENSEE PSE&G  
LICENSED POWER (MWT) 5338.0  
INITIAL CRITICALITY 12/11/76

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	6.11E-03
AR-41	6.15E-02
CR-51	1.21E-04
MN-54	1.15E-01
CO-58	1.17E-03
FE-59	3.00E-05
CO-60	8.69E-04
KR-85	1.72E-01
KR-85M	8.77E-01
KR-87	1.72E-01
KR-88	1.00E+00
RB-88	1.27E+00
Y-88	6.65E-02
NB-95	4.50E-05
ZR-95	2.13E-05
SN-117M	1.84E-02
I-131	3.91E-03
I-133	8.97E-04
XE-133	6.32E+01
XE-133M	5.08E-01
CS-134	1.41E-05
I-135	2.79E-04
XE-135	6.66E-01
XE-135M	6.69E-01
CS-137	1.99E-05
CE-139	9.38E-03

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	7.26E-03
AR-41	5.58E-05
CR-51	8.38E-02
MN-54	7.89E-01
CO-58	8.44E-01
FE-59	4.80E-02
CO-60	7.80E-01
KR-88	4.60E-04
Y-91	2.98E-02
NB-95	5.30E-03
ZR-95	4.63E-03
SB-124	1.05E-02
SB-125	1.40E-04
I-131	8.71E-02
I-133	4.56E-03
XE-133	6.73E+00

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



INSTALLATION SALEM 1

LOCATION 20 MI S WILMINGTON, DL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
XE-133M		3.47E-02
CS-134		2.91E-01
XE-135		7.72E-02
CS-136		1.16E-03
CS-137		3.75E-01
CE-139		5.09E-05

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	7.02E-03
TOTAL LIQUID RELEASE	0.

VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)	LITERS	1.97E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	4.73E+10

A - 135

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

INSTALLATION SALEM 2

LOCATION 20 M S WILMINGTON, DL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-311  
COOLING WATER SOURCE DELAWARE RIVER

LICENSEE PSE&G  
LICENSED POWER (MWT) 5338.0  
INITIAL CRITICALITY 08/02/80

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
I-131	5.44E-05
XE-133	7.74E+00

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	1.38E-02
MN-54	1.34E-02
CO-58	2.66E-01
FE-59	5.05E-03
CO-60	6.77E-02
NR-95	2.35E-03
SN-113	1.90E-03
SB-124	5.03E-03
SB-125	4.08E-03
XE-133	2.42E-04
CS-134	4.22E-03
CS-137	4.93E-03

TRITIUM (CI)  
TOTAL AIRBORNE RELEASE  
TOTAL LIQUID RELEASE

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	3.34E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.17E+10

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

INSTALLATION= SALEM 1 & SALEM 2

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
87	TRUCK	BARNWELL S.C.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
A		
CG-58	% 9.00E+00	8.04E+01
CO-60	% 7.40E+01	1.63E+01
MN-54	% 1.70E+01	3.30E+00
B		
CG-58	% 9.00E+00	5.04E+01
CO-60	% 7.40E+01	1.63E+01
MN-54	% 1.70E+01	3.30E+00

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	3.25E+02 3.87E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	6.87E+02 7.16E+01
C. IRRADIATED COMPONENTS, CONTROL K DS, ETC.	M3 CI	0. 0.
D. OTHER	M3 CI	0. 0.

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

INSTALLATION SAN ONOFRE

LOCATION 2.5 MI S SAN CLEMENTE, CA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-206  
COOLING WATER SOURCE PACIFIC OCEAN

LICENSEE SOUTHERN CALIFORNIA EDISON AND SAN DIEGO GAS & EL\*  
LICENSED POWER (MWT) 1347.0  
INITIAL CRITICALITY 06/14/67

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	4.50E-01
CO-58	6.49E-06
CO-60	2.95E-05
KR-85	4.24E+00
KR-85M	3.31E+00
KR-87	5.44E-01
KR-88	2.63E+00
RU-103	1.94E-01
I-131	2.35E-04
XE-131M	1.66E+00
I-132	1.95E-05
XE-133	9.24E+02
XE-133M	1.61E+01
XE-135	9.17E+01
XE-135M	1.30E+00
CS-137	6.47E-01
XE-138	7.30E-01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
P-32	4.31E-03
CR-51	1.12E-01
MN-54	1.33E-01
FE-55	7.85E-01
CO-57	5.63E-03
CO-58	3.93E+00
FE-59	4.00E-02
CO-60	1.67E+00
SR-89	1.51E-03
SR-90	5.86E-03
NB-95	3.80E-02
ZR-95	1.89E-02
TC-99M	2.02E+00
RU-103	6.20E-02
SB-124	6.37E-01
I-131	1.16E-01
XE-133	2.87E+00
XE-133M	2.87E-02
CS-134	1.67E+00
CS-137	1.25E+00
CE-141	4.19E-03
CE-144	1.58E-02
PU-238	2.86E-05
NP-239	5.18E-02
PU-239	8.00E-06

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

INSTALLATION SAN ONOFRE

LOCATION 2.5 MI S SAN CLEMENTE, CA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

TRITIUM	(CI)			
TOTAL AIRBORNE RELEASE	3.69E+01			
TOTAL LIQUID RELEASE	1.03E+03			
VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)		LITERS	1.31E+07	
VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS	2.59E+11	

A - 139

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

INSTALLATION- SAN ONOFRE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
1	TRUCK	BEATTY NV.
85	TRUCK	RICHLAND WA.

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	7.12E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	4.35E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
D. OTHER	CI	

A - 140

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

INSTALLATION SEQUOYAH

LOCATION DAISY, TN

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-327  
COOLING WATER SOURCE TENNESSEE RIVER

LICENSEE TENNESSEE VALLEY AUTHORITY  
LICENSED POWER (MWT) 2815.0  
INITIAL CRITICALITY 07/05/80

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.96E-04
MN-54	3.16E-04
CO-58	4.40E-04
CO-60	2.45E-05
KR-85	0.
KR-85M	0.
KR-87	0.
SR-88	0.
SR-89	1.09E-03
SR-90	3.34E-04
TC-99M	7.60E-05
I-131	3.96E-05
XE-131M	4.58E+02
I-133	5.54E-05
XE-133	2.43E+03
XE-133M	7.69E-07
CS-134	0.
I-135	0.
XE-135	1.23E+02
XE-135M	0.
CS-137	0.
XE-138	0.
BA-LA-140	0.
CE-144	5.35E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
H-3	2.86E-01
NA-24	1.44E-01
P-32	2.30E-01
AR-41	1.61E-04
CR-51	1.74E-02
MN-54	3.86E-02
FE-55	1.69E-02
CO-57	1.03E-06
CO-58	1.03E-01
FE-59	8.65E-04
CO-60	7.09E-03
KR-85	9.75E-03
SR-89	2.09E-02
SR-90	8.93E-03
NB-95	1.76E-04
ZR-95	1.76E-04
TC-99M	1.44E-03
SB-124	3.23E-04

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

INSTALLATION SEQUOYAH

LOCATION DAISY, TN

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
I-131		6.40E-03
XE-131M		3.01E-02
I-133		5.48E-04
XE-133		1.98E+00
XE-135		3.20E-04
CS-137		1.71E-05
CE-144		5.27E-04
W-187		3.58E-04

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	0.
TOTAL LIQUID RELEASE	3.23E-01

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

A - 142

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



INSTALLATION= SEQUOYAH

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 CI	
D. OTHER	M3 CI	

A - 143

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

INSTALLATION ST. LUCIE

LOCATION 8 MI S FT. PIERCE, FL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-335  
COOLING WATER SOURCE ATLANTIC OCEAN

LICENSEE FLORIDA POWER & LIGHT  
LICENSED POWER (MWT) 2560.0  
INITIAL CRITICALITY 04/22/76

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	4.60E+00
MN-54	5.48E-07
CO-58	1.39E-05
CO-60	2.26E-05
KR-85	1.68E+01
KR-85M	5.99E+01
KR-87	1.44E+01
KR-88	8.82E+01
RB-88	8.42E-02
I-131	3.23E-02
XE-131M	1.73E+02
I-133	1.87E-01
XE-133	1.46E+04
XE-133M	1.87E+02
XE-135	5.15E+02
XE-135M	2.53E+00
CS-137	9.23E-06
XE-138	1.66E+01
UNIDENTIFIED	0.

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	1.28E-03
AR-41	2.67E-04
CR-51	1.83E-01
MN-54	5.39E-02
MN-56	5.35E-03
CO-57	1.96E-03
CO-58	3.42E-01
FE-59	3.50E-02
CO-60	1.06E+00
NI-65	1.72E-03
ZN-65	5.29E-03
BR-82	1.07E-03
KR-85	6.55E-01
SR-89	2.98E-04
SR-90	3.87E-05
ZR-95	1.12E-01
ZR-97	8.04E-03
MO-99	4.07E-04
RU-103	1.50E-04
AG-110M	9.18E-03
SN-113	3.46E-03
SB-122	1.94E-02
SB-124	1.26E-01

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

INSTALLATION ST. LUCIE

LOCATION 8 MI S FT. PIERCE, FL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
SB-125		4.96E-02
I-131		2.09E-02
XE-131M		1.24E-02
I-132		1.28E-04
I-133		1.43E-03
XE-133		2.51E-01
XE-133M		4.85E-04
CS-134		1.40E-01
I-134		9.50E-04
I-135		9.90E-03
XE-135		8.07E-04
CS-136		1.44E-03
CS-137		1.43E-01
BA-140		2.09E-03
CE-141		1.22E-04
CE-144		1.53E-02
W-187		6.33E-03
NP-239		1.93E-03
UNIDENTIFIED		0.

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	3.73E+02
TOTAL LIQUID RELEASE	2.72E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	3.94E+06
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.92E+10

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

INSTALLATION= ST. LUCIE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
26	TRUCK	BARNWELL S.C.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)	JAN-JUNE	JULY-DEC
A		
CO-58	% 1.00E+01	3.00E+01
CO-60	%	5.20E+01
CS-134	% 2.90E+01	
CS-137	% 6.10E+01	1.80E+01
B		
CO-58	% 2.70E+01	1.10E+01
CO-60	% 5.10E+01	6.30E+01
CS-137	% 2.20E+01	2.60E+01

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.78E+01
	CI	7.39E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	2.84E+02
	CI	7.47E+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

INSTALLATION SURRY

LOCATION 19 W' NW NEWPORT NEWS, VA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-280  
COOLING WATER SOURCE JAMES RIVER  
UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-281  
COOLING WATER SOURCE JAMES RIVER

LICENSEE VIRGINIA ELECTRIC & POWER  
LICENSED POWER (MWT) 2431.0  
INITIAL CRITICALITY 07/01/72

LICENSEE VIRGINIA ELECTRIC & POWER  
LICENSED POWER (MWT) 2441.0  
INITIAL CRITICALITY 05/07/73

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.82E+00
CR-51	2.98E-04
MN-54	1.71E-05
CO-58	6.50E-04
FE-59	2.23E-07
CO-60	1.05E-03
ZN-65	5.74E-06
KR-85	4.12E+01
KR-85M	2.85E+00
KR-87	8.15E+00
KR-88	2.60E+00
RB-88	1.12E+00
NB-95	1.04E-05
ZR-95	1.80E-05
RU-103	7.80E-06
I-131	1.62E-02
I-132	2.33E-04
I-133	1.76E-03
XE-133	5.61E+03
XE-133M	4.33E+01
CS-134	3.88E-05
I-134	0.
I-135	6.66E-06
XE-135	2.64E+02
CS-137	2.58E-04
CS-138	9.27E-01

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
C-14	2.71E-03
NA-24	8.88E-01
AR-41	2.33E-04
CR-51	9.62E-02
MN-54	3.11E-02
CO-57	2.39E-03
CO-58	1.21E+00
FE-59	2.96E-04
CO-60	1.40E+00
KR-85	0.
RB-88	1.48E-02
SR-89	2.70E-03

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

INSTALLATION SURRY

LOCATION 19 MI NW NEWPORT NEWS, VA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
SR-90		1.42E-04
NR-95		7.34E-03
SB-124		1.24E-02
SB-125		3.59E-02
I-131		6.96E-01
I-132		2.07E-01
I-133		3.66E-01
XE-133		3.65E+00
XE-133M		4.47E-02
CS-134		7.52E-01
I-134		2.19E-01
I-135		3.36E-01
XE-135		7.35E-01
CS-136		3.19E-02
CS-137		1.31E+00
BA-LA-140		2.39E-03
CE-141		2.78E-05
CE-144		9.27E-04

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.83E+01
TOTAL LIQUID RELEASE	3.85E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	4.13E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.57E+12

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

INSTALLATION= SURRY

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
110		BARNWELL S.C.

TYPE OF WASTE	UNIT	YFAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	2.01E+02
	CI	7.06E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	1.81E+03
	CI	6.36E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	
	CI	

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

INSTALLATION THREE MILE ISLAND 1

LOCATION 10 MI SE HARRISBURG, PA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-289  
COOLING WATER SOURCE SUSQUEHANNA RIVER

LICENSEE METROPOLITAN EDISON & JERSEY CENTRAL POWER & LIGHT  
LICENSED POWER (MWT) 2535.0  
INITIAL CRITICALITY 06/05/74

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-60	2.76E-05
KR-85	4.64E-03
KR-85M	N/D
KR-87	N/D
KR-88	N/D
SR-89	N/D
SR-90	1.26E-06
RU-103	1.49E-06
AG-110M	4.32E-06
I-131	N/D
I-133	1.81E-06
XE-133	N/D
CS-134	5.18E-05
I-135	1.66E-05
XE-135	N/D
XE-135M	N/D
CS-137	2.66E-04
XE-138	N/D
CE-144	1.14E-05
UNIDENTIFIED	5.98E-06

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
P-32	2.38E-04
CR-51	N/D
MN-54	8.30E-04
CO-58	6.90E-04
FE-59	N/D
CO-60	1.59E-02
ZN-65	N/D
SR-89	9.77E-03
SR-90	1.89E-02
ZR-NB-95	N/D
MO-99	N/D
TC-99M	N/D
AG-110M	5.03E-02
SE-125	1.88E-03
I-131	1.05E-05
XE-133	N/D
CS-134	2.36E-02
XE-135	N/D
CS-137	8.37E-02
BA-LA-140	N/D
CE-141	N/D

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



INSTALLATION THREE MILE ISLAND 1 LOCATION 10 MI SE HARRISBURG, PA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

TRITIUM	(CI)			
TOTAL AIRBORNE RELEASE	1.81E+01			
TOTAL LIQUID RELEASE	3.26E+01			
VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)		LITERS	3.11E+06	
VOLUME OF DILUTION WATER USED DURING PERIOD		LITERS	6.90E+10	

A - 151

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 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
7	TRACTOR TRAILER	BARNWELL S.C.
3	TRACTOR TRAILER	RICHLAND WA.
7	TRUCK	BARNWELL S.C.
1	TRUCK	RICHLAND WA.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)

		JAN-JUNE	JULY-DEC
A			
	CO-58	% 4.00E+00	
	CO-60	% 5.40E+00	
	CS-134	% 2.43E+01	
	CS-137	% 6.63E+01	
B			
	AG-110M	% 4.50E+00	
	BA-137M	%	3.10E+01
	CO-60	% 5.50E+00	7.00E+00
	CS-134	% 3.22E+01	1.90E+01
	CS-137	% 5.59E+01	3.30E+01

TYPE OF WASTE

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.77E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	2.28E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	4.44E+02
D. OTHER	CI	1.91E+00
	M3	
	CI	
	M3	
	CI	

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-320  
COOLING WATER SOURCE SUSQUEHANNA RIVER

LICENSEE METROPOLITAN EDISON & JERSEY CENTRAL POWER & LIGHT  
LICENSED POWER (MWT) 2772.0  
INITIAL CRITICALITY 03/28/78

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CO-60	6.62E-07
KR-85	4.19E+04
KR-85M	N/D
KR-87	N/D
KR-88	N/D
SR-89	2.68E-06
SR-90	2.09E-05
I-131	N/D
I-133	N/D
XE-133	N/D
CS-134	N/D
I-135	N/D
XE-135	N/D
XE-135M	N/D
CS-137	4.90E-04
XE-138	N/D
BA-LA-140	N/D
UNIDENTIFIED	1.04E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
CR-51	N/D
MN-54	N/D
CO-58	N/D
FE-59	N/D
CO-60	N/D
ZN-65	N/D
ZR-NB-95	N/D
MO-99	N/D
TC-99M	N/D
I-131	N/D
XE-133	N/D
CS-134	N/D
XE-135	N/D
CS-137	1.18E-05
BA-LA-140	N/D
CE-141	N/D
UNIDENTIFIED	3.00E-06

TRITIUM

	(CI)
TOTAL AIRBORNE RELEASE	3.94E+02
TOTAL LIQUID RELEASE	6.10E-04

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 1980  
AIRBORNE AND LIQUID EFFLUENTS

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	3.20E+04
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.82E+10

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

INSTALLATION- THREE MILE ISLAND 2

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
15	TRACTOR TRAILER	RICHLAND WA.
29	TRUCK	RICHLAND WA.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)

	JAN-JUNE	JULY-DEC
A		
CO-58	3.56E+00	2.00E+00
CO-60		7.00E+00
CS-134	1.81E+01	1.60E+01
CS-137	6.93E+01	6.60E+01
SR-89	5.32E+00	
B		
CS-134	1.20E+01	1.20E+01
CS-137	8.00E+01	8.00E+01
SR-89	2.00E+00	2.00E+00
SR-90	5.00E+00	6.00E+00
D		
CS-134	1.06E+01	
CS-137	4.30E+01	
SR-89	1.54E+01	
SR-90	3.10E+01	

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.73E+02
	CI	8.93E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3	5.74E+02
	CI	2.70E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	1.95E+01
	CI	9.91E+00

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

INSTALLATION TMI 2/EPICOR

LOCATION 10 MI SE HARRISBURG, PA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-320  
COOLING WATER SOURCE SUSQUEHANNA RIVER

LICENSEE METROPOLITAN EDISON & JERSEY CENTRAL POWER & LIGHT  
LICENSED POWER (MWT) 2772.0  
INITIAL CRITICALITY 03/28/78

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
KR-85	2.16E+00
KR-85M	N/D
KR-87	N/D
KR-88	N/D
SR-89	1.97E-08
SR-90	3.19E-07
I-131	N/D
I-133	N/D
XE-133	N/D
CS-134	N/D
I-135	N/D
XE-135	N/D
XE-135M	N/D
CS-137	3.74E-06
XE-138	N/D
BA-LA-140	N/D
UNIDENTIFIED	2.73E-06

LIQUID EFFLUENTS  
NUCLIDES RELEASED

ACTIVITY (CI)

TRITIUM (CI)  
TOTAL AIRBORNE RELEASE 5.68E+02  
TOTAL LIQUID RELEASE

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

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

INSTALLATION TROJAN

LOCATION 35 MI NW PORTLAND, OR

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-344  
COOLING WATER SOURCE COLUMBIA RIVER

LICENSEE PORTLAND GENERAL ELECTRIC  
LICENSED POWER (MWT) 3411.0  
INITIAL CRITICALITY 12/15/75

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	2.16E-01
CR-51	6.51E-07
MN-54	2.02E-05
CO-58	5.55E-05
CO-60	1.75E-04
KR-85	1.68E+00
KR-85M	8.65E-01
KR-87	1.56E+00
KR-88	1.93E+00
KR-89	1.97E-02
SR-89	4.17E-08
SR-90	4.17E-08
NB-95	4.86E-06
RU-103	6.25E-06
AG-110M	6.08E-07
SN-113	1.01E-08
I-131	1.14E-02
XE-131M	3.10E+00
I-132	8.21E-06
I-133	1.65E-03
XE-133	3.26E+02
XE-133M	8.39E-01
CS-134	2.50E-05
I-134	2.76E-06
I-135	1.20E-03
XL-135	2.91E+01
XE-135M	1.21E+01
CS-137	2.53E-04
XE-137	2.54E+00
XE-138	3.91E+00
BA-140	<1.36E-03
LA-140	<3.50E-04
UNIDENTIFIED	8.07E+00

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	2.25E-03
NA-24	3.51E-03
CR-51	5.04E-02
MN-54	2.67E-02
CO-57	6.01E-04
CO-58	2.06E-01
FE-59	2.79E-03
CO-60	1.61E-01
KR-85M	6.12E-04

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

INSTALLATION TROJAN

LOCATION 35 MI NW PORTLAND, OR

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
RB-88		7.15E-05
SR-89		8.57E-05
SR-90		5.18E-03
NB-93		3.01E-02
ZR-95		1.56E-02
MO-99		5.36E-04
TC-99M		5.59E-04
RU-103		4.68E-03
AG-110M		1.81E-02
SN-113		4.71E-04
SB-124		1.42E-02
SB-125		2.59E-02
I-131		1.81E-02
I-132		1.63E-02
TE-132		1.67E-04
I-133		2.50E-02
XE-133		2.07E-01
XE-133M		1.61E-03
CS-134		1.60E-02
I-134		1.53E-02
I-135		2.78E-02
XE-135		2.34E-01
XE-135M		4.81E-01
CS-136		1.15E-04
CS-137		2.96E-02
CS-138		8.24E-03
BA-140		6.85E-03
LA-140		1.86E-03
CE-141		2.37E-03
CF-144		2.08E-02
NP-239		6.15E-04
UNIDENTIFIED		2.52E-04

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.49E+01
TOTAL LIQUID RELEASE	1.24E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	1.83E+07
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	3.52E+10

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



INSTALLATION- TROJAN

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
26	TRUCK	RICHLAND WA.

ESTIMATE OF MAJOR NUCLIDE COMPOSITION(BY TYPE OF WASTE)

A

		JAN-JUNE	JULY-DEC
AG-110M	%	1.14E+00	
BA-140	%	1.38E-03	7.84E-03
CE-141	%	2.09E-01	1.41E-01
CE-144	%	1.53E+00	1.66E+00
CO-57	%	1.57E-01	1.41E-01
CO-58	%	1.96E+01	6.19E+01
CO-60	%	4.21E+01	1.97E+01
CR-51	%	3.90E-01	7.50E+00
CS-134	%	5.01E+00	8.39E-01
CS-136	%	5.45E-04	
CS-137	%	1.05E+01	1.75E+00
FE-59	%	1.27E-01	1.41E-01
I-131	%	2.17E-01	1.49E-01
I-135	%	4.06E-08	
LA-140	%	3.07E-05	
MN-54	%	5.61E+00	2.63E+00
MO-99	%	1.91E-06	
NB-95	%	3.45E+00	1.67E+00
RU-103	%	1.85E-01	2.35E-02
SB-122	%	7.65E-02	
SB-124	%	4.16E+00	5.18E-01
SB-125	%		1.57E-02
SN-113	%	3.31E-02	1.41E-01
ZR-95	%	1.48E+00	1.08E+00

B

CE-141	%	4.19E-01	8.88E-02
CE-144	%	1.16E+00	2.18E+00
CO-57	%	1.67E-01	3.55E-01
CO-58	%	5.95E+01	4.64E+01
CO-60	%	1.11E+01	3.12E+01
CR-51	%	2.04E+01	6.84E+00
CS-134	%	1.31E-01	1.69E+00
CS-137	%	2.77E-01	2.40E+00
FE-59	%	2.84E-01	8.88E-02
I-131	%	2.65E-01	4.88E-01
I-132	%	4.76E-03	
MN-54	%	1.06E+00	4.13E+00
MO-99	%	9.52E-01	
NB-95	%	2.68E+00	1.82E+00
RU-103	%	4.20E-01	2.22E-01
SB-124	%	1.42E-03	6.66E-01
SN-113	%	2.48E-01	8.88E-02

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

INSTALLATION- TROJAN

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

TC-99M	\$	9.52E-03
TE-132	\$	4.76E-03
ZK-95	\$	1.77E+00
		1.53E+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

- M3
- CI
- M3
- CI
- M3
- CI
- M3
- CI
- CI

YEAR TOTAL

- 1.42E+02
- 2.27E+01
- 5.72E+02
- 2.38E+01

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

INSTALLATION TURKEY POINT

LOCATION 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 3  
TYPE PWR  
DOCKET NO. 50-250  
COOLING WATER SOURCE CLOSED CANAL SYSTEM  
UNIT NUMBER 4  
TYPE PWR  
DOCKET NO. 50-251  
COOLING WATER SOURCE CLOSED CANAL SYSTEM

LICENSEE FLORIDA POWER & LIGHT  
LICENSED POWER (MWT) 2200.0  
INITIAL CRITICALITY 10/20/72  
LICENSEE FLORIDA POWER & LIGHT  
LICENSED POWER (MWT) 2200.0  
INITIAL CRITICALITY 06/11/73

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
AR-41	5.63E+01
CR-51	1.22E-03
MN-54	1.40E-04
CO-57	9.04E-06
CO-58	9.16E-03
FE-59	5.70E-05
CO-60	6.69E-03
ZN-65	1.10E-04
BR-82	1.19E-03
KR-85	2.55E+00
KR-85M	1.34E+00
KR-87	8.93E-01
KR-88	9.22E-01
SR-89	7.95E-05
SR-90	5.28E-06
NB-95	2.39E-04
ZR-95	1.20E-04
RU-103	1.34E-04
AG-110M	2.20E-06
SB-124	4.92E-05
SB-125	4.87E-05
I-131	5.19E-02
XE-131M	2.56E+00
I-133	1.24E-02
XE-133	4.14E+03
XE-133M	8.06E+00
CS-134	1.78E-04
I-135	4.26E-03
XE-135	1.61E+01
XE-135M	7.68E+00
CS-136	2.87E-05
CS-137	2.85E-04
XE-138	3.37E+00
BA-140	1.00E-05
LA-140	1.27E-05
CE-141	2.58E-05
CE-144	2.80E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
F-18	6.69E-02

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

INSTALLATION TURKEY POINT

LOCATION 10 MI E FLORIDA CITY, FL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID NUCLIDES	EFFLUENTS RELEASED	ACTIVITY (CI)
NA-24		1.07E-02
CR-51		1.04E-02
MN-54		2.19E-03
CO-57		2.82E-04
CO-58		3.75E-02
CO-60		8.96E-02
ZN-65		1.33E-04
SR-89		1.06E-02
SR-90		3.52E-04
NB-95		2.84E-03
ZR-95		6.89E-04
MO-99		7.35E-04
RU-103		8.01E-04
AG-110M		3.13E-03
SB-124		4.54E-04
SB-125		5.76E-04
I-131		5.06E-02
I-132		5.40E-02
I-133		1.09E-01
CS-134		9.94E-03
I-134		6.33E-02
I-135		7.63E-02
CS-136		5.65E-03
CS-137		2.68E-02
CS-138		4.41E-02
BA-140		4.53E-03
LA-140		8.58E-04

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	1.15E+00
TOTAL LIQUID RELEASE	7.49E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	2.28E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	2.53E+12

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

INSTALLATION= TURKEY POINT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS 67  
MODE OF TRANSPORTATION TRUCK  
DESTINATION BARNWELL, S.C.

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	7.24E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	1.61E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	
	CI	
D. OTHER	M3	
	CI	

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

INSTALLATION VERMONT YANKEE

LOCATION 5 MI S BRATTLEBORO, VT

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE BWR  
DOCKET NO. 50-271  
COOLING WATER SOURCE CONNECTICUT RIVER

LICENSEE VERMONT YANKEE NUCLEAR POWER  
LICENSED POWER (MWT) 1593.0  
INITIAL CRITICALITY 03/24/72

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
MN-54	1.25E-04
CO-58	1.79E-05
CO-60	3.66E-03
ZN-65	5.29E-04
KR-85M	1.64E+01
KR-87	3.45E+01
KR-88	5.73E+01
SR-89	1.84E-04
SR-90	3.71E-06
SB-124	9.62E-05
I-131	1.11E-02
I-133	8.01E-03
XE-133	2.20E+02
CS-134	3.23E-04
I-135	2.13E-03
XE-135	6.72E+01
XE-135M	2.41E+02
CS-137	6.09E-04
XE-138	1.03E+03
BA-LA-140	4.43E-04

TRITIUM (CI)  
TOTAL AIRBORNE RELEASE 1.65E+01  
TOTAL LIQUID RELEASE

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

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

INSTALLATION= VERMONT YANKEE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS(DISPOSITION)

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
0		

SOLID WASTE DISPOSITION

NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
47	TRUCK	BARNWELL S.C.
3	TRUCK	BEATTY NV.

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

		JAN-JUNE	JULY-DEC
<b>A</b>			
BA-140	%	7.27E-04	4.50E-01
CE-141	%	1.89E-03	1.90E-01
CO-58	%	1.18E+00	1.34E+00
CO-60	%	1.41E+01	1.92E+01
CS-134	%	2.69E+01	1.92E+01
CS-137	%	5.05E+01	4.81E+01
I-131	%	1.55E-01	1.25E+00
I-133	%	2.17E-03	
LA-140	%	7.22E-02	5.30E-01
MN-54	%	1.25E+00	1.76E+00
MN-56	%	2.94E-03	3.50E-01
NA-24	%	1.05E-02	
ZN-65	%	5.70E+00	6.73E+00
ZR-95	%	3.25E-03	8.60E-01
<b>B</b>			
CO-58	%	9.80E-01	9.80E-01
CO-60	%	2.43E+01	2.43E+01
CS-134	%	2.31E+01	2.31E+01
CS-137	%	4.08E+01	4.08E+01
MN-54	%	2.45E+00	2.54E+00
ZN-65	%	8.38E+00	8.34E+00

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TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	1.71E+02
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	8.95E+02
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	3.13E+02
D. OTHER	CI	2.48E+01
	M3	0.
	CI	0.
	M3	0.
	CI	0.

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

INSTALLATION YANKEE ROWE

LOCATION 20 MI NW GREENFIELD, MA

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-29  
COOLING WATER SOURCE DEERFIELD RIVER

LICENSEE YANKEE ATOMIC ELECTRIC  
LICENSED POWER (MWT) 600.0  
INITIAL CRITICALITY 08/19/60

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
C-14	1.50E-01
AR-37	4.17E-01
AR-41	9.19E-01
CR-51	<1.61E-05
MN-54	8.28E-06
CO-58	1.28E-06
FE-59	<4.41E-06
CO-60	1.18E-05
KR-85	1.23E+00
KR-85M	7.45E-01
KR-87	7.11E-01
KR-88	1.26E+00
SR-89	3.04E-07
SR-90	1.20E-07
ZR-NB-95	<3.66E-06
AG-110M	<4.71E-06
SB-124	<3.09E-06
SB-125	1.40E-06
I-131	6.32E-05
XE-131M	1.05E+00
I-133	<3.09E-05
XE-133	3.22E+01
XE-133M	9.47E-02
CS-134	3.04E-06
I-135	<4.87E-05
XE-135	1.30E+01
XE-135M	1.85E+01
CS-137	6.48E-06
XE-138	3.66E-01
BA-LA-140	<8.28E-06
CE-141	<2.80E-06
CE-144	<1.31E-05

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
C-14	6.40E-03
CR-51	5.98E-05
MN-54	7.84E-04
CO-58	1.52E-04
FE-59	4.88E-06
CO-60	8.62E-04
ZN-65	<9.54E-05
SE-75	<5.49E-05
SR-89	1.21E-04
SR-90	4.61E-05

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



INSTALLATION YANKEE ROWE LOCATION 20 MI NW GREENFIELD, MA  
 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
 AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)	LITERS	LITERS
ZR-NB-95	6.80E-06	9.59E+06	6.73E+10
MO-99	<2.83E-04		
TC-99M	9.63E-06		
RU-103	3.04E-06		
AG-110M	<6.21E-05		
SB-124	<1.07E-01		
I-131	1.96E-03		
I-135	4.61E-04		
XE-133	5.15E-01		
CS-134	2.59E-03		
XE-135	5.52E-03		
CS-137	4.02E-03		
BA-LA-140	2.41E-05		
CE-141	2.37E-06		
CE-144	1.13E-05		
UNIDENTIFIED	2.20E-05		
TRITIUM	(CI)		
TOTAL AIRBORNE RELEASE	1.47E+00		
TOTAL LIQUID RELEASE	5.84E+01		
VOLUME OF LIQUID WASTE RELEASED (PRIOR TO DILUTION)			
VOLUME OF DILUTION WATER USED DURING PERIOD			

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

INSTALLATION- YANKEE ROWE

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

IRRADIATED FUEL SHIPMENTS (DISPOSITION)  
NUMBER OF SHIPMENTS    MODE OF TRANSPORTATION    DESTINATION

SOLID WASTE DISPOSITION  
NUMBER OF SHIPMENTS    MODE OF TRANSPORTATION    DESTINATION  
15    TRUCK    BARNWELL S. C.  
1    TRUCK    BEATTY NV.

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3	6.46E+01
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	CI	9.29E+01
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3	1.42E+02
D. OTHER	CI	2.78E+00
	M3	
	CI	
	M3	
	CI	

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

INSTALLATION ZION

LOCATION 6 MI N WAUKEGAN, IL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

UNIT NUMBER 1  
TYPE PWR  
DOCKET NO. 50-295  
COOLING WATER SOURCE LAKE MICHIGAN  
UNIT NUMBER 2  
TYPE PWR  
DOCKET NO. 50-304  
COOLING WATER SOURCE LAKE MICHIGAN

LICENSEE COMMONWEALTH EDISON  
LICENSED POWER (MWT) 3250.0  
INITIAL CRITICALITY 06/19/73

LICENSEE COMMONWEALTH EDISON  
LICENSED POWER (MWT) 3250.0  
INITIAL CRITICALITY 12/24/73

AIRBORNE EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.42E-04
AR-41	N/D
CR-51	3.11E-06
MN-54	1.92E-06
CO-58	1.65E-05
FE-59	N/D
CO-60	3.33E-04
KR-85	3.70E-01
KR-85M	1.16E+01
KR-88	8.58E+01
RB-88	2.49E-09
SR-89	1.52E-07
SR-90	2.87E-09
NB-95	N/D
ZR-95	N/D
MO-99	N/D
TC-99M	5.93E-07
AG-110	4.46E-07
SB-124	N/D
I-131	5.94E-04
XE-131M	2.63E+02
I-132	8.63E-06
I-133	4.52E-05
XE-133	5.15E+03
XE-133M	1.01E+01
CS-134	1.02E-04
I-135	4.14E-06
XE-135	2.72E+02
CS-137	2.26E-04
CS-138	1.11E-09
BA-LA-140	6.06E-06
W-187	3.13E-07
NP-239	N/D

LIQUID EFFLUENTS

NUCLIDES RELEASED	ACTIVITY (CI)
NA-24	3.77E-04
CR-51	1.38E-02
MN-54	2.27E-03
CO-57	6.25E-04
CO-58	1.12E-01

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

INSTALLATION ZION

LOCATION 6 MI N WAUKEGAN, IL

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
AIRBORNE AND LIQUID EFFLUENTS

LIQUID EFFLUENTS NUCLIDES RELEASED	ACTIVITY (CI)
FE-59	N/D
CO-60	1.83E-01
CU-64	N/D
ZN-65	3.64E-05
SR-89	4.87E-02
SR-90	4.81E-02
NB-95	3.41E-03
ZR-95	2.92E-04
MO-99	2.48E-04
AG-110M	4.63E-04
SB-124	5.73E-03
I-131	5.37E-05
I-132	3.90E-04
I-133	N/D
XE-133	7.95E-02
XE-135M	N/D
CS-134	1.28E-02
XE-135	4.61E-03
XE-135M	N/D
CS-136	2.74E-05
CS-137	2.15E-02
BA-LA-140	N/D
W-187	1.40E-03
NP-239	N/D

TRITIUM	(CI)
TOTAL AIRBORNE RELEASE	N/D
TOTAL LIQUID RELEASE	7.45E+02

VOLUME OF LIQUID WASTE RELEASED(PRIOR TO DILUTION)	LITERS	2.12E+08
VOLUME OF DILUTION WATER USED DURING PERIOD	LITERS	1.73E+12

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

INSTALLATION= ZION

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT FOR YEAR 1980  
SOLID WASTES

TYPE OF WASTE	UNIT	YEAR TOTAL
A. SPENT RESINS, FILTER SLUDGES, EVAPORATOR BOTTOMS, ETC.	M3 CI	
B. DRY COMPRESSIBLE WASTE, CONTAMINATED EQUIPMENT, ETC.	M3 CI	
C. IRRADIATED COMPONENTS, CONTROL RODS, ETC.	M3 CI	
D. OTHER	M3 CI	1.64E+03 2.55E+03

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

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16. ABSTRACT (200 words or less) Releases of radioactive materials in airborne and liquid effluents from commercial light water reactors during 1980 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 1980 release data are compared with previous years' releases in tabular form. Data covering specific radionuclides are summarized.					
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