Public Service
Electric and Gas
Company

Louis F. Storz
Senior Vice President - Nuclear Operations

Public Service Electric and Gas Company P.O. Box 236, Hancocks Bridge, NJ 08038 609-339-5700

AUG 28 1995
LR-N95114

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

RADIOACTIVE EFFLUENT RELEASE REPORT - 38
SALEM GENERATING STATION
DOCKET NOS. 50-272 AND 50-311

In accordance with Section 6.9.1.8 of Appendix A to the Operating License for Salem Generating Station, Public Service Electric and Gas Company hereby transmits one copy of the semi-annual Radioactive Effluent Release Report, RERR-38. This report summarizes liquid and gaseous releases and solid waste shipments from the Salem Generating Station for the period of January 1, 1995 through June 30, 1995.

Should you have any questions regarding this transmittal, please feel free to contact us.

Sincerely,

Louis F. Storz

Attachment (1)

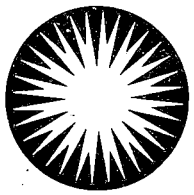
010064

JE48

SALEM GENERATING STATION
SEMIANNUAL RADIOACTIVE
EFFLUENT RELEASE REPORT
SGS RERR-38

SALEM UNIT NOS. 1 & 2

UNIT 1 DOCKET NO. 50-272
UNIT 2 DOCKET NO. 50-311
OPERATING LICENSE NO. DPR-70
OPERATING LICENSE NO. DPR-75



AUGUST, 1995

PSE&G

The Energy People

SALEM GENERATING STATION
RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY - JUNE 1995

Table of Contents

SALEM GENERATING STATION
RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY - JUNE 1995

INTRODUCTION

This report, SGS-RERR-38, summarizes information pertaining to the releases of radioactive materials in liquid, gaseous and solid form from the Salem Generating Station (SGS) Units 1 and 2 for the period January 1, 1995 to June 30, 1995.

This Semiannual RERR is submitted for both Salem Units and combines those sections which are common to each unit. Separate tables of releases and release totals are included whenever separate processing systems exist.

Salem Unit 1 is a Westinghouse Pressurized Water Reactor which has a licensed core power of 3411 MWt and an approximate net electrical output of 1115 MWe. Salem Unit 1 achieved initial criticality on December 11, 1976 and went into commercial operations on June 30, 1977.

Salem Unit 2 is a Westinghouse Pressurized Water Reactor which has a licensed core power of 3411 MWt and an approximate net electrical output of 1115 MWe. Salem Unit 2 achieved initial criticality on August 2, 1980 and went into commercial operations on October 13, 1981.

The report is prepared in the format of Regulatory Guide 1.21, Appendix B, as required by Specification 6.9.1.11 of the Salem Technical Specifications. Preceding the tables summarizing the gaseous and liquid discharges and solid waste shipments are our responses to parts A-F of the "Supplemental Information" section of Regulatory Guide 1.21, Appendix B.

As required by Regulatory Guide 1.21, our Technical Specification limits are described in detail within this report along with a summary description of how measurements and determinations of the total activity discharged were developed.

To facilitate determination of compliance with 40CFR190 requirements, the following information on electrical output is provided.

Unit 1 generated **2,538,135** megawatt-hours of electrical energy (net) during the reporting period.

Unit 2 generated **2,041,100** megawatt-hours of electrical energy (net) during the reporting period.

Results of liquid and gaseous composites analyzed for Sr-89, Sr-90 and Fe-55 for the second quarter of 1995 were not available for inclusion in this report. The results of these composites will be provided in the next Radioactive Effluent Release Report.

The Sr-89, Sr-90 and Fe-55 analyses for the second half of 1994 (refer to RERR-37) have been completed; amended pages to RERR-37 are included in this report.

PART A. PRELIMINARY SUPPLEMENTAL INFORMATION

1.0 REGULATORY LIMITS

1.1 Fission and Activation Gas Release Limits

The dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the site boundary, shall be limited to the following:

> For noble gases: Less than or equal to 500 mrems/yr to the total body and less than or equal to 3000 mrems/yr to the skin.

In addition, the air dose due to noble gases released in gaseous effluents, from each reactor unit, from the site to areas at and beyond the site boundary, shall be limited to the following:

> During any calendar quarter: Less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation, and
>
> During any calendar year: Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.

1.2 Iodine Particulates, and Tritium

The dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the site boundary, shall be limited to the following:

> For Iodine-131, for tritium, and for all radionuclides in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrems/yr to any organ.

In addition, the dose to a member of the public from iodine-131, from tritium, and from all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released, from each reactor unit, from the site to areas at and beyond the site boundary, shall be limited to the following:

> During any calendar quarter: Less than or equal to 7.5 mrems to any organ, and
>
> During any calendar year: Less than or equal to 15 mrems to any organ.

1.3 Liquid Effluents Release Limits

The concentration of radioactive material released in liquid effluents to unrestricted areas shall be limited to the concentrations specified in 10 CFR, Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2E-4 microcuries per milliliter.

In addition, the dose or dose commitment to a member of the public from radioactive materials in liquid effluents released to unrestricted areas shall be limited:

During any calendar quarter to less than or equal to 1.5 mrems to the total body and to less than or equal to 5 mrems to any organ, and

During any calendar year to less than or equal to 3 mrems to the total body and to less than or equal to 10 mrems to any organ.

1.4 Total Dose Limit

The annual (calendar year) dose or dose commitment to any member of the public, due to releases of radioactivity and radiation, from uranium fuel cycle sources shall be limited to less than or equal to 25 mrems to the total body or any organ (except the thyroid, which shall be limited to less than or equal to 75 mrems).

2.0 MAXIMUM PERMISSIBLE CONCENTRATIONS (MPC)

Regulatory Guide 1.21 requires that the licensee provide the MPCs used in determining allowable release rates for radioactive releases.

a. MPC values were not used to determine the maximum release rates for fission gases, iodines, or particulates.

b. MPC values as stated in 10CFR20, Appendix B, Table II, Column 2 were used for liquids.

c. The MPC value used for dissolved or entrained noble gases is 2E-4 microcuries per milliliter.

3.0 AVERAGE ENERGY

Regulatory Guide 1.21 requires that the licensee provide the average energy of the radionuclide mixture in releases of fission and activation gases, if applicable.

Release limits for SGS are not based upon average energy, hence, this section does not apply.

4.0 MEASUREMENTS AND APPROXIMATION OF TOTAL RADIOACTIVITY

4.1 Liquid Effluents

Liquid effluents are monitored in accordance with Table 4.11-1 of the Technical Specifications. During the period of record, all batch liquid wastes from the chemical drain tank and the laundry and hot shower tanks were routed to the hold-up tanks for monitoring prior to release. Technical Specifications require these tanks to be uniformly mixed for sampling and analysis before being released. Batch releases are defined as releases from the waste monitor hold-up tank and the chemical and volume control tanks. Continuous liquid releases are defined as condensate releases from intermittent blowdown of the steam generators. Specific activities from analyses were multiplied by the volume of effluent discharged to the environment in order to estimate the total liquid activity discharged.

The detection requirements of Tables 4.11-1 of the Technical Specifications are achieved or exceeded. Radionuclides detected at concentrations below the Technical Specification detection limits (LLDs) are treated as being present. Radionuclides for which no activity was detected, while meeting the required LLDs, are treated as absent.

4.2 Gaseous Effluents

Gaseous effluent streams are monitored and sampled in accordance with Table 4.11-2 of the Technical Specifications. The plant vent is the final release point of all planned gaseous effluents and is continuously monitored by beta scintillator and high range GM tubes. The vent is also continuously sampled for iodine and particulates with a charcoal cartridge and filter paper. The filter and charcoal are changed weekly, and analyzed on a multi-channel analyzer in the laboratory.

Noble gas sampling is also performed on all gas decay tanks and containment purges prior to their release to the environment. The plant vent is sampled weekly for noble gases.

The detection requirements of Tables 4.11-1 and 4.11-2 of the Technical Specifications are achieved or exceeded. Radionuclides detected at concentrations below the Technical Specification detection limits (LLDs) are treated as being present. Radionuclides for which no activity was detected, while meeting the required LLDs, are treated as absent.

Continuous Mode gaseous releases are quantified by routine (monthly or weekly) sampling and isotopic analyses of the plant vent. Specific activities for each isotope detected are multiplied by the total vent flow volume for the entire sampling period in order to estimate the normal continuous release of radioactivity through the plant vent.

Slightly elevated plant vent radiation monitor readings are treated as continuous releases. The monitors response is converted to a "specific activity" using historical efficiency factors. The "specific activity" is multiplied by a default volume of effluent discharge to estimate the total activity discharged.

Batch Mode gaseous releases are quantified by sampling each gas decay tank or containment purge prior to discharge. Specific activities for each isotope are multiplied by the total volume of gas discharged for that batch.

Elevated plant vent radiation monitoring system readings while the channel is in an alarm state are treated as batch mode releases. If specific activity data from grab samples taken is not available, then the abnormal release is quantified by the use of the plant vent radiation monitors. The monitors response is converted to a "specific activity" using historical efficiency factors. The "specific activity" is multiplied by the volume of effluent discharged while the channel was in an alarm state in order to estimate the total activity discharged.

4.3 Estimated Total Error

The estimated total error of reported liquid and solid releases is within 25%

The estimated total error of the reported continuous gaseous releases is within 50% when concentrations exceed detectable levels. This error is due primarily to variability of waste stream flow rates and changes in isotopic distributions of waste streams between sampling periods. The estimated total error of the reported batch gaseous releases is within 10%.

Error estimates for releases where sample activity is below the detectable concentration levels are not included since error estimates at the LLD are not defined.

5.0 BATCH RELEASES

Summaries of batch releases of gaseous and liquid effluents are provided in Tables 4A-1 and 4B-1 for Unit 1 and 4A-2 and 4B-2 for Unit 2.

6.0 UNPLANNED RELEASES

During this reporting period there were no unplanned releases.

7.0 ELEVATED R-16/R41C CHANNEL RESPONSES

During this reporting period, there was one instance of an elevated monitor reading on Salem Unit 1 R16/R41C. On May 19, 1995 the contents of the pressurizer relief tank was inadvertently released to the containment atmosphere. A containment purge was subsequently performed on 5/19/95 14:54 to 5/20/95 10:05 during which time the 1R16 plant vent monitor alarm was actuated. There are no warning alarms or interlocks associated with the 1R16 radiation monitor. There are containment purge valve interlocks associated with the 1R41C noble gas radiation monitor, however, no alarm was reported for the 1R41C radiation monitor. The radioactivity released from this purge resulted in a small fraction of the allowable limit and is included in the summary tables presented in Table 1A-1 and 1B-1 of this report.

8.0 MODIFICATION TO PREVIOUS RADIOACTIVE EFFLUENT RELEASE REPORTS

Our last report (RERR-37) did not include the quarterly Sr-89, Sr-90 and Fe-55 composite data for the fourth quarter of 1994. Amended pages to RERR-37 are included at the end of this report.

PART B. GASEOUS EFFLUENTS

See Summary Tables 1A-1 thru 1C for Salem Unit 1 Operations.

See Summary Tables 1A-2 thru 1C for Salem Unit 2 Operations.

PART C. LIQUID EFFLUENTS

See Summary Tables 2A-1 thru 2B for Salem Unit 1 Operations.

See Summary Tables 2A-2 thru 2B for Salem Unit 2 Operations.

PART D. SOLID WASTE

See Summary in Table 3.

PART E. RADIOLOGICAL IMPACT ON MAN

The calculated individual doses in this section are based on actual locations of nearby residents and farms. The population dose impact is based on historical site specific data i.e., food production, milk production, feed for milk animals and seafood production.

The doses were calculated using methods described in Regulatory Guide 1.109 and represent calculations for the six month reporting interval. Individual doses from batch and continuous releases were calculated using the annual average historic meteorological dispersion coefficients as described in the Offsite Dose Calculation Manual. Population doses were calculated using the meteorological dispersion coefficients for the six month reporting interval.

Liquid Pathways

Doses to "maximum hypothetical individuals" in the population from liquid releases are primarily from the seafood ingestion pathway. Calculated doses to individuals are as shown below:

Total body dose to the individual: 3.43E-01 mrem
Highest organ dose (GI-LLI): 1.48E+00 mrem

Dose to the 4.5 million individuals living within the 50 mile radius of the plant site:

Total population dose: 3.17E-02 person-rem

Average population dose: 7.04E-06 mrem/person

Air Pathways

The calculated doses to "maximum hypothetical individuals" via the air pathway are shown below:

Total body dose: 4.04E-03 mrem

Skin dose: 9.85E-03 mrem

Highest organ dose due to radioiodines and particulates with half lives greater than 8 days:

1.10E-01 mrem to the Thyroid.

Dose to the 4.5 million individuals living within the 50 mile radius of the plant site:

Total population dose:	2.68E+00	person-rem
Average population dose:	5.96E-04	mrem/person

Direct Radiation

Direct radiation may be estimated by thermoluminescent dosimetric (TLD) measurements. One method for comparing TLD measurements is by comparison with preoperational data. It should be noted that the TLDs measure direct radiation from both the Salem and Hope Creek Generating Stations at Artificial Island, as well as natural background radiation.

TLD data for the six month reporting period is given below:

TLD	Location	Measurement
2S-2	0.3 mile	4.3 mrad/month
5S-1	0.9 mile	3.3 mrad/month

These values are interpreted to represent natural background. They are within the statistical variation associated with the pre-operational program results, which are: 3.7 mrad/month for location 2S-2, and 4.2 mrad/month for location 5S-1.

Total Dose

40CFR190 limits the total dose to members of the public due to radioactivity and radiation from uranium fuel cycle sources to:

<25 mrem total body or any organ
<75 mrem to the thyroid

for a calendar year. For Artificial Island, the major sources of dose are from liquid and gaseous effluents from the Salem and Hope Creek plants.

The following doses to members of the public have been calculated for the six month reporting period:

0.447	mrem	total body
1.690	mrem	organ (GI-LLI)
0.185	mrem	thyroid

Dose to Members of the Public Due to Activities inside the Site Boundary.

In accordance with the requirements of Technical Specification 6.9.1.7, the dose to members of the public inside the site boundary has been calculated based on the following assumptions:

a. Such persons are participating or spectators in company softball league
b. 10 hours per week on site
c. Dose due to airborne pathway(inhalation and immersion)
d. persons are located about 3/4 mile east of plant discharge points (softball fields)
e. occupancy coincides with batch gaseous discharges

For the six month reporting period, the calculated doses are:

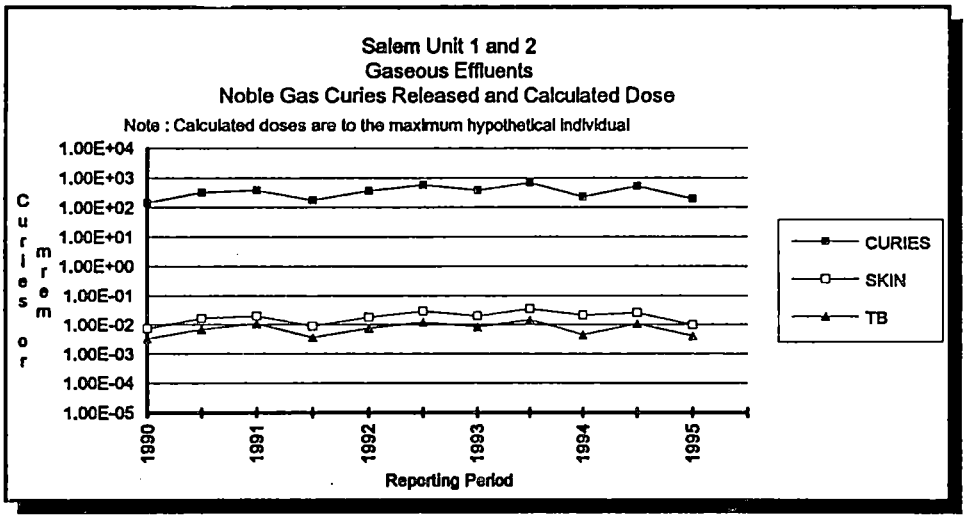
1.41E-03	mrem	Total Body
1.41E-03	mrem	Organ (Lung)
1.42E-03	mrem	Thyroid

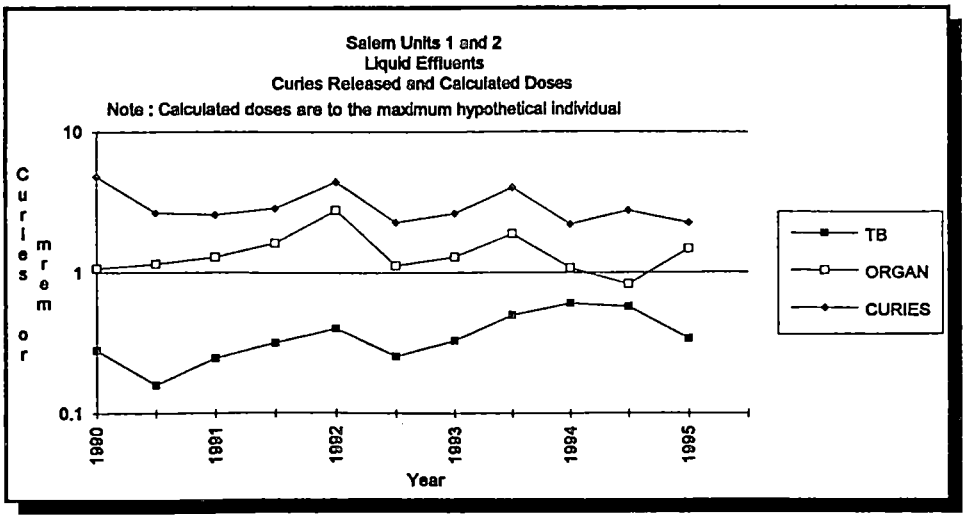
Assessment

Gaseous effluents released from Salem resulted in a minimal dose to the maximum hypothetical individual. The air dose for the 6 month period was a small fraction of all applicable limits.

Liquid effluent activity decreased slightly from previous reporting periods. Calculated doses are due principally to isotopes of iron, cobalt and cesium. The dose from liquid effluents to the maximum hypothetical individual were well below all applicable limits.

The following two trend graphs show the total curies of gaseous and liquid effluents released from Salem Units 1 and 2 for the past 5 years. Calculated doses in the graphs are to the maximum hypothetical individual.





PART F. METEOROLOGICAL DATA

Cumulative joint wind frequency distributions by atmospheric stability class at the 300 foot elevation are provided for the first and second quarters of 1995 in Tables 5 and 6.

PART G. OFFSITE DOSE CALCULATION MANUAL (ODCM) CHANGES

During this period, there were no changes to the SGS off-site dose calculation manual.

PART H. INOPERABLE MONITORS

During this period, the following effluent monitor was inoperable for more than 30 days:

* Unit 1 Waste Gas Analyzer

  The waste gas analyzer could not be returned to service within the specified time period due to extensive design changes. The design changes were necessary to prevent moisture accumulation in the waste gas analyzer. The analyzer was returned to service when the design changes were completed.

* Unit 1 Steam Generator Blowdown Process Radiation Monitors (1R19 A,B,C,D)

  The steam generator blowdown flow monitors could not be returned to service within the specified time due to low S/G blowdown flow conditions. The low S/G blowdown flow was due to an extended shutdown of the reactor.

* Unit 1 Containment Fan Coil Unit Process Radiation Monitor (1R13D)

  The radiation monitor could not be returned to service within the specified time due to station planning workload and the unavailability of parts. The monitor was inoperable for a total of 31 days.

* Unit 2 Steam Generator Blowdown Process Radiation Monitors (2R19 A,B,C,D)

  The steam generator blowdown flow monitors could not be returned to service within the specified time due to low S/G blowdown flow conditions. The low S/G blowdown flow was due to an extended shutdown of the reactor.

* Unit 2 Containment Fan Coil Unit Process Radiation Monitors (2R13 A,B,C)

* Unit 2 Liquid Radwaste Disposal Process Radiation Monitor (2R18)

* Unit 2 Chemical Waste Basin Process Radiation Monitor (2R37)

The above radiation monitors could not be returned to service within the specified time due to problems associated with the RMS computer system. The Unit 2 RMS computer was found to not reliably annunciate alarm status changes. The repairs to the computer system could not be completed within the 30 day time period due to the unavailability of repair parts and the complexity of the assembly language coding.

PART I. PROCESS CONTROL PROGRAM (PCP) CHANGES

During this reporting period, there were no changes to the Process Control Program.

PART J. ENVIRONMENTAL MONITORING LOCATION CHANGES

During the reporting period, there were no changes environmental monitoring sampling program.

SALEM GENERATING STATION
TABLE 1A-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995

UNIT 1
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	Est. Total Error %
A. Fission and Activation Gases				
1. Total release	Ci	8.20E+01	8.60E+01	25
2. Average release rate for period	uCi/sec	1.04E+01	1.09E+01	
3. Percent of technical specification limit (T.S. 3.11.2.2(a))	%	6.20E-02	6.38E-02	
B. Iodines				
1. Total Iodine-131	Ci	3.01E-04	1.00E-04	25
2. Average release rate for period	uCi/sec	3.82E-05	1.27E-05	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	1.44E-02	3.55E-02	
C. Particulates				
1. Particulates with half-lives >8 days	Ci	4.68E-06	2.61E-06	25
2. Average release rate for period	uCi/sec	5.96E-07	3.32E-07	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	1.44E-02	3.55E-02	
4. Gross alpha	Ci	0.00E+00	0.00E+00	
C. Tritium				
1. Total Release	Ci	1.28E+01	1.13E+03	25
2. Average release rate for period	uCi/sec	1.63E+00	1.44E+02	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	1.44E-02	3.55E-02	

(1) For batch releases the estimated overall error is within 10%
(2) Iodine, tritium and particulates are treated as a group

SALEM GENERATING STATION
TABLE 1A-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995

UNIT 2
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	Est. Total Error %
A. Fission and Activation Gases				
1. Total release	Ci	8.63E+00	1.54E+01	25
2. Average release rate for period	uCi/sec	1.10E+00	1.96E+00	
3. Percent of technical specification limit (T.S. 3.11.2.2(a))	%	6.83E-03	1.16E-02	
B. Iodines				
1. Total Iodine-131	Ci	3.62E-06	1.10E-04	25
2. Average release rate for period	uCi/sec	4.60E-07	1.40E-05	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	4.61E-04	5.57E-03	
C. Particulates				
1. Particulates with half-lives >8 days	Ci	2.56E-06	0.00E+00	25
2. Average release rate for period	uCi/sec	3.26E-07	0.00E+00	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	4.61E-04	5.57E-03	
4. Gross alpha	Ci	0.00E+00	0.00E+00	
C. Tritium				
1. Total Release	Ci	1.06E+01	1.63E+01	25
2. Average release rate for period	uCi/sec	1.35E+00	2.07E+00	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	4.61E-04	5.57E-03	

(1) For batch releases the estimated overall error is within 10%
(2) Iodine, tritium and particulates are treated as a group

SALEM GENERATING STATION
TABLE 1B-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
GASEOUS EFFLUENTS-ELEVATED RELEASES
UNIT 1

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1. Fission Gases					
Krypton-85	Ci	0.00E+00	0.00E+00	1.11E+00	6.63E-02
Krypton-85m	Ci	0.00E+00	0.00E+00	3.24E-03	4.67E-03
Xenon-131m	Ci	0.00E+00	0.00E+00	4.17E-01	5.54E-01
Xenon-133	Ci	1.29E+01	3.60E+01	6.58E+01	4.83E+01
Xenon-133m	Ci	0.00E+00	0.00E+00	7.97E-01	5.82E-01
Xenon-135	Ci	2.59E-01	0.00E+00	7.65E-01	5.20E-01
Krypton-88	Ci	0.00E+00	0.00E+00	0.00E+00	6.67E-04
Argon-41	Ci	0.00E+00	0.00E+00	0.00E+00	1.04E-05
TOTALS	Ci	1.32E+01	3.60E+01	6.89E+01	5.00E+01
2. Iodines					
Iodine-131	Ci	3.01E-04	1.00E-04	0.00E+00	0.00E+00
TOTALS	Ci	3.01E-04	1.00E-04	0.00E+00	0.00E+00
3. Particulates (half-live >8 days)					
Cobalt-60	Ci	2.79E-06	1.85E-06	0.00E+00	0.00E+00
Cobalt-58	Ci	1.89E-06	7.62E-07	0.00E+00	0.00E+00
Tritium	Ci	1.28E+01	1.13E+03	0.00E+00	0.00E+00
TOTALS	Ci	1.28E+01	1.13E+03	0.00E+00	0.00E+00

Note: The large increase in tritium (H-3) activity in the 2nd quarter is attributed to a conservative error found in the sample/analysis process for one containment purge. Incomplete tritium sample purification yielded artificially elevated tritium results. These results could not be reverified by further analysis because the sample was inadvertently discarded.

SALEM GENERATING STATION
TABLE 1B-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
GASEOUS EFFLUENTS-ELEVATED RELEASES
UNIT 2

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1. Fission Gases					
Krypton-85	Ci	0.00E+00	0.00E+00	7.99E-01	4.51E-01
Xenon-131m	Ci	0.00E+00	0.00E+00	1.84E-02	6.87E-02
Xenon-133	Ci	6.22E+00	6.78E+00	1.57E+00	8.02E+00
Xenon-133m	Ci	0.00E+00	0.00E+00	1.45E-02	4.16E-02
Xenon-135	Ci	0.00E+00	0.00E+00	4.90E-03	5.57E-02
TOTALS	Ci	6.22E+00	6.78E+00	2.41E+00	8.64E+00
2. Iodines					
Iodine-131	Ci	3.62E-06	1.10E-04	0.00E+00	0.00E+00
TOTALS	Ci	3.62E-06	1.10E-04	0.00E+00	0.00E+00
3. Particulates (half-lives >8 days)					
Cobalt-60	Ci	1.80E-06	0.00E+00	0.00E+00	0.00E+00
Cesium-137	Ci	7.62E-07	0.00E+00	0.00E+00	0.00E+00
Tritium	Ci	1.06E+01	1.63E+01	0.00E+00	0.00E+00
TOTALS	Ci	1.06E+01	1.63E+01	0.00E+00	0.00E+00

SALEM GENERATING STATION
TABLE 1C

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995

UNITS 1 AND 2

GASEOUS EFFLUENTS-GROUND-LEVEL RELEASES

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter

There were no ground level gaseous releases during this reporting period.

SALEM GENERATING STATION
TABLE 2A-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
UNIT 1
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	Est. Total Error %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	7.24E-01	5.86E-01	25
2. Average diluted concentration during period	uCi/mL	1.26E-07	2.47E-07	
3. Percent of technical specification limit (T.S. 3.11.1.2.(a))	%	6.32E+00	9.35E+00	
B. Tritium				
1. Total release	Ci	1.15E+02	4.84E+01	25
2. Average diluted concentration during period	uCi/mL	1.99E-05	2.04E-05	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	6.65E-01	6.79E-01	
C. Dissolved and entrained noble gases				
1. Total release	Ci	4.87E-02	3.25E-02	25
2. Average diluted concentration during period	uCi/mL	8.48E-09	1.37E-08	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	4.24E-03	6.84E-03	
D. Gross alpha activity				
1. Total release	Ci	0.00E+00	0.00E+00	25
E. Volume of waste release (prior to dilution - Batch Release)	liters	2.71E+06	1.12E+06	25
F. Volume of dilution water used during entire period	liters	4.84E+11	3.66E+11	25

SALEM GENERATING STATION
TABLE 2A-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
UNIT 2
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	Est. Total Error %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	6.12E-01	3.42E-01	25
2. Average diluted concentration during period	uCi/mL	2.47E-07	2.28E-07	
3. Percent of technical specification limit (T.S. 3.11.1.2.(a))	%	6.30E+00	7.76E+00	
B. Tritium				
1. Total release	Ci	9.55E+01	1.49E+01	25
2. Average diluted concentration during period	uCi/mL	3.86E-05	9.94E-06	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	1.29E+00	3.31E-01	
C. Dissolved and entrained noble gases				
1. Total release	Ci	3.63E-02	3.96E-02	25
2. Average diluted concentration during period	uCi/mL	1.46E-08	2.63E-08	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	7.32E-03	1.32E-02	
D. Gross alpha activity				
1. Total release	Ci	0.00E+00	0.00E+00	25
E. Volume of waste release (prior to dilution - Batch Release)	liters	1.57E+06	6.92E+05	25
F. Volume of dilution water used during entire period	liters	2.70E+11	3.96E+11	25

SALEM GENERATING STATION
TABLE 2B-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995

LIQUID EFFLUENTS UNIT 1

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
A. Fission Products					
Manganese-54	Ci	0.00E+00	0.00E+00	1.35E-03	1.01E-03
Iron-55	Ci	0.00E+00	0.00E+00	1.45E-02	0.00E+00
Iron-59	Ci	0.00E+00	0.00E+00	6.55E-05	3.43E-04
Cobalt-57	Ci	0.00E+00	0.00E+00	1.04E-03	1.03E-03
Cobalt-58	Ci	1.35E-05	0.00E+00	4.99E-01	3.23E-01
Cobalt-60	Ci	0.00E+00	0.00E+00	2.16E-02	2.29E-02
Cerium-141	Ci	0.00E+00	0.00E+00	3.01E-05	0.00E+00
Technetium-99m	Ci	0.00E+00	0.00E+00	2.99E-05	0.00E+00
Barium-140	Ci	0.00E+00	0.00E+00	5.65E-05	0.00E+00
Niobium-95	Ci	0.00E+00	0.00E+00	3.68E-04	4.18E-03
Zirconium-95	Ci	0.00E+00	0.00E+00	1.30E-04	2.50E-03
Niobium-97	Ci	0.00E+00	0.00E+00	2.15E-04	0.00E+00
Silver-110m	Ci	0.00E+00	0.00E+00	1.61E-04	3.70E-04
Antimony-122	Ci	0.00E+00	0.00E+00	1.61E-04	0.00E+00
Antimony-124	Ci	0.00E+00	0.00E+00	8.39E-03	8.38E-03
Antimony-125	Ci	0.00E+00	0.00E+00	3.61E-02	2.56E-02
Iodine-131	Ci	4.72E-05	0.00E+00	6.00E-03	2.83E-03
Chromium-51	Ci	0.00E+00	0.00E+00	1.65E-04	5.35E-03
Cesium-134	Ci	4.45E-05	0.00E+00	5.30E-02	7.74E-02
Cesium-136	Ci	0.00E+00	0.00E+00	1.25E-04	0.00E+00
Cesium-137	Ci	1.37E-04	0.00E+00	8.14E-02	1.11E-01
Lanthanum-140	Ci	0.00E+00	0.00E+00	2.45E-05	6.88E-05
Ruthenium-105	Ci	0.00E+00	0.00E+00	0.00E+00	2.55E-04
Sodium-24	Ci	0.00E+00	0.00E+00	7.98E-05	0.00E+00
Tin-113	Ci	0.00E+00	0.00E+00	0.00E+00	4.66E-04
Zinc-65	Ci	0.00E+00	0.00E+00	0.00E+00	6.77E-05
TOTALS	Ci	2.43E-04	0.00E+00	7.24E-01	5.86E-01
B. Tritium, Dissolved and Entrained Gases					
Tritium	Ci	2.00E-03	0.00E+00	1.15E+02	4.84E+01
Xenon-133m	Ci	0.00E+00	0.00E+00	4.82E-04	2.78E-04
Xenon-133	Ci	0.00E+00	0.00E+00	4.78E-02	3.21E-02
Xenon-135	Ci	0.00E+00	0.00E+00	4.06E-04	8.03E-05
TOTALS	Ci	2.00E-03	0.00E+00	1.15E+02	4.84E+01

SALEM GENERATING STATION
TABLE 2B-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995

LIQUID EFFLUENTS UNIT 2

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
A. Fission Products					
Sodium-24	Ci	0.00E+00	0.00E+00	5.13E-05	2.03E-05
Chromium-51	Ci	0.00E+00	0.00E+00	3.25E-04	6.23E-03
Manganese-54	Ci	0.00E+00	0.00E+00	1.18E-03	6.87E-04
Iron-55	Ci	0.00E+00	0.00E+00	2.35E-02	0.00E+00
Iron-59	Ci	0.00E+00	0.00E+00	1.08E-04	1.36E-04
Cobalt-57	Ci	0.00E+00	0.00E+00	6.82E-04	7.33E-04
Cobalt-58	Ci	0.00E+00	0.00E+00	3.75E-01	2.38E-01
Cobalt-60	Ci	0.00E+00	0.00E+00	2.64E-02	1.20E-02
Strontium-90	Ci	0.00E+00	0.00E+00	2.51E-05	0.00E+00
Niobium-95	Ci	0.00E+00	0.00E+00	6.24E-04	4.49E-03
Zirconium-95	Ci	0.00E+00	0.00E+00	2.71E-04	2.67E-03
Niobium-97	Ci	0.00E+00	0.00E+00	1.07E-04	0.00E+00
Cerium-141	Ci	0.00E+00	0.00E+00	0.00E+00	4.92E-05
Silver-110m	Ci	0.00E+00	0.00E+00	4.90E-04	3.79E-04
Antimony-122	Ci	0.00E+00	0.00E+00	5.14E-05	0.00E+00
Antimony-124	Ci	0.00E+00	0.00E+00	7.30E-03	4.26E-03
Antimony-125	Ci	0.00E+00	0.00E+00	3.15E-02	1.28E-02
Iodine-131	Ci	0.00E+00	0.00E+00	3.62E-03	6.24E-05
Cesium-134	Ci	0.00E+00	0.00E+00	5.57E-02	2.47E-02
Cesium-136	Ci	0.00E+00	0.00E+00	3.34E-05	0.00E+00
Cesium-137	Ci	0.00E+00	6.32E-07	8.55E-02	3.43E-02
Lanthanum-140	Ci	0.00E+00	0.00E+00	5.06E-06	7.98E-06
Ruthenium-105	Ci	0.00E+00	0.00E+00	0.00E+00	1.97E-04
Tin-113	Ci	0.00E+00	0.00E+00	0.00E+00	8.20E-04
Zinc-65	Ci	0.00E+00	0.00E+00	0.00E+00	1.14E-04
TOTALS	Ci	0.00E+00	6.32E-07	6.12E-01	3.42E-01
B. Tritium, Dissolved and Entrained Gases					
Tritium	Ci	0.00E+00	0.00E+00	9.55E+01	1.49E+01
Xenon-133	Ci	0.00E+00	0.00E+00	3.60E-02	3.91E-02
Xenon-133m	Ci	0.00E+00	0.00E+00	1.19E-04	4.07E-04
Xenon-135	Ci	0.00E+00	0.00E+00	1.56E-04	7.05E-05
TOTALS		0.00E+00	0.00E+00	9.55E+01	1.50E+01

SALEM GENERATING STATION
TABLE 3

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
UNITS 1 AND 2
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL
(Not irradiated fuel)

1. Type of waste		Units(1)	6-month period	Est. Total Error, %
a.	Spent resins, filters, sludges, evaporator bottoms	m3 Ci	0.00E+00 0.00E+00	25
b.	Dry compressible waste, contaminated equipment.	m3 Ci	0.00E+00 0.00E+00	25
c.	Irradiated components, control rods	m3 Ci	0.00E+00 0.00E+00	25
d.	Others (described)	m3 Ci	0.00E+00 0.00E+00	25

2. Estimate of major nuclide composition (for Type A and B waste)

Note: No material was shipped offsite for disposal or burial during this time period.

SALEM GENERATING STATION
TABLE 3
(CONT'D)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
UNITS 1 AND 2
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination	Type of Containers
0	N/A	N/A	N/A

4. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
None	N/A	N/A

SALEM GENERATING STATION
TABLE 4A-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 1

BATCH RELEASES ONLY

1. Dates: January 1 - March 31, 1995

2. Type of release: Gas

3. Number of releases during the 1st Quarter: 16

4. Total time duration for all releases of type listed above: 2.60E+03 minutes

5. Maximum duration for release of type listed above: 9.55E+02 minutes

6. Average duration for release of type listed above: 1.62E+02 minutes

7. Minimum duration for release of type listed above: 3.00E+01 minutes

8. Average stream flow (dilution flow) during the period of release: N/A

SALEM GENERATING STATION
TABLE 4A-1
(CONT'D)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 1

BATCH RELEASES ONLY

1. Dates: April 1 - June 30, 1995

2. Type of release: Gas

3. Number of releases during the 2nd Quarter: 16

4. Total time duration for all releases of type listed above: 2.07E+04 minutes

5. Maximum duration for release of type listed above: 7.22E+03 minutes

6. Average duration for release of type listed above: 1.29E+03 minutes

7. Minimum duration for release of type listed above: 1.30E+01 minutes

8. Average stream flow (dilution flow) during the period of release: N/A

SALEM GENERATING STATION
TABLE 4A-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 2

BATCH RELEASES ONLY

1. Dates: January 1 - March 31, 1995

2. Type of release: Gas

3. Number of releases during the 1st Quarter: 45

4. Total time duration for all releases of type listed above: 1.11E+04 minutes

5. Maximum duration for release of type listed above: 1.44E+03 minutes

6. Average duration for release of type listed above: 2.46E+02 minutes

7. Minimum duration for release of type listed above: 3.30E+01 minutes

8. Average stream flow (dilution flow) during the period of release: N/A

SALEM GENERATING STATION
TABLE 4A-2
(CONT'D)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 2

BATCH RELEASES ONLY

1. Dates: April 1 - June 30, 1995

2. Type of release: Gas

3. Number of releases during the 2nd Quarter: 26

4. Total time duration for all releases of type listed above: 1.02E+04 minutes

5. Maximum duration for release of type listed above: 4.37E+03 minutes

6. Average duration for release of type listed above: 3.94E+02 minutes

7. Minimum duration for release of type listed above: 7.90E+01 minutes

8. Average stream flow (dilution flow) during the period of release: N/A

SALEM GENERATING STATION
TABLE 4B-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 1

BATCH RELEASES ONLY

1. Dates: January 1 - March 31, 1995

2. Type of release: Liquid

3. Number of releases during the 1st Quarter: 32

4. Total time duration for all releases of type listed above: 8.59E+03 minutes

5. Maximum duration for release of type listed above: 4.50E+02 minutes

6. Average duration for release of type listed above: 2.69E+02 minutes

7. Minimum duration for release of type listed above: 4.10E+01 minutes

8. Average stream flow (dilution flow) during the period of release: 1.77E+05 gpm

SALEM GENERATING STATION
TABLE 4B-1
(CONT'D)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 1

BATCH RELEASES ONLY

1. Dates: April 1 - June 30, 1995

2. Type of release: Liquid

3. Number of releases during the 2nd Quarter: 18

4. Total time duration for all releases of type listed above: 4.69E+03 minutes

5. Maximum duration for release of type listed above: 3.34E+02 minutes

6. Average duration for release of type listed above: 2.60E+02 minutes

7. Minimum duration for release of type listed above: 2.15E+02 minutes

8. Average stream flow (d. lution flow) during the period of release: 1.34E+05 gpm

SALEM GENERATING STATION
TABLE 4B-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 2

BATCH RELEASES ONLY

1. Dates: January 1 - March 31, 1995

2. Type of release: Liquid

3. Number of releases during the 1st Quarter: 26

4. Total time duration for all releases of type listed above: 5.85E+03 minutes

5. Maximum duration for release of type listed above: 3.01E+02 minutes

6. Average duration for release of type listed above: 2.25E+02 minutes

7. Minimum duration for release of type listed above: 4.50E+01 minutes

8. Average stream flow (dilution flow) during the period of release: 1.12E+05 gpm

SALEM GENERATING STATION
TABLE 4B-2
(CONT'D)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 2

BATCH RELEASES ONLY

1. Dates: March 1 - June 30, 1995

2. Type of release: Liquid

3. Number of releases during the 2nd Quarter: 11

4. Total time duration for all releases of type listed above: 2.50E+03 minutes

5. Maximum duration for release of type listed above: 2.85E+02 minutes

6. Average duration for release of type listed above: 2.27E+02 minutes

7. Minimum duration for release of type listed above: 2.00E+02 minutes

8. Average stream flow (dilution flow) during the period of release: 1.59E+05 gpm

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: LE -1.9 DEG C/100M
CLASS A

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	1	0.0	0	0.0	3	0.1
NNE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NE	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1	0.0
ENE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SE	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	2	0.1
SSE	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
S	0.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SSW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
WSW	0	0.0	0	0.0	0	0.0	1	0.0	10	0.5	2	0.1	0	0.0	13	0.6
W	0	0.0	0	0.0	1	0.0	1	0.0	11	0.5	5	0.2	3	0.1	21	1.0
WNW	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	2	0.1
NW	0	0.0	2	0.1	0	0.0	0	0.0	7	0.3	14	0.6	2	0.1	25	1.2
NNW	0	0.0	1	0.0	1	0.0	0	0.0	6	0.3	2	0.1	1	0.0	11	0.5
	0	0.0	3	0.1	2	0.1	5	0.2	38	1.8	25	1.2	6	0.3	79	3.7

MEAN WIND SPEED: 16.9
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.8 TO -1.7 DEG C/100M
CLASS B

TABLE 5
2 of 9

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM	PERCENT
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	0	0.0	1	0.0	2	0.1	2	0.1	0	0.0	5	0.2
NNE	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0	0	0.0	2	0.1
NE	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
ENE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SSE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	1	0.0
S	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SSW	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
WSW	0	0.0	0	0.0	2	0.1	2	0.1	1	0.0	0	0.0	0	0.0	5	0.2
W	0	0.0	0	0.0	1	0.0	4	0.2	11	0.5	6	0.3	3	0.1	25	1.2
WNW	0	0.0	0	0.0	1	0.0	4	0.2	8	0.4	0	0.0	5	0.2	18	0.8
NW	0	0.0	1	0.0	0	0.0	1	0.0	5	0.2	8	0.4	2	0.1	17	0.8
NNW	0	0.0	3	0.1	0	0.0	1	0.0	10	0.5	5	0.2	1	0.0	20	0.9
	0	0.0	4	0.2	5	0.2	16	0.7	37	1.7	22	1.0	11	0.5	95	4.4

MEAN WIND SPEED: 16.2
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.6 TO -1.5 DEG C/100M
CLASS C

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	2	0.1	1	0.0	2	0.1	1	0.0	0	0.0	6	0.3
NNE	0	0.0	0	0.0	3	0.1	2	0.1	1	0.0	0	0.0	0	0.0	6	0.3
NE	0	0.0	0	0.0	2	0.1	6	0.3	1	0.0	0	0.0	0	0.0	9	0.4
ENE	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	2	0.1
SE	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1	0.0
SSE	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	3	0.1	0	0.0	4	0.2
S	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SSW	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1	0.0
SW	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
WSW	0	0.0	0	0.0	0	0.0	3	0.1	1	0.0	1	0.0	0	0.0	5	0.2
W	0	0.0	0	0.0	1	0.0	8	0.4	2	0.1	2	0.1	4	0.2	17	0.8
WNW	0	0.0	0	0.0	5	0.2	6	0.3	4	0.2	3	0.1	8	0.4	26	1.2
NW	0	0.0	2	0.1	1	0.0	3	0.1	4	0.2	11	0.5	0	0.0	21	1.0
NNW	0	0.0	0	0.0	1	0.0	1	0.0	5	0.2	0	0.0	0	0.0	7	0.3
	0	0.0	2	0.1	16	0.7	33	1.5	23	1.1	21	1.0	12	0.6	107	5.0

MEAN WIND SPEED: 14.9
MISSING: 0

Table 5
3 of 9

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.4 TO -0.5 DEG C/100M
CLASS D

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM	PERCENT
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	1	0.0	5	0.2	11	0.5	16	0.7	4	0.2	0	0.0	37	1.7
NNE	0	0.0	1	0.0	6	0.3	22	1.0	20	0.9	0	0.0	0	0.0	49	2.3
NE	0	0.0	0	0.0	8	0.4	33	1.5	23	1.1	0	0.0	0	0.0	64	3.0
ENE	0	0.0	0	0.0	5	0.2	12	0.6	10	0.5	0	0.0	0	0.0	27	1.3
E	0	0.0	0	0.0	4	0.2	8	0.4	0	0.0	0	0.0	0	0.0	12	0.6
ESE	0	0.0	0	0.0	5	0.2	3	0.1	1	0.0	0	0.0	0	0.0	9	0.4
SE	0	0.0	1	0.0	10	0.5	4	0.2	6	0.3	3	0.1	4	0.2	28	1.3
SSE	0	0.0	2	0.1	3	0.1	9	0.4	8	0.4	11	0.5	2	0.1	35	1.6
S	0	0.0	1	0.0	5	0.2	11	0.5	5	0.2	0	0.0	0	0.0	22	1.0
SSW	0	0.0	0	0.0	3	0.1	8	0.4	3	0.1	3	0.1	0	0.0	17	0.8
SW	0	0.0	2	0.1	2	0.1	4	0.2	5	0.2	0	0.0	0	0.0	13	0.6
WSW	0	0.0	1	0.0	6	0.3	11	0.5	20	0.9	14	0.6	4	0.2	56	2.6
W	0	0.0	0	0.0	9	0.4	21	1.0	29	1.3	28	1.3	9	0.4	96	4.5
WNW	0	0.0	0	0.0	4	0.2	9	0.4	28	1.3	28	1.3	30	1.4	99	4.6
NW	0	0.0	5	0.2	3	0.1	3	0.1	36	1.7	51	2.4	19	0.9	117	5.4
NNW	0	0.0	5	0.2	6	0.3	5	0.2	15	0.7	11	0.5	3	0.1	45	2.1
	0	0.0	19	0.9	84	3.9	174	8.1	225	10.4	153	7.1	71	3.3	726	33.7

MEAN WIND SPEED: 15.2
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -0.4 TO 1.5 DEG C/100M
CLASS E

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	5	0.2	9	0.4	36	1.7	11	0.5	3	0.1	64	3.0
NNE	0	0.0	1	0.0	5	0.2	19	0.9	19	0.9	8	0.4	0	0.0	52	2.4
NE	0	0.0	0	0.0	4	0.2	16	0.7	12	0.6	0	0.0	0	0.0	32	1.5
ENE	0	0.0	0	0.0	5	0.2	14	0.6	4	0.2	1	0.0	1	0.0	25	1.2
E	0	0.0	0	0.0	7	0.3	11	0.5	8	0.4	3	0.1	0	0.0	29	1.3
ESE	0	0.0	2	0.1	1	0.0	7	0.3	4	0.2	0	0.0	1	0.0	15	0.7
SE	0	0.0	1	0.0	7	0.3	8	0.4	7	0.3	13	0.6	2	0.1	38	1.8
SSE	0	0.0	2	0.1	5	0.2	12	0.6	7	0.3	6	0.3	2	0.1	34	1.6
S	0	0.0	3	0.1	4	0.2	9	0.4	5	0.2	1	0.0	0	0.0	22	1.0
SSW	0	0.0	2	0.1	6	0.3	4	0.2	7	0.3	2	0.1	0	0.0	21	1.0
SW	0	0.0	2	0.1	6	0.3	13	0.6	26	1.2	5	0.2	0	0.0	52	2.4
WSW	0	0.0	1	0.0	6	0.3	23	1.1	23	1.1	3	0.1	0	0.0	56	2.6
W	0	0.0	2	0.1	6	0.3	16	0.7	29	1.3	3	0.1	0	0.0	56	2.6
WNW	0	0.0	2	0.1	8	0.4	17	0.8	31	1.4	6	0.3	1	0.0	65	3.0
NW	0	0.0	5	0.2	2	0.1	8	0.4	42	1.9	31	1.4	2	0.1	90	4.2
NNW	0	0.0	17	0.8	1	0.0	5	0.2	31	1.4	21	1.0	4	0.2	79	3.7
	0	0.0	40	1.9	78	3.6	191	8.9	291	13.5	114	5.3	16	0.7	730	33.8

MEAN WIND SPEED: 13.4
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: 1.6 TO 4.0 DEG C/100M
CLASS F

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	1	0.0	0	0.0	7	0.3	10	0.5	0	0.0	0	0.0	18	0.8
NNE	0	0.0	0	0.0	4	0.2	0	0.0	13	0.6	1	0.0	0	0.0	18	0.8
NE	0	0.0	2	0.1	2	0.1	2	0.1	1	0.0	0	0.0	0	0.0	7	0.3
ENE	0	0.0	2	0.1	3	0.1	3	0.1	2	0.1	0	0.0	0	0.0	10	0.5
E	0	0.0	1	0.0	3	0.1	5	0.2	2	0.1	0	0.0	0	0.0	11	0.5
ESE	0	0.0	1	0.0	3	0.1	6	0.3	1	0.0	0	0.0	0	0.0	11	0.5
SE	0	0.0	0	0.0	1	0.0	6	0.3	10	0.5	7	0.3	1	0.0	25	1.2
SSE	0	0.0	0	0.0	4	0.2	15	0.7	8	0.4	5	0.2	2	0.1	34	1.6
S	0	0.0	0	0.0	1	0.0	3	0.1	8	0.4	5	0.2	0	0.0	17	0.8
SSW	0	0.0	2	0.1	0	0.0	3	0.1	16	0.7	4	0.2	0	0.0	25	1.2
SW	0	0.0	0	0.0	1	0.0	1	0.0	1	0.0	0	0.0	0	0.0	3	0.1
WSW	0	0.0	2	0.1	1	0.0	3	0.1	3	0.1	0	0.0	0	0.0	9	0.4
W	0	0.0	2	0.1	4	0.2	5	0.2	9	0.4	0	0.0	0	0.0	20	0.9
WNW	0	0.0	0	0.0	0	0.0	1	0.0	2	0.1	0	0.0	0	0.0	3	0.1
NW	0	0.0	0	0.0	0	0.0	0	0.0	4	0.2	0	0.0	0	0.0	4	0.2
NNW	0	0.0	0	0.0	2	0.1	2	0.1	7	0.3	0	0.0	0	0.0	11	0.5
	0	0.0	13	0.6	29	1.3	62	2.9	97	4.5	22	1.0	3	0.1	226	10.5

MEAN WIND SPEED: 12.6
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: GT 4.0 DEG C/100M
CLASS G

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	2	0.1	1	0.0	0	0.0	0	0.0	0	0.0	3	0.1
NNE	0	0.0	0	0.0	0	0.0	4	0.2	1	0.0	0	0.0	0	0.0	5	0.2
NE	0	0.0	1	0.0	1	0.0	2	0.1	1	0.0	0	0.0	0	0.0	5	0.2
ENE	0	0.0	1	0.0	3	0.1	4	0.2	1	0.0	0	0.0	0	0.0	9	0.4
E	0	0.0	1	0.0	4	0.2	5	0.2	0	0.0	0	0.0	0	0.0	10	0.5
ESE	0	0.0	0	0.0	1	0.0	3	0.1	2	0.1	1	0.0	0	0.0	7	0.3
SE	0	0.0	0	0.0	1	0.0	5	0.2	1	0.0	5	0.2	0	0.0	12	0.6
SSE	0	0.0	3	0.1	0	0.0	4	0.2	2	0.1	23	1.1	34	1.6	66	3.1
S	0	0.0	3	0.1	0	0.0	3	0.1	8	0.4	9	0.4	3	0.1	26	1.2
SSW	0	0.0	0	0.0	0	0.0	1	0.0	10	0.5	1	0.0	0	0.0	12	0.6
SW	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
WSW	0	0.0	0	0.0	1	0.0	6	0.3	6	0.3	3	0.1	0	0.0	16	0.7
W	0	0.0	3	0.1	3	0.1	2	0.1	3	0.1	0	0.0	0	0.0	11	0.5
WNW	0	0.0	0	0.0	0	0.0	5	0.2	0	0.0	0	0.0	0	0.0	5	0.2
NW	0	0.0	1	0.0	2	0.1	1	0.0	0	0.0	0	0.0	0	0.0	4	0.2
NNW	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1
	0	0.0	14	0.6	19	0.9	47	2.2	35	1.6	42	1.9	37	1.7	194	9.0

MEAN WIND SPEED: 17.4
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

ALL STABILITY CLASSES

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	2	0.1	14	0.6	31	1.4	67	3.1	19	0.9	3	0.1	136	6.3
NNE	0	0.0	2	0.1	18	0.8	49	2.3	54	2.5	9	0.4	0	0.0	132	6.1
NE	0	0.0	3	0.1	17	0.8	60	2.8	39	1.8	0	0.0	0	0.0	119	5.5
ENE	0	0.0	3	0.1	16	0.7	34	1.6	17	0.8	1	0.0	1	0.0	72	3.3
E	0	0.0	2	0.1	18	0.8	29	1.3	10	0.5	3	0.1	0	0.0	62	2.9
ESE	0	0.0	3	0.1	11	0.5	20	0.9	8	0.4	1	0.0	1	0.0	44	2.0
SE	0	0.0	2	0.1	19	0.9	24	1.1	26	1.2	28	1.3	7	0.3	106	4.9
SSE	0	0.0	7	0.3	12	0.6	41	1.9	26	1.2	49	2.3	40	1.9	175	8.1
S	0	0.0	7	0.3	10	0.5	26	1.2	26	1.2	15	0.7	3	0.1	87	4.0
SSW	0	0.0	4	0.2	10	0.5	16	0.7	37	1.7	10	0.5	0	0.0	77	3.6
SW	0	0.0	4	0.2	9	0.4	20	0.9	32	1.5	5	0.2	0	0.0	70	3.2
WSW	0	0.0	4	0.2	16	0.7	49	2.3	64	3.0	23	1.1	4	0.2	160	7.4
W	0	0.0	7	0.3	25	1.2	57	2.6	94	4.4	44	2.0	19	0.9	246	11.4
WNW	0	0.0	2	0.1	18	0.8	42	1.9	74	3.4	38	1.8	44	2.0	218	10.1
NW	0	0.0	16	0.7	8	0.4	16	0.7	98	4.5	115	5.3	25	1.2	278	12.9
NNW	0	0.0	27	1.3	12	0.6	14	0.6	74	3.4	39	1.8	9	0.4	175	8.1
	0	0.0	95	4.4	233	10.8	528	24.5	746	34.6	399	18.5	156	7.2	2157	100.0

MISSING HOURS: 3

MEAN WIND SPEED: 14.6

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

DIRECTION VS SPEED ONLY

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	2	0.1	14	0.6	31	1.4	67	3.1	19	0.9	3	0.1	136	6.3
NNE	0	0.0	2	0.1	18	0.8	49	2.3	54	2.5	9	0.4	0	0.0	132	6.1
NE	0	0.0	3	0.1	17	0.8	60	2.8	41	1.9	0	0.0	0	0.0	121	5.6
ENE	0	0.0	3	0.1	16	0.7	34	1.6	17	0.8	1	0.0	1	0.0	72	3.3
E	0	0.0	2	0.1	18	0.8	29	1.3	10	0.5	3	0.1	0	0.0	62	2.9
ESE	0	0.0	3	0.1	11	0.5	20	0.9	8	0.4	1	0.0	1	0.0	44	2.0
SE	0	0.0	2	0.1	19	0.9	24	1.1	26	1.2	28	1.3	7	0.3	106	4.9
SSE	0	0.0	7	0.3	12	0.6	41	1.9	26	1.2	49	2.3	40	1.9	175	8.1
S	0	0.0	7	0.3	10	0.5	26	1.2	26	1.2	15	0.7	3	0.1	87	4.0
SSW	0	0.0	4	0.2	10	0.5	16	0.7	37	1.7	10	0.5	0	0.0	77	3.6
SW	0	0.0	4	0.2	9	0.4	20	0.9	32	1.5	5	0.2	0	0.0	70	3.2
WSW	0	0.0	4	0.2	16	0.7	49	2.3	64	3.0	23	1.1	4	0.2	160	7.4
W	0	0.0	7	0.3	25	1.2	57	2.6	94	4.4	44	2.0	19	0.9	246	11.4
WNW	0	0.0	2	0.1	18	0.8	42	1.9	74	3.4	38	1.8	44	2.0	218	10.1
NW	0	0.0	16	0.7	8	0.4	16	0.7	98	4.5	115	5.3	25	1.2	278	12.9
NNW	0	0.0	27	1.3	12	0.6	14	0.6	75	3.5	39	1.8	9	0.4	176	8.1
	0	0.0	95	4.4	233	10.8	528	24.4	749	34.7	399	18.5	156	7.2	2160	100.0

MISSING HOURS: 0

MEAN WIND SPEED: 14.6

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: LE -1.9 DEG C/100M
CLASS A

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	1	0.0	0	0.0	3	0.1
NNE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ENE	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SE	0	0.0	0	0.0	1	0.0	0	0.0	3	0.1	2	0.1	3	0.1	9	0.4
SSE	0	0.0	2	0.1	2	0.1	4	0.2	4	0.2	4	0.2	0	0.0	16	0.7
S	0	0.0	0	0.0	3	0.1	4	0.2	0	0.0	0	0.0	0	0.0	7	0.3
SSW	0	0.0	2	0.1	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1
SW	0	0.0	0	0.0	3	0.1	5	0.2	1	0.0	0	0.0	0	0.0	9	0.4
WSW	0	0.0	0	0.0	3	0.1	8	0.4	0	0.0	1	0.0	0	0.0	12	0.5
W	0	0.0	0	0.0	0	0.0	2	0.1	7	0.3	0	0.0	0	0.0	9	0.4
WNW	0	0.0	0	0.0	0	0.0	2	0.1	4	0.2	8	0.4	1	0.0	15	0.7
NW	0	0.0	0	0.0	0	0.0	5	0.2	23	1.1	12	0.5	2	0.1	42	1.9
NNW	0	0.0	0	0.0	0	0.0	1	0.0	13	0.6	6	0.3	1	0.0	21	1.0
	0	0.0	4	0.2	13	0.6	33	1.5	57	2.6	34	1.6	7	0.3	148	6.8

MEAN WIND SPEED: 15.1
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.8 TO -1.7 DEG C/100M
CLASS B

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	1	0.0	7	0.3	5	0.2	1	0.0	0	0.0	14	0.6
NNE	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	2	0.1
NE	0	0.0	0	0.0	3	0.1	7	0.3	2	0.1	0	0.0	0	0.0	12	0.5
ENE	0	0.0	0	0.0	2	0.1	1	0.0	0	0.0	0	0.0	0	0.0	3	0.1
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	2	0.1
SE	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0	1	0.0	2	0.1	5	0.2
SSE	0	0.0	0	0.0	6	0.3	4	0.2	3	0.1	3	0.1	2	0.1	18	0.8
S	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1
SSW	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SW	0	0.0	0	0.0	2	0.1	5	0.2	6	0.3	0	0.0	0	0.0	13	0.6
WSW	0	0.0	0	0.0	4	0.2	2	0.1	0	0.0	3	0.1	1	0.0	10	0.5
W	0	0.0	0	0.0	3	0.1	3	0.1	2	0.1	0	0.0	0	0.0	8	0.4
WNW	0	0.0	0	0.0	2	0.1	2	0.1	1	0.0	0	0.0	1	0.0	6	0.3
NW	0	0.0	0	0.0	1	0.0	6	0.3	13	0.6	9	0.4	0	0.0	29	1.3
NNW	0	0.0	0	0.0	0	0.0	7	0.3	10	0.5	2	0.1	1	0.0	20	0.9
	0	0.0	0	0.0	28	1.3	48	2.2	43	2.0	19	0.9	7	0.3	145	6.6

MEAN WIND SPEED: 13.2
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.6 TO -1.5 DEG C/100M
CLASS C

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	1	0.0	6	0.3	3	0.1	1	0.0	0	0.0	11	0.5
NNE	0	0.0	0	0.0	1	0.0	6	0.3	4	0.2	0	0.0	0	0.0	11	0.5
NE	0	0.0	0	0.0	2	0.1	7	0.3	0	0.0	0	0.0	0	0.0	9	0.4
ENE	0	0.0	0	0.0	1	0.0	6	0.3	0	0.0	3	0.1	0	0.0	10	0.5
E	0	0.0	0	0.0	2	0.1	3	0.1	0	0.0	0	0.0	0	0.0	5	0.2
ESE	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SE	0	0.0	0	0.0	3	0.1	1	0.0	2	0.1	1	0.0	4	0.2	11	0.5
SSE	0	0.0	1	0.0	1	0.0	1	0.0	2	0.1	5	0.2	0	0.0	10	0.5
S	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	2	0.1
SSW	0	0.0	0	0.0	4	0.2	1	0.0	0	0.0	0	0.0	0	0.0	5	0.2
SW	0	0.0	0	0.0	2	0.1	2	0.1	5	0.2	1	0.0	1	0.0	11	0.5
WSW	0	0.0	0	0.0	3	0.1	2	0.1	1	0.0	1	0.0	1	0.0	8	0.4
W	0	0.0	0	0.0	3	0.1	1	0.0	1	0.0	0	0.0	0	0.0	5	0.2
WNW	0	0.0	0	0.0	1	0.0	2	0.1	2	0.1	1	0.0	1	0.0	7	0.3
NW	0	0.0	0	0.0	2	0.1	4	0.2	9	0.4	6	0.3	0	0.0	21	1.0
NNW	0	0.0	0	0.0	3	0.1	6	0.3	2	0.1	1	0.0	0	0.0	12	0.5
	0	0.0	1	0.0	31	1.4	49	2.2	31	1.4	20	0.9	7	0.3	139	6.4

MEAN WIND SPEED: 12.9
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.4 TO -0.5 DEG C/100M
CLASS D

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	2	0.1	8	0.4	13	0.6	14	0.6	2	0.1	39	1.8
NNE	0	0.0	1	0.0	3	0.1	6	0.3	19	0.9	13	0.6	1	0.0	43	2.0
NE	0	0.0	0	0.0	13	0.6	34	1.6	12	0.5	11	0.5	2	0.1	72	3.3
ENE	0	0.0	1	0.0	13	0.6	26	1.2	55	2.5	7	0.3	0	0.0	102	4.7
E	0	0.0	1	0.0	16	0.7	21	1.0	5	0.2	0	0.0	0	0.0	43	2.0
ESE	0	0.0	0	0.0	4	0.2	6	0.3	18	0.8	3	0.1	0	0.0	31	1.4
SE	0	0.0	1	0.0	4	0.2	14	0.6	24	1.1	23	1.1	8	0.4	74	3.4
SSE	0	0.0	3	0.1	10	0.5	20	0.9	51	2.3	28	1.3	9	0.4	121	5.5
S	0	0.0	5	0.2	14	0.6	20	0.9	17	0.8	12	0.5	0	0.0	68	3.1
SSW	0	0.0	2	0.1	5	0.2	9	0.4	8	0.4	2	0.1	1	0.0	27	1.2
SW	0	0.0	1	0.0	8	0.4	11	0.5	9	0.4	5	0.2	3	0.1	37	1.7
WSW	0	0.0	1	0.0	7	0.3	4	0.2	12	0.5	0	0.0	0	0.0	24	1.1
W	0	0.0	0	0.0	14	0.6	10	0.5	1	0.0	1	0.0	1	0.0	27	1.2
WNW	0	0.0	1	0.0	7	0.3	8	0.4	7	0.3	4	0.2	1	0.0	28	1.3
NW	0	0.0	1	0.0	2	0.1	4	0.2	27	1.2	17	0.8	4	0.2	55	2.5
NNW	0	0.0	0	0.0	2	0.1	7	0.3	7	0.3	14	0.6	7	0.3	37	1.7
	0	0.0	18	0.8	124	5.7	208	9.5	285	13.0	154	7.1	39	1.8	828	37.9

MEAN WIND SPEED: 14.0
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -0.4 TO 1.5 DEG C/100M
CLASS E

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	9	0.1	5	0.2	14	0.6	4	0.2	1	0.0	33	1.5
NNE	0	0.0	0	0.0	3	0.1	8	0.4	10	0.5	9	0.4	0	0.0	30	1.4
NE	0	0.0	3	0.1	6	0.3	5	0.2	8	0.4	2	0.1	0	0.0	24	1.1
ENE	0	0.0	1	0.0	8	0.4	10	0.5	4	0.2	0	0.0	0	0.0	23	1.1
E	0	0.0	2	0.1	9	0.4	22	1.0	4	0.2	0	0.0	0	0.0	37	1.7
ESE	0	0.0	2	0.1	6	0.3	13	0.6	11	0.5	4	0.2	0	0.0	36	1.6
SE	0	0.0	1	0.0	6	0.3	7	0.3	12	0.5	7	0.3	1	0.0	34	1.6
SSE	0	0.0	2	0.1	12	0.5	9	0.4	17	0.8	7	0.3	8	0.4	55	2.5
S	0	0.0	4	0.2	5	0.2	8	0.4	18	0.8	12	0.5	3	0.1	50	2.3
SSW	0	0.0	1	0.0	5	0.2	11	0.5	17	0.8	17	0.8	4	0.2	55	2.5
SW	0	0.0	2	0.1	3	0.1	16	0.7	26	1.2	15	0.7	5	0.2	67	3.1
WSW	0	0.0	2	0.1	2	0.1	11	0.5	24	1.1	4	0.2	1	0.0	44	2.0
W	0	0.0	3	0.1	9	0.4	13	0.6	12	0.5	0	0.0	0	0.0	37	1.7
WNW	0	0.0	5	0.2	9	0.4	13	0.6	22	1.0	3	0.1	0	0.0	52	2.4
NW	0	0.0	2	0.1	6	0.3	14	0.6	33	1.5	22	1.0	1	0.0	78	3.6
NNW	0	0.0	3	0.1	3	0.1	8	0.4	24	1.1	13	0.6	6	0.3	57	2.6
	0	0.0	33	1.5	101	4.6	173	7.9	256	11.7	119	5.4	30	1.4	712	32.6

MEAN WIND SPEED: 13.6
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: 1.6 TO 4.0 DEG C/100M
CLASS F

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	1	0.0	0	0.0	9	0.4	4	0.2	0	0.0	14	0.6
NNE	0	0.0	0	0.0	1	0.0	1	0.0	10	0.5	1	0.0	0	0.0	13	0.6
NE	0	0.0	0	0.0	3	0.1	0	0.0	2	0.1	3	0.1	0	0.0	8	0.4
ENE	0	0.0	2	0.1	2	0.1	5	0.2	2	0.1	0	0.0	0	0.0	11	0.5
E	0	0.0	2	0.1	5	0.2	1	0.0	0	0.0	0	0.0	0	0.0	8	0.4
ESE	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SE	0	0.0	2	0.1	2	0.1	0	0.0	0	0.0	1	0.0	0	0.0	5	0.2
SSE	0	0.0	1	0.0	4	0.2	7	0.3	2	0.1	0	0.0	0	0.0	14	0.6
S	0	0.0	0	0.0	2	0.1	1	0.0	8	0.4	2	0.1	1	0.0	14	0.6
SSW	0	0.0	1	0.0	3	0.1	5	0.2	8	0.4	3	0.1	1	0.0	21	1.0
SW	0	0.0	1	0.0	1	0.0	6	0.3	8	0.4	0	0.0	0	0.0	16	0.7
WSW	0	0.0	1	0.0	1	0.0	1	0.0	14	0.6	9	0.4	0	0.0	26	1.2
W	0	0.0	0	0.0	1	0.0	2	0.1	5	0.2	2	0.1	0	0.0	10	0.5
WNW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NW	0	0.0	1	0.0	1	0.0	4	0.2	2	0.1	0	0.0	0	0.0	8	0.4
NNW	0	0.0	2	0.1	1	0.0	0	0.0	9	0.4	1	0.0	0	0.0	13	0.6
	0	0.0	14	0.6	28	1.3	33	1.5	79	3.6	26	1.2	2	0.1	182	8.3

MEAN WIND SPEED: 13.0
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: GT 4.0 DEG C/100M
CLASS G

WIND SPEED GROUPS (MPH)

DIRECTION	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM	PERCENT
	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	3	0.1	0	0.0	5	0.2
NNE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ENE	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SSE	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	1	0.0	2	0.1
S	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1	2	0.1	2	0.1	7	0.3
SSW	0	0.0	0	0.0	0	0.0	3	0.1	2	0.1	0	0.0	0	0.0	5	0.2
SW	0	0.0	0	0.0	1	0.0	4	0.2	0	0.0	0	0.0	0	0.0	5	0.2
WSW	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
W	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1	0.0
WNW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NNW	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	2	0.1
	0	0.0	1	0.0	2	0.1	9	0.4	10	0.5	5	0.2	3	0.1	30	1.4

MEAN WIND SPEED: 16.0
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

ALL STABILITY CLASSES

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM	PERCENT
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	14	0.6	26	1.2	48	2.2	28	1.3	3	0.1	119	5.4
NNE	0	0.0	1	0.0	8	0.4	22	1.0	44	2.0	23	1.1	1	0.0	99	4.5
NE	0	0.0	3	0.1	27	1.2	53	2.4	24	1.1	16	0.7	2	0.1	125	5.7
ENE	0	0.0	4	0.2	27	1.2	49	2.2	61	2.8	10	0.5	0	0.0	151	6.9
E	0	0.0	5	0.2	32	1.5	47	2.2	9	0.4	0	0.0	0	0.0	93	4.3
ESE	0	0.0	4	0.2	12	0.5	21	1.0	29	1.3	7	0.3	0	0.0	73	3.3
SE	0	0.0	4	0.2	16	0.7	24	1.1	41	1.9	35	1.6	18	0.8	138	6.3
SSE	0	0.0	9	0.4	35	1.6	45	2.1	80	3.7	47	2.2	20	0.9	236	10.8
S	0	0.0	9	0.4	27	1.2	34	1.6	46	2.1	28	1.3	6	0.3	150	6.9
SSW	0	0.0	6	0.3	19	0.9	29	1.3	35	1.6	22	1.0	6	0.3	117	5.4
SW	0	0.0	4	0.2	20	0.9	49	2.2	55	2.5	21	1.0	9	0.4	158	7.2
WSW	0	0.0	4	0.2	20	0.9	29	1.3	51	2.3	18	0.8	3	0.1	125	5.7
W	0	0.0	3	0.1	30	1.4	31	1.4	29	1.3	3	0.1	1	0.0	97	4.4
WNW	0	0.0	6	0.3	19	0.9	27	1.2	36	1.6	16	0.7	4	0.2	108	4.9
NW	0	0.0	4	0.2	12	0.5	37	1.7	107	4.9	66	3.0	7	0.3	233	10.7
NNW	0	0.0	5	0.2	9	0.4	30	1.4	66	3.0	37	1.7	15	0.7	162	7.4
	0	0.0	71	3.3	327	15.0	553	25.3	761	34.8	377	17.3	95	4.3	2184	100.0

MISSING HOURS: 0

MEAN WIND SPEED: 13.8

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

DIRECTION VS SPEED ONLY

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	14	0.6	26	1.2	48	2.2	28	1.3	3	0.1	119	5.4
NNE	0	0.0	1	0.0	8	0.4	22	1.0	44	2.0	23	1.1	1	0.0	99	4.5
NE	0	0.0	3	0.1	27	1.2	53	2.4	24	1.1	16	0.7	2	0.1	125	5.7
ENE	0	0.0	4	0.2	27	1.2	49	2.2	61	2.8	10	0.5	0	0.0	151	6.9
E	0	0.0	5	0.2	32	1.5	47	2.2	9	0.4	0	0.0	0	0.0	93	4.3
ESE	0	0.0	4	0.2	12	0.5	21	1.0	29	1.3	7	0.3	0	0.0	73	3.3
SE	0	0.0	4	0.2	16	0.7	24	1.1	41	1.9	35	1.6	18	0.8	138	6.3
SSE	0	0.0	9	0.4	35	1.6	45	2.1	80	3.7	47	2.2	20	0.9	236	10.8
S	0	0.0	9	0.4	27	1.2	34	1.6	46	2.1	28	1.3	6	0.3	150	6.9
SSW	0	0.0	6	0.3	19	0.9	29	1.3	35	1.6	22	1.0	6	0.3	117	5.4
SW	0	0.0	4	0.2	20	0.9	49	2.2	55	2.5	21	1.0	9	0.4	158	7.2
WSW	0	0.0	4	0.2	20	0.9	29	1.3	51	2.3	18	0.8	3	0.1	125	5.7
W	0	0.0	3	0.1	30	1.4	31	1.4	29	1.3	3	0.1	1	0.0	97	4.4
WNW	0	0.0	6	0.3	19	0.9	27	1.2	36	1.6	16	0.7	4	0.2	108	4.9
NW	0	0.0	4	0.2	12	0.5	37	1.7	107	4.9	66	3.0	7	0.3	233	10.7
NNW	0	0.0	5	0.2	9	0.4	30	1.4	66	3.0	37	1.7	15	0.7	162	7.4
	0	0.0	71	3.3	327	15.0	553	25.3	761	34.8	377	17.3	95	4.3	2184	100.0

MISSING HOURS: 0

MEAN WIND SPEED: 13.8

AMENDMENT TO RERR - 37

8.0 MODIFICATION TO PREVIOUS RADIOACTIVE EFFLUENT RELEASE REPORTS

Our last report (RERR-36) did not include the quarterly Sr-89, Sr-90 and Fe-55 composite data for the second quarter of 1994. Amended pages to RERR-36 are included at the end of this report.

PART B. GASEOUS EFFLUENTS

See Summary Tables 1A-1 thru 1C for Salem Unit 1 Operations.
See Summary Tables 1A-2 thru 1C for Salem Unit 2 Operations.

PART C. LIQUID EFFLUENTS

See Summary Tables 2A-1 thru 2B for Salem Unit 1 Operations.
See Summary Tables 2A-2 thru 2B for Salem Unit 2 Operations.

PART D. SOLID WASTE

See Summary in Table 3.

PART E. RADIOLOGICAL IMPACT ON MAN

The calculated individual doses in this section are based on actual locations of nearby residents and farms. The population dose impact is based on historical site specific data i.e., food production, milk production, feed for milk animals and seafood production.

The doses were calculated using methods described in Regulatory Guide 1.109 and represent calculations for the six month reporting interval. Individual doses from batch and continuous releases were calculated using the annual average historic meteorological dispersion coefficients as described in the Offsite Dose Calculation Manual. Population doses were calculated using the meteorological dispersion coefficients for the six month reporting interval.

Liquid Pathways

Doses to "maximum hypothetical individuals" in the population from liquid releases are primarily from the seafood ingestion pathway. Calculated doses to individuals are as shown below:

Total body dose to the individual: 5.85E-01 mrem
Highest organ dose (GI-LLI): 8.54E-01 mrem

Dose to the 4.5 million individuals living within the 50 mile radius of the plant site:

Total population dose: 7.44E-02 person-rem

Average population dose: 1.65E-05 mrem/person

Air Pathways

The calculated doses to "maximum hypothetical individuals" via the air pathway are shown below:

Total body dose: 1.07E-02 mrem

Skin dose: 2.60E-02 mrem

Highest organ dose due to radioiodines and particulates with half lives greater than 8 days:

1.71E-02 mrem to the Thyroid.

Dose to the 4.5 million individuals living within the 50 mile radius of the plant site:

Total population dose: 1.84E-01 person-rem

Average population dose: 4.09E-05 mrem/person

Direct Radiation

Direct radiation may be estimated by thermoluminescent dosimetric (TLD) measurements. One method for comparing TLD measurements is by comparison with preoperational data. It should be noted that the TLDs measure direct radiation from both the Salem and Hope Creek Generating Stations at Artificial Island, as well as natural background radiation.

TLD data for the six month reporting period is given below:

TLD	Location	Measurement
2S-2	0.3 mile	3.9 mrad/month
5S-1	0.9 mile	3.1 mrad/month

These values are interpreted to represent natural background. They are within the statistical variation associated with the pre-operational program results, which are: 3.7 mrad/month for location 2S-2, and 4.2 mrad/month for location 5S-1.

SALEM GENERATING STATION
TABLE 2A-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JULY - DECEMBER 1994
UNIT 1
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	3rd Quarter	4th Quarter	Est. Total Error %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	7.14E-01	7.81E-01	25
2. Average diluted concentration during period of release	uCi/mL	1.73E-07	1.67E-07	
3. Percent of technical specification limit (T.S. 3.11.1.2.(a))	%	1.43E+01	7.06E+00	
B. Tritium				
1. Total release	Ci	1.74E+02	8.43E+01	25
2. Average diluted concentration during period	uCi/mL	4.21E-05	1.80E-05	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	1.40E+00	6.02E-01	
C. Dissolved and entrained noble gases				
1. Total release	Ci	3.21E-01	1.56E-01	25
2. Average diluted concentration during period	uCi/mL	7.79E-08	3.35E-08	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	3.90E-02	1.67E-02	
D. Gross alpha activity				
1. Total release	Ci	0.00E+00	0.00E+00	25
E. Volume of waste release (prior to dilution - Batch Release)	liters	1.79E+06	1.74E+06	25
F. Volume of dilution water used during entire period	liters	5.19E+11	4.80E+11	25

SALEM GENERATING STATION
TABLE 2A-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JULY - DECEMBER 1994
UNIT 2
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	3rd Quarter	4th Quarter	Est. Total Error %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	7.76E-01	5.40E-01	25
2. Average diluted concentration during period	uCi/mL	1.79E-07	1.01E-07	
3. Percent of technical specification limit (T.S. 3.11.1.2.(a))	%	1.38E+01	3.94E+00	
B. Tritium				
1. Total release	Ci	1.67E+02	7.44E+01	25
2. Average diluted concentration during period	uCi/mL	3.85E-05	1.39E-05	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	1.28E+00	4.64E-01	
C. Dissolved and entrained noble gases				
1. Total release	Ci	1.25E-01	1.19E-01	25
2. Average diluted concentration during period	uCi/mL	2.89E-08	2.22E-08	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	1.44E-02	1.11E-02	
D. Gross alpha activity				
1. Total release	Ci	0.00E+00	0.00E+00	25
E. Volume of waste release (prior to dilution - Batch Release)	liters	1.93E+06	1.90E+06	25
F. Volume of dilution water used during entire period	liters	4.86E+11	9.34E+10	25

SALEM GENERATING STATION
TABLE 2B-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JULY - DECEMBER 1994

LIQUID EFFLUENTS UNIT 1

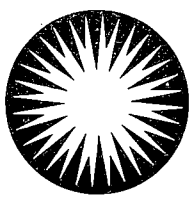
		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
Sodium-24	Ci	0.00E+00	0.00E+00	2.40E-05	1.38E-04
Chromium-51	Ci	0.00E+00	0.00E+00	0.00E+00	2.02E-03
Manganese-54	Ci	0.00E+00	0.00E+00	1.58E-03	6.66E-03
Iron-55	Ci	0.00E+00	0.00E+00	4.65E-02	1.27E-02
Iron-59	Ci	0.00E+00	0.00E+00	1.03E-03	4.78E-04
Cobalt-57	Ci	0.00E+00	0.00E+00	3.60E-04	1.66E-03
Cobalt-58	Ci	0.00E+00	0.00E+00	4.82E-02	3.50E-01
Cobalt-60	Ci	0.00E+00	0.00E+00	1.64E-02	6.87E-02
Niobium-95	Ci	0.00E+00	0.00E+00	0.00E+00	1.12E-03
Zirconium-95	Ci	0.00E+00	0.00E+00	0.00E+00	5.97E-04
Niobium-97	Ci	0.00E+00	0.00E+00	4.70E-04	1.32E-04
Silver-110m	Ci	0.00E+00	0.00E+00	1.39E-03	3.61E-04
Antimony-122	Ci	0.00E+00	0.00E+00	0.00E+00	5.35E-04
Antimony-124	Ci	0.00E+00	0.00E+00	1.08E-03	1.24E-02
Antimony-125	Ci	0.00E+00	0.00E+00	2.21E-02	3.27E-02
Antimony-126	Ci	0.00E+00	0.00E+00	0.00E+00	6.18E-05
Iodine-131	Ci	0.00E+00	0.00E+00	1.59E-03	1.60E-02
Iodine-133	Ci	0.00E+00	0.00E+00	0.00E+00	1.88E-04
Cesium-134	Ci	0.00E+00	0.00E+00	2.46E-01	1.15E-01
Cesium-136	Ci	0.00E+00	0.00E+00	1.01E-03	4.73E-04
Cesium-137	Ci	0.00E+00	0.00E+00	3.26E-01	1.57E-01
Cesium-138	Ci	0.00E+00	0.00E+00	0.00E+00	2.72E-05
Barium-140	Ci	0.00E+00	0.00E+00	8.62E-05	0.00E+00
Lanthanum-140	Ci	0.00E+00	0.00E+00	5.42E-05	8.35E-05
Ruthenium-105	Ci	0.00E+00	0.00E+00	0.00E+00	1.35E-04
Molybdenum-99	Ci	0.00E+00	0.00E+00	0.00E+00	1.76E-04
Cerium-141	Ci	0.00E+00	0.00E+00	0.00E+00	4.24E-05
Tin-113	Ci	0.00E+00	0.00E+00	0.00E+00	4.91E-05
TOTALS	Ci	0.00E+00	0.00E+00	7.14E-01	7.81E-01
Tritium	Ci	0.00E+00	0.00E+00	1.74E+02	8.43E+01
Krypton-85m	Ci	0.00E+00	0.00E+00	0.00E+00	1.04E-04
Xenon-131m	Ci	0.00E+00	0.00E+00	0.00E+00	3.58E-04
Xenon-133m	Ci	0.00E+00	0.00E+00	2.76E-03	4.49E-04
Xenon-133	Ci	0.00E+00	0.00E+00	3.18E-01	1.53E-01
Xenon-135	Ci	0.00E+00	0.00E+00	1.18E-03	2.16E-03
TOTALS	Ci	0.00E+00	0.00E+00	1.74E+02	8.44E+01

SALEM GENERATING STATION
TABLE 2B-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JULY - DECEMBER 1994

LIQUID EFFLUENTS UNIT 2

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
Sodium-24	Ci	0.00E+00	0.00E+00	0.00E+00	3.30E-05
Chromium-51	Ci	0.00E+00	0.00E+00	0.00E+00	1.21E-03
Manganese-54	Ci	0.00E+00	0.00E+00	1.98E-03	5.39E-03
Iron-55	Ci	0.00E+00	0.00E+00	5.59E-02	1.14E-02
Iron-59	Ci	0.00E+00	0.00E+00	8.24E-04	1.47E-04
Cobalt-57	Ci	0.00E+00	0.00E+00	4.57E-04	1.43E-03
Cobalt-58	Ci	0.00E+00	0.00E+00	5.54E-02	2.98E-01
Cobalt-60	Ci	0.00E+00	0.00E+00	1.75E-02	4.84E-02
Strontium-90	Ci	0.00E+00	0.00E+00	1.52E-05	1.43E-05
Niobium-95	Ci	0.00E+00	0.00E+00	3.94E-05	7.08E-04
Zirconium-95	Ci	0.00E+00	0.00E+00	0.00E+00	4.79E-04
Niobium-97	Ci	0.00E+00	0.00E+00	5.68E-04	1.63E-04
Silver-110m	Ci	0.00E+00	0.00E+00	1.93E-03	8.33E-05
Antimony-124	Ci	0.00E+00	0.00E+00	1.19E-03	6.03E-03
Antimony-125	Ci	0.00E+00	0.00E+00	1.61E-02	1.95E-02
Antimony-126	Ci	0.00E+00	0.00E+00	0.00E+00	2.42E-06
Iodine-131	Ci	0.00E+00	0.00E+00	1.83E-03	5.56E-03
Iodine-133	Ci	0.00E+00	0.00E+00	7.35E-05	4.38E-05
Cesium-134	Ci	0.00E+00	0.00E+00	2.66E-01	5.93E-02
Cesium-136	Ci	0.00E+00	0.00E+00	1.10E-03	2.30E-04
Cesium-137	Ci	0.00E+00	4.46E-05	3.55E-01	8.19E-02
Lanthanum-140	Ci	0.00E+00	0.00E+00	5.87E-05	0.00E+00
TOTALS	Ci	0.00E+00	4.46E-05	7.76E-01	5.40E-01
Tritium	Ci	0.00E+00	0.00E+00	1.67E+02	7.44E+01
Krypton-85m	Ci	0.00E+00	0.00E+00	0.00E+00	3.27E-05
Xenon-131m	Ci	0.00E+00	0.00E+00	0.00E+00	1.25E-03
Xenon-133m	Ci	0.00E+00	0.00E+00	4.79E-04	3.98E-04
Xenon-133	Ci	0.00E+00	0.00E+00	1.24E-01	1.14E-01
Xenon-135	Ci	0.00E+00	0.00E+00	3.59E-04	3.05E-03
TOTALS		0.00E+00	0.00E+00	1.67E+02	7.46E+01



PSE&G

The Energy People

ALL WITH ATTACHMENT:

C Mr. T. T. Martin, Administrator - Region I
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. L. N. Olshan, Licensing Project Manager - Salem
U. S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

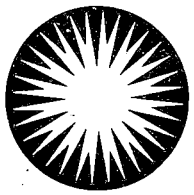
Mr. C. S. Marschall (S09)
USNRC Senior Resident Inspector

Mr. K. Tosch, Manager, IV
NJ Department of Environmental Protection
Division of Environmental Quality
CN 415
Trenton, NJ 08625

SALEM GENERATING STATION
SEMIANNUAL RADIOACTIVE
EFFLUENT RELEASE REPORT
SGS RERR-38

SALEM UNIT NOS. 1 & 2

UNIT 1 DOCKET NO. 50-272
UNIT 2 DOCKET NO. 50-311
OPERATING LICENSE NO. DPR-70
OPERATING LICENSE NO. DPR-75



AUGUST, 1995

PSE&G

The Energy People

SALEM GENERATING STATION
RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY - JUNE 1995

Table of Contents

SALEM GENERATING STATION
RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY - JUNE 1995

INTRODUCTION

This report, SGS-RERR-38, summarizes information pertaining to the releases of radioactive materials in liquid, gaseous and solid form from the Salem Generating Station (SGS) Units 1 and 2 for the period January 1, 1995 to June 30, 1995.

This Semiannual RERR is submitted for both Salem Units and combines those sections which are common to each unit. Separate tables of releases and release totals are included whenever separate processing systems exist.

Salem Unit 1 is a Westinghouse Pressurized Water Reactor which has a licensed core power of 3411 MWt and an approximate net electrical output of 1115 MWe. Salem Unit 1 achieved initial criticality on December 11, 1976 and went into commercial operations on June 30, 1977.

Salem Unit 2 is a Westinghouse Pressurized Water Reactor which has a licensed core power of 3411 MWt and an approximate net electrical output of 1115 MWe. Salem Unit 2 achieved initial criticality on August 2, 1980 and went into commercial operations on October 13, 1981.

The report is prepared in the format of Regulatory Guide 1.21, Appendix B, as required by Specification 6.9.1.11 of the Salem Technical Specifications. Preceding the tables summarizing the gaseous and liquid discharges and solid waste shipments are our responses to parts A-F of the "Supplemental Information" section of Regulatory Guide 1.21, Appendix B.

As required by Regulatory Guide 1.21, our Technical Specification limits are described in detail within this report along with a summary description of how measurements and determinations of the total activity discharged were developed.

To facilitate determination of compliance with 40CFR190 requirements, the following information on electrical output is provided.

Unit 1 generated **2,538,135** megawatt-hours of electrical energy (net) during the reporting period.

Unit 2 generated **2,041,100** megawatt-hours of electrical energy (net) during the reporting period.

Results of liquid and gaseous composites analyzed for Sr-89, Sr-90 and Fe-55 for the second quarter of 1995 were not available for inclusion in this report. The results of these composites will be provided in the next Radioactive Effluent Release Report.

The Sr-89, Sr-90 and Fe-55 analyses for the second half of 1994 (refer to RERR-37) have been completed; amended pages to RERR-37 are included in this report.

PART A. PRELIMINARY SUPPLEMENTAL INFORMATION

1.0 REGULATORY LIMITS

1.1 Fission and Activation Gas Release Limits

The dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the site boundary, shall be limited to the following:

> For noble gases: Less than or equal to 500 mrems/yr to the total body and less than or equal to 3000 mrems/yr to the skin.

In addition, the air dose due to noble gases released in gaseous effluents, from each reactor unit, from the site to areas at and beyond the site boundary, shall be limited to the following:

> During any calendar quarter: Less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation, and
>
> During any calendar year: Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.

1.2 Iodine Particulates, and Tritium

The dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the site boundary, shall be limited to the following:

> For Iodine-131, for tritium, and for all radionuclides in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrems/yr to any organ.

In addition, the dose to a member of the public from iodine-131, from tritium, and from all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released, from each reactor unit, from the site to areas at and beyond the site boundary, shall be limited to the following:

> During any calendar quarter: Less than or equal to 7.5 mrems to any organ, and
>
> During any calendar year: Less than or equal to 15 mrems to any organ.

1.3 Liquid Effluents Release Limits

The concentration of radioactive material released in liquid effluents to unrestricted areas shall be limited to the concentrations specified in 10 CFR, Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2E-4 microcuries per milliliter.

In addition, the dose or dose commitment to a member of the public from radioactive materials in liquid effluents released to unrestricted areas shall be limited:

During any calendar quarter to less than or equal to 1.5 mrems to the total body and to less than or equal to 5 mrems to any organ, and

During any calendar year to less than or equal to 3 mrems to the total body and to less than or equal to 10 mrems to any organ.

1.4 Total Dose Limit

The annual (calendar year) dose or dose commitment to any member of the public, due to releases of radioactivity and radiation, from uranium fuel cycle sources shall be limited to less than or equal to 25 mrems to the total body or any organ (except the thyroid, which shall be limited to less than or equal to 75 mrems).

2.0 MAXIMUM PERMISSIBLE CONCENTRATIONS (MPC)

Regulatory Guide 1.21 requires that the licensee provide the MPCs used in determining allowable release rates for radioactive releases.

a. MPC values were not used to determine the maximum release rates for fission gases, iodines, or particulates.

b. MPC values as stated in 10CFR20, Appendix B, Table II, Column 2 were used for liquids.

c. The MPC value used for dissolved or entrained noble gases is 2E-4 microcuries per milliliter.

3.0 AVERAGE ENERGY

Regulatory Guide 1.21 requires that the licensee provide the average energy of the radionuclide mixture in releases of fission and activation gases, if applicable.

Release limits for SGS are not based upon average energy, hence, this section does not apply.

4.0 MEASUREMENTS AND APPROXIMATION OF TOTAL RADIOACTIVITY

4.1 Liquid Effluents

Liquid effluents are monitored in accordance with Table 4.11-1 of the Technical Specifications. During the period of record, all batch liquid wastes from the chemical drain tank and the laundry and hot shower tanks were routed to the hold-up tanks for monitoring prior to release. Technical Specifications require these tanks to be uniformly mixed for sampling and analysis before being released. Batch releases are defined as releases from the waste monitor hold-up tank and the chemical and volume control tanks. Continuous liquid releases are defined as condensate releases from intermittent blowdown of the steam generators. Specific activities from analyses were multiplied by the volume of effluent discharged to the environment in order to estimate the total liquid activity discharged.

The detection requirements of Tables 4.11-1 of the Technical Specifications are achieved or exceeded. Radionuclides detected at concentrations below the Technical Specification detection limits (LLDs) are treated as being present. Radionuclides for which no activity was detected, while meeting the required LLDs, are treated as absent.

4.2 Gaseous Effluents

Gaseous effluent streams are monitored and sampled in accordance with Table 4.11-2 of the Technical Specifications. The plant vent is the final release point of all planned gaseous effluents and is continuously monitored by beta scintillator and high range GM tubes. The vent is also continuously sampled for iodine and particulates with a charcoal cartridge and filter paper. The filter and charcoal are changed weekly, and analyzed on a multi-channel analyzer in the laboratory.

Noble gas sampling is also performed on all gas decay tanks and containment purges prior to their release to the environment. The plant vent is sampled weekly for noble gases.

The detection requirements of Tables 4.11-1 and 4.11-2 of the Technical Specifications are achieved or exceeded. Radionuclides detected at concentrations below the Technical Specification detection limits (LLDs) are treated as being present. Radionuclides for which no activity was detected, while meeting the required LLDs, are treated as absent.

Continuous Mode gaseous releases are quantified by routine (monthly or weekly) sampling and isotopic analyses of the plant vent. Specific activities for each isotope detected are multiplied by the total vent flow volume for the entire sampling period in order to estimate the normal continuous release of radioactivity through the plant vent.

Slightly elevated plant vent radiation monitor readings are treated as continuous releases. The monitors response is converted to a "specific activity" using historical efficiency factors. The "specific activity" is multiplied by a default volume of effluent discharge to estimate the total activity discharged.

Batch Mode gaseous releases are quantified by sampling each gas decay tank or containment purge prior to discharge. Specific activities for each isotope are multiplied by the total volume of gas discharged for that batch.

Elevated plant vent radiation monitoring system readings while the channel is in an alarm state are treated as batch mode releases. If specific activity data from grab samples taken is not available, then the abnormal release is quantified by the use of the plant vent radiation monitors. The monitors response is converted to a "specific activity" using historical efficiency factors. The "specific activity" is multiplied by the volume of effluent discharged while the channel was in an alarm state in order to estimate the total activity discharged.

4.3 Estimated Total Error

The estimated total error of reported liquid and solid releases is within 25%

The estimated total error of the reported continuous gaseous releases is within 50% when concentrations exceed detectable levels. This error is due primarily to variability of waste stream flow rates and changes in isotopic distributions of waste streams between sampling periods. The estimated total error of the reported batch gaseous releases is within 10%.

Error estimates for releases where sample activity is below the detectable concentration levels are not included since error estimates at the LLD are not defined.

5.0 BATCH RELEASES

Summaries of batch releases of gaseous and liquid effluents are provided in Tables 4A-1 and 4B-1 for Unit 1 and 4A-2 and 4B-2 for Unit 2.

6.0 UNPLANNED RELEASES

During this reporting period there were no unplanned releases.

7.0 ELEVATED R-16/R41C CHANNEL RESPONSES

During this reporting period, there was one instance of an elevated monitor reading on Salem Unit 1 R16/R41C. On May 19, 1995 the contents of the pressurizer relief tank was inadvertently released to the containment atmosphere. A containment purge was subsequently performed on 5/19/95 14:54 to 5/20/95 10:05 during which time the 1R16 plant vent monitor alarm was actuated. There are no warning alarms or interlocks associated with the 1R16 radiation monitor. There are containment purge valve interlocks associated with the 1R41C noble gas radiation monitor, however, no alarm was reported for the 1R41C radiation monitor. The radioactivity released from this purge resulted in a small fraction of the allowable limit and is included in the summary tables presented in Table 1A-1 and 1B-1 of this report.

8.0 MODIFICATION TO PREVIOUS RADIOACTIVE EFFLUENT RELEASE REPORTS

Our last report (RERR-37) did not include the quarterly Sr-89, Sr-90 and Fe-55 composite data for the fourth quarter of 1994. Amended pages to RERR-37 are included at the end of this report.

PART B. GASEOUS EFFLUENTS

See Summary Tables 1A-1 thru 1C for Salem Unit 1 Operations.

See Summary Tables 1A-2 thru 1C for Salem Unit 2 Operations.

PART C. LIQUID EFFLUENTS

See Summary Tables 2A-1 thru 2B for Salem Unit 1 Operations.

See Summary Tables 2A-2 thru 2B for Salem Unit 2 Operations.

PART D. SOLID WASTE

See Summary in Table 3.

PART E. RADIOLOGICAL IMPACT ON MAN

The calculated individual doses in this section are based on actual locations of nearby residents and farms. The population dose impact is based on historical site specific data i.e., food production, milk production, feed for milk animals and seafood production.

The doses were calculated using methods described in Regulatory Guide 1.109 and represent calculations for the six month reporting interval. Individual doses from batch and continuous releases were calculated using the annual average historic meteorological dispersion coefficients as described in the Offsite Dose Calculation Manual. Population doses were calculated using the meteorological dispersion coefficients for the six month reporting interval.

Liquid Pathways

Doses to "maximum hypothetical individuals" in the population from liquid releases are primarily from the seafood ingestion pathway. Calculated doses to individuals are as shown below:

Total body dose to the individual: 3.43E-01 mrem
Highest organ dose (GI-LLI): 1.48E+00 mrem

Dose to the 4.5 million individuals living within the 50 mile radius of the plant site:

Total population dose: 3.17E-02 person-rem

Average population dose: 7.04E-06 mrem/person

Air Pathways

The calculated doses to "maximum hypothetical individuals" via the air pathway are shown below:

Total body dose: 4.04E-03 mrem

Skin dose: 9.85E-03 mrem

Highest organ dose due to radioiodines and particulates with half lives greater than 8 days:

1.10E-01 mrem to the Thyroid.

Dose to the 4.5 million individuals living within the 50 mile radius of the plant site:

Total population dose:	2.68E+00	person-rem
Average population dose:	5.96E-04	mrem/person

Direct Radiation

Direct radiation may be estimated by thermoluminescent dosimetric (TLD) measurements. One method for comparing TLD measurements is by comparison with preoperational data. It should be noted that the TLDs measure direct radiation from both the Salem and Hope Creek Generating Stations at Artificial Island, as well as natural background radiation.

TLD data for the six month reporting period is given below:

TLD	Location	Measurement
2S-2	0.3 mile	4.3 mrad/month
5S-1	0.9 mile	3.3 mrad/month

These values are interpreted to represent natural background. They are within the statistical variation associated with the pre-operational program results, which are: 3.7 mrad/month for location 2S-2, and 4.2 mrad/month for location 5S-1.

Total Dose

40CFR190 limits the total dose to members of the public due to radioactivity and radiation from uranium fuel cycle sources to:

<25 mrem total body or any organ
<75 mrem to the thyroid

for a calendar year. For Artificial Island, the major sources of dose are from liquid and gaseous effluents from the Salem and Hope Creek plants.

The following doses to members of the public have been calculated for the six month reporting period:

0.447	mrem	total body
1.690	mrem	organ (GI-LLI)
0.185	mrem	thyroid

Dose to Members of the Public Due to Activities inside the Site Boundary.

In accordance with the requirements of Technical Specification 6.9.1.7, the dose to members of the public inside the site boundary has been calculated based on the following assumptions:

a. Such persons are participating or spectators in company softball league
b. 10 hours per week on site
c. Dose due to airborne pathway(inhalation and immersion)
d. persons are located about 3/4 mile east of plant discharge points (softball fields)
e. occupancy coincides with batch gaseous discharges

For the six month reporting period, the calculated doses are:

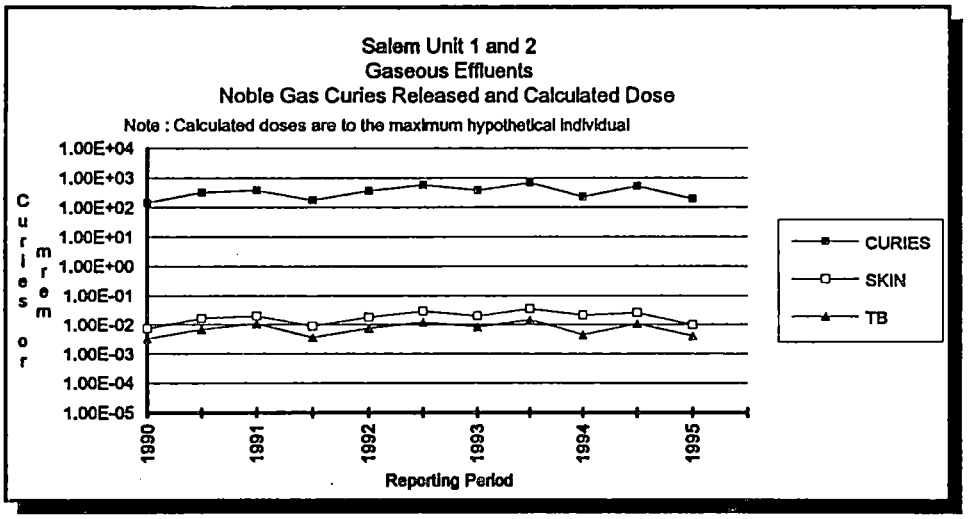
1.41E-03	mrem	Total Body
1.41E-03	mrem	Organ (Lung)
1.42E-03	mrem	Thyroid

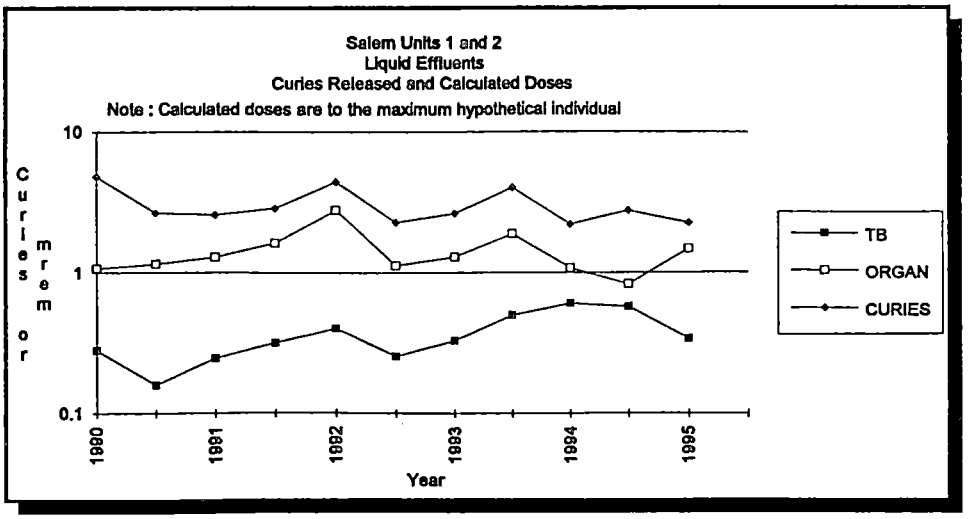
Assessment

Gaseous effluents released from Salem resulted in a minimal dose to the maximum hypothetical individual. The air dose for the 6 month period was a small fraction of all applicable limits.

Liquid effluent activity decreased slightly from previous reporting periods. Calculated doses are due principally to isotopes of iron, cobalt and cesium. The dose from liquid effluents to the maximum hypothetical individual were well below all applicable limits.

The following two trend graphs show the total curies of gaseous and liquid effluents released from Salem Units 1 and 2 for the past 5 years. Calculated doses in the graphs are to the maximum hypothetical individual.





PART F. METEOROLOGICAL DATA

Cumulative joint wind frequency distributions by atmospheric stability class at the 300 foot elevation are provided for the first and second quarters of 1995 in Tables 5 and 6.

PART G. OFFSITE DOSE CALCULATION MANUAL (ODCM) CHANGES

During this period, there were no changes to the SGS off-site dose calculation manual.

PART H. INOPERABLE MONITORS

During this period, the following effluent monitor was inoperable for more than 30 days:

* Unit 1 Waste Gas Analyzer

  The waste gas analyzer could not be returned to service within the specified time period due to extensive design changes. The design changes were necessary to prevent moisture accumulation in the waste gas analyzer. The analyzer was returned to service when the design changes were completed.

* Unit 1 Steam Generator Blowdown Process Radiation Monitors (1R19 A,B,C,D)

  The steam generator blowdown flow monitors could not be returned to service within the specified time due to low S/G blowdown flow conditions. The low S/G blowdown flow was due to an extended shutdown of the reactor.

* Unit 1 Containment Fan Coil Unit Process Radiation Monitor (1R13D)

  The radiation monitor could not be returned to service within the specified time due to station planning workload and the unavailability of parts. The monitor was inoperable for a total of 31 days.

* Unit 2 Steam Generator Blowdown Process Radiation Monitors (2R19 A,B,C,D)

  The steam generator blowdown flow monitors could not be returned to service within the specified time due to low S/G blowdown flow conditions. The low S/G blowdown flow was due to an extended shutdown of the reactor.

* Unit 2 Containment Fan Coil Unit Process Radiation Monitors (2R13 A,B,C)

* Unit 2 Liquid Radwaste Disposal Process Radiation Monitor (2R18)

* Unit 2 Chemical Waste Basin Process Radiation Monitor (2R37)

The above radiation monitors could not be returned to service within the specified time due to problems associated with the RMS computer system. The Unit 2 RMS computer was found to not reliably annunciate alarm status changes. The repairs to the computer system could not be completed within the 30 day time period due to the unavailability of repair parts and the complexity of the assembly language coding.

PART I. PROCESS CONTROL PROGRAM (PCP) CHANGES

During this reporting period, there were no changes to the Process Control Program.

PART J. ENVIRONMENTAL MONITORING LOCATION CHANGES

During the reporting period, there were no changes environmental monitoring sampling program.

SALEM GENERATING STATION
TABLE 1A-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995

UNIT 1
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	Est. Total Error %
A. Fission and Activation Gases				
1. Total release	Ci	8.20E+01	8.60E+01	25
2. Average release rate for period	uCi/sec	1.04E+01	1.09E+01	
3. Percent of technical specification limit (T.S. 3.11.2.2(a))	%	6.20E-02	6.38E-02	
B. Iodines				
1. Total Iodine-131	Ci	3.01E-04	1.00E-04	25
2. Average release rate for period	uCi/sec	3.82E-05	1.27E-05	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	1.44E-02	3.55E-02	
C. Particulates				
1. Particulates with half-lives >8 days	Ci	4.68E-06	2.61E-06	25
2. Average release rate for period	uCi/sec	5.96E-07	3.32E-07	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	1.44E-02	3.55E-02	
4. Gross alpha	Ci	0.00E+00	0.00E+00	
C. Tritium				
1. Total Release	Ci	1.28E+01	1.13E+03	25
2. Average release rate for period	uCi/sec	1.63E+00	1.44E+02	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	1.44E-02	3.55E-02	

(1) For batch releases the estimated overall error is within 10%
(2) Iodine, tritium and particulates are treated as a group

SALEM GENERATING STATION
TABLE 1A-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995

UNIT 2
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	Est. Total Error %
A. Fission and Activation Gases				
1. Total release	Ci	8.63E+00	1.54E+01	25
2. Average release rate for period	uCi/sec	1.10E+00	1.96E+00	
3. Percent of technical specification limit (T.S. 3.11.2.2(a))	%	6.83E-03	1.16E-02	
B. Iodines				
1. Total Iodine-131	Ci	3.62E-06	1.10E-04	25
2. Average release rate for period	uCi/sec	4.60E-07	1.40E-05	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	4.61E-04	5.57E-03	
C. Particulates				
1. Particulates with half-lives >8 days	Ci	2.56E-06	0.00E+00	25
2. Average release rate for period	uCi/sec	3.26E-07	0.00E+00	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	4.61E-04	5.57E-03	
4. Gross alpha	Ci	0.00E+00	0.00E+00	
C. Tritium				
1. Total Release	Ci	1.06E+01	1.63E+01	25
2. Average release rate for period	uCi/sec	1.35E+00	2.07E+00	
3. Percent of technical specification limit (2) (T.S. 3.11.2.3(a))	%	4.61E-04	5.57E-03	

(1) For batch releases the estimated overall error is within 10%
(2) Iodine, tritium and particulates are treated as a group

SALEM GENERATING STATION
TABLE 1B-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
GASEOUS EFFLUENTS-ELEVATED RELEASES
UNIT 1

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1. Fission Gases					
Krypton-85	Ci	0.00E+00	0.00E+00	1.11E+00	6.63E-02
Krypton-85m	Ci	0.00E+00	0.00E+00	3.24E-03	4.67E-03
Xenon-131m	Ci	0.00E+00	0.00E+00	4.17E-01	5.54E-01
Xenon-133	Ci	1.29E+01	3.60E+01	6.58E+01	4.83E+01
Xenon-133m	Ci	0.00E+00	0.00E+00	7.97E-01	5.82E-01
Xenon-135	Ci	2.59E-01	0.00E+00	7.65E-01	5.20E-01
Krypton-88	Ci	0.00E+00	0.00E+00	0.00E+00	6.67E-04
Argon-41	Ci	0.00E+00	0.00E+00	0.00E+00	1.04E-05
TOTALS	Ci	1.32E+01	3.60E+01	6.89E+01	5.00E+01
2. Iodines					
Iodine-131	Ci	3.01E-04	1.00E-04	0.00E+00	0.00E+00
TOTALS	Ci	3.01E-04	1.00E-04	0.00E+00	0.00E+00
3. Particulates (half-live >8 days)					
Cobalt-60	Ci	2.79E-06	1.85E-06	0.00E+00	0.00E+00
Cobalt-58	Ci	1.89E-06	7.62E-07	0.00E+00	0.00E+00
Tritium	Ci	1.28E+01	1.13E+03	0.00E+00	0.00E+00
TOTALS	Ci	1.28E+01	1.13E+03	0.00E+00	0.00E+00

Note: The large increase in tritium (H-3) activity in the 2nd quarter is attributed to a conservative error found in the sample/analysis process for one containment purge. Incomplete tritium sample purification yielded artificially elevated tritium results. These results could not be reverified by further analysis because the sample was inadvertently discarded.

SALEM GENERATING STATION
TABLE 1B-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
GASEOUS EFFLUENTS-ELEVATED RELEASES
UNIT 2

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1. Fission Gases					
Krypton-85	Ci	0.00E+00	0.00E+00	7.99E-01	4.51E-01
Xenon-131m	Ci	0.00E+00	0.00E+00	1.84E-02	6.87E-02
Xenon-133	Ci	6.22E+00	6.78E+00	1.57E+00	8.02E+00
Xenon-133m	Ci	0.00E+00	0.00E+00	1.45E-02	4.16E-02
Xenon-135	Ci	0.00E+00	0.00E+00	4.90E-03	5.57E-02
TOTALS	Ci	6.22E+00	6.78E+00	2.41E+00	8.64E+00
2. Iodines					
Iodine-131	Ci	3.62E-06	1.10E-04	0.00E+00	0.00E+00
TOTALS	Ci	3.62E-06	1.10E-04	0.00E+00	0.00E+00
3. Particulates (half-lives >8 days)					
Cobalt-60	Ci	1.80E-06	0.00E+00	0.00E+00	0.00E+00
Cesium-137	Ci	7.62E-07	0.00E+00	0.00E+00	0.00E+00
Tritium	Ci	1.06E+01	1.63E+01	0.00E+00	0.00E+00
TOTALS	Ci	1.06E+01	1.63E+01	0.00E+00	0.00E+00

SALEM GENERATING STATION
TABLE 1C

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995

UNITS 1 AND 2

GASEOUS EFFLUENTS-GROUND-LEVEL RELEASES

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter

There were no ground level gaseous releases during this reporting period.

SALEM GENERATING STATION
TABLE 2A-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
UNIT 1
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	Est. Total Error %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	7.24E-01	5.86E-01	25
2. Average diluted concentration during period	uCi/mL	1.26E-07	2.47E-07	
3. Percent of technical specification limit (T.S. 3.11.1.2.(a))	%	6.32E+00	9.35E+00	
B. Tritium				
1. Total release	Ci	1.15E+02	4.84E+01	25
2. Average diluted concentration during period	uCi/mL	1.99E-05	2.04E-05	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	6.65E-01	6.79E-01	
C. Dissolved and entrained noble gases				
1. Total release	Ci	4.87E-02	3.25E-02	25
2. Average diluted concentration during period	uCi/mL	8.48E-09	1.37E-08	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	4.24E-03	6.84E-03	
D. Gross alpha activity				
1. Total release	Ci	0.00E+00	0.00E+00	25
E. Volume of waste release (prior to dilution - Batch Release)	liters	2.71E+06	1.12E+06	25
F. Volume of dilution water used during entire period	liters	4.84E+11	3.66E+11	25

SALEM GENERATING STATION
TABLE 2A-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
UNIT 2
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	1st Quarter	2nd Quarter	Est. Total Error %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	6.12E-01	3.42E-01	25
2. Average diluted concentration during period	uCi/mL	2.47E-07	2.28E-07	
3. Percent of technical specification limit (T.S. 3.11.1.2.(a))	%	6.30E+00	7.76E+00	
B. Tritium				
1. Total release	Ci	9.55E+01	1.49E+01	25
2. Average diluted concentration during period	uCi/mL	3.86E-05	9.94E-06	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	1.29E+00	3.31E-01	
C. Dissolved and entrained noble gases				
1. Total release	Ci	3.63E-02	3.96E-02	25
2. Average diluted concentration during period	uCi/mL	1.46E-08	2.63E-08	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	7.32E-03	1.32E-02	
D. Gross alpha activity				
1. Total release	Ci	0.00E+00	0.00E+00	25
E. Volume of waste release (prior to dilution - Batch Release)	liters	1.57E+06	6.92E+05	25
F. Volume of dilution water used during entire period	liters	2.70E+11	3.96E+11	25

SALEM GENERATING STATION
TABLE 2B-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995

LIQUID EFFLUENTS UNIT 1

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
A. Fission Products					
Manganese-54	Ci	0.00E+00	0.00E+00	1.35E-03	1.01E-03
Iron-55	Ci	0.00E+00	0.00E+00	1.45E-02	0.00E+00
Iron-59	Ci	0.00E+00	0.00E+00	6.55E-05	3.43E-04
Cobalt-57	Ci	0.00E+00	0.00E+00	1.04E-03	1.03E-03
Cobalt-58	Ci	1.35E-05	0.00E+00	4.99E-01	3.23E-01
Cobalt-60	Ci	0.00E+00	0.00E+00	2.16E-02	2.29E-02
Cerium-141	Ci	0.00E+00	0.00E+00	3.01E-05	0.00E+00
Technetium-99m	Ci	0.00E+00	0.00E+00	2.99E-05	0.00E+00
Barium-140	Ci	0.00E+00	0.00E+00	5.65E-05	0.00E+00
Niobium-95	Ci	0.00E+00	0.00E+00	3.68E-04	4.18E-03
Zirconium-95	Ci	0.00E+00	0.00E+00	1.30E-04	2.50E-03
Niobium-97	Ci	0.00E+00	0.00E+00	2.15E-04	0.00E+00
Silver-110m	Ci	0.00E+00	0.00E+00	1.61E-04	3.70E-04
Antimony-122	Ci	0.00E+00	0.00E+00	1.61E-04	0.00E+00
Antimony-124	Ci	0.00E+00	0.00E+00	8.39E-03	8.38E-03
Antimony-125	Ci	0.00E+00	0.00E+00	3.61E-02	2.56E-02
Iodine-131	Ci	4.72E-05	0.00E+00	6.00E-03	2.83E-03
Chromium-51	Ci	0.00E+00	0.00E+00	1.65E-04	5.35E-03
Cesium-134	Ci	4.45E-05	0.00E+00	5.30E-02	7.74E-02
Cesium-136	Ci	0.00E+00	0.00E+00	1.25E-04	0.00E+00
Cesium-137	Ci	1.37E-04	0.00E+00	8.14E-02	1.11E-01
Lanthanum-140	Ci	0.00E+00	0.00E+00	2.45E-05	6.88E-05
Ruthenium-105	Ci	0.00E+00	0.00E+00	0.00E+00	2.55E-04
Sodium-24	Ci	0.00E+00	0.00E+00	7.98E-05	0.00E+00
Tin-113	Ci	0.00E+00	0.00E+00	0.00E+00	4.66E-04
Zinc-65	Ci	0.00E+00	0.00E+00	0.00E+00	6.77E-05
TOTALS	Ci	2.43E-04	0.00E+00	7.24E-01	5.86E-01
B. Tritium, Dissolved and Entrained Gases					
Tritium	Ci	2.00E-03	0.00E+00	1.15E+02	4.84E+01
Xenon-133m	Ci	0.00E+00	0.00E+00	4.82E-04	2.78E-04
Xenon-133	Ci	0.00E+00	0.00E+00	4.78E-02	3.21E-02
Xenon-135	Ci	0.00E+00	0.00E+00	4.06E-04	8.03E-05
TOTALS	Ci	2.00E-03	0.00E+00	1.15E+02	4.84E+01

SALEM GENERATING STATION
TABLE 2B-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995

LIQUID EFFLUENTS UNIT 2

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
A. Fission Products					
Sodium-24	Ci	0.00E+00	0.00E+00	5.13E-05	2.03E-05
Chromium-51	Ci	0.00E+00	0.00E+00	3.25E-04	6.23E-03
Manganese-54	Ci	0.00E+00	0.00E+00	1.18E-03	6.87E-04
Iron-55	Ci	0.00E+00	0.00E+00	2.35E-02	0.00E+00
Iron-59	Ci	0.00E+00	0.00E+00	1.08E-04	1.36E-04
Cobalt-57	Ci	0.00E+00	0.00E+00	6.82E-04	7.33E-04
Cobalt-58	Ci	0.00E+00	0.00E+00	3.75E-01	2.38E-01
Cobalt-60	Ci	0.00E+00	0.00E+00	2.64E-02	1.20E-02
Strontium-90	Ci	0.00E+00	0.00E+00	2.51E-05	0.00E+00
Niobium-95	Ci	0.00E+00	0.00E+00	6.24E-04	4.49E-03
Zirconium-95	Ci	0.00E+00	0.00E+00	2.71E-04	2.67E-03
Niobium-97	Ci	0.00E+00	0.00E+00	1.07E-04	0.00E+00
Cerium-141	Ci	0.00E+00	0.00E+00	0.00E+00	4.92E-05
Silver-110m	Ci	0.00E+00	0.00E+00	4.90E-04	3.79E-04
Antimony-122	Ci	0.00E+00	0.00E+00	5.14E-05	0.00E+00
Antimony-124	Ci	0.00E+00	0.00E+00	7.30E-03	4.26E-03
Antimony-125	Ci	0.00E+00	0.00E+00	3.15E-02	1.28E-02
Iodine-131	Ci	0.00E+00	0.00E+00	3.62E-03	6.24E-05
Cesium-134	Ci	0.00E+00	0.00E+00	5.57E-02	2.47E-02
Cesium-136	Ci	0.00E+00	0.00E+00	3.34E-05	0.00E+00
Cesium-137	Ci	0.00E+00	6.32E-07	8.55E-02	3.43E-02
Lanthanum-140	Ci	0.00E+00	0.00E+00	5.06E-06	7.98E-06
Ruthenium-105	Ci	0.00E+00	0.00E+00	0.00E+00	1.97E-04
Tin-113	Ci	0.00E+00	0.00E+00	0.00E+00	8.20E-04
Zinc-65	Ci	0.00E+00	0.00E+00	0.00E+00	1.14E-04
TOTALS	Ci	0.00E+00	6.32E-07	6.12E-01	3.42E-01
B. Tritium, Dissolved and Entrained Gases					
Tritium	Ci	0.00E+00	0.00E+00	9.55E+01	1.49E+01
Xenon-133	Ci	0.00E+00	0.00E+00	3.60E-02	3.91E-02
Xenon-133m	Ci	0.00E+00	0.00E+00	1.19E-04	4.07E-04
Xenon-135	Ci	0.00E+00	0.00E+00	1.56E-04	7.05E-05
TOTALS		0.00E+00	0.00E+00	9.55E+01	1.50E+01

SALEM GENERATING STATION
TABLE 3

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
UNITS 1 AND 2
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL
(Not irradiated fuel)

1. Type of waste		Units(1)	6-month period	Est. Total Error, %
a.	Spent resins, filters, sludges, evaporator bottoms	m3 Ci	0.00E+00 0.00E+00	25
b.	Dry compressible waste, contaminated equipment.	m3 Ci	0.00E+00 0.00E+00	25
c.	Irradiated components, control rods	m3 Ci	0.00E+00 0.00E+00	25
d.	Others (described)	m3 Ci	0.00E+00 0.00E+00	25

2. Estimate of major nuclide composition (for Type A and B waste)

Note: No material was shipped offsite for disposal or burial during this time period.

SALEM GENERATING STATION
TABLE 3
(CONT'D)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
UNITS 1 AND 2
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination	Type of Containers
0	N/A	N/A	N/A

4. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
None	N/A	N/A

SALEM GENERATING STATION
TABLE 4A-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 1

BATCH RELEASES ONLY

1. Dates: January 1 - March 31, 1995

2. Type of release: Gas

3. Number of releases during the 1st Quarter: 16

4. Total time duration for all releases of type listed above: 2.60E+03 minutes

5. Maximum duration for release of type listed above: 9.55E+02 minutes

6. Average duration for release of type listed above: 1.62E+02 minutes

7. Minimum duration for release of type listed above: 3.00E+01 minutes

8. Average stream flow (dilution flow) during the period of release: N/A

SALEM GENERATING STATION
TABLE 4A-1
(CONT'D)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 1

BATCH RELEASES ONLY

1. Dates: April 1 - June 30, 1995

2. Type of release: Gas

3. Number of releases during the 2nd Quarter: 16

4. Total time duration for all releases of type listed above: 2.07E+04 minutes

5. Maximum duration for release of type listed above: 7.22E+03 minutes

6. Average duration for release of type listed above: 1.29E+03 minutes

7. Minimum duration for release of type listed above: 1.30E+01 minutes

8. Average stream flow (dilution flow) during the period of release: N/A

SALEM GENERATING STATION
TABLE 4A-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 2

BATCH RELEASES ONLY

1. Dates: January 1 - March 31, 1995

2. Type of release: Gas

3. Number of releases during the 1st Quarter: 45

4. Total time duration for all releases of type listed above: 1.11E+04 minutes

5. Maximum duration for release of type listed above: 1.44E+03 minutes

6. Average duration for release of type listed above: 2.46E+02 minutes

7. Minimum duration for release of type listed above: 3.30E+01 minutes

8. Average stream flow (dilution flow) during the period of release: N/A

SALEM GENERATING STATION
TABLE 4A-2
(CONT'D)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 2

BATCH RELEASES ONLY

1. Dates: April 1 - June 30, 1995

2. Type of release: Gas

3. Number of releases during the 2nd Quarter: 26

4. Total time duration for all releases of type listed above: 1.02E+04 minutes

5. Maximum duration for release of type listed above: 4.37E+03 minutes

6. Average duration for release of type listed above: 3.94E+02 minutes

7. Minimum duration for release of type listed above: 7.90E+01 minutes

8. Average stream flow (dilution flow) during the period of release: N/A

SALEM GENERATING STATION
TABLE 4B-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 1

BATCH RELEASES ONLY

1. Dates: January 1 - March 31, 1995

2. Type of release: Liquid

3. Number of releases during the 1st Quarter: 32

4. Total time duration for all releases of type listed above: 8.59E+03 minutes

5. Maximum duration for release of type listed above: 4.50E+02 minutes

6. Average duration for release of type listed above: 2.69E+02 minutes

7. Minimum duration for release of type listed above: 4.10E+01 minutes

8. Average stream flow (dilution flow) during the period of release: 1.77E+05 gpm

SALEM GENERATING STATION
TABLE 4B-1
(CONT'D)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 1

BATCH RELEASES ONLY

1. Dates: April 1 - June 30, 1995

2. Type of release: Liquid

3. Number of releases during the 2nd Quarter: 18

4. Total time duration for all releases of type listed above: 4.69E+03 minutes

5. Maximum duration for release of type listed above: 3.34E+02 minutes

6. Average duration for release of type listed above: 2.60E+02 minutes

7. Minimum duration for release of type listed above: 2.15E+02 minutes

8. Average stream flow (d. lution flow) during the period of release: 1.34E+05 gpm

SALEM GENERATING STATION
TABLE 4B-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 2

BATCH RELEASES ONLY

1. Dates: January 1 - March 31, 1995

2. Type of release: Liquid

3. Number of releases during the 1st Quarter: 26

4. Total time duration for all releases of type listed above: 5.85E+03 minutes

5. Maximum duration for release of type listed above: 3.01E+02 minutes

6. Average duration for release of type listed above: 2.25E+02 minutes

7. Minimum duration for release of type listed above: 4.50E+01 minutes

8. Average stream flow (dilution flow) during the period of release: 1.12E+05 gpm

SALEM GENERATING STATION
TABLE 4B-2
(CONT'D)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JANUARY - JUNE 1995
SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODE
UNIT 2

BATCH RELEASES ONLY

1. Dates: March 1 - June 30, 1995

2. Type of release: Liquid

3. Number of releases during the 2nd Quarter: 11

4. Total time duration for all releases of type listed above: 2.50E+03 minutes

5. Maximum duration for release of type listed above: 2.85E+02 minutes

6. Average duration for release of type listed above: 2.27E+02 minutes

7. Minimum duration for release of type listed above: 2.00E+02 minutes

8. Average stream flow (dilution flow) during the period of release: 1.59E+05 gpm

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: LE -1.9 DEG C/100M
CLASS A

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	1	0.0	0	0.0	3	0.1
NNE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NE	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1	0.0
ENE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SE	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	2	0.1
SSE	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
S	0.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SSW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
WSW	0	0.0	0	0.0	0	0.0	1	0.0	10	0.5	2	0.1	0	0.0	13	0.6
W	0	0.0	0	0.0	1	0.0	1	0.0	11	0.5	5	0.2	3	0.1	21	1.0
WNW	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	2	0.1
NW	0	0.0	2	0.1	0	0.0	0	0.0	7	0.3	14	0.6	2	0.1	25	1.2
NNW	0	0.0	1	0.0	1	0.0	0	0.0	6	0.3	2	0.1	1	0.0	11	0.5
	0	0.0	3	0.1	2	0.1	5	0.2	38	1.8	25	1.2	6	0.3	79	3.7

MEAN WIND SPEED: 16.9
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.8 TO -1.7 DEG C/100M
CLASS B

TABLE 5
2 of 9

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM	PERCENT
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	0	0.0	1	0.0	2	0.1	2	0.1	0	0.0	5	0.2
NNE	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0	0	0.0	2	0.1
NE	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
ENE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SSE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	1	0.0
S	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SSW	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
WSW	0	0.0	0	0.0	2	0.1	2	0.1	1	0.0	0	0.0	0	0.0	5	0.2
W	0	0.0	0	0.0	1	0.0	4	0.2	11	0.5	6	0.3	3	0.1	25	1.2
WNW	0	0.0	0	0.0	1	0.0	4	0.2	8	0.4	0	0.0	5	0.2	18	0.8
NW	0	0.0	1	0.0	0	0.0	1	0.0	5	0.2	8	0.4	2	0.1	17	0.8
NNW	0	0.0	3	0.1	0	0.0	1	0.0	10	0.5	5	0.2	1	0.0	20	0.9
	0	0.0	4	0.2	5	0.2	16	0.7	37	1.7	22	1.0	11	0.5	95	4.4

MEAN WIND SPEED: 16.2
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.6 TO -1.5 DEG C/100M
CLASS C

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	2	0.1	1	0.0	2	0.1	1	0.0	0	0.0	6	0.3
NNE	0	0.0	0	0.0	3	0.1	2	0.1	1	0.0	0	0.0	0	0.0	6	0.3
NE	0	0.0	0	0.0	2	0.1	6	0.3	1	0.0	0	0.0	0	0.0	9	0.4
ENE	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	2	0.1
SE	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1	0.0
SSE	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	3	0.1	0	0.0	4	0.2
S	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SSW	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1	0.0
SW	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
WSW	0	0.0	0	0.0	0	0.0	3	0.1	1	0.0	1	0.0	0	0.0	5	0.2
W	0	0.0	0	0.0	1	0.0	8	0.4	2	0.1	2	0.1	4	0.2	17	0.8
WNW	0	0.0	0	0.0	5	0.2	6	0.3	4	0.2	3	0.1	8	0.4	26	1.2
NW	0	0.0	2	0.1	1	0.0	3	0.1	4	0.2	11	0.5	0	0.0	21	1.0
NNW	0	0.0	0	0.0	1	0.0	1	0.0	5	0.2	0	0.0	0	0.0	7	0.3
	0	0.0	2	0.1	16	0.7	33	1.5	23	1.1	21	1.0	12	0.6	107	5.0

MEAN WIND SPEED: 14.9
MISSING: 0

Table 5
3 of 9

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.4 TO -0.5 DEG C/100M
CLASS D

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM	PERCENT
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	1	0.0	5	0.2	11	0.5	16	0.7	4	0.2	0	0.0	37	1.7
NNE	0	0.0	1	0.0	6	0.3	22	1.0	20	0.9	0	0.0	0	0.0	49	2.3
NE	0	0.0	0	0.0	8	0.4	33	1.5	23	1.1	0	0.0	0	0.0	64	3.0
ENE	0	0.0	0	0.0	5	0.2	12	0.6	10	0.5	0	0.0	0	0.0	27	1.3
E	0	0.0	0	0.0	4	0.2	8	0.4	0	0.0	0	0.0	0	0.0	12	0.6
ESE	0	0.0	0	0.0	5	0.2	3	0.1	1	0.0	0	0.0	0	0.0	9	0.4
SE	0	0.0	1	0.0	10	0.5	4	0.2	6	0.3	3	0.1	4	0.2	28	1.3
SSE	0	0.0	2	0.1	3	0.1	9	0.4	8	0.4	11	0.5	2	0.1	35	1.6
S	0	0.0	1	0.0	5	0.2	11	0.5	5	0.2	0	0.0	0	0.0	22	1.0
SSW	0	0.0	0	0.0	3	0.1	8	0.4	3	0.1	3	0.1	0	0.0	17	0.8
SW	0	0.0	2	0.1	2	0.1	4	0.2	5	0.2	0	0.0	0	0.0	13	0.6
WSW	0	0.0	1	0.0	6	0.3	11	0.5	20	0.9	14	0.6	4	0.2	56	2.6
W	0	0.0	0	0.0	9	0.4	21	1.0	29	1.3	28	1.3	9	0.4	96	4.5
WNW	0	0.0	0	0.0	4	0.2	9	0.4	28	1.3	28	1.3	30	1.4	99	4.6
NW	0	0.0	5	0.2	3	0.1	3	0.1	36	1.7	51	2.4	19	0.9	117	5.4
NNW	0	0.0	5	0.2	6	0.3	5	0.2	15	0.7	11	0.5	3	0.1	45	2.1
	0	0.0	19	0.9	84	3.9	174	8.1	225	10.4	153	7.1	71	3.3	726	33.7

MEAN WIND SPEED: 15.2
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -0.4 TO 1.5 DEG C/100M
CLASS E

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	5	0.2	9	0.4	36	1.7	11	0.5	3	0.1	64	3.0
NNE	0	0.0	1	0.0	5	0.2	19	0.9	19	0.9	8	0.4	0	0.0	52	2.4
NE	0	0.0	0	0.0	4	0.2	16	0.7	12	0.6	0	0.0	0	0.0	32	1.5
ENE	0	0.0	0	0.0	5	0.2	14	0.6	4	0.2	1	0.0	1	0.0	25	1.2
E	0	0.0	0	0.0	7	0.3	11	0.5	8	0.4	3	0.1	0	0.0	29	1.3
ESE	0	0.0	2	0.1	1	0.0	7	0.3	4	0.2	0	0.0	1	0.0	15	0.7
SE	0	0.0	1	0.0	7	0.3	8	0.4	7	0.3	13	0.6	2	0.1	38	1.8
SSE	0	0.0	2	0.1	5	0.2	12	0.6	7	0.3	6	0.3	2	0.1	34	1.6
S	0	0.0	3	0.1	4	0.2	9	0.4	5	0.2	1	0.0	0	0.0	22	1.0
SSW	0	0.0	2	0.1	6	0.3	4	0.2	7	0.3	2	0.1	0	0.0	21	1.0
SW	0	0.0	2	0.1	6	0.3	13	0.6	26	1.2	5	0.2	0	0.0	52	2.4
WSW	0	0.0	1	0.0	6	0.3	23	1.1	23	1.1	3	0.1	0	0.0	56	2.6
W	0	0.0	2	0.1	6	0.3	16	0.7	29	1.3	3	0.1	0	0.0	56	2.6
WNW	0	0.0	2	0.1	8	0.4	17	0.8	31	1.4	6	0.3	1	0.0	65	3.0
NW	0	0.0	5	0.2	2	0.1	8	0.4	42	1.9	31	1.4	2	0.1	90	4.2
NNW	0	0.0	17	0.8	1	0.0	5	0.2	31	1.4	21	1.0	4	0.2	79	3.7
	0	0.0	40	1.9	78	3.6	191	8.9	291	13.5	114	5.3	16	0.7	730	33.8

MEAN WIND SPEED: 13.4
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: 1.6 TO 4.0 DEG C/100M
CLASS F

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	1	0.0	0	0.0	7	0.3	10	0.5	0	0.0	0	0.0	18	0.8
NNE	0	0.0	0	0.0	4	0.2	0	0.0	13	0.6	1	0.0	0	0.0	18	0.8
NE	0	0.0	2	0.1	2	0.1	2	0.1	1	0.0	0	0.0	0	0.0	7	0.3
ENE	0	0.0	2	0.1	3	0.1	3	0.1	2	0.1	0	0.0	0	0.0	10	0.5
E	0	0.0	1	0.0	3	0.1	5	0.2	2	0.1	0	0.0	0	0.0	11	0.5
ESE	0	0.0	1	0.0	3	0.1	6	0.3	1	0.0	0	0.0	0	0.0	11	0.5
SE	0	0.0	0	0.0	1	0.0	6	0.3	10	0.5	7	0.3	1	0.0	25	1.2
SSE	0	0.0	0	0.0	4	0.2	15	0.7	8	0.4	5	0.2	2	0.1	34	1.6
S	0	0.0	0	0.0	1	0.0	3	0.1	8	0.4	5	0.2	0	0.0	17	0.8
SSW	0	0.0	2	0.1	0	0.0	3	0.1	16	0.7	4	0.2	0	0.0	25	1.2
SW	0	0.0	0	0.0	1	0.0	1	0.0	1	0.0	0	0.0	0	0.0	3	0.1
WSW	0	0.0	2	0.1	1	0.0	3	0.1	3	0.1	0	0.0	0	0.0	9	0.4
W	0	0.0	2	0.1	4	0.2	5	0.2	9	0.4	0	0.0	0	0.0	20	0.9
WNW	0	0.0	0	0.0	0	0.0	1	0.0	2	0.1	0	0.0	0	0.0	3	0.1
NW	0	0.0	0	0.0	0	0.0	0	0.0	4	0.2	0	0.0	0	0.0	4	0.2
NNW	0	0.0	0	0.0	2	0.1	2	0.1	7	0.3	0	0.0	0	0.0	11	0.5
	0	0.0	13	0.6	29	1.3	62	2.9	97	4.5	22	1.0	3	0.1	226	10.5

MEAN WIND SPEED: 12.6
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: GT 4.0 DEG C/100M
CLASS G

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	2	0.1	1	0.0	0	0.0	0	0.0	0	0.0	3	0.1
NNE	0	0.0	0	0.0	0	0.0	4	0.2	1	0.0	0	0.0	0	0.0	5	0.2
NE	0	0.0	1	0.0	1	0.0	2	0.1	1	0.0	0	0.0	0	0.0	5	0.2
ENE	0	0.0	1	0.0	3	0.1	4	0.2	1	0.0	0	0.0	0	0.0	9	0.4
E	0	0.0	1	0.0	4	0.2	5	0.2	0	0.0	0	0.0	0	0.0	10	0.5
ESE	0	0.0	0	0.0	1	0.0	3	0.1	2	0.1	1	0.0	0	0.0	7	0.3
SE	0	0.0	0	0.0	1	0.0	5	0.2	1	0.0	5	0.2	0	0.0	12	0.6
SSE	0	0.0	3	0.1	0	0.0	4	0.2	2	0.1	23	1.1	34	1.6	66	3.1
S	0	0.0	3	0.1	0	0.0	3	0.1	8	0.4	9	0.4	3	0.1	26	1.2
SSW	0	0.0	0	0.0	0	0.0	1	0.0	10	0.5	1	0.0	0	0.0	12	0.6
SW	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
WSW	0	0.0	0	0.0	1	0.0	6	0.3	6	0.3	3	0.1	0	0.0	16	0.7
W	0	0.0	3	0.1	3	0.1	2	0.1	3	0.1	0	0.0	0	0.0	11	0.5
WNW	0	0.0	0	0.0	0	0.0	5	0.2	0	0.0	0	0.0	0	0.0	5	0.2
NW	0	0.0	1	0.0	2	0.1	1	0.0	0	0.0	0	0.0	0	0.0	4	0.2
NNW	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1
	0	0.0	14	0.6	19	0.9	47	2.2	35	1.6	42	1.9	37	1.7	194	9.0

MEAN WIND SPEED: 17.4
MISSING: 0

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

ALL STABILITY CLASSES

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	2	0.1	14	0.6	31	1.4	67	3.1	19	0.9	3	0.1	136	6.3
NNE	0	0.0	2	0.1	18	0.8	49	2.3	54	2.5	9	0.4	0	0.0	132	6.1
NE	0	0.0	3	0.1	17	0.8	60	2.8	39	1.8	0	0.0	0	0.0	119	5.5
ENE	0	0.0	3	0.1	16	0.7	34	1.6	17	0.8	1	0.0	1	0.0	72	3.3
E	0	0.0	2	0.1	18	0.8	29	1.3	10	0.5	3	0.1	0	0.0	62	2.9
ESE	0	0.0	3	0.1	11	0.5	20	0.9	8	0.4	1	0.0	1	0.0	44	2.0
SE	0	0.0	2	0.1	19	0.9	24	1.1	26	1.2	28	1.3	7	0.3	106	4.9
SSE	0	0.0	7	0.3	12	0.6	41	1.9	26	1.2	49	2.3	40	1.9	175	8.1
S	0	0.0	7	0.3	10	0.5	26	1.2	26	1.2	15	0.7	3	0.1	87	4.0
SSW	0	0.0	4	0.2	10	0.5	16	0.7	37	1.7	10	0.5	0	0.0	77	3.6
SW	0	0.0	4	0.2	9	0.4	20	0.9	32	1.5	5	0.2	0	0.0	70	3.2
WSW	0	0.0	4	0.2	16	0.7	49	2.3	64	3.0	23	1.1	4	0.2	160	7.4
W	0	0.0	7	0.3	25	1.2	57	2.6	94	4.4	44	2.0	19	0.9	246	11.4
WNW	0	0.0	2	0.1	18	0.8	42	1.9	74	3.4	38	1.8	44	2.0	218	10.1
NW	0	0.0	16	0.7	8	0.4	16	0.7	98	4.5	115	5.3	25	1.2	278	12.9
NNW	0	0.0	27	1.3	12	0.6	14	0.6	74	3.4	39	1.8	9	0.4	175	8.1
	0	0.0	95	4.4	233	10.8	528	24.5	746	34.6	399	18.5	156	7.2	2157	100.0

MISSING HOURS: 3

MEAN WIND SPEED: 14.6

ARTIFICIAL ISLAND 1/95 - 3/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

DIRECTION VS SPEED ONLY

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	2	0.1	14	0.6	31	1.4	67	3.1	19	0.9	3	0.1	136	6.3
NNE	0	0.0	2	0.1	18	0.8	49	2.3	54	2.5	9	0.4	0	0.0	132	6.1
NE	0	0.0	3	0.1	17	0.8	60	2.8	41	1.9	0	0.0	0	0.0	121	5.6
ENE	0	0.0	3	0.1	16	0.7	34	1.6	17	0.8	1	0.0	1	0.0	72	3.3
E	0	0.0	2	0.1	18	0.8	29	1.3	10	0.5	3	0.1	0	0.0	62	2.9
ESE	0	0.0	3	0.1	11	0.5	20	0.9	8	0.4	1	0.0	1	0.0	44	2.0
SE	0	0.0	2	0.1	19	0.9	24	1.1	26	1.2	28	1.3	7	0.3	106	4.9
SSE	0	0.0	7	0.3	12	0.6	41	1.9	26	1.2	49	2.3	40	1.9	175	8.1
S	0	0.0	7	0.3	10	0.5	26	1.2	26	1.2	15	0.7	3	0.1	87	4.0
SSW	0	0.0	4	0.2	10	0.5	16	0.7	37	1.7	10	0.5	0	0.0	77	3.6
SW	0	0.0	4	0.2	9	0.4	20	0.9	32	1.5	5	0.2	0	0.0	70	3.2
WSW	0	0.0	4	0.2	16	0.7	49	2.3	64	3.0	23	1.1	4	0.2	160	7.4
W	0	0.0	7	0.3	25	1.2	57	2.6	94	4.4	44	2.0	19	0.9	246	11.4
WNW	0	0.0	2	0.1	18	0.8	42	1.9	74	3.4	38	1.8	44	2.0	218	10.1
NW	0	0.0	16	0.7	8	0.4	16	0.7	98	4.5	115	5.3	25	1.2	278	12.9
NNW	0	0.0	27	1.3	12	0.6	14	0.6	75	3.5	39	1.8	9	0.4	176	8.1
	0	0.0	95	4.4	233	10.8	528	24.4	749	34.7	399	18.5	156	7.2	2160	100.0

MISSING HOURS: 0

MEAN WIND SPEED: 14.6

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: LE -1.9 DEG C/100M
CLASS A

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	1	0.0	0	0.0	3	0.1
NNE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ENE	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SE	0	0.0	0	0.0	1	0.0	0	0.0	3	0.1	2	0.1	3	0.1	9	0.4
SSE	0	0.0	2	0.1	2	0.1	4	0.2	4	0.2	4	0.2	0	0.0	16	0.7
S	0	0.0	0	0.0	3	0.1	4	0.2	0	0.0	0	0.0	0	0.0	7	0.3
SSW	0	0.0	2	0.1	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1
SW	0	0.0	0	0.0	3	0.1	5	0.2	1	0.0	0	0.0	0	0.0	9	0.4
WSW	0	0.0	0	0.0	3	0.1	8	0.4	0	0.0	1	0.0	0	0.0	12	0.5
W	0	0.0	0	0.0	0	0.0	2	0.1	7	0.3	0	0.0	0	0.0	9	0.4
WNW	0	0.0	0	0.0	0	0.0	2	0.1	4	0.2	8	0.4	1	0.0	15	0.7
NW	0	0.0	0	0.0	0	0.0	5	0.2	23	1.1	12	0.5	2	0.1	42	1.9
NNW	0	0.0	0	0.0	0	0.0	1	0.0	13	0.6	6	0.3	1	0.0	21	1.0
	0	0.0	4	0.2	13	0.6	33	1.5	57	2.6	34	1.6	7	0.3	148	6.8

MEAN WIND SPEED: 15.1
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.8 TO -1.7 DEG C/100M
CLASS B

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	1	0.0	7	0.3	5	0.2	1	0.0	0	0.0	14	0.6
NNE	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	2	0.1
NE	0	0.0	0	0.0	3	0.1	7	0.3	2	0.1	0	0.0	0	0.0	12	0.5
ENE	0	0.0	0	0.0	2	0.1	1	0.0	0	0.0	0	0.0	0	0.0	3	0.1
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	2	0.1
SE	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0	1	0.0	2	0.1	5	0.2
SSE	0	0.0	0	0.0	6	0.3	4	0.2	3	0.1	3	0.1	2	0.1	18	0.8
S	0	0.0	0	0.0	2	0.1	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1
SSW	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SW	0	0.0	0	0.0	2	0.1	5	0.2	6	0.3	0	0.0	0	0.0	13	0.6
WSW	0	0.0	0	0.0	4	0.2	2	0.1	0	0.0	3	0.1	1	0.0	10	0.5
W	0	0.0	0	0.0	3	0.1	3	0.1	2	0.1	0	0.0	0	0.0	8	0.4
WNW	0	0.0	0	0.0	2	0.1	2	0.1	1	0.0	0	0.0	1	0.0	6	0.3
NW	0	0.0	0	0.0	1	0.0	6	0.3	13	0.6	9	0.4	0	0.0	29	1.3
NNW	0	0.0	0	0.0	0	0.0	7	0.3	10	0.5	2	0.1	1	0.0	20	0.9
	0	0.0	0	0.0	28	1.3	48	2.2	43	2.0	19	0.9	7	0.3	145	6.6

MEAN WIND SPEED: 13.2
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.6 TO -1.5 DEG C/100M
CLASS C

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	1	0.0	6	0.3	3	0.1	1	0.0	0	0.0	11	0.5
NNE	0	0.0	0	0.0	1	0.0	6	0.3	4	0.2	0	0.0	0	0.0	11	0.5
NE	0	0.0	0	0.0	2	0.1	7	0.3	0	0.0	0	0.0	0	0.0	9	0.4
ENE	0	0.0	0	0.0	1	0.0	6	0.3	0	0.0	3	0.1	0	0.0	10	0.5
E	0	0.0	0	0.0	2	0.1	3	0.1	0	0.0	0	0.0	0	0.0	5	0.2
ESE	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SE	0	0.0	0	0.0	3	0.1	1	0.0	2	0.1	1	0.0	4	0.2	11	0.5
SSE	0	0.0	1	0.0	1	0.0	1	0.0	2	0.1	5	0.2	0	0.0	10	0.5
S	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0	2	0.1
SSW	0	0.0	0	0.0	4	0.2	1	0.0	0	0.0	0	0.0	0	0.0	5	0.2
SW	0	0.0	0	0.0	2	0.1	2	0.1	5	0.2	1	0.0	1	0.0	11	0.5
WSW	0	0.0	0	0.0	3	0.1	2	0.1	1	0.0	1	0.0	1	0.0	8	0.4
W	0	0.0	0	0.0	3	0.1	1	0.0	1	0.0	0	0.0	0	0.0	5	0.2
WNW	0	0.0	0	0.0	1	0.0	2	0.1	2	0.1	1	0.0	1	0.0	7	0.3
NW	0	0.0	0	0.0	2	0.1	4	0.2	9	0.4	6	0.3	0	0.0	21	1.0
NNW	0	0.0	0	0.0	3	0.1	6	0.3	2	0.1	1	0.0	0	0.0	12	0.5
	0	0.0	1	0.0	31	1.4	49	2.2	31	1.4	20	0.9	7	0.3	139	6.4

MEAN WIND SPEED: 12.9
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -1.4 TO -0.5 DEG C/100M
CLASS D

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	2	0.1	8	0.4	13	0.6	14	0.6	2	0.1	39	1.8
NNE	0	0.0	1	0.0	3	0.1	6	0.3	19	0.9	13	0.6	1	0.0	43	2.0
NE	0	0.0	0	0.0	13	0.6	34	1.6	12	0.5	11	0.5	2	0.1	72	3.3
ENE	0	0.0	1	0.0	13	0.6	26	1.2	55	2.5	7	0.3	0	0.0	102	4.7
E	0	0.0	1	0.0	16	0.7	21	1.0	5	0.2	0	0.0	0	0.0	43	2.0
ESE	0	0.0	0	0.0	4	0.2	6	0.3	18	0.8	3	0.1	0	0.0	31	1.4
SE	0	0.0	1	0.0	4	0.2	14	0.6	24	1.1	23	1.1	8	0.4	74	3.4
SSE	0	0.0	3	0.1	10	0.5	20	0.9	51	2.3	28	1.3	9	0.4	121	5.5
S	0	0.0	5	0.2	14	0.6	20	0.9	17	0.8	12	0.5	0	0.0	68	3.1
SSW	0	0.0	2	0.1	5	0.2	9	0.4	8	0.4	2	0.1	1	0.0	27	1.2
SW	0	0.0	1	0.0	8	0.4	11	0.5	9	0.4	5	0.2	3	0.1	37	1.7
WSW	0	0.0	1	0.0	7	0.3	4	0.2	12	0.5	0	0.0	0	0.0	24	1.1
W	0	0.0	0	0.0	14	0.6	10	0.5	1	0.0	1	0.0	1	0.0	27	1.2
WNW	0	0.0	1	0.0	7	0.3	8	0.4	7	0.3	4	0.2	1	0.0	28	1.3
NW	0	0.0	1	0.0	2	0.1	4	0.2	27	1.2	17	0.8	4	0.2	55	2.5
NNW	0	0.0	0	0.0	2	0.1	7	0.3	7	0.3	14	0.6	7	0.3	37	1.7
	0	0.0	18	0.8	124	5.7	208	9.5	285	13.0	154	7.1	39	1.8	828	37.9

MEAN WIND SPEED: 14.0
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: -0.4 TO 1.5 DEG C/100M
CLASS E

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	9	0.1	5	0.2	14	0.6	4	0.2	1	0.0	33	1.5
NNE	0	0.0	0	0.0	3	0.1	8	0.4	10	0.5	9	0.4	0	0.0	30	1.4
NE	0	0.0	3	0.1	6	0.3	5	0.2	8	0.4	2	0.1	0	0.0	24	1.1
ENE	0	0.0	1	0.0	8	0.4	10	0.5	4	0.2	0	0.0	0	0.0	23	1.1
E	0	0.0	2	0.1	9	0.4	22	1.0	4	0.2	0	0.0	0	0.0	37	1.7
ESE	0	0.0	2	0.1	6	0.3	13	0.6	11	0.5	4	0.2	0	0.0	36	1.6
SE	0	0.0	1	0.0	6	0.3	7	0.3	12	0.5	7	0.3	1	0.0	34	1.6
SSE	0	0.0	2	0.1	12	0.5	9	0.4	17	0.8	7	0.3	8	0.4	55	2.5
S	0	0.0	4	0.2	5	0.2	8	0.4	18	0.8	12	0.5	3	0.1	50	2.3
SSW	0	0.0	1	0.0	5	0.2	11	0.5	17	0.8	17	0.8	4	0.2	55	2.5
SW	0	0.0	2	0.1	3	0.1	16	0.7	26	1.2	15	0.7	5	0.2	67	3.1
WSW	0	0.0	2	0.1	2	0.1	11	0.5	24	1.1	4	0.2	1	0.0	44	2.0
W	0	0.0	3	0.1	9	0.4	13	0.6	12	0.5	0	0.0	0	0.0	37	1.7
WNW	0	0.0	5	0.2	9	0.4	13	0.6	22	1.0	3	0.1	0	0.0	52	2.4
NW	0	0.0	2	0.1	6	0.3	14	0.6	33	1.5	22	1.0	1	0.0	78	3.6
NNW	0	0.0	3	0.1	3	0.1	8	0.4	24	1.1	13	0.6	6	0.3	57	2.6
	0	0.0	33	1.5	101	4.6	173	7.9	256	11.7	119	5.4	30	1.4	712	32.6

MEAN WIND SPEED: 13.6
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: 1.6 TO 4.0 DEG C/100M
CLASS F

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	1	0.0	0	0.0	9	0.4	4	0.2	0	0.0	14	0.6
NNE	0	0.0	0	0.0	1	0.0	1	0.0	10	0.5	1	0.0	0	0.0	13	0.6
NE	0	0.0	0	0.0	3	0.1	0	0.0	2	0.1	3	0.1	0	0.0	8	0.4
ENE	0	0.0	2	0.1	2	0.1	5	0.2	2	0.1	0	0.0	0	0.0	11	0.5
E	0	0.0	2	0.1	5	0.2	1	0.0	0	0.0	0	0.0	0	0.0	8	0.4
ESE	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SE	0	0.0	2	0.1	2	0.1	0	0.0	0	0.0	1	0.0	0	0.0	5	0.2
SSE	0	0.0	1	0.0	4	0.2	7	0.3	2	0.1	0	0.0	0	0.0	14	0.6
S	0	0.0	0	0.0	2	0.1	1	0.0	8	0.4	2	0.1	1	0.0	14	0.6
SSW	0	0.0	1	0.0	3	0.1	5	0.2	8	0.4	3	0.1	1	0.0	21	1.0
SW	0	0.0	1	0.0	1	0.0	6	0.3	8	0.4	0	0.0	0	0.0	16	0.7
WSW	0	0.0	1	0.0	1	0.0	1	0.0	14	0.6	9	0.4	0	0.0	26	1.2
W	0	0.0	0	0.0	1	0.0	2	0.1	5	0.2	2	0.1	0	0.0	10	0.5
WNW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NW	0	0.0	1	0.0	1	0.0	4	0.2	2	0.1	0	0.0	0	0.0	8	0.4
NNW	0	0.0	2	0.1	1	0.0	0	0.0	9	0.4	1	0.0	0	0.0	13	0.6
	0	0.0	14	0.6	28	1.3	33	1.5	79	3.6	26	1.2	2	0.1	182	8.3

MEAN WIND SPEED: 13.0
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

LAPSE RATE: GT 4.0 DEG C/100M
CLASS G

WIND SPEED GROUPS (MPH)

DIRECTION	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM	PERCENT
	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	3	0.1	0	0.0	5	0.2
NNE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ENE	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
E	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ESE	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
SE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SSE	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	1	0.0	2	0.1
S	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1	2	0.1	2	0.1	7	0.3
SSW	0	0.0	0	0.0	0	0.0	3	0.1	2	0.1	0	0.0	0	0.0	5	0.2
SW	0	0.0	0	0.0	1	0.0	4	0.2	0	0.0	0	0.0	0	0.0	5	0.2
WSW	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
W	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	1	0.0
WNW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NW	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
NNW	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	0	0.0	0	0.0	2	0.1
	0	0.0	1	0.0	2	0.1	9	0.4	10	0.5	5	0.2	3	0.1	30	1.4

MEAN WIND SPEED: 16.0
MISSING: 0

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

ALL STABILITY CLASSES

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM	PERCENT
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	14	0.6	26	1.2	48	2.2	28	1.3	3	0.1	119	5.4
NNE	0	0.0	1	0.0	8	0.4	22	1.0	44	2.0	23	1.1	1	0.0	99	4.5
NE	0	0.0	3	0.1	27	1.2	53	2.4	24	1.1	16	0.7	2	0.1	125	5.7
ENE	0	0.0	4	0.2	27	1.2	49	2.2	61	2.8	10	0.5	0	0.0	151	6.9
E	0	0.0	5	0.2	32	1.5	47	2.2	9	0.4	0	0.0	0	0.0	93	4.3
ESE	0	0.0	4	0.2	12	0.5	21	1.0	29	1.3	7	0.3	0	0.0	73	3.3
SE	0	0.0	4	0.2	16	0.7	24	1.1	41	1.9	35	1.6	18	0.8	138	6.3
SSE	0	0.0	9	0.4	35	1.6	45	2.1	80	3.7	47	2.2	20	0.9	236	10.8
S	0	0.0	9	0.4	27	1.2	34	1.6	46	2.1	28	1.3	6	0.3	150	6.9
SSW	0	0.0	6	0.3	19	0.9	29	1.3	35	1.6	22	1.0	6	0.3	117	5.4
SW	0	0.0	4	0.2	20	0.9	49	2.2	55	2.5	21	1.0	9	0.4	158	7.2
WSW	0	0.0	4	0.2	20	0.9	29	1.3	51	2.3	18	0.8	3	0.1	125	5.7
W	0	0.0	3	0.1	30	1.4	31	1.4	29	1.3	3	0.1	1	0.0	97	4.4
WNW	0	0.0	6	0.3	19	0.9	27	1.2	36	1.6	16	0.7	4	0.2	108	4.9
NW	0	0.0	4	0.2	12	0.5	37	1.7	107	4.9	66	3.0	7	0.3	233	10.7
NNW	0	0.0	5	0.2	9	0.4	30	1.4	66	3.0	37	1.7	15	0.7	162	7.4
	0	0.0	71	3.3	327	15.0	553	25.3	761	34.8	377	17.3	95	4.3	2184	100.0

MISSING HOURS: 0

MEAN WIND SPEED: 13.8

ARTIFICIAL ISLAND 4/95 - 6/95

JOINT DISTRIBUTION OF WIND DIRECTION AND SPEED
BY ATMOSPHERIC STABILITY CLASS
WIND: 300 FT
DELTA T: (300-33FT)

DIRECTION VS SPEED ONLY

WIND SPEED GROUPS (MPH)

	0.0-0.5		0.6-3.5		3.6-7.5		7.6-12.5		12.6-18.5		18.6-24.5		GE 24.6		SUM PERCENT	
DIRECTION	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT	SUM	PERCENT		
N	0	0.0	0	0.0	14	0.6	26	1.2	48	2.2	28	1.3	3	0.1	119	5.4
NNE	0	0.0	1	0.0	8	0.4	22	1.0	44	2.0	23	1.1	1	0.0	99	4.5
NE	0	0.0	3	0.1	27	1.2	53	2.4	24	1.1	16	0.7	2	0.1	125	5.7
ENE	0	0.0	4	0.2	27	1.2	49	2.2	61	2.8	10	0.5	0	0.0	151	6.9
E	0	0.0	5	0.2	32	1.5	47	2.2	9	0.4	0	0.0	0	0.0	93	4.3
ESE	0	0.0	4	0.2	12	0.5	21	1.0	29	1.3	7	0.3	0	0.0	73	3.3
SE	0	0.0	4	0.2	16	0.7	24	1.1	41	1.9	35	1.6	18	0.8	138	6.3
SSE	0	0.0	9	0.4	35	1.6	45	2.1	80	3.7	47	2.2	20	0.9	236	10.8
S	0	0.0	9	0.4	27	1.2	34	1.6	46	2.1	28	1.3	6	0.3	150	6.9
SSW	0	0.0	6	0.3	19	0.9	29	1.3	35	1.6	22	1.0	6	0.3	117	5.4
SW	0	0.0	4	0.2	20	0.9	49	2.2	55	2.5	21	1.0	9	0.4	158	7.2
WSW	0	0.0	4	0.2	20	0.9	29	1.3	51	2.3	18	0.8	3	0.1	125	5.7
W	0	0.0	3	0.1	30	1.4	31	1.4	29	1.3	3	0.1	1	0.0	97	4.4
WNW	0	0.0	6	0.3	19	0.9	27	1.2	36	1.6	16	0.7	4	0.2	108	4.9
NW	0	0.0	4	0.2	12	0.5	37	1.7	107	4.9	66	3.0	7	0.3	233	10.7
NNW	0	0.0	5	0.2	9	0.4	30	1.4	66	3.0	37	1.7	15	0.7	162	7.4
	0	0.0	71	3.3	327	15.0	553	25.3	761	34.8	377	17.3	95	4.3	2184	100.0

MISSING HOURS: 0

MEAN WIND SPEED: 13.8

AMENDMENT TO RERR - 37

8.0 MODIFICATION TO PREVIOUS RADIOACTIVE EFFLUENT RELEASE REPORTS

Our last report (RERR-36) did not include the quarterly Sr-89, Sr-90 and Fe-55 composite data for the second quarter of 1994. Amended pages to RERR-36 are included at the end of this report.

PART B. GASEOUS EFFLUENTS

See Summary Tables 1A-1 thru 1C for Salem Unit 1 Operations.
See Summary Tables 1A-2 thru 1C for Salem Unit 2 Operations.

PART C. LIQUID EFFLUENTS

See Summary Tables 2A-1 thru 2B for Salem Unit 1 Operations.
See Summary Tables 2A-2 thru 2B for Salem Unit 2 Operations.

PART D. SOLID WASTE

See Summary in Table 3.

PART E. RADIOLOGICAL IMPACT ON MAN

The calculated individual doses in this section are based on actual locations of nearby residents and farms. The population dose impact is based on historical site specific data i.e., food production, milk production, feed for milk animals and seafood production.

The doses were calculated using methods described in Regulatory Guide 1.109 and represent calculations for the six month reporting interval. Individual doses from batch and continuous releases were calculated using the annual average historic meteorological dispersion coefficients as described in the Offsite Dose Calculation Manual. Population doses were calculated using the meteorological dispersion coefficients for the six month reporting interval.

Liquid Pathways

Doses to "maximum hypothetical individuals" in the population from liquid releases are primarily from the seafood ingestion pathway. Calculated doses to individuals are as shown below:

Total body dose to the individual: 5.85E-01 mrem
Highest organ dose (GI-LLI): 8.54E-01 mrem

Dose to the 4.5 million individuals living within the 50 mile radius of the plant site:

Total population dose: 7.44E-02 person-rem

Average population dose: 1.65E-05 mrem/person

Air Pathways

The calculated doses to "maximum hypothetical individuals" via the air pathway are shown below:

Total body dose: 1.07E-02 mrem

Skin dose: 2.60E-02 mrem

Highest organ dose due to radioiodines and particulates with half lives greater than 8 days:

1.71E-02 mrem to the Thyroid.

Dose to the 4.5 million individuals living within the 50 mile radius of the plant site:

Total population dose: 1.84E-01 person-rem

Average population dose: 4.09E-05 mrem/person

Direct Radiation

Direct radiation may be estimated by thermoluminescent dosimetric (TLD) measurements. One method for comparing TLD measurements is by comparison with preoperational data. It should be noted that the TLDs measure direct radiation from both the Salem and Hope Creek Generating Stations at Artificial Island, as well as natural background radiation.

TLD data for the six month reporting period is given below:

TLD	Location	Measurement
2S-2	0.3 mile	3.9 mrad/month
5S-1	0.9 mile	3.1 mrad/month

These values are interpreted to represent natural background. They are within the statistical variation associated with the pre-operational program results, which are: 3.7 mrad/month for location 2S-2, and 4.2 mrad/month for location 5S-1.

SALEM GENERATING STATION
TABLE 2A-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JULY - DECEMBER 1994
UNIT 1
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	3rd Quarter	4th Quarter	Est. Total Error %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	7.14E-01	7.81E-01	25
2. Average diluted concentration during period of release	uCi/mL	1.73E-07	1.67E-07	
3. Percent of technical specification limit (T.S. 3.11.1.2.(a))	%	1.43E+01	7.06E+00	
B. Tritium				
1. Total release	Ci	1.74E+02	8.43E+01	25
2. Average diluted concentration during period	uCi/mL	4.21E-05	1.80E-05	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	1.40E+00	6.02E-01	
C. Dissolved and entrained noble gases				
1. Total release	Ci	3.21E-01	1.56E-01	25
2. Average diluted concentration during period	uCi/mL	7.79E-08	3.35E-08	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	3.90E-02	1.67E-02	
D. Gross alpha activity				
1. Total release	Ci	0.00E+00	0.00E+00	25
E. Volume of waste release (prior to dilution - Batch Release)	liters	1.79E+06	1.74E+06	25
F. Volume of dilution water used during entire period	liters	5.19E+11	4.80E+11	25

SALEM GENERATING STATION
TABLE 2A-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JULY - DECEMBER 1994
UNIT 2
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Units	3rd Quarter	4th Quarter	Est. Total Error %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	7.76E-01	5.40E-01	25
2. Average diluted concentration during period	uCi/mL	1.79E-07	1.01E-07	
3. Percent of technical specification limit (T.S. 3.11.1.2.(a))	%	1.38E+01	3.94E+00	
B. Tritium				
1. Total release	Ci	1.67E+02	7.44E+01	25
2. Average diluted concentration during period	uCi/mL	3.85E-05	1.39E-05	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	1.28E+00	4.64E-01	
C. Dissolved and entrained noble gases				
1. Total release	Ci	1.25E-01	1.19E-01	25
2. Average diluted concentration during period	uCi/mL	2.89E-08	2.22E-08	
3. Percent of technical specification limit (T.S. 3.11.1.1)	%	1.44E-02	1.11E-02	
D. Gross alpha activity				
1. Total release	Ci	0.00E+00	0.00E+00	25
E. Volume of waste release (prior to dilution - Batch Release)	liters	1.93E+06	1.90E+06	25
F. Volume of dilution water used during entire period	liters	4.86E+11	9.34E+10	25

SALEM GENERATING STATION
TABLE 2B-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JULY - DECEMBER 1994

LIQUID EFFLUENTS UNIT 1

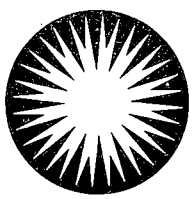
		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
Sodium-24	Ci	0.00E+00	0.00E+00	2.40E-05	1.38E-04
Chromium-51	Ci	0.00E+00	0.00E+00	0.00E+00	2.02E-03
Manganese-54	Ci	0.00E+00	0.00E+00	1.58E-03	6.66E-03
Iron-55	Ci	0.00E+00	0.00E+00	4.65E-02	1.27E-02
Iron-59	Ci	0.00E+00	0.00E+00	1.03E-03	4.78E-04
Cobalt-57	Ci	0.00E+00	0.00E+00	3.60E-04	1.66E-03
Cobalt-58	Ci	0.00E+00	0.00E+00	4.82E-02	3.50E-01
Cobalt-60	Ci	0.00E+00	0.00E+00	1.64E-02	6.87E-02
Niobium-95	Ci	0.00E+00	0.00E+00	0.00E+00	1.12E-03
Zirconium-95	Ci	0.00E+00	0.00E+00	0.00E+00	5.97E-04
Niobium-97	Ci	0.00E+00	0.00E+00	4.70E-04	1.32E-04
Silver-110m	Ci	0.00E+00	0.00E+00	1.39E-03	3.61E-04
Antimony-122	Ci	0.00E+00	0.00E+00	0.00E+00	5.35E-04
Antimony-124	Ci	0.00E+00	0.00E+00	1.08E-03	1.24E-02
Antimony-125	Ci	0.00E+00	0.00E+00	2.21E-02	3.27E-02
Antimony-126	Ci	0.00E+00	0.00E+00	0.00E+00	6.18E-05
Iodine-131	Ci	0.00E+00	0.00E+00	1.59E-03	1.60E-02
Iodine-133	Ci	0.00E+00	0.00E+00	0.00E+00	1.88E-04
Cesium-134	Ci	0.00E+00	0.00E+00	2.46E-01	1.15E-01
Cesium-136	Ci	0.00E+00	0.00E+00	1.01E-03	4.73E-04
Cesium-137	Ci	0.00E+00	0.00E+00	3.26E-01	1.57E-01
Cesium-138	Ci	0.00E+00	0.00E+00	0.00E+00	2.72E-05
Barium-140	Ci	0.00E+00	0.00E+00	8.62E-05	0.00E+00
Lanthanum-140	Ci	0.00E+00	0.00E+00	5.42E-05	8.35E-05
Ruthenium-105	Ci	0.00E+00	0.00E+00	0.00E+00	1.35E-04
Molybdenum-99	Ci	0.00E+00	0.00E+00	0.00E+00	1.76E-04
Cerium-141	Ci	0.00E+00	0.00E+00	0.00E+00	4.24E-05
Tin-113	Ci	0.00E+00	0.00E+00	0.00E+00	4.91E-05
TOTALS	Ci	0.00E+00	0.00E+00	7.14E-01	7.81E-01
Tritium	Ci	0.00E+00	0.00E+00	1.74E+02	8.43E+01
Krypton-85m	Ci	0.00E+00	0.00E+00	0.00E+00	1.04E-04
Xenon-131m	Ci	0.00E+00	0.00E+00	0.00E+00	3.58E-04
Xenon-133m	Ci	0.00E+00	0.00E+00	2.76E-03	4.49E-04
Xenon-133	Ci	0.00E+00	0.00E+00	3.18E-01	1.53E-01
Xenon-135	Ci	0.00E+00	0.00E+00	1.18E-03	2.16E-03
TOTALS	Ci	0.00E+00	0.00E+00	1.74E+02	8.44E+01

SALEM GENERATING STATION
TABLE 2B-2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
JULY - DECEMBER 1994

LIQUID EFFLUENTS UNIT 2

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
Sodium-24	Ci	0.00E+00	0.00E+00	0.00E+00	3.30E-05
Chromium-51	Ci	0.00E+00	0.00E+00	0.00E+00	1.21E-03
Manganese-54	Ci	0.00E+00	0.00E+00	1.98E-03	5.39E-03
Iron-55	Ci	0.00E+00	0.00E+00	5.59E-02	1.14E-02
Iron-59	Ci	0.00E+00	0.00E+00	8.24E-04	1.47E-04
Cobalt-57	Ci	0.00E+00	0.00E+00	4.57E-04	1.43E-03
Cobalt-58	Ci	0.00E+00	0.00E+00	5.54E-02	2.98E-01
Cobalt-60	Ci	0.00E+00	0.00E+00	1.75E-02	4.84E-02
Strontium-90	Ci	0.00E+00	0.00E+00	1.52E-05	1.43E-05
Niobium-95	Ci	0.00E+00	0.00E+00	3.94E-05	7.08E-04
Zirconium-95	Ci	0.00E+00	0.00E+00	0.00E+00	4.79E-04
Niobium-97	Ci	0.00E+00	0.00E+00	5.68E-04	1.63E-04
Silver-110m	Ci	0.00E+00	0.00E+00	1.93E-03	8.33E-05
Antimony-124	Ci	0.00E+00	0.00E+00	1.19E-03	6.03E-03
Antimony-125	Ci	0.00E+00	0.00E+00	1.61E-02	1.95E-02
Antimony-126	Ci	0.00E+00	0.00E+00	0.00E+00	2.42E-06
Iodine-131	Ci	0.00E+00	0.00E+00	1.83E-03	5.56E-03
Iodine-133	Ci	0.00E+00	0.00E+00	7.35E-05	4.38E-05
Cesium-134	Ci	0.00E+00	0.00E+00	2.66E-01	5.93E-02
Cesium-136	Ci	0.00E+00	0.00E+00	1.10E-03	2.30E-04
Cesium-137	Ci	0.00E+00	4.46E-05	3.55E-01	8.19E-02
Lanthanum-140	Ci	0.00E+00	0.00E+00	5.87E-05	0.00E+00
TOTALS	Ci	0.00E+00	4.46E-05	7.76E-01	5.40E-01
Tritium	Ci	0.00E+00	0.00E+00	1.67E+02	7.44E+01
Krypton-85m	Ci	0.00E+00	0.00E+00	0.00E+00	3.27E-05
Xenon-131m	Ci	0.00E+00	0.00E+00	0.00E+00	1.25E-03
Xenon-133m	Ci	0.00E+00	0.00E+00	4.79E-04	3.98E-04
Xenon-133	Ci	0.00E+00	0.00E+00	1.24E-01	1.14E-01
Xenon-135	Ci	0.00E+00	0.00E+00	3.59E-04	3.05E-03
TOTALS		0.00E+00	0.00E+00	1.67E+02	7.46E+01



PSE&G

The Energy People