

DPR 70

REPORT NO. RERR-1

UNIT NO. 1
RADIOACTIVE EFFLUENT RELEASE REPORT
DECEMBER 11, 1976 - DECEMBER 31, 1976

SALEM NUCLEAR GENERATING STATION
Public Service Electric and Gas Company

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SALEM NUCLEAR GENERATING STATION
50-272

UNIT NO. 1
RADIOACTIVE EFFLUENT RELEASE REPORT
DECEMBER 11, 1976 - DECEMBER 31, 1976

INTRODUCTION

The Salem Nuclear Generating Station Unit 1 went critical on December 11, 1976. During most of December the plant was operating at less than 10% power. As a result of this the radiological impact of station operation was minimal. With the exception of several batch releases all sampling resulted in activity below the Lower Limit of Detection (LLD).

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

A Supplemental Information

Item A1 - Regulatory Limits

Part A. Fission and Activation Gases

These are Noble Gases

Our absolute instantaneous limits are: $2.0 Q_{tv} K_v < 1$
 $0.33 Q_{tv} (L_v + 1.1 N_v) < 1$
calculated to be 1.61 E6 microcuries/sec.
for the period of record

Our quarterly limits are: $13 Q_{tv} N_v < 1$
 $6.3 Q_{tv} M_v < 1$
calculated to be 5.92 E4 microcuries/sec.
for the period of record

Our twelve month limits are: $25 Q_{tv} N_v < 1$
 $13 Q_{tv} M_v < 1$
calculated to be 3.08 E4 microcuries/sec.
for the period of record

In addition, no gas decay tank may contain more than 41,000 curies. All symbols used are as stated in Section 2.3.3 of the Environmental Technical Specifications. The release limits for the Salem Nuclear Generating Station are not fixed numbers, but depend upon the radioactive isotopes present in the effluent.

Part B. Iodines

(Same as Part C)

Part C. Particulates, Half Live > 8 days

The regulatory limit for iodines and particulates is:

Our absolute instantaneous limit is: $1.5 \times 10^5 Q_v < 1$

Procedure for completing Attachment 1

Part C. (Continued)

Our quarterly 2 curies of I-131 and
limit is: $13 \times 1.5 \times 10^5 < 1$

Our twelve month $25 \times 1.5 \times 10^5 Q_v < 1$ and
limit is: 4 curies of I-31

All symbols used are as stated in Section 2.3.3 of the ETS.

Part D. Liquid Effluents

The regulatory limits for liquids are governed by 10CFR20, Appendix B, Table II Column 2.

In addition, the following limits apply:

At no time shall any radwaste tank contain more than 10 Ci of activity. Noble gases and tritium are excluded from this limit.

The cumulative release of radioactive effluents, excluding tritium and dissolved gases, shall be less than 10 Ci in a calendar quarter for each unit.

The cumulative release of radioactive effluents, excluding tritium and dissolved gases, shall be less than 20 Ci in any twelve consecutive months.

Item A2 - Maximum Permissible Concentrations

Provide the MPC's used in determining allowable release rates or concentrations.

- a. Fission Gases - No MPC limits used to determine the maximum release rate.
- b. Iodines - No MPC limits used to determine the maximum release rates.
- c. Particulates, Half Lives > 8 days - No MPC limit used to determine the maximum release rates.
- d. Liquid effluents - See 10CFR20, Appendix B, Table 11 Column 2.

Item A3 - Average Energy

Provide the average energy E of the radionuclide mixture in releases of fission and activation gases, if applicable.

Release limits are not based upon average energy.

Item A4 Measurements and Approximation of Total Radioactivity

1. Liquid effluents are monitored in accordance with Table 2.3-3 of the Salem Nuclear Generating Station Environmental Technical Specifications (ETS). During the period of record all waste from the chemical drain tank and the laundry and hot shower tanks were routed to the waste monitor holdup tanks. The tanks were then recirculated in order to produce uniform mixing and a sample was extracted and analyzed.
2. Gaseous effluent streams are monitored in accordance with Table 2.3-4 of the Salem Station ETS. The station's plant vent is the final release point of all planned gaseous effluents. This location is monitored continuously for noble gases by 4 Geiger-Mueller tubes and is sampled continuously for iodine and particulates with a charcoal cartridge and Cesco filter paper connected in series to a high volume air sampler. The filter and charcoal are changed weekly and counted in the laboratory. Sampling is also performed on all gas decay tanks released into the environs. The result of these analysis is used as the basis for the cumulative release of gaseous effluent into the environment. Tritium samples were taken by bubbling gas through water and then counting the tritiated water.
3. Overall error for gaseous releases estimated to be 10 percent. This error is a result of gas decay tank sampling and measurement only. All liquid measurement proved to be below the lower limit of detection. Therefore, error estimates are not provided.

Item A5 Batch Releases

Batch releases of gaseous and liquid effluent are provided in Tables 4A - 4C.

Item A6 Abnormal Releases

There were no abnormal releases to an unrestricted area during this period.

TABLE 1A
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (1976)
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	Unit	Quarter 3	Quarter 4	Est. Total Error %
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A. Fission & activation gases

1. Total release	Ci		8.9 E-5	10%
2. Average release rate for period	μCi/sec.		5.15 E-5	
3. Percent of Technical specification limit (See sets Spec. 2.3.3.2)	%		1.67 E-9	

B. Iodines

1. Total iodine-131	Ci		(1)	
2. Average release rate for period	μCi/sec.			
3. Percent of technical specification limit	%			

C. Particulates

1. Particulates with half-lives 8 days	Ci		(2)	
2. Average release rate for period	μCi/sec.			
3. Percent of technical specification limit	%			
4. Gross alpha radioactivity	Ci			

D. Tritium

1. Total release	Ci		1.46 E-5	10%
2. Average release rate for period	μCi/sec.		2.56 E-4 (3)	
3. Percent of technical specification	%		(4)	

- (1) No detectable levels of iodine 131 were present in releases for the period from December 11, 1976 to December 31, 1976. The detectable level for I 131 was approximately 2.54 E-14 uCi/ml during this period.
- (2) No detectable levels of particulate matter with half lives > 8 days were present in releases for the period of record (Dec. 11, 1976 to Dec. 31, 1976) The lower limit of detection for the principal gamma emitting particulate was 2.25 E-9 uCi/ml for CO-60.
- (3) Calculated during Batch Release only.
- (4) No Technical Specification Limits.

TABLE 1B

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1976)

GASEOUS EFFLUENTS-ELEVATED RELEASE

		CONTINUOUS MODE		BATCH MODE	
Nuclides Released	Unit	3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
1. Fission gases ¹					
Krypton-85	Ci				
Krypton-85m	Ci				
Krypton-87	Ci				
Krypton-88	Ci				
Xenon-133	Ci				8.90 E-5
Xenon-135	Ci				
Xenon-135M	Ci				
Xenon-138	Ci				
Others (specify)	Ci				
	Ci				
	Ci				
Unidentified	Ci				
Total for period	Ci				

2. Iodines ²

Iodine-131	Ci				
Iodine-133	Ci				
Iodine-135	Ci				
Total for period					

3. Particles

Strontium-89	Ci				
Strontium-90	Ci				
Cesium-134	Ci				
Cesium-137	Ci				
Barium-lanthanum-140	Ci				
Others (specify)	Ci				
	Ci				
	Ci				
Unidentified	Ci				

4. Tritium

	Ci				1.46 E-5
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- 1) Other than Xe 133 all fission gases were below detectable activity (Approximately less than 6.67 E-7 uCi/ml).
- 2) Weekly sampling of the plant vent has indicated that there is no detectable Iodine activity (Approximately less than $2.54 \text{-}14 \text{ uCi/ml}$ for I-131).

TABLE 1C

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1976

GASEOUS EFFLUENTS-GROUND-LEVEL RELEASES

Nuclides Releases	Unit	3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
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There were no Ground Level Releases for the Period of Record.

TABLE 2A

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (YEAR)

LIQUID EFFLUENTS—SUMMATION OF ALL RELEASES

	Unit	Quarter	Quarter	Est. Total Error, %
(1)				
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	. E	. E	. E
2. Average diluted concentration during period	$\mu\text{Ci/ml}$. E	. E	
3. Percent of applicable limit	%	. E	. E	
(2)				
B. Tritium				
1. Total release	Ci	. E	. E	. E
2. Average diluted concentration during period	$\mu\text{Ci/ml}$. E	. E	
3. Percent of applicable limit	%	. E	. E	
(1)				
C. Dissolved and entrained gases				
1. Total release	Ci	. E	. E	. E
2. Average diluted concentration during period	$\mu\text{Ci/ml}$. E	. E	
3. Percent of applicable limit	%	. E	. E	
(2)				
D. Gross alpha radioactivity				
1. Total release	Ci	. E	. E	. E
E. Volume of waste released (prior to dilution)				
	liters	. E	. E	. E
F. Volume of dilution water used during period				
	liters	. E	. E	. E

(1) No detectable levels of fission and activation products or dissolved and entrained gases have been detected. Lower Limit of Detection is approximately $1.00 \text{ E-8 } \mu\text{Ci/ml}$ (Co 60)

(2) The result of tritium analyzes and gross alpha activity which are composite samples of all releases for Dec. 1976, were not completed at the time of preparation of this report. This information shall be compiled and forwarded when completed.

TABLE 2B

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (YEAR)

LIQUID EFFLUENTS (1)

Nuclides Released	Unit	CONTINUOUS MODE		BATCH MODE	
		Quarter	Quarter	Quarter	Quarter
strontium-89	Ci	. E	. E	. E	. E
strontium-90	Ci	. E	. E	. E	. E
cesium-134	Ci	. E	. E	. E	. E
cesium-137	Ci	. E	. E	. E	. E
iodine-131	Ci	. E	. E	. E	. E
cobalt-58	Ci	. E	. E	. E	. E
cobalt-60	Ci	. E	. E	. E	. E
iron-59	Ci	. E	. E	. E	. E
zinc-65	Ci	. E	. E	. E	. E
manganese-54	Ci	. E	. E	. E	. E
chromium-51	Ci	. E	. E	. E	. E
zirconium-niobium-95	Ci	. E	. E	. E	. E
molybdenum-99	Ci	. E	. E	. E	. E
technetium-99m	Ci	. E	. E	. E	. E
barium-lanthanum-140	Ci	. E	. E	. E	. E
cerium-141	Ci	. E	. E	. E	. E
Other (specify)	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
	Ci	. E	. E	. E	. E
unidentified	Ci	. E	. E	. E	. E
Total for period (above)	Ci	. E	. E	. E	. E
xenon-133	Ci	. E	. E	. E	. E
xenon-135	Ci	. E	. E	. E	. E

(1) No detectable levels of fission and activation products have been detected lower than the Lower Limit of Detection (LLD) which is approximately $1.00 \text{ E-8 } \mu\text{Ci/ml}$ (Co 60).

TABLE 3
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1976
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

There were no solid waste or irradiated fuel shipments during this period of record.

TABLE 4A

SALEM NUCLEAR GENERATING STATION

SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODEBATCH RELEASES ONLY

1. Date (Month and year) December, 1976
2. Type of release (Cross out the one that does not apply)
~~Liquid~~
Gas
3. Number of releases during the month 8
4. Total time duration for all releases of type listed above 1.45E3
minutes
5. Maximum duration for releases of type listed above 2.60E2
minutes
6. Average duration for all releases of type listed above 1.80 E2
minutes
7. Minimum duration for release of type listed above 1.20 E2
minutes
8. For liquid batch releases only, provide the average stream flow
(dilution flow) during the period of release. N/A

TABLE 4B

SALEM NUCLEAR GENERATING STATION

SUMMARY SHEET FOR RADIOACTIVE EFFLUENTS RELEASED
IN A BATCH MODEBATCH RELEASES ONLY

1. Date (Month and year) December, 1976
2. Type of release (Cross out the one that does not apply)
Liquid
Gas
3. Number of releases during the month 10
4. Total time duration for all releases of type listed above 5.14 E3
minutes
5. Maximum duration for releases of type listed above 5.28 E2
minutes
6. Average duration for all releases of type listed above
5.14 E2
minutes
7. Minimum duration for release of type listed above 1.95 E2
minutes
8. For liquid batch releases only, provide the average stream
(dilution flow) during the period of release. 2.58 E5
Gal/Min.

TABLE 4C
LIQUID AND GASEOUS BATCH RELEASES
FROM
SALEM NUCLEAR GENERATING STATION - UNIT 1
DECEMBER 11, 1976 - DECEMBER 31, 1976

GASEOUS									
RELEASE NUMBER	REFER SAMPLE NUMBER	SOURCE LOCATION (1)	INITIAL PRESSURE (PSIG)	FINAL PRESSURE (PSIG)	DILUTION FLOW RATE RELEASE (FT ³ /MIN)	DATE START RELEASE	DATE STOP RELEASE	TIME START	TIME STOP
G76-021	12954	GDT14	105	10	7.1E4	122976	122976	0539	0910
G76-020	12865	GDT12	110	10	6.8E4	122676	122776	2200	0135
G76-019	12863	GDT11	112	10	6.8E4	122676	122676	1715	2118
G76-018	12733	GDT14	100	10	7.6E4	122276	122276	1440	1900
G76-017	N/A	GDT12	110	10	75	121876	121876	0721	1010
G76-016	12403	GDT11	110	10	75	121876	121876	0425	0710
G76-015	12325	GDT13	100	10	6.0E4	121576	121576	0915	1035
G76-014	12326	GDT14	100	10	6.0E4	121576	121576	0655	0820

LIQUID									
RELEASE NUMBER	REFER SAMPLE NUMBER	SOURCE LOCATION (2)	INITIAL VOLUME (GAL.)	FINAL VOLUME (GAL.)	DILUTION FLOW RATE (GPM)	DATE START RELEASE	DATE STOP RELEASE	TIME START	TIME STOP
L76-0033	13041	1WMHUT	23500	1400	1.85E5	123076	123176	1240	0625
L76-0032	12876	1WMHUT	23500	1400	1.85E5	122876	122976	1650	0048
L76-0031	12899	1WMHUT	23000	1410	1.85E5	122676	122776	1605	0005
L76-0030	12781	1WMHUT	23000	1200	1.85E5	122476	122476	1037	1913
L76-029	12728	1WMHUT	21300	1200	1.85E5	122276	122276	0040	0825
L76-0028	12647	12CVC	18692	2032	5.5E5	122076	122076	1825	2140
L76-0027	12590	1WMHUT	23000	10%	1.85E5	121876	121976	2036	0420
L76-0026A	12427	1WMHUT	22500	1100	1.85E5	121676	121676	0442	1240
L76-0026	12186	1WMHUT	23000	1410	3.70E5	121476	121476	1520	2150
L76-0025	12038	1WMHUT	24000	1410	3.70E5	121276	121376	1542	0030

- (1) GDT = Gas Decay Tank
(2) WMHUT = Waste Monitoring Hold-Up Tank

D. SOLID WASTE

There were no solid waste or irradiated fuel shipment from the site during this period on record.

E RADIOLOGICAL IMPACT ON MAN

The calculated doses in this section pertain to those received in unrestricted areas.

LIQUID PATHWAYS

Doses to individuals in the population resulting from liquid pathways will be provided at a later date, as sample analysis has not been fully completed. These doses will be relatively insignificant as the only liquid pathway is the ingestion of seafood. The low-level liquid releases coupled with the small seafood harvest during the month of December will result in a minimal impact.

AIR PATHWAY

The individual and population doses resulting from the release of radioiodines and particulates will be inconsequential as there was no iodine or particulates present in any of the samples taken for this period of record.

There were only two isotopes identified as a result of gaseous samples taken during this reporting period. These isotopes, Xe-133 and H-3, were identified as a result of sample analysis. The resulting maximum, unrestricted area, whole body and skin doses were calculated to be $1.79\text{E-}9$ mrem and $5.08\text{E-}9$ mrem respectfully. The highest dose to any organ dose from radioactive iodines and particulates was not calculated due to their absence in sample analysis. The calculated population whole body dose was $3.01\text{E-}11$ man-rem. The average total body dose to the population within 50 miles of the site was $6.20\text{E-}12$ mrem.

The doses were calculated using methods described in Regulatory Guide 1.109.

DIRECT RADIATION

The direct radiation, resulting from station operation, is considered to be zero due to the short operating period and low-level operations for this period of record.

F METEOROLOGICAL DATA

Cumulative joint wind frequency distributions by atmospheric stability class are provided for the period of station operation (December 11 - December 31, 1976) as Table 5. Table 6 provides joint wind frequency distributions for the hours of Gas Decay Tank releases (batch releases) for this same period. Only data for those hours since initial criticality is provided as data covering the entire third and fourth quarters would result in misleading dispersion estimates.

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121176 TO 123176

STABILITY CLASS: EXTREMELY UNSTABLE DELTA T <-1.9 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	1	0	0	0	1
SSW	0	0	0	0	0	0	0
SW	0	1	2	1	0	0	4
WSW	0	0	0	3	0	0	3
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	1	3	2	2	8
NNW	0	0	0	0	0	1	1
TOTAL	0	1	4	7	2	3	17

PERIODS OF CALM (HOURS): 0

HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121176 TO 123176

STABILITY CLASS: MODERATELY UNSTABLE DELTA T -1.9 TO -1.7 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0

PERIODS OF CALM (HOURS): 0

HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121176 TO 123176

STABILITY CLASS: SLIGHTLY UNSTABLE DELTA T -1.7 TO -1.5 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	2	1	0	0	3
SW	0	0	0	2	0	0	2
WSW	0	0	0	2	0	0	2
W	0	0	1	1	0	0	2
WNW	0	0	0	0	0	9	9
NW	0	0	2	2	2	1	7
NNW	0	0	0	0	0	0	0
TOTAL	0	1	5	8	2	10	26

PERIODS OF CALM (HOURS): 0
HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121176 TO 123176

ABILITY CLASS: NEUTRAL DELTA T -1.5 TO -0.5 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	1	2	0	0	0	3
NNE	0	3	10	0	0	0	13
NE	0	2	0	0	0	0	2
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	1	0	0	0	1
SE	0	1	0	0	0	0	1
SSE	0	0	2	4	0	0	6
S	0	3	7	11	0	0	21
SSW	0	0	9	3	2	0	14
SW	1	0	4	2	0	0	7
WSW	0	0	3	2	0	0	5
W	0	0	9	13	6	3	31
WNW	0	0	1	11	9	31	52
W	0	2	2	8	4	11	27
NNW	0	4	2	1	4	2	13
TOTAL	1	16	52	55	25	47	196

PERIODS OF CALM (HOURS): 0

HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121176 TO 123176

STABILITY CLASS: SLIGHTLY STABLE DELTA T -0.5 TO 1.5 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	2	0	0	0	2
NNE	0	4	3	0	0	0	7
NE	0	2	1	0	0	0	3
ENE	0	1	0	0	0	0	1
E	0	1	1	0	0	0	2
ESE	0	1	1	0	0	0	2
SE	0	1	0	0	0	0	1
SSE	1	2	2	0	0	0	5
S	1	3	3	3	0	0	10
SSW	0	2	3	5	1	0	11
SW	1	1	9	4	0	0	15
WSW	0	2	2	4	0	0	8
W	2	3	9	23	2	0	39
WNW	2	2	1	1	8	3	17
W	0	4	1	2	2	5	14
RNW	0	2	2	2	2	0	8
TOTAL	7	31	40	44	15	8	145

PERIODS OF CALM (HOURS): 0
HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121176 TO 123176

STABILITY CLASS: MODERATELY STABLE DELTA T 1.5 TO 4.0 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1	2	2	0	0	0	5
NNE	0	1	2	1	0	0	4
NE	0	2	0	0	0	0	2
ENE	0	0	0	0	0	0	0
E	0	2	0	0	0	0	2
ESE	0	0	1	0	0	0	1
SE	0	4	0	0	0	0	4
SSE	0	1	2	2	0	0	5
S	1	3	4	0	1	0	9
SSW	0	3	3	1	2	0	9
SW	1	0	2	2	1	0	6
WSW	0	0	2	0	0	0	2
W	0	2	1	0	2	0	5
WNW	0	0	2	0	1	0	3
NW	0	0	6	0	0	0	6
NNW	0	0	0	0	0	0	0
TOTAL	3	20	27	6	7	0	63

PERIODS OF CALM (HOURS): 0
HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121176 TO 123176

STABILITY CLASS: EXTREMELY STABLE DELTA T >4.0 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	1	0	4	1	0	0	6
NE	0	1	1	1	0	0	3
ENE	0	1	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	1	0	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	1	9	0	0	0	10
SSW	0	0	12	2	1	0	15
SW	0	1	0	0	0	0	1
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	1	0	0	0	1
TOTAL	2	4	27	4	1	0	38

PERIODS OF CALM (HOURS): 0

HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121576 TO 122976 HRS. DURING GDT RELEASES ONLY

STABILITY CLASS: EXTREMELY UNSTABLE DELTA T <-1.9 °

LAPSE RATE IN DEG C/100 METERS

EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0

PERIODS OF CALM (HOURS): 0

HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121576 TO 122976 HRS. DURING GDT RELEASES ONLY

STABILITY CLASS: MODERATELY UNSTABLE DELTA T -1.9 TO -1.7 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WIND DIREC- TION	WINDSPEED (MPH) AT 150 FEET						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0

PERIODS OF CALM (HOURS): 0
HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121576 TO 122976 HRS. DURING GDT RELEASES ONLY

STABILITY CLASS: SLIGHTLY UNSTABLE DELTA T -1.7 TO -1.5 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0

PERIODS OF CALM (HOURS): 0

HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121576 TO 122976 HRS. DURING GDT RELEASES ONLY

STABILITY CLASS: NEUTRAL DELTA T -1.5 TO -0.5 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	2	1	0	0	3
SW	0	0	0	1	0	0	1
WSW	0	0	0	0	0	0	0
W	0	0	2	0	0	0	2
WNW	0	0	1	1	0	0	2
NW	0	1	0	0	0	0	1
NNW	0	1	0	0	0	0	1
TOTAL	0	2	5	3	0	0	10

PERIODS OF CALM (HOURS): 0
HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121576 TO 122976 HRS. DURING GDT RELEASES ONLY

STABILITY CLASS: SLIGHTLY STABLE DELTA T -0.5 TO 1.5 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	1	0	0	1
W	1	1	1	7	0	0	10
WN	0	0	0	1	0	0	1
NW	0	1	0	0	0	0	1
NNW	0	0	0	0	0	0	0
TOTAL	1	2	1	9	0	0	13

PERIODS OF CALM (HOURS): 0

HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121576 TO 122976 HRS. DURING GDT RELEASES ONLY

STABILITY CLASS: MODERATELY STABLE DELTA T 1.5 TO 4.0 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WIND DIREC- TION	WINDSPEED (MPH) AT 150 FEET						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0

PERIODS OF CALM (HOURS): 0
HOURS OF MISSING DATA: 0

ARTIFICIAL ISLAND
SALEM UNIT 1

PERIOD OF RECORD: 121576 TO 122976 HRS. DURING GDT RELEASES ONLY

STABILITY CLASS: EXTREMELY STABLE DELTA T >4.0 °
LAPSE RATE IN DEG C/100 METERS
EVALUATED USING DELTA T 150-33 FT

ELEVATION: 150 FEET

WINDSPEED (MPH) AT 150 FEET

WIND DIREC- TION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0

PERIODS OF CALM (HOURS): 0

HOURS OF MISSING DATA: 0