

Southern California Edison Company

SAN ONOFRE NUCLEAR GENERATING STATION

P.O. BOX 128

SAN CLEMENTE, CALIFORNIA 92672

J. G. HAYNES
STATION MANAGER

RECEIVED
NRC

SCE

1984 AUG 30 PM 1:04

TELEPHONE
(714) 492-7700

AUGUST 29, 1984

U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94596-5368

Attention: Mr. J. B. Martin, Regional Administrator

Dear Sir:

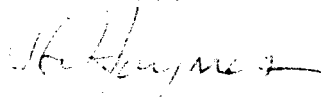
Subject: Docket No. 50-206
Semiannual Radioactive Effluent Release Report
San Onofre Nuclear Generating Station, Unit 1

In accordance with Environmental Technical Specification Section 5.6.2 of Provisional Operating License No. DPR-13 for San Onofre Nuclear Generating Station, Unit 1, enclosed is the semiannual report of the radioactive content of effluents released to unrestricted areas and shipments of solid waste during the period January 1 to June 30, 1984.

This report has been prepared in the general format of NRC Regulatory Guide 1.21, sections pertinent to SONGS 1. Included in this report are quarterly effluent summaries, percent of Technical Specification Limits, estimated total percent error, lower limit of detection concentrations, 40 CFR 190 consideration, meteorological data and 10 CFR 50, Appendix I considerations.

Please contact us if we can be of further assistance.

Sincerely,



Enclosure

1E-25
1/1

Mr. J. B. Martin

-2-

RECEIVED
NRC

cc: A. E. Chaffee (USNRC Resident Inspector Units 1, 2 and 3)
A. J. D'Angelo (USNRC Resident Inspector, Unit 1)

1984 AUG 30 PM 1:04

U.S. Nuclear Regulatory Commission
Document Control Desk

REGISTRATION

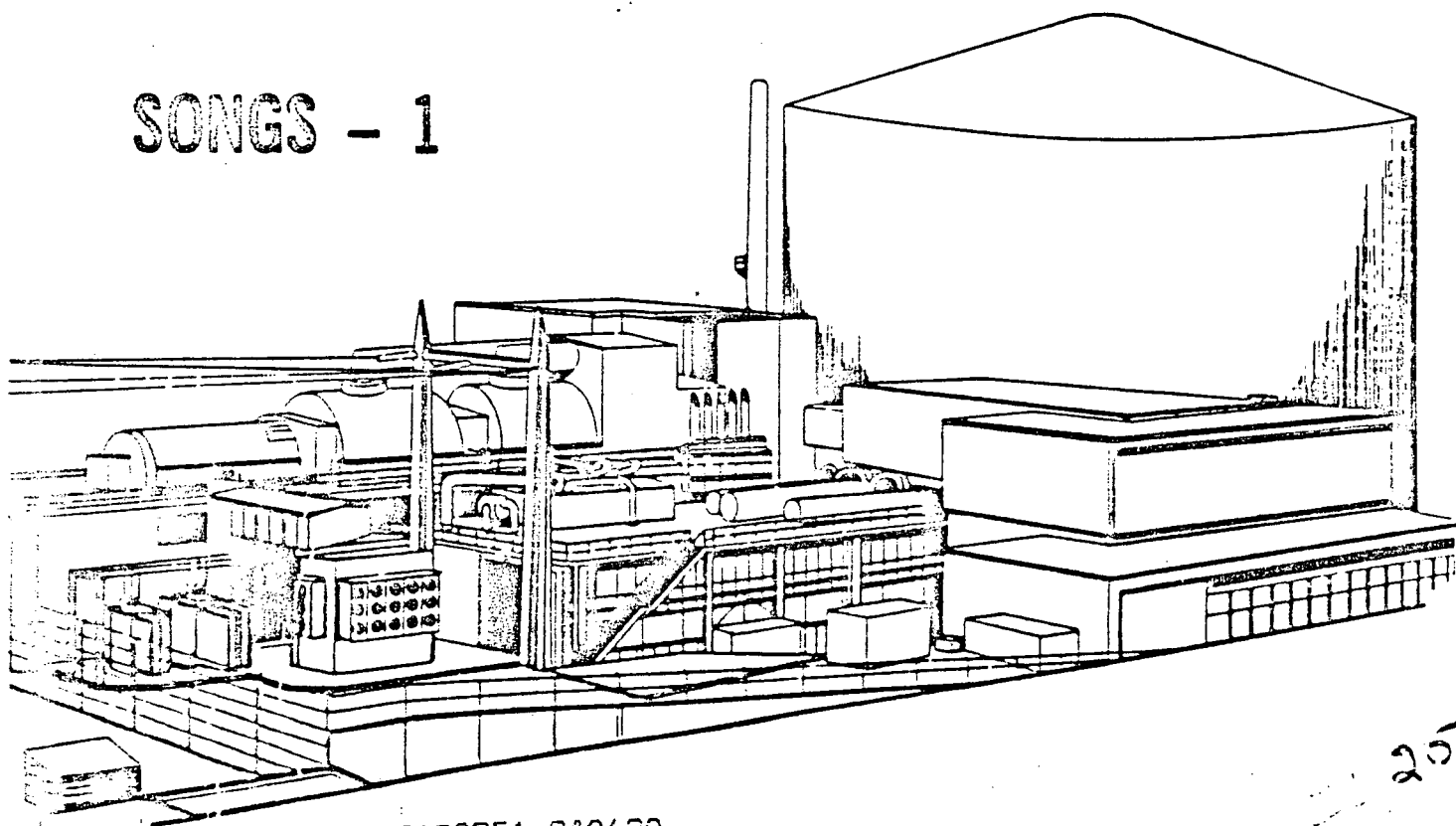
Institute of Nuclear Power Operations (INPO)

4234u

**SAN ONOFRE
NUCLEAR GENERATING STATION
UNIT 1
SEMI ANNUAL EFFLUENT REPORT**

JANUARY — JUNE 1984

SONGS - 1



8409130351 840630
PDR ADDCK 05000206
R PDR

25

TABLE OF CONTENTS

SECTION A - INTRODUCTION.	1
SECTION B - GASEOUS EFFLUENTS	2
SECTION C - LIQUID EFFLUENTS.	6
SECTION D - RADWASTE SHIPMENTS.	10
SECTION E - TECHNICAL SPECIFICATION LIMITS.	12
SECTION F - ESTIMATION OF ERROR	16
SECTION G - METEOROLOGY	17
SECTION H - 10 CFR 50 APPENDIX I CONSIDERATIONS	34
SECTION I - 40 CFR 190 CONSIDERATIONS	35
SECTION J - CONCLUSIONS	36

SEMIANNUAL EFFLUENT REPORT

January - June 1984

SECTION A. INTRODUCTION

This Semiannual Report summarizes the gaseous and liquid radioactive effluent releases and solid waste shipments made from the San Onofre Nuclear Generating Station Unit 1. This report is prepared in the general format of USNRC Regulatory Guide 1.21 and includes:

1. Quarterly summaries of liquid and gaseous effluents for "batch" and "continuous" modes of release;
2. Percent of Technical Specification Limits;
3. Estimated total percent error;
4. Lower limit of detection concentrations;
5. Meteorological data;
6. 10 CFR 50 Appendix I considerations;
7. 40 CFR 190 considerations;
8. Radwaste shipments.

SECTION B. GASEOUS EFFLUENTS

Table 1A, "Gaseous Effluents-Summation of All Releases," provides a detailed listing of gaseous effluents released quarterly in four categories: fission and activation gases, iodine-131, particulates with half-lives greater than eight days, and tritium. Listed are the total releases of each category, the average release rate for the quarter, and the percent of Technical Specification Limit (TSL).

Table 1B, "Gaseous Effluents-Elevated Release," has not been included in this report since San Onofre Nuclear Generating Station Unit 1 does not conduct elevated releases.

Table 1C, "Gaseous Effluents-Ground-Level Releases," provides the systematic listing by radionuclide for the quantity of radioactivity released in three categories: fission gases, iodines, and particulates. The total radioactivity for each radionuclide is listed for each quarterly period by both "continuous" and "batch" modes of release.

Waste gas decay tank and calibration releases are considered to be "batch" releases. Containment sphere purges and plant stack releases are considered to be "continuous" releases.

The percent of TSL was calculated according to SCE's proposed Technical Specification change because of ambiguity in the current Technical Specifications. The SCE method is fully described in Section E of this report. The percent of TSL is reported for the "maximum hourly release rate" condition rather than the "average over a year" condition, since the hourly condition of the TSL was the limiting condition by several orders of magnitude.

Table 1D, "Gaseous Effluents-Lower Limit of Detection," provides a listing of lower limit of detection concentrations for isotopes not detected in Table 1A and Table 1C.

The percent estimated total error is listed in Table 1A for each of the four gaseous effluent categories. The methodology used for error analysis is described in Section F of this report.

The July - December 1983 Semiannual Report values for composite Gross Alpha, Sr-89, Sr-90, (Tables 1A and 1C Gaseous Effluents) were incomplete due to data not available prior to reporting time. The values not reported were for the fourth quarter of 1983. The values are as follows:

	<u>Unit</u>	
Gross Alpha	Ci	6.03E-8
Sr-89	Ci	LLD
Sr-90	Ci	LLD

LLD = < 3.78E-16 μ Ci/cc

TABLE 1A

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1984)
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	Unit	First Quarter	Second Quarter	Estimated Total Error, %
A. Fission and activation gases				
1. Total release	Ci	LLD	LLD	2.20E+1
2. Average release rate for period	μCi/sec	0.00	0.00	
3. Percent of technical specification limit	%	0.00	0.00	
4. Maximum gross radio- activity release rate during any one-hour period.	Ci/sec	0.00	0.00	
B. Iodines				
1. Total Iodine-131	Ci	2.03E-6*	4.63E-7*	1.90E+1
2. Average release rate for period	μCi/sec	2.57E-7	5.87E-8	
3. Percent of technical specification limit	%	1.00E-6	9.01E-8	
C. Particulates				
1. Particulates with half-lives > 8 days	Ci	LLD	1.74E-6	1.60E+1
2. Average release rate for period	μCi/sec	0.00	2.21E-7	
3. Percent of technical specification limit	%	0.00	2.88E-7	
4. Gross alpha radioactivity	Ci	4.26E-8	**	5.00E+1
D. Tritium				
1. Total release	Ci	LLD	LLD	2.50E+1
2. Average release rate for period	μCi/sec	0.00	0.00	
3. Percent of technical specification limit	%	0.00	0.00	

LLD - Lower Limit of Detection; See Table 1D.

* - All radioiodine released from Unit 1 during the period of this report is due to processing of Unit 2/3 Radwaste at Unit 1.

** - Second quarter analyses not available at report time; analyses will be included in the following Semiannual Report.

TABLE 1C

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1984)
GASEOUS EFFLUENTS - GROUND-LEVEL RELEASES

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		First Quarter	Second Quarter	First Quarter	Second Quarter
1. Fission gases					
krypton-85	Ci	LLD	LLD	LLD	LLD
krypton-85m	Ci	LLD	LLD	LLD	LLD
krypton-87	Ci	LLD	LLD	LLD	LLD
krypton-88	Ci	LLD	LLD	LLD	LLD
xenon-133	Ci	LLD	LLD	LLD	LLD
xenon-135	Ci	LLD	LLD	LLD	LLD
xenon-135m	Ci	LLD	LLD	LLD	LLD
xenon-138	Ci	LLD	LLD	LLD	LLD
Total for period	Ci	LLD	LLD	LLD	LLD
2. Iodines					
iodine-131	Ci	2.03E-6	4.63E-7	LLD	LLD
iodine-133	Ci	LLD	LLD	LLD	LLD
iodine-135	Ci	LLD	LLD	LLD	LLD
Total for period	Ci	2.03E-6	4.63E-7	LLD	LLD
3. Particulates					
barium-lanthanum-140	Ci	LLD	LLD	LLD	LLD
cadmium 109	Ci	LLD	1.74E-6	LLD	LLD
cesium-134	Ci	LLD	LLD	LLD	LLD
cesium-137	Ci	LLD	LLD	LLD	LLD
strontium-89	Ci	LLD	*	**	**
strontium-90	Ci	LLD	*	**	**

LLD - Lower Limit of Detection; See Table 1D.

* Second quarter analysis not available at report time; analyses will be included in the following Semiannual Report.

** All gaseous releases made from SONGS-1 are vented through the Plant Stack; therefore, Sr-89, Sr-90 and gross alpha are analyzed by "continuous" mode only.

TABLE 1D
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1984)
GASEOUS EFFLUENTS - LOWER LIMIT OF DETECTION

ISOTOPES	BATCH MODE LLD ($\mu\text{Ci/cc}$)	CONTINUOUS MODE LLD ($\mu\text{Ci/cc}$)
barium-140	NA	< 2.65E-13
cadmium-109	NA	< 1.74E-12
cesium-134	NA	< 1.18E-13
cesium-137	NA	< 1.61E-13
iodine-131	NA	< 2.47E-14
iodine-133	NA	< 9.96E-14
iodine-135	NA	< 5.94E-13
krypton-85	*	< 6.68E-6
krypton-85m	*	< 2.89E-8
krypton-87	*	< 7.12E-8
krypton-88	*	< 6.63E-8
lanthanum-140	NA	< 1.33E-13
strontium-89	**	< 1.25E-16
strontium-90	**	< 1.25E-16
tritium	*	< 7.97E-8
xenon-133	*	< 7.72E-8
xenon-135	*	< 2.43E-8
xenon-135m	*	< 2.15E-7
xenon-138	*	< 6.44E-7

* - For the report period, there were no releases made via batch mode; therefore no batch mode LLDs were reported.

** - All gaseous releases made from SONGS-1 are vented through the Plant Stack, therefore, Sr-89, Sr-90, and gross alpha are analyzed by "continuous" mode only.

NA - Iodines and particulates other than Sr-89, Sr-90 and gross alpha are not analyzed prior to release.

SECTION C. LIQUID EFFLUENTS

Table 2A, "Liquid Effluents-Summation of All Releases," provides a detailed listing of liquid effluent releases in three categories: fission and activation products, tritium, and dissolved and entrained gases. Listed are (1) the total release of each category, (2) the average diluted concentration at the point of discharge during each quarterly period, and (3) the percent of applicable Limit. Also listed are the gross alpha radioactivity, the volume of actual waste released (prior to dilution by the circulating water), and the volume of dilution water (the volume of circulating water) used to dilute the batch releases.

Table 2B, "Liquid Effluents," provides the systematic listing by radionuclide for the quantity of radioactivity released in each category. The total radioactivity of each radionuclide released is listed for each quarterly period by both "continuous" and "batch" modes of release.

Table 2C, "Liquid Effluents-Lower Limit of Detection," provides a listing of lower limit of detection concentrations for isotopes not detected in Table 2A and Table 2B.

The percent of applicable limit was calculated according to SCE's proposed Technical Specification change because of the ambiguity in the current Technical Specifications. The methodology used in calculating the percent of applicable limit is presented in Section E of this report. The methodology used for error analysis is presented in Section F of this report.

In the July - December 1983 Semiannual Report, the values for composite Gross Alpha, Sr-89, and Sr-90, in Table 2A and Table 2B Liquid Effluents, were incomplete due to data not available prior to reporting time. The values not reported were for the fourth quarter 1983. The values are as follows:

	<u>Unit</u>	
Gross Alpha	Ci	7.38E-5
Strontium-89	Ci	2.84E-6
Strontium-90	Ci	2.04E-4

TABLE 2A

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1984)
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Unit	First Quarter	Second Quarter	Estimated Total Error, %
A. Fission and activation products				
1. Total release	Ci	2.79E-1	7.99E-1	1.90E+1
2. Average diluted concentration during period	μCi/ml	1.52E-8	2.76E-8	
3. Percent of applicable limit	%	2.42E+0	4.91E+0	
B. Tritium				
1. Total release	Ci	4.56E+0	1.56E+1	1.90E+1
2. Average diluted concentration during period	μCi/ml	2.48E-7	5.40E-7	
3. Percent of applicable limit	%	6.62E-1	2.96E-1	
C. Dissolved and entrained gases				
1. Total release	Ci	LLD	9.93E-3	1.90E+1
2. Average diluted concentration during period	μCi/ml	0.00	3.44E-10	
3. Percent of applicable limit	%	0.00	2.71E-4	
D. Gross alpha radioactivity				
	Ci	2.01E-4	*	5.00E+1
E. Volume of waste released (prior to dilution)				
	liters	1.86E+6	1.62E+7	5.00E+0
F. Volume of dilution water used during period				
	liters	1.84E+10	2.89E+10	5.00E+0
G. Maximum concentration of gross radioactivity (β, γ) released to the unrestricted area (averaged over the period of release)				
	μCi/ml	2.79E-6	9.17E-6	1.90E+1

LLD - Lower Limit of Detection; see Table 2C.

* - Second quarter analyses not available at report time; analyses will be included in the following Semiannual Report.

TABLE 2B
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1984)
LIQUID EFFLUENTS

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		First Quarter	Second Quarter	First Quarter	Second Quarter
barium-lanthanum-140	Ci	LLD	LLD	LLD	LLD
cerium-141	Ci	LLD	LLD	LLD	LLD
cerium-144	Ci	LLD	LLD	LLD	4.28E-6
cesium-134	Ci	LLD	LLD	4.36E-2	4.43E-2
cesium-137	Ci	8.56E-6	2.69E-6	1.48E-1	1.70E-1
chromium-51	Ci	LLD	LLD	LLD	LLD
cobalt-58	Ci	LLD	LLD	LLD	LLD
cobalt-60	Ci	LLD	LLD	8.51E-2	5.76E-1
iodine-131	Ci	LLD	3.25E-5	LLD	LLD
iron-59	Ci	LLD	LLD	LLD	LLD
manganese-54	Ci	LLD	LLD	6.56E-4	8.25E-3
molybdenum-99	Ci	LLD	LLD	LLD	LLD
sodium-24	Ci	LLD	LLD	LLD	3.90E-4
strontium-89	Ci	LLD	*	LLD	*
strontium-90	Ci	1.13E-3	*	LLD	*
technetium-99m	Ci	LLD	LLD	1.87E-4	LLD
zinc-65	Ci	LLD	LLD	LLD	LLD
zirconium-niobium-95	Ci	LLD	LLD	LLD	LLD
Total for period	Ci	1.14E-3	3.52E-5	2.78E-1	7.99E-1
=====					
xenon-133	Ci	LLD	LLD	LLD	9.93E-3
xenon-135	Ci	LLD	LLD	LLD	4.42E-6

LLD - Lower Limit of Detection; see Table 2C.

* - Second quarter analyses not available at report time; analyses will be included in the following Semiannual Report.

TABLE 2C

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1984)
LIQUID EFFLUENTS - LOWER LIMIT OF DETECTION

ISOTOPES	BATCH MODE LLD ($\mu\text{Ci/ml}$)	CONTINUOUS MODE LLD ($\mu\text{Ci/ml}$)
barium-lanthanum-140	< 1.06E-5	< 1.30E-7
cerium-141	< 2.66E-6	< 7.77E-8
cerium-144	*	< 7.77E-8
cesium-134	*	< 6.49E-8
chromium-51	< 2.04E-5	< 4.44E-7
cobalt-57	< 1.48E-6	< 3.64E-8
cobalt-58	< 2.94E-8	< 3.58E-8
cobalt-60	*	< 7.25E-8
iodine-131	< 2.99E-6	< 5.56E-8
iron-59	< 3.84E-6	< 7.16E-8
manganese-54	*	< 3.65E-8
molybdenum-99	< 3.10E-5	< 2.57E-8
sodium-24	< 2.80E-5	< 1.51E-7
strontium-89	< 5.00E-7	< 4.00E-8
strontium-90	< 2.00E-8	< 2.00E-8
technetium-99m	< 2.47E-4	< 3.86E-8
xenon-133	< 6.20E-6	< 1.72E-7
xenon-135	< 6.11E-5	< 4.50E-8
zinc-65	< 6.99E-6	< 8.01E-8
zirconium-niobium-95	< 4.38E-6	< 6.07E-8

* - Nuclides were detected in Table 2B.

SECTION D. RADWASTE SHIPMENTS

TABLE 3

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1984) SOLID WASTE AND IRRADIATED FUEL SHIPMENT

A. Solid Waste Shipped Offsite for Burial or Disposal (Not irradiated fuel)

1. Type of Waste	Unit	6-Month Period	Est. Total Error, %
a. Spent Resins	m ³ Ci	0.00E+0 0.00E+0	3.00E+1
b. Dry Compressible Waste, Contaminated Equip. Etc.	m ³ Ci	4.72E+1 * 1.29E-1	3.00E+1
c. Irradiated Components, Control Rods, Etc.	m ³ Ci	0.00E+0 0.00E+0	3.00E+1
d. Absorbed Liquids, Sand, Building Rubble, Biological Waste	m ³ Ci	0.00E+0 0.00E+0	3.00E+1

2. Estimate of Major Nuclide Composition (by type of waste)

a.	Not Applicable	%	0.00E+0
b.	carbon-14	%	6.82E-5
	cesium-134	%	4.81E+0
	cesium-137	%	3.77E+1
	cobalt-60	%	4.01E+1
	hydrogen-3	%	2.47E-3
	iodine-129	%	5.39E-5
	manganese-54	%	4.66E-1
	nickel-63	%	1.47E+1
	plutonium-241	%	2.18E+0
	technetium-99	%	1.77E-5
c.	Not Applicable	%	0.00E+0
d.	Not Applicable	%	0.00E+1

* Equal to 1.67E+3 ft³

SECTION D. RADWASTE SHIPMENTS (Continued)

TABLE 3

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1983)
SOLID WASTE AND IRRADIATED FUEL SHIPMENT

A. Solid Waste Shipped Offsite for Burial or Disposal (Not irradiated fuel)
(Continued)

3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
1	Chem-Nuclear Systems Inc Truck	Richland, WA

B. Irradiated Fuel Shipments (Disposition)

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
None	N/A	N/A

SECTION E. TECHNICAL SPECIFICATION LIMITS

The existing Technical Specifications 4.5.A and 4.6.A for SONGS 1 have led to several discussions between SCE, NRR, and Region V. The results of these discussions have led to agreement that the intent of these Technical Specifications is to require compliance with 10 CFR 20, Appendix B. This intent limits concentrations in unrestricted areas such that the following condition is met on both gaseous and liquid effluents:

$$\sum_i C_i / \text{MPC}_i \leq 1 \text{ for concentrations}$$

averaged over a year; and $\sum_i C_i / \text{MPC}_i \leq 10$ for concentrations averaged over an hour. SCE has developed revised Technical Specification 4.5.A and 4.6.A. This Semiannual Report has calculations of the percent of the Technical Specification Limit according to the following proposed Technical Specifications 4.5.A and 4.6.A.

Proposed Technical Specification 4.5.A (Liquid Effluents)

Averaged over a year, radioactivity released shall not result in concentrations at the point of discharge such that the following condition is exceeded.

$$\sum_i C_i / \text{MPC}_i \leq 1$$

Where: C_i = Concentration of radionuclide i in the circulating water discharge at the point of release to unrestricted areas; in $\mu\text{Ci/ml}$.

MPC_i = Maximum Permissible Concentration of radionuclide i , as defined in 10 CFR 20, Appendix B, Table II, Column 2; in $\mu\text{Ci/ml}$.

SECTION E. TECHNICAL SPECIFICATION LIMITS (Continued)

The percent of Technical Specification Limit averaged over a year shall be determined by calculation of the following parameter:

$$(1E+6/V_T) \sum_i (A_i/MPC_i) \times 100\%$$

- Where:
- A_i = Activity of radionuclide i released over a year; in Ci.
 - V_T = Total volume of liquid effluent released to the unrestricted area during the year; in ml.
 - V_T = $V_{DW} + V_{LW}$
 - V_{DW} = Total volume of dilution water used to dilute liquid waste during the year; in ml.
 - V_{LW} = Total volume of liquid waste released prior to dilution; in ml.
 - MPC_i = As defined above.

The licensee shall be provided the flexibility of averaging over the semiannual period of interest rather than averaging over a year if the licensee so desires.

Averaged over an hour, radioactivity released shall not result in concentrations in circulating water discharge such that the following condition is exceeded:

$$\sum_i C_i/MPC_i \leq 10$$

- Where:
- 10 = Maximum value of the summation of the ratios of C_i/MPC_i averaged over hourly time periods; dimensionless.
 - C_i = As defined above
 - MPC_i = As defined above

SECTION E. TECHNICAL SPECIFICATION LIMITS (Continued)

The percent of Technical Specification Limit averaged over an hour shall be determined by calculation of the following parameter for the hourly period when maximum releases and/or concentrations occurred:

$$(1E+6/10V_{T,h}) \sum_i (A_{i,h}/MPC_i) \times 100\%$$

- Where:
- 10 = As defined above
 - h = Subscript used to indicate the hourly period when maximum releases occurred; in Ci.
 - $A_{i,h}$ = Activity of radionuclide i released during the hour when maximum releases occurred; in Ci.
 - $V_{T,h}$ = Total volume of liquid waste released to the unrestricted area during the hour when maximum releases occurred; in ml.
 - MPC_i = As defined above.

For purposes of reporting the percent of Technical Specification Limit in the Semiannual Effluent Report, the licensee will report the higher percent of the limit as determined from averaging either over the year or over the maximum hour.

Proposed Technical Specification 4.6.A (Gaseous Effluents)

Averaged over a year, radioactivity released shall not result in concentrations of radioactivity in unrestricted areas such that the following condition is exceeded:

$$\sum_i C_i/MPC_i \leq 1$$

- Where:
- C_i = Concentration of radionuclide i at the unrestricted area.
 - MPC_i = Maximum permissible concentrations of radionuclide i as defined in 10 CFR 20, Appendix B, Table II, Column 1, in $\mu\text{Ci/cc}$.

SECTION E. TECHNICAL SPECIFICATION LIMITS (Continued)

The percent of Technical Specification Limit averaged over a year shall be determined by calculation of the following parameter:

$$(5.56E-6) \sum_i (Q_i / MPC_i) \times 100\%$$

Where: $5.56E-6$ = Atmospheric dispersion factor, in sec/m^3
 Q_i = Release rate of radionuclide i averaged over a year;
in Ci/sec .
 MPC_i = As defined above.

The licensee shall be provided the flexibility of averaging over the semiannual period of interest rather than averaging over a year if the licensee desires.

Averaged over the hour when maximum releases occur, radioactivity released shall not result in concentrations in unrestricted areas exceeding ten times the yearly averaged limit stated above. The percent of Technical Specification Limit shall be determined by calculation of the following parameter for the hourly period when maximum releases occurred:

$$(5.56E-7) \sum_i (Q_{i,h} / MPC_i) \times 100\%$$

Where: $5.56E-7$ = Atmospheric dispersion factor divided by 10, in sec/m^3
 h = Subscript used to indicate the hourly period when
maximum releases occurred.
 $Q_{i,h}$ = Release rate of radionuclide i averaged over the hour
during which the highest releases occurred; Ci/sec .
 MPC_i = As defined above.

For purposes of reporting the percent of Technical Specification Limit in the Semiannual Effluent Report, the licensee will report the higher percent of the limit as determined from averaging either over the year or over the maximum hour.

SECTION F. ESTIMATION OF ERROR

Estimation of the error in reported values of gaseous and liquid effluents releases have been made. Sources of error considered for gaseous effluents - batch releases are: (1) tank volumes, (2) sampling errors, (3) counting errors, and (4) calibration errors. Sources of error for gaseous effluents - continuous releases are: (1) fan flow rate, (2) sampling, (3) counting, (4) calibration and (5) differential pressure drop.

Sources of error for liquid effluents - batch releases are: (1) tank volumes, (2) sampling, (3) counting and (4) calibration. Sources of error for liquid effluents - continuous releases are: (1) dilution water flow rate, (2) sampling, (3) counting and (4) calibration.

These sources of error are independent, and thus, the total error is calculated according to the following formula:

$$\text{Total Error} = \sqrt{\sigma_1^2 + \sigma_2^2 + \sigma_3^2 \dots + \sigma_i^2}$$

Where: σ_i = Error associated with each component.

SECTION G. METEOROLOGY

The meteorology of the SONGS-1 site for the quarterly periods January - March and April - June, 1984, is described in this section. Meteorological measurements have been made according to the guidance set forth in USNRC Regulatory Guide 1.23, "Onsite Meteorological Programs." A summary report of the meteorological measurements taken during each calendar quarter are presented in Table 4A as joint frequency distributions (JFD) of wind direction and wind speed by atmospheric stability class.

Hourly meteorological data for batch releases have been recorded for the periods of actual release. This data is available, as well as the hourly data for all periods of the semiannual report, but has not been included in this report because of the bulk of recorded data.

Table 4A lists the joint frequency distributions for the first and second quarters of 1984. Each page of Table 4A represents the data for the Stability Classes: A, B, C, D, E, F, G; the last page of each table is the JFD with the combined stability classes. Each page is also divided into two parts; the upper part lists the number of hourly periods when each meteorology condition occurred and the lower part lists the frequency of each classification by percent. The wind speeds have been measured at the 10 meter level and the stability classes are defined by the temperature differential between the 10 and 40 meter levels.

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 1ST QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 01/01/84 TO 03/31/84
 STABILITY CLASS #A# (10-40 METERS)
 WINDS AT 10 METER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.	0.	1.	4.	8.20
NE	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	7.40
ENE	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	6.90
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	12.40
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SE	0.	0.	0.	0.	0.	1.	1.	1.	2.	0.	0.	0.	5.	7.16
SSE	0.	0.	0.	3.	5.	1.	3.	4.	4.	3.	0.	0.	23.	6.53
S	0.	0.	3.	8.	5.	11.	14.	13.	4.	1.	3.	0.	62.	6.23
SSW	0.	0.	0.	8.	10.	11.	6.	4.	9.	2.	0.	1.	51.	6.09
SW	0.	0.	6.	14.	20.	13.	7.	8.	0.	0.	0.	0.	70.	4.98
WSW	0.	0.	2.	19.	26.	19.	16.	4.	1.	0.	0.	4.	91.	5.46
W	0.	0.	1.	10.	32.	45.	28.	20.	7.	5.	4.	2.	154.	6.15
WNW	0.	0.	0.	3.	7.	13.	16.	9.	7.	10.	3.	9.	77.	7.88
NW	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.	3.	10.13
NNW	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.	4.20
N	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	0.	12.	55.	106.	117.	92.	56.	35.	21.	11.	19.	544.	6.20

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.05	0.00	0.00	0.05	0.19	8.20
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.05	7.40
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.05	6.90
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	12.40
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.05	0.09	0.00	0.00	0.00	0.23	7.16
SSE	0.00	0.00	0.00	0.14	0.23	0.05	0.14	0.19	0.19	0.14	0.00	0.00	1.07	6.53
S	0.00	0.00	0.14	0.37	0.23	0.51	0.65	0.60	0.19	0.05	0.14	0.00	2.80	6.23
SSW	0.00	0.00	0.00	0.37	0.46	0.51	0.28	0.19	0.42	0.09	0.00	0.05	2.37	6.09
SW	0.00	0.00	0.28	0.65	0.93	0.70	0.33	0.37	0.00	0.00	0.00	0.00	3.25	4.98
WSW	0.00	0.00	0.09	0.88	1.21	0.88	0.74	0.19	0.05	0.00	0.00	0.19	4.23	5.46
W	0.00	0.00	0.05	0.46	1.49	2.09	1.30	0.93	0.33	0.23	0.19	0.09	7.16	6.15
WNW	0.00	0.00	0.00	0.14	0.33	0.60	0.74	0.42	0.33	0.46	0.14	0.42	3.50	7.88
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.05	0.05	0.14	10.13
NNW	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	4.20
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.00	0.56	3.02	4.93	5.44	4.28	3.07	1.63	0.98	0.51	0.88	25.29	6.20

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2152

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 1ST QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 01/01/84 TO 03/31/84
 STABILITY CLASS #8# (10-40 METERS)
 WINDS AT 10 MEIER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)											TOTAL	MEAN SPEED	
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	2.	17.40
NE	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.	8.60
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SSE	0.	0.	2.	0.	0.	0.	2.	0.	0.	0.	1.	0.	5.	5.72
S	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SSW	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	3.00
SW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
WSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
W	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	2.	5.45
WNW	0.	0.	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.	3.	6.43
NW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
NNW	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.	2.	5.90
N	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	0.	3.	1.	2.	0.	4.	2.	2.	0.	1.	1.	16.	7.31

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.05	0.07	17.40
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.05	8.60
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSE	0.00	0.00	0.09	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.05	0.00	0.23	5.72
S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSW	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	3.00
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.09	5.45
WNW	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.14	6.43
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NNW	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.09	5.90
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.00	0.14	0.05	0.09	0.00	0.19	0.09	0.09	0.00	0.05	0.05	0.74	7.31

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2152

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 1ST QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 01/01/84 TO 03/31/84
 STABILITY CLASS #C# (10-40 METERS)
 WINDS AT 10 METER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.	1.	3.	10.27
NE	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.	5.10
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SE	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	0.	0.	3.	9.53
SSE	0.	0.	1.	1.	0.	2.	1.	1.	3.	0.	0.	0.	9.	6.38
S	0.	0.	1.	0.	1.	0.	0.	1.	0.	1.	0.	0.	4.	6.43
SSW	0.	0.	1.	0.	1.	0.	1.	2.	1.	0.	0.	1.	7.	7.21
SW	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	3.	3.47
WSW	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.	2.	4.30
W	0.	0.	2.	0.	0.	1.	0.	0.	0.	0.	0.	1.	4.	7.08
WNW	0.	0.	0.	1.	1.	3.	1.	1.	1.	0.	1.	1.	10.	7.37
NW	0.	0.	0.	1.	1.	2.	1.	0.	0.	0.	0.	0.	5.	5.04
NNW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
N	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.	2.	8.50
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	0.	6.	4.	8.	9.	6.	5.	6.	3.	1.	5.	53.	6.82

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.05	0.14	10.27
NE	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05	5.10
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.09	0.00	0.00	0.14	9.53
SSE	0.00	0.00	0.05	0.05	0.00	0.09	0.05	0.05	0.14	0.00	0.00	0.00	0.42	6.38
S	0.00	0.00	0.05	0.00	0.05	0.00	0.00	0.05	0.00	0.05	0.00	0.00	0.17	6.43
SSW	0.00	0.00	0.05	0.00	0.05	0.00	0.05	0.09	0.05	0.00	0.00	0.05	0.33	7.21
SW	0.00	0.00	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	3.47
WSW	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	4.30
W	0.00	0.00	0.09	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.05	0.17	7.08
WNW	0.00	0.00	0.00	0.05	0.05	0.14	0.05	0.05	0.05	0.00	0.05	0.05	0.46	7.37
NW	0.00	0.00	0.00	0.05	0.05	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.23	5.04
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.09	8.50
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.00	0.28	0.19	0.37	0.42	0.28	0.23	0.28	0.14	0.05	0.23	2.46	6.82

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2152

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 1ST QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 01/01/84 TO 03/31/84
 STABILITY CLASS #DN (10-40 METERS)
 WINDS AT 10 MEIER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.	1.	2.	5.	2.	0.	3.	3.	2.	0.	0.	5.	23.	7.09
NE	0.	0.	0.	2.	0.	0.	1.	0.	1.	0.	0.	3.	7.	8.10
ENE	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	3.	5.50
E	1.	0.	0.	0.	2.	2.	4.	2.	0.	0.	0.	1.	12.	6.07
ESE	1.	0.	0.	1.	0.	0.	5.	5.	1.	0.	0.	0.	13.	6.53
SE	0.	0.	0.	8.	4.	8.	7.	6.	4.	6.	4.	1.	48.	6.87
SSE	0.	0.	3.	6.	5.	5.	2.	3.	0.	6.	0.	0.	30.	5.77
S	0.	0.	3.	1.	5.	3.	1.	4.	1.	1.	1.	0.	20.	5.89
SSW	0.	0.	1.	1.	2.	1.	0.	1.	0.	0.	0.	0.	6.	4.55
SW	0.	2.	2.	2.	2.	1.	0.	0.	0.	0.	0.	0.	9.	3.26
WSW	0.	0.	3.	3.	0.	0.	1.	0.	0.	3.	1.	2.	13.	7.06
W	0.	0.	2.	3.	6.	2.	1.	0.	0.	0.	0.	2.	16.	6.01
WNW	0.	1.	1.	4.	4.	6.	2.	0.	1.	1.	0.	4.	24.	6.91
NW	0.	0.	4.	6.	4.	4.	6.	3.	0.	0.	0.	1.	28.	5.27
NNW	0.	0.	2.	4.	5.	7.	1.	1.	0.	0.	0.	0.	20.	4.79
N	0.	3.	0.	0.	4.	1.	0.	0.	0.	1.	0.	0.	9.	4.28
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	2.	7.	23.	46.	46.	41.	35.	28.	10.	18.	6.	19.	281.	6.07

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.00	0.05	0.09	0.23	0.09	0.00	0.14	0.14	0.09	0.00	0.00	0.23	1.07	7.09
NE	0.00	0.00	0.00	0.09	0.00	0.00	0.05	0.00	0.05	0.00	0.00	0.14	0.33	8.10
ENE	0.00	0.00	0.00	0.00	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.14	5.50
E	0.05	0.00	0.00	0.00	0.09	0.09	0.19	0.09	0.00	0.00	0.00	0.05	0.56	6.07
ESE	0.05	0.00	0.00	0.05	0.00	0.00	0.23	0.23	0.05	0.00	0.00	0.00	0.60	6.53
SE	0.00	0.00	0.00	0.37	0.19	0.37	0.33	0.28	0.19	0.28	0.19	0.05	2.23	6.87
SSE	0.00	0.00	0.14	0.28	0.23	0.23	0.09	0.14	0.00	0.28	0.00	0.00	1.39	5.77
S	0.00	0.00	0.14	0.05	0.23	0.14	0.05	0.19	0.05	0.05	0.05	0.00	0.93	5.89
SSW	0.00	0.00	0.05	0.05	0.09	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.28	4.55
SW	0.00	0.09	0.09	0.09	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.42	3.26
WSW	0.00	0.00	0.14	0.14	0.00	0.00	0.05	0.00	0.00	0.14	0.05	0.09	0.60	7.06
W	0.00	0.00	0.09	0.14	0.28	0.09	0.05	0.00	0.00	0.00	0.00	0.09	0.74	6.01
WNW	0.00	0.05	0.05	0.19	0.19	0.28	0.09	0.00	0.05	0.05	0.00	0.19	1.12	6.91
NW	0.00	0.00	0.19	0.28	0.19	0.19	0.28	0.14	0.00	0.00	0.00	0.05	1.30	5.27
NNW	0.00	0.00	0.09	0.19	0.23	0.33	0.05	0.05	0.00	0.00	0.00	0.00	0.93	4.79
N	0.00	0.14	0.00	0.00	0.19	0.05	0.00	0.00	0.00	0.05	0.00	0.00	0.42	4.28
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.09	0.33	1.07	2.14	2.14	1.91	1.63	1.30	0.46	0.84	0.28	0.88	13.06	6.07

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2152

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 1ST QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 01/01/84 TO 03/31/84
 STABILITY CLASS #E# (10-40 METERS)
 WINDS AT 10 MEIER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.	2.	18.	18.	22.	16.	5.	1.	0.	4.	1.	5.	92.	4.79
NE	0.	2.	3.	3.	2.	3.	0.	0.	1.	0.	0.	8.	22.	7.99
ENE	0.	1.	2.	2.	1.	1.	2.	0.	1.	1.	0.	0.	11.	5.00
E	0.	0.	2.	0.	4.	3.	0.	0.	0.	1.	0.	0.	10.	4.98
ESE	0.	0.	1.	2.	1.	2.	1.	0.	0.	0.	0.	0.	7.	4.47
SE	0.	0.	0.	1.	4.	3.	1.	0.	0.	0.	0.	0.	9.	5.01
SSE	0.	0.	1.	2.	3.	4.	1.	0.	0.	0.	0.	0.	11.	4.77
S	0.	0.	2.	1.	0.	0.	1.	0.	0.	0.	0.	0.	4.	3.75
SGW	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.75
SW	0.	0.	3.	0.	1.	0.	1.	0.	0.	0.	0.	0.	5.	3.70
WSW	0.	0.	1.	0.	1.	0.	0.	0.	1.	0.	0.	0.	3.	5.20
W	0.	0.	0.	4.	1.	4.	0.	0.	0.	0.	0.	0.	9.	4.48
WNW	0.	0.	1.	2.	6.	3.	3.	1.	1.	0.	0.	0.	17.	5.18
NW	0.	0.	1.	0.	1.	3.	4.	0.	0.	1.	0.	0.	10.	5.80
NNW	0.	1.	1.	7.	1.	4.	7.	2.	1.	1.	0.	1.	26.	5.55
N	0.	3.	1.	8.	4.	4.	7.	1.	1.	0.	1.	1.	31.	5.14
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	9.	39.	50.	52.	50.	33.	5.	6.	8.	2.	15.	269.	5.25

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.00	0.09	0.84	0.84	1.02	0.74	0.23	0.05	0.00	0.19	0.05	0.23	4.28	4.99
NE	0.00	0.09	0.14	0.14	0.09	0.14	0.00	0.00	0.05	0.00	0.00	0.37	1.02	7.99
ENE	0.00	0.05	0.09	0.09	0.05	0.05	0.09	0.00	0.05	0.05	0.00	0.00	0.51	5.00
E	0.00	0.00	0.09	0.00	0.19	0.14	0.00	0.00	0.00	0.05	0.00	0.00	0.46	4.98
ESE	0.00	0.00	0.05	0.09	0.05	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.33	4.47
SE	0.00	0.00	0.00	0.05	0.19	0.14	0.05	0.00	0.00	0.00	0.00	0.00	0.42	5.01
SSE	0.00	0.00	0.05	0.09	0.14	0.19	0.05	0.00	0.00	0.00	0.00	0.00	0.51	4.77
S	0.00	0.00	0.09	0.05	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.19	3.75
SGW	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	2.75
SW	0.00	0.00	0.14	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.23	3.70
WSW	0.00	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.14	5.20
W	0.00	0.00	0.00	0.19	0.05	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.42	4.48
WNW	0.00	0.00	0.05	0.09	0.28	0.14	0.14	0.05	0.05	0.00	0.00	0.00	0.79	5.18
NW	0.00	0.00	0.05	0.00	0.05	0.14	0.19	0.00	0.00	0.05	0.00	0.00	0.46	5.80
NNW	0.00	0.05	0.05	0.33	0.05	0.19	0.33	0.09	0.05	0.05	0.00	0.05	1.21	5.55
N	0.00	0.14	0.05	0.37	0.19	0.19	0.33	0.05	0.05	0.00	0.05	0.05	1.44	5.14
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.42	1.81	2.32	2.42	2.32	1.53	0.23	0.28	0.37	0.09	0.70	12.50	5.25

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2152

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 1ST QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 01/01/84 TO 03/31/84
 STABILITY CLASS #F# (10-40 METERS)
 WINDS AT 10 MEETER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.	3.	13.	34.	37.	37.	28.	11.	3.	3.	6.	8.	187.	5.59
NE	0.	0.	11.	6.	4.	4.	2.	1.	0.	1.	1.	4.	34.	5.36
ENE	0.	4.	1.	4.	2.	1.	1.	1.	0.	0.	0.	0.	14.	3.81
E	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	4.	3.93
ESE	0.	1.	4.	1.	0.	2.	2.	0.	0.	0.	0.	0.	10.	3.79
SE	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	2.	5.30
SSE	0.	1.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	5.	2.98
S	0.	0.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	2.53
SSW	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.55
SW	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.	2.	3.50
WSW	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.05
W	0.	0.	0.	2.	1.	1.	0.	0.	0.	0.	0.	0.	4.	4.00
WNW	0.	0.	0.	0.	0.	2.	2.	0.	0.	0.	0.	0.	4.	6.05
NW	0.	0.	1.	1.	0.	2.	0.	1.	0.	0.	0.	0.	5.	5.08
NNW	0.	0.	1.	1.	3.	0.	1.	0.	0.	0.	0.	0.	6.	4.15
N	0.	0.	2.	5.	9.	8.	5.	6.	1.	4.	0.	0.	40.	5.86
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	10.	44.	57.	59.	59.	41.	20.	6.	10.	7.	12.	325.	5.27

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)											TOTAL	MEAN SPEED	
	1	2	3	4	5	6	7	8	9	10	11			>11
NNE	0.00	0.14	0.60	1.58	1.72	1.72	1.30	0.51	0.23	0.23	0.28	0.37	8.69	5.54
NE	0.00	0.00	0.31	0.28	0.19	0.19	0.09	0.03	0.00	0.03	0.03	0.19	1.58	5.36
ENE	0.00	0.19	0.03	0.19	0.09	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.65	3.81
E	0.00	0.00	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.19	3.93
ESE	0.00	0.03	0.19	0.03	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.46	3.79
SE	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.09	5.30
SSE	0.00	0.03	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	2.98
S	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	2.53
SSW	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	2.55
SW	0.00	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	3.50
WSW	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	2.05
W	0.00	0.00	0.00	0.09	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.19	4.00
WNW	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.23	6.05
NW	0.00	0.00	0.03	0.03	0.00	0.09	0.00	0.03	0.00	0.00	0.00	0.00	0.23	5.08
NNW	0.00	0.00	0.03	0.03	0.14	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.23	4.15
N	0.00	0.00	0.09	0.23	0.42	0.37	0.23	0.28	0.03	0.19	0.00	0.00	1.86	5.86
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.46	2.04	2.65	2.74	2.74	1.91	0.93	0.28	0.46	0.33	0.56	15.10	5.27

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2152

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 1ST QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 01/01/84 TO 03/31/84
 STABILITY CLASS #G# (10-40 METERS)
 WINDS AT 10 METER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)											TOTAL	MEAN SPEED	
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.	1.	4.	15.	14.	46.	71.	90.	80.	111.	72.	79.	583.	8.63
NE	0.	1.	1.	4.	1.	6.	4.	4.	0.	2.	0.	3.	26.	6.62
ENE	0.	1.	0.	0.	2.	0.	1.	0.	0.	0.	0.	0.	4.	4.47
E	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	3.	3.63
ESE	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.70
SE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SSE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
S	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.	5.00
SSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
WSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
W	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
WNW	0.	0.	0.	0.	2.	0.	1.	0.	0.	0.	0.	0.	3.	5.20
NW	0.	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.	2.	6.50
NNW	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	2.	4.50
N	0.	0.	0.	2.	1.	3.	6.	4.	10.	6.	3.	4.	39.	8.30
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	4.	7.	22.	21.	56.	86.	98.	90.	119.	75.	86.	664.	8.43

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.00	0.05	0.19	0.70	0.65	2.14	3.30	4.18	3.72	5.16	3.35	3.67	27.07	8.63
NE	0.00	0.05	0.05	0.19	0.05	0.28	0.19	0.19	0.00	0.09	0.00	0.14	1.21	6.62
ENE	0.00	0.05	0.00	0.00	0.09	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.19	4.47
E	0.00	0.00	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	3.63
ESE	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	2.70
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05	5.00
SSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WNW	0.00	0.00	0.00	0.00	0.09	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.14	5.20
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.07	6.50
NNW	0.00	0.05	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.07	4.50
N	0.00	0.00	0.00	0.09	0.05	0.14	0.28	0.19	0.46	0.28	0.14	0.19	1.81	8.30
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.19	0.33	1.02	0.98	2.60	4.00	4.55	4.18	5.53	3.49	4.00	30.86	8.43

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2152

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 1ST QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 01/01/84 TO 03/31/84
 STABILITY CLASS ALL (10-40 METERS)
 WINDS AT 10 METER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)											TOTAL	MEAN SPEED	
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.	7.	37.	72.	75.	100.	109.	106.	89.	120.	79.	100.	894.	7.60
NE	0.	3.	15.	15.	7.	14.	7.	6.	3.	3.	1.	18.	92.	6.61
ENE	0.	6.	3.	6.	6.	3.	6.	1.	1.	1.	0.	0.	33.	4.54
E	1.	0.	4.	2.	8.	6.	4.	2.	0.	1.	0.	2.	30.	5.39
ESE	1.	1.	6.	4.	1.	4.	8.	5.	1.	0.	0.	0.	31.	5.06
SE	0.	0.	0.	9.	9.	13.	9.	7.	8.	8.	4.	1.	68.	6.75
SSE	0.	1.	9.	15.	14.	12.	9.	8.	7.	9.	1.	0.	85.	5.70
S	0.	0.	13.	10.	12.	15.	16.	18.	5.	3.	4.	0.	96.	5.89
SSW	0.	0.	7.	9.	13.	12.	7.	7.	10.	2.	0.	2.	69.	5.93
SW	0.	2.	13.	17.	25.	16.	8.	8.	0.	0.	0.	0.	89.	4.65
WSW	0.	2.	7.	22.	30.	19.	17.	4.	2.	3.	1.	6.	113.	5.51
W	0.	0.	5.	19.	41.	53.	30.	20.	7.	5.	4.	5.	189.	6.02
WNW	0.	1.	3.	10.	21.	27.	26.	12.	10.	11.	4.	14.	139.	7.16
NW	0.	0.	6.	8.	6.	11.	13.	5.	0.	1.	1.	2.	53.	5.65
NNW	0.	2.	4.	13.	10.	11.	10.	4.	1.	1.	0.	1.	57.	5.09
N	0.	6.	3.	15.	19.	16.	18.	11.	12.	11.	4.	6.	121.	6.39
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	2.	31.	135.	246.	297.	332.	297.	224.	156.	179.	103.	157.	2159.	6.63

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.00	0.32	1.71	3.33	3.47	4.63	5.05	4.91	4.12	5.56	3.66	4.63	41.41	7.60
NE	0.00	0.14	0.69	0.69	0.32	0.65	0.32	0.28	0.14	0.14	0.05	0.83	4.26	6.61
ENE	0.00	0.28	0.14	0.28	0.28	0.14	0.28	0.05	0.05	0.05	0.00	0.00	1.53	4.54
E	0.05	0.00	0.19	0.09	0.37	0.28	0.19	0.09	0.00	0.05	0.00	0.09	1.37	5.39
ESE	0.05	0.05	0.28	0.19	0.05	0.19	0.37	0.23	0.05	0.00	0.00	0.00	1.44	5.06
SE	0.00	0.00	0.00	0.42	0.42	0.60	0.42	0.32	0.37	0.37	0.19	0.05	3.15	6.75
SSE	0.00	0.05	0.42	0.69	0.65	0.56	0.42	0.37	0.32	0.42	0.05	0.00	3.94	5.70
S	0.00	0.00	0.60	0.46	0.56	0.69	0.74	0.83	0.23	0.14	0.19	0.00	4.45	5.89
SSW	0.00	0.00	0.32	0.42	0.60	0.56	0.32	0.32	0.46	0.09	0.00	0.09	3.20	5.93
SW	0.00	0.09	0.60	0.79	1.16	0.74	0.37	0.37	0.00	0.00	0.00	0.00	4.12	4.65
WSW	0.00	0.09	0.32	1.02	1.39	0.88	0.79	0.19	0.09	0.14	0.05	0.28	5.23	5.51
W	0.00	0.00	0.23	0.88	1.90	2.45	1.39	0.93	0.32	0.23	0.19	0.23	8.75	6.02
WNW	0.00	0.05	0.14	0.46	0.97	1.25	1.20	0.56	0.46	0.51	0.19	0.65	6.44	7.16
NW	0.00	0.00	0.28	0.37	0.28	0.51	0.60	0.23	0.00	0.05	0.05	0.09	2.45	5.65
NNW	0.00	0.09	0.19	0.60	0.46	0.51	0.46	0.19	0.05	0.05	0.00	0.05	2.64	5.09
N	0.00	0.28	0.14	0.69	0.88	0.74	0.83	0.51	0.56	0.51	0.19	0.28	5.60	6.39
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.09	1.44	6.25	11.39	13.76	15.38	13.76	10.38	7.23	8.29	4.77	7.27	100.00	6.63

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2152

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 2ND QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 04/01/84 TO 06/30/84
 STABILITY CLASS #A# (10-40 METERS)
 WINDS AT 10 METER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
NE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SE	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.	0.	1.	4.	8.57
SSE	0.	0.	0.	0.	0.	3.	2.	5.	6.	2.	3.	20.	41.	11.17
S	0.	0.	2.	4.	8.	9.	11.	16.	21.	20.	9.	21.	121.	8.54
SSW	0.	0.	1.	5.	13.	19.	23.	25.	28.	9.	2.	4.	129.	7.17
SW	0.	0.	2.	11.	22.	32.	42.	32.	13.	5.	2.	1.	162.	6.41
WSW	0.	0.	1.	6.	17.	39.	45.	25.	12.	7.	3.	1.	156.	6.53
W	0.	0.	0.	1.	20.	27.	27.	19.	26.	15.	8.	12.	155.	7.64
WNW	0.	0.	0.	0.	0.	3.	2.	2.	4.	2.	2.	21.	36.	11.25
NW	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	2.	11.80
NNW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
N	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	0.	6.	27.	80.	132.	153.	125.	111.	61.	29.	82.	806.	7.59

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.03	0.00	0.03	0.19	8.57
SSE	0.00	0.00	0.00	0.00	0.00	0.14	0.09	0.24	0.28	0.09	0.14	0.94	1.93	11.17
S	0.00	0.00	0.09	0.19	0.38	0.42	0.52	0.75	0.99	0.94	0.42	0.99	5.71	8.54
SSW	0.00	0.00	0.05	0.24	0.61	0.90	1.08	1.18	1.32	0.42	0.09	0.19	6.08	7.17
SW	0.00	0.00	0.09	0.52	1.04	1.51	1.98	1.51	0.61	0.24	0.09	0.05	7.64	6.41
WSW	0.00	0.00	0.05	0.28	0.80	1.84	2.12	1.18	0.57	0.33	0.14	0.05	7.36	6.53
W	0.00	0.00	0.00	0.05	0.94	1.27	1.27	0.90	1.23	0.71	0.38	0.57	7.31	7.64
WNW	0.00	0.00	0.00	0.00	0.00	0.14	0.09	0.09	0.19	0.09	0.09	0.99	1.70	11.25
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.05	0.07	11.80
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.00	0.28	1.27	3.77	6.23	7.22	5.90	5.24	2.88	1.37	3.87	38.02	7.59

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2120

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 2ND QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 04/01/84 TO 06/30/84
 STABILITY CLASS #8# (10-40 METERS)
 WINDS AT 10 METER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
NE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SE	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.	1.	3.	9.63
SGE	0.	0.	0.	0.	0.	1.	1.	2.	0.	1.	0.	3.	8.	9.61
S	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.	1.	5.	7.16
SSW	0.	0.	0.	0.	0.	0.	2.	1.	0.	0.	0.	0.	3.	7.13
SW	0.	0.	1.	0.	1.	0.	2.	0.	0.	1.	0.	0.	5.	6.00
WSW	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	3.70
W	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	7.60
WNW	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	7.70
NW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	12.40
NNW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
N	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	0.	1.	1.	2.	2.	6.	6.	2.	2.	0.	6.	28.	8.02

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.05	0.14	9.63
SGE	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.05	0.00	0.05	0.00	0.14	0.38	9.61
S	0.00	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.05	0.24	7.16
SSW	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.05	0.00	0.00	0.00	0.00	0.14	7.13
SW	0.00	0.00	0.05	0.00	0.05	0.00	0.09	0.00	0.00	0.05	0.00	0.00	0.24	6.00
WSW	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	3.70
W	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.05	7.60
WNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.05	7.70
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	12.40
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.00	0.05	0.05	0.09	0.09	0.28	0.28	0.09	0.09	0.00	0.28	1.32	8.02

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2120

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 2ND QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 04/01/84 TO 06/30/84
 STABILITY CLASS #C* (10-40 METERS)
 WINDS AT 10 METER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)													MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	
NNE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
NE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SE	0.	0.	0.	0.	0.	1.	0.	2.	1.	0.	0.	2.	6.	9.78
SSE	0.	0.	0.	2.	1.	3.	1.	4.	0.	2.	1.	5.	19.	9.03
S	0.	0.	1.	1.	3.	1.	0.	2.	2.	1.	2.	1.	14.	7.20
SSW	0.	0.	1.	1.	1.	3.	2.	2.	0.	0.	0.	0.	10.	5.70
SW	0.	0.	1.	1.	0.	1.	0.	0.	0.	0.	1.	0.	4.	5.65
WSW	0.	0.	1.	4.	5.	1.	1.	0.	0.	0.	0.	0.	12.	4.28
W	0.	0.	3.	3.	3.	0.	2.	0.	0.	0.	0.	0.	11.	4.08
WNW	0.	0.	0.	3.	3.	0.	3.	2.	1.	1.	0.	0.	13.	6.06
NW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
NNW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	10.60
N	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	0.	7.	15.	16.	10.	9.	12.	4.	4.	5.	8.	90.	6.63

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.09	0.03	0.00	0.00	0.09	0.28	9.78
SSE	0.00	0.00	0.00	0.09	0.03	0.14	0.03	0.19	0.00	0.09	0.03	0.24	0.90	9.03
S	0.00	0.00	0.03	0.03	0.14	0.03	0.00	0.09	0.09	0.03	0.09	0.03	0.66	7.20
SSW	0.00	0.00	0.03	0.03	0.03	0.14	0.09	0.09	0.00	0.00	0.00	0.00	0.47	5.70
SW	0.00	0.00	0.03	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.03	0.00	0.19	5.65
WSW	0.00	0.00	0.03	0.19	0.24	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.37	4.28
W	0.00	0.00	0.14	0.14	0.14	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.52	4.08
WNN	0.00	0.00	0.00	0.14	0.14	0.00	0.14	0.09	0.03	0.03	0.00	0.00	0.61	6.06
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03	10.60
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.00	0.33	0.71	0.75	0.47	0.42	0.37	0.19	0.19	0.24	0.38	4.25	6.63

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2120

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 2ND QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 04/01/84 TO 06/30/84
 STABILITY CLASS #D* (10-40 METERS)
 WINDS AT 10 METER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.	0.	2.	6.	6.	4.	2.	2.	0.	0.	0.	0.	22.	4.72
NE	0.	0.	1.	5.	2.	1.	0.	0.	0.	0.	0.	0.	9.	3.90
ENE	0.	0.	1.	2.	2.	6.	1.	0.	0.	0.	0.	0.	12.	4.88
E	0.	0.	1.	2.	10.	1.	2.	1.	0.	0.	0.	0.	17.	4.79
ESE	0.	0.	1.	7.	4.	13.	12.	6.	9.	4.	0.	0.	56.	6.34
SE	0.	0.	4.	13.	16.	20.	23.	32.	25.	18.	13.	19.	183.	7.67
SSE	0.	0.	1.	10.	8.	10.	4.	10.	9.	6.	3.	7.	68.	7.27
S	0.	0.	8.	7.	10.	7.	6.	4.	6.	3.	3.	1.	55.	5.94
SSW	0.	1.	2.	6.	8.	7.	1.	3.	2.	1.	2.	2.	35.	5.82
SW	0.	0.	2.	4.	5.	5.	3.	5.	2.	1.	1.	0.	28.	5.84
WSW	0.	1.	5.	4.	2.	2.	2.	0.	0.	1.	0.	1.	18.	4.90
W	0.	1.	6.	3.	5.	2.	1.	0.	1.	1.	0.	2.	22.	5.32
WNW	0.	0.	1.	2.	4.	2.	1.	4.	2.	0.	1.	4.	21.	7.64
NW	0.	0.	2.	3.	2.	3.	2.	2.	2.	2.	0.	6.	24.	8.02
NNW	0.	0.	1.	5.	0.	1.	0.	0.	0.	0.	0.	0.	7.	3.66
N	0.	3.	5.	9.	5.	3.	2.	1.	0.	0.	0.	0.	28.	3.94
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	6.	43.	88.	89.	87.	62.	70.	58.	37.	23.	42.	605.	6.48

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.00	0.00	0.09	0.28	0.28	0.19	0.09	0.09	0.00	0.00	0.00	0.00	1.04	4.72
NE	0.00	0.00	0.05	0.24	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.42	3.90
ENE	0.00	0.00	0.05	0.09	0.09	0.28	0.05	0.00	0.00	0.00	0.00	0.00	0.57	4.88
E	0.00	0.00	0.05	0.09	0.47	0.05	0.09	0.05	0.00	0.00	0.00	0.00	0.80	4.79
ESE	0.00	0.00	0.05	0.33	0.19	0.61	0.57	0.28	0.42	0.19	0.00	0.00	2.64	6.34
SE	0.00	0.00	0.19	0.61	0.75	0.94	1.08	1.51	1.18	0.85	0.61	0.90	8.63	7.67
SSE	0.00	0.00	0.05	0.47	0.38	0.47	0.19	0.47	0.42	0.28	0.14	0.33	3.21	7.27
S	0.00	0.00	0.38	0.33	0.47	0.33	0.28	0.19	0.28	0.14	0.14	0.05	2.59	5.94
SSW	0.00	0.05	0.09	0.28	0.38	0.33	0.05	0.14	0.09	0.05	0.09	0.09	1.65	5.82
SW	0.00	0.00	0.09	0.19	0.24	0.24	0.14	0.24	0.09	0.05	0.05	0.00	1.32	5.84
WSW	0.00	0.05	0.24	0.19	0.09	0.09	0.09	0.00	0.00	0.05	0.00	0.05	0.85	4.90
W	0.00	0.05	0.28	0.14	0.24	0.09	0.05	0.00	0.05	0.05	0.00	0.09	1.04	5.32
WNW	0.00	0.00	0.05	0.09	0.19	0.09	0.05	0.19	0.09	0.05	0.05	0.19	0.99	7.64
NW	0.00	0.00	0.09	0.14	0.09	0.14	0.09	0.09	0.09	0.09	0.00	0.28	1.13	8.02
NNW	0.00	0.00	0.05	0.24	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.33	3.66
N	0.00	0.14	0.24	0.42	0.24	0.14	0.09	0.05	0.00	0.00	0.00	0.00	1.32	3.94
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.28	2.03	4.15	4.20	4.10	2.92	3.30	2.74	1.75	1.08	1.98	28.54	6.48

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2120

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 2ND QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 04/01/84 TO 06/30/84
 STABILITY CLASS #E# (10-40 METERS)
 WINDS AT 10 MEIER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.	2.	6.	18.	8.	4.	5.	5.	0.	2.	0.	0.	50.	4.65
NE	0.	1.	2.	1.	3.	0.	0.	0.	0.	0.	0.	0.	7.	3.49
ENE	0.	0.	1.	3.	2.	1.	0.	0.	0.	0.	0.	0.	7.	3.99
E	0.	0.	2.	2.	3.	4.	1.	1.	1.	1.	0.	0.	15.	5.33
ESE	0.	0.	3.	3.	4.	6.	1.	0.	1.	0.	0.	0.	18.	4.64
SE	0.	0.	3.	10.	6.	6.	7.	2.	2.	0.	0.	0.	36.	5.13
SSE	0.	1.	6.	9.	2.	5.	2.	2.	0.	0.	0.	0.	27.	4.20
S	0.	0.	3.	2.	2.	1.	3.	0.	0.	0.	0.	0.	11.	4.55
SSW	0.	0.	0.	0.	0.	2.	1.	1.	0.	0.	0.	0.	4.	6.30
SW	0.	0.	1.	2.	1.	1.	1.	0.	0.	0.	0.	0.	6.	4.52
WSW	0.	0.	0.	2.	0.	0.	0.	1.	0.	1.	0.	0.	4.	5.78
W	0.	0.	1.	3.	2.	0.	0.	0.	0.	0.	0.	0.	6.	3.68
WNW	0.	1.	1.	1.	2.	1.	2.	1.	0.	0.	0.	1.	10.	5.96
NW	0.	1.	3.	1.	2.	2.	1.	0.	1.	0.	1.	5.	17.	7.07
NNW	0.	1.	2.	3.	0.	0.	1.	1.	1.	0.	0.	0.	9.	4.63
N	0.	2.	12.	5.	3.	2.	2.	2.	0.	1.	0.	0.	29.	3.99
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	9.	46.	65.	40.	35.	27.	16.	6.	5.	1.	6.	256.	4.91

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.00	0.09	0.28	0.85	0.38	0.19	0.24	0.24	0.00	0.09	0.00	0.00	2.36	4.65
NE	0.00	0.03	0.09	0.03	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	3.49
ENE	0.00	0.00	0.03	0.14	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.33	3.99
E	0.00	0.00	0.09	0.09	0.14	0.19	0.03	0.03	0.03	0.03	0.00	0.00	0.71	5.33
ESE	0.00	0.00	0.14	0.14	0.19	0.28	0.05	0.00	0.05	0.00	0.00	0.00	0.85	4.64
SE	0.00	0.00	0.14	0.47	0.28	0.28	0.33	0.09	0.09	0.00	0.00	0.00	1.70	5.13
SSE	0.00	0.03	0.28	0.42	0.09	0.24	0.09	0.09	0.00	0.00	0.00	0.00	1.27	4.20
S	0.00	0.00	0.14	0.09	0.09	0.03	0.14	0.00	0.00	0.00	0.00	0.00	0.52	4.55
SSW	0.00	0.00	0.00	0.00	0.00	0.09	0.03	0.03	0.00	0.00	0.00	0.00	0.19	6.30
SW	0.00	0.00	0.03	0.09	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.28	4.52
WSW	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.00	0.19	5.78
W	0.00	0.00	0.03	0.14	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	3.68
WNW	0.00	0.03	0.03	0.03	0.09	0.03	0.09	0.03	0.00	0.00	0.00	0.03	0.47	5.96
NW	0.00	0.03	0.14	0.03	0.09	0.09	0.03	0.00	0.03	0.00	0.03	0.24	0.80	7.07
NNW	0.00	0.03	0.09	0.14	0.00	0.00	0.03	0.03	0.03	0.00	0.00	0.00	0.42	4.63
N	0.00	0.09	0.57	0.24	0.14	0.09	0.09	0.09	0.00	0.03	0.00	0.00	1.37	3.99
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.42	2.17	3.07	1.89	1.63	1.27	0.73	0.28	0.24	0.03	0.28	12.08	4.91

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2120

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 2ND QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 04/01/84 TO 06/30/84
 STABILITY CLASS #F# (10-40 METERS)
 WINDS AT 10 METER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.	1.	7.	25.	42.	28.	22.	5.	5.	1.	0.	0.	136.	5.12
NE	0.	1.	3.	6.	3.	2.	0.	0.	0.	0.	0.	0.	15.	3.75
ENE	0.	0.	2.	1.	0.	0.	1.	0.	0.	0.	0.	0.	4.	3.93
E	0.	1.	3.	0.	1.	1.	0.	0.	0.	0.	0.	0.	6.	3.10
ESE	0.	0.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	3.	2.73
SE	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.80
SSE	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.75
S	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.10
SSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
WSW	0.	0.	3.	1.	0.	0.	0.	0.	0.	0.	0.	0.	4.	2.85
W	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
WNW	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	7.00
NW	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.	0.	4.	8.15
NNW	0.	0.	1.	1.	1.	1.	0.	1.	0.	0.	0.	0.	5.	4.38
N	0.	0.	4.	8.	4.	3.	2.	2.	2.	0.	1.	0.	26.	4.90
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	3.	28.	45.	51.	35.	26.	8.	8.	2.	2.	0.	208.	4.95

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	UPPER CLASS INTERVALS OF WIND SPEED (MPH)												TOTAL	MEAN SPEED
	1	2	3	4	5	6	7	8	9	10	11	>11		
NNE	0.00	0.05	0.33	1.18	1.98	1.32	1.04	0.24	0.24	0.05	0.00	0.00	6.42	5.12
NE	0.00	0.05	0.14	0.28	0.14	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.71	3.75
ENE	0.00	0.00	0.09	0.05	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.19	3.93
E	0.00	0.05	0.14	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.28	3.10
ESE	0.00	0.00	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	2.93
SE	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	2.80
SSE	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	2.95
S	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	2.10
SSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WSW	0.00	0.00	0.14	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	2.85
W	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WNW	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.05	7.00
NW	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.05	0.05	0.05	0.00	0.19	8.15
NNW	0.00	0.00	0.05	0.05	0.05	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.24	4.58
N	0.00	0.00	0.19	0.38	0.19	0.14	0.09	0.09	0.09	0.00	0.05	0.00	1.23	4.90
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.14	1.32	2.12	2.41	1.65	1.23	0.38	0.38	0.09	0.09	0.00	7.81	4.83

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2120

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 2ND QUARTER, 1984
 DAMES AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 04/01/84 TO 06/30/84
 STABILITY CLASS #00 (10-40 METERS)
 WINDS AT 10 MEIER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.	0.	0.	1.	9.	19.	19.	27.	21.	8.	4.	0.	108.	7.19
NE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
ENE	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.	3.40
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SSE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
S	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
SW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
WSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
W	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
WNW	0.	0.	0.	0.	1.	0.	0.	1.	0.	0.	1.	1.	4.	8.85
NW	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	3.	0.	4.	9.33
NNW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.00
N	0.	0.	0.	1.	0.	1.	3.	3.	0.	0.	0.	0.	10.	6.50
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	0.	0.	2.	10.	22.	24.	31.	21.	8.	8.	1.	127.	7.24

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.00	0.00	0.00	0.03	0.42	0.90	0.90	1.27	0.99	0.38	0.19	0.00	5.09	7.19
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ENE	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.03	3.40
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WNW	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.05	0.00	0.00	0.05	0.05	0.19	8.85
NW	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.14	0.00	0.19	9.33
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	0.00	0.00	0.00	0.05	0.00	0.05	0.24	0.14	0.00	0.00	0.00	0.00	3.47	6.50
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.00	0.00	0.09	0.47	1.04	1.13	1.46	0.99	0.38	0.38	0.05	5.99	7.24

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2120

TABLE 4A

SOUTHERN CALIFORNIA EDISON COMPANY
 SAN ONOFRE NUCLEAR GENERATING STATION
 2ND QUARTER, 1984
 DAMER AND MOORE JOB NO. - 00377-084-09
 DATA PERIOD- 04/01/84 TO 06/30/84
 STABILITY CLAS ALL (10-40 METERS)
 WINDS AT 10 MEIER LEVEL

25-JUL-84

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN NUMBER OF OCCURRENCES)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.	3.	16.	52.	65.	57.	48.	39.	26.	11.	4.	0.	321.	5.70
NE	0.	2.	6.	12.	8.	3.	0.	0.	0.	0.	0.	0.	31.	3.74
ENE	0.	0.	4.	6.	4.	8.	2.	0.	0.	0.	0.	0.	24.	4.48
E	0.	1.	6.	4.	14.	6.	3.	2.	1.	1.	0.	0.	38.	4.74
ESE	0.	0.	6.	11.	8.	19.	13.	6.	10.	4.	0.	0.	77.	5.81
SE	0.	0.	8.	23.	22.	27.	31.	37.	30.	19.	13.	23.	233.	7.35
SSE	0.	1.	8.	22.	11.	22.	10.	23.	16.	11.	7.	35.	166.	8.00
S	0.	0.	15.	14.	24.	19.	21.	23.	29.	25.	14.	24.	208.	7.49
SSW	0.	1.	4.	12.	22.	31.	30.	32.	30.	10.	4.	6.	182.	6.91
SW	0.	0.	7.	19.	29.	44.	50.	38.	15.	7.	4.	1.	214.	6.23
WSW	0.	1.	11.	18.	28.	42.	50.	26.	13.	9.	3.	2.	203.	6.10
W	0.	1.	11.	10.	30.	32.	32.	22.	28.	18.	8.	15.	207.	7.06
WNW	0.	1.	2.	6.	10.	6.	9.	11.	7.	3.	4.	27.	86.	8.75
NW	0.	1.	3.	6.	4.	6.	3.	2.	5.	3.	5.	13.	93.	7.96
NNW	0.	1.	4.	11.	1.	2.	1.	2.	1.	0.	1.	0.	24.	4.49
N	0.	5.	21.	24.	12.	9.	11.	8.	2.	1.	1.	0.	94.	4.49
VARIABLE													0.	0.00
CALM													0.	0.00
TOTAL	0.	18.	134.	290.	292.	333.	314.	271.	213.	122.	68.	146.	2161.	6.60

WIND FREQUENCY DISTRIBUTION
 (FREQUENCY IN PERCENT OF TOTAL)

WIND DIRECTION	1	2	3	4	5	6	7	8	9	10	11	>11	TOTAL	MEAN SPEED
NNE	0.00	0.14	0.74	2.41	3.01	2.64	2.22	1.80	1.20	0.51	0.19	0.00	14.85	5.70
NE	0.00	0.09	0.28	0.36	0.37	0.14	0.00	0.00	0.00	0.00	0.00	0.00	1.43	3.74
ENE	0.00	0.00	0.19	0.28	0.19	0.37	0.09	0.00	0.00	0.00	0.00	0.00	1.11	4.48
E	0.00	0.05	0.28	0.19	0.65	0.28	0.14	0.09	0.05	0.05	0.00	0.00	1.76	4.74
ESE	0.00	0.00	0.28	0.51	0.37	0.88	0.60	0.28	0.46	0.19	0.00	0.00	3.56	5.81
SE	0.00	0.00	0.37	1.06	1.02	1.25	1.43	1.71	1.39	0.88	0.60	1.06	10.78	7.35
SSE	0.00	0.05	0.37	1.02	0.51	1.02	0.46	1.06	0.74	0.51	0.32	1.62	7.68	8.00
S	0.00	0.00	0.69	0.65	1.11	0.88	0.97	1.06	1.34	1.16	0.65	1.11	7.63	7.49
SSW	0.00	0.05	0.19	0.56	1.02	1.43	1.39	1.48	1.39	0.46	0.19	0.28	8.42	6.91
SW	0.00	0.00	0.32	0.88	1.34	2.04	2.31	1.76	0.69	0.32	0.19	0.05	9.90	6.23
WSW	0.00	0.05	0.51	0.83	1.30	1.94	2.31	1.20	0.60	0.42	0.14	0.09	9.39	6.10
W	0.00	0.05	0.51	0.46	1.39	1.48	1.48	1.02	1.30	0.83	0.37	0.69	9.58	7.06
WNW	0.00	0.05	0.09	0.28	0.46	0.28	0.42	0.51	0.32	0.14	0.19	1.25	3.98	8.75
NW	0.00	0.05	0.23	0.28	0.19	0.28	0.14	0.09	0.23	0.14	0.23	0.60	2.45	7.96
NNW	0.00	0.05	0.19	0.51	0.05	0.09	0.05	0.09	0.05	0.00	0.05	0.00	1.11	4.49
N	0.00	0.23	0.97	1.11	0.56	0.42	0.51	0.37	0.09	0.05	0.05	0.00	4.35	4.49
VARIABLE													0.00	0.00
CALM													0.00	0.00
TOTAL	0.00	0.83	6.20	11.57	13.91	15.41	14.93	12.54	9.86	9.65	3.15	6.76	100.00	6.60

TOTAL NUMBER OF POSSIBLE OBSERVATIONS - 2184

TOTAL NUMBER OF OBSERVATIONS WITH VALID SPEED, DIRECTION AND STABILITY - 2120

SECTION H. 10 CFR 50, APPENDIX I CONSIDERATIONS

Current Technical Specifications do not require and effluent monitoring capabilities do not allow, strict compliance with the provisions of 10 CFR 50, Appendix I. However, using data from an Appendix I study conducted for the years 1973, 1974, and 1975, conclusions can be drawn regarding relative release amounts versus doses assessed.

A submittal dated October 6, 1976, titled: Evaluation of Radioactive Gaseous Effluents from the San Onofre Nuclear Generating Station - Unit 1. For the Years 1973, 1974 and 1975 (CN05-RAD) lists releases and dose assessments for the years 1973, 1974, and 1975. In 1975, Appendix I criteria were met and the lowest doses were obtained. The releases for the first half of 1984 were categorized as Noble Gas, Particulate, Tritium and Iodine. The released quantity of radionuclides in each of these categories was at least an order of magnitude less than in 1975. Therefore, it may be concluded that the current reporting period complies with Appendix I of 10 CFR 50.

SECTION I. 40 CFR 190 CONSIDERATIONS

Current capabilities at Unit-1 do not allow for the direct determination (calculation) of doses from liquid and gaseous releases. However, comparing the releases from this reporting period to the referenced study in Section H, and direct dose measurements via TLDs located on the beach west of Unit-1, it can be concluded that the doses from releases at Unit-1, including scattered and direct radiation, comply with the provision of 40 CFR 190.

SECTION J. CONCLUSIONS

- Radioactive releases totaled $4.28\text{E}-6$ curies for gaseous effluent releases and $2.12\text{E}+1$ curies for liquid effluent releases.
- Gaseous releases were primarily I-131 which accounted for 58.3% of the total gaseous releases.
- Liquid releases were primarily tritium which accounted for 94.9% of the total liquid releases.
- Unit 1 generated radioactive releases which were below the Technical Specifications Limits for both gaseous and liquid effluents.
- Radwaste shipments totaled 1 shipment to Richland, Washington. There were $4.72\text{E}+1$ cubic meters of solid radwaste shipped containing $1.29\text{E}-1$ curies of radioactivity.
- Meteorological conditions during the semiannual period were typical of the meteorology at SONGS-1. Meteorological dispersion was good 36% of the time, fair 33% of the time and poor 31% of the time.
- 10 CFR 50, Appendix I criteria was met and SONGS-1 had no measurable radiological impact on the surrounding environment during the reporting period. This is based on a comparison with a report generated for the years 1973, 1974, and 1975 which showed compliance with the criteria set forth in Appendix I to 10 CFR 50.
- 40 CFR 190 compliance has been demonstrated using the comparison of this reporting period data with the study referenced in Section H.
- For liquid releases, marine sample analyses will indicate if any radioactive material has concentrated in marine life. However, detection of any tritium in these samples is not expected because of the rapid turnover of water in marine life and because of the bulk of ocean water available for dilution.
- The net results from the analysis of these effluent releases indicate the operation of SONGS-1 has not produced any detrimental effect on the environment.