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ACCESSION NBR: 8603130045 DOC. DATE: 85/12/31 NOTARIZED: NO DOCKET-#
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SUBJECT: "Seminannual Operating Rept, Radioactive Effluents Jul-Dec 1985." W/860228 ltr.

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PALO VERDE NUCLEAR GENERATING STATION
UNIT 1

SEMI-ANNUAL OPERATING REPORT
RADIOACTIVE EFFLUENTS
JULY 1, 1985 THROUGH DECEMBER 31, 1985

USNRC Docket STN-50-528

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PALO VERDE NUCLEAR GENERATING STATION
UNIT 1

SEMI-ANNUAL OPERATING REPORT
RADIOACTIVE EFFLUENTS
JULY 1, 1985 THROUGH DECEMBER 31, 1985

USNRC Docket STN-50-528

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INTRODUCTION

This report summarizes meteorological data and doses from radioactive effluents for the Palo Verde Nuclear Generation Station (PVNGS) for the period July through December 1985. The data presented meet the reporting requirements of Regulatory Guide 1.21 of the U.S. Nuclear Regulatory Commission (Revision 1, June 1974).

The report is organized into four parts. Appendix A presents the effluent and waste disposal source term data. Appendix B presents a summary of onsite meteorological data for the report period and includes an annual summary. Appendix C presents the radiological doses from gaseous radioactive effluents. Appendix D presents change pages to the semi-annual report ending June 1985.

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APPENDIX A

SOURCE TERMS AND

EFFLUENT AND WASTE DISPOSAL REPORTS

Supplemental Information

1.0 Regulatory Limits

1.1 Liquid Releases

a. PVNGS Technical Specification 3.11.1.1

The concentration of radioactive material discharged from secondary system liquid waste to the onsite evaporation ponds shall be limited to the Lower Limit of Detectability (LLD) defined as 5×10^{-7} uCi/ml for the principal gamma emitters or 1×10^{-6} uCi/ml for I-131.

b. PVNGS Technical Specification 3.11.1.2

The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released, from each reactor unit, to areas at and beyond the SITE BOUNDARY shall be limited:

- During any calendar quarter to less than or equal to 1.5 mrems to the total body and to less than or equal to 5 mrems to any organ, and
- During any calendar year to less than or equal to 3 mrems to the total body and to less than or equal to 10 mrems to any organ.

1.2 Gaseous Releases

a. PVNGS Technical Specification 3.11.2.1

The dose rate due to radioactive materials released in gaseous effluents from the site shall be limited to the following:

- For noble gases: Less than or equal to 500 mrems/yr to the total body and less than or equal to 3000 mrems/yr to the skin, and
- For I-131 and I-133, for tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to 1500 mrems/yr to any organ.

b. PVNGS Technical Specification 3.11.2.2

The air dose due to noble gases released in gaseous effluents, from each reactor unit, to areas at and beyond the SITE BOUNDARY shall be limited to the following:

- During any calendar quarter: Less than or equal to 5 mrads for gamma radiation and less than or equal to 10 mrads for beta radiation and,

- o During any calendar year: Less than or equal to 10 mrads for gamma radiation and less than or equal to 20 mrads for beta radiation.

c. PVNGS Technical Specification 3.11.2.3

The dose to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, Tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released, from each reactor unit, to areas at and beyond the SITE BOUNDARY shall be limited to the following:

- o During any calendar quarter: Less than or equal to 7.5 mrems to any organ and,

- o During any calendar year: Less than or equal to 15 mrems to any organ.

d. PVNGS Technical Specification 3.11.2.4

The GASEOUS RADWASTE SYSTEM and the VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected gaseous effluent air doses due to gaseous effluent releases, from each reactor unit, from the site when averaged over 31 days, would exceed 0.2 mrad for gamma radiation and 0.4 mrad for beta radiation. The VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses due to gaseous effluent releases, from each reactor unit, to areas at and beyond the SITE BOUNDARY when averaged over 31 days would exceed 0.3 mrem to any organ of a MEMBER OF THE PUBLIC.

1.3 Total Dose

a. PVNGS Technical Specification 3.11.4

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

2.0 Maximum Permissible Concentrations

Air: Release Concentrations are limited to dose rate limits described in 1.2.a of this report.

3.0 The average energy ($\bar{E}$) of the radionuclide mixture in releases of fission and activation gases is not applicable to PVNGS.

4.0 Measurement and Approximations of Total Radioactivity in Gaseous Effluents.

For continuous releases, sampling is in accordance with PVNGS Technical Specification Table 4.11-2. Particulate and iodine radionuclides are sampled continuously at the three exhaust points. The particulate filters and charcoal cartridges are exchanged for analysis four times per month. Noble gas and tritium are sampled at least once per 31 days. The hourly average Radiation Monitoring System (RMS) effluent monitor readings are used, when available, to account for increases and decreases in noble gas concentrations between noble gas grab samples. The tritium concentration is assumed constant between sampling periods.

For batch releases, sampling is also in accordance with PVNGS Technical Specification Table 4.11-2. For containment purges, the noble gas concentration is adjusted to account for decreases or increases in concentration during the purge using RMS readings. The volume of air released during the purge is determined using the exhaust fan rated flow rate. For Waste Gas Decay Tank releases, the volume released is corrected to standard pressure.

The Minimum Detectable Activity (MDA) is the minimum activity detectable by a measurement system for each particular sample. The MDA will include any interferences from other nuclides and is calculated using the actual sample volume and instrument efficiency. An average MDA for each nuclide, calculated using several randomly selected results, is provided in Table A1.

5.0 Batch Releases

5.1 Gaseous

o Number of batch releases:	46
o Total time period for batch releases:	44,296 minutes
o Maximum time period for a batch release:	9,977 minutes
o Average time period for a batch release:	963 minutes
o Minimum time period for a batch release:	41 minutes

5.2 Liquid

None

6.0 Abnormal Releases

None

7.0 Offsite Dose Calculation Manual (ODCM), Process Control Program (PCP) and Preplanned Alternate Sampling Program (PASP) Revisions

There have been no revisions to the ODCM or PCP. The PASP was resubmitted to the Office of Inspection and Enforcement Region V, on December 5, 1985 in accordance with Section 6.0 of PVNGS Technical

Specification. As of this report period the PASP had not been approved by Regional Administrator as required by PVNGS Technical Specification 6.16.1.

8.0 Effluents and Solid Wastes

8.1 Gaseous Effluents

The gaseous effluents for the third and fourth quarters are included in Tables A2 and A3. Included in Tables A2 and A3 are summaries of the effluents and estimated total error.

8.2 Liquid Effluents

There were no liquid effluents from the PVNGS site.

8.3 Solid Waste

Solid waste shipments are summarized in Table A6.

9.0 Miscellaneous Information

The land use census was conducted in December 1985. As a result of this census no changes have occurred to the radiological environmental monitoring program.

Table A7 presents the effluent monitoring instrumentation out of service for more than 30 days as required by PVNGS Technical Specification 3.3.3.9.

Releases made to the Evaporation Pond have been limited at the tank to the concentrations specified in Technical Specification 3.11.1.1. In addition, PVNGS has imposed a limit of 3×10^{-3} uci/ml for tritium in tanks released to the evaporation pond. This is the maximum permissible concentration for unrestricted areas for tritium in water from 10CFR20 Appendix B. The Evaporation Pond was monitored in accordance with Technical Specification 3.12.1. During this report period, the analyses showed tritium concentrations in water to be less than the Lower Limit of Detection for water.

Table A1

Gaseous Effluents - Minimum Detectable Activity

Nuclide	MDA (uCi/cc)
Krypton 85	1.20 E-05
Krypton 85m	4.88 E-08
Krypton 87	1.37 E-07
Krypton 88	1.21 E-07
Xenon 133	1.00 E-07
Xenon 135	3.30 E-08
Xenon 138	1.92 E-06
Xenon 133m	2.89 E-07
Iodine 131	7.36 E-13
Iodine 132	1.30 E-13
Iodine 133	2.71 E-12
Iodine 135	1.90 E-11
Strontium 89	5.00 E-16
Strontium 90	5.00 E-16
Cesium 134	5.33 E-13
Cesium 137	6.34 E-13
Cesium 138	1.06 E-11
Barium 140	1.58 E-11
Lanthanum 140	4.94 E-13
Manganese 54	6.22 E-13
Iron 59	1.40 E-12
Cobalt 58	1.37 E-12
Cobalt 60	1.01 E-12
Zinc 65	1.62 E-12
Bromine 82	2.68 E-13
Rubidium 88	1.17 E-12
Molybdenum 99	2.84 E-12
Cerium 141	6.20 E-12
Cerium 144	1.03 E-12
Hydrogen 3	1.90 E-07

Table A2

Gaseous Effluents-Summation of All Releases for July - December 1985

	Unit	Quarter #3	Quarter #4	Est. Total Error %*
A. Fission & Activation Gases				
Total release	Ci	2.61E+01	2.26E+02	3.97E+01
Average release rate for period	uCi/sec	3.28E+00	2.84E+01	
Percent of Technical Specification Limit	%	NA**	NA**	
B. Iodines				
Total Iodine-131	Ci	1.48E-04	1.28E-03	2.93E+01
Average release rate for period	uCi/sec	1.86E-05	1.61E-04	
Percent of Technical Specification Limit	%	NA**	NA**	
C. Particulates				
Particulates with half-lives >8 days	Ci	0.00E+00	1.18E-06	2.93E+01
Average release rate for period	uCi/sec	NA	1.48E-07	
Percent of Technical Specification Limit	%	NA**	NA**	
Gross alpha radioactivity	Ci	0.00E+00	0.00E+00	
D. Tritium				
Total release	Ci	1.53E+00	5.27E-01	3.95E+01
Average release rate for period	uCi/sec	1.93E-01	6.63E-02	
Percent of Technical Specification Limit	%	NA**	NA**	

* Estimated total error methodology is presented in Table A5.
**See Table A4 for Percent of Technical Specification Limits

Table A3

Gaseous Effluents-Ground Level Releases for July - December 1985

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
1. Fission gases					
Krypton-85	Ci	<MDA	<MDA	<MDA	2.46E-02
Krypton-85m	Ci	<MDA	<MDA	2.71E-03	1.0E-01
Krypton-87	Ci	<MDA	<MDA	<MDA	<MDA
Krypton-88	Ci	<MDA	<MDA	1.54E-03	6.54E-02
Xenon-133	Ci	1.41E+01	1.18E+02	1.19E+01	9.41E+01
Xenon-135	Ci	<MDA	1.17E+01	3.44E-02	1.13E+00
Xenon-135m	Ci	<MDA	<MDA	<MDA	4.46E-03
Xenon-138	Ci	<MDA	<MDA	<MDA	<MDA
Xenon-133m	Ci	<MDA	<MDA	1.85E-02	7.98E-01
Xenon-131m	Ci	<MDA	<MDA	<MDA	3.10E-02
Argon-41	Ci	<MDA	<MDA	7.17E-02	4.88E-01
	Ci				
	Ci				
	Ci				
Unidentified	Ci				
Total for Period	Ci	1.41E+01	1.30E+02	1.20E+01	9.67E+01
2. Iodines					
Iodine-131	Ci	1.20E-04	1.21E-03	2.82E-05	6.50E-05
Iodine-132	Ci	<MDA	<MDA	<MDA	1.60E-07
Iodine-133	Ci	4.21E-05	1.08E-03	3.47E-06	1.21E-05
Iodine-135	Ci	<MDA	<MDA	<MDA	2.52E-06
Total for Period	Ci	1.62E-04	2.29E-03	3.17E-05	7.98E-05
3. Particulates					
Strontium-89	Ci	*	*	*	*
Strontium-90	Ci	*	*	*	*
Cesium-134	Ci	<MDA	<MDA	<MDA	<MDA
Cesium-137	Ci	<MDA	<MDA	<MDA	<MDA
Barium-Lanthanum-140	Ci	<MDA	<MDA	<MDA	<MDA
Bromine-82	Ci	<MDA	<MDA	2.73E-06	1.72E-05
Rubidium-88	Ci	<MDA	<MDA	1.90E-04	1.17E-03
Cesium-138	Ci	<MDA	<MDA	<MDA	6.57E-06
Cobalt-58	Ci	<MDA	1.18E-06	<MDA	<MDA
Tritium	Ci	3.66E-01	<MDA	1.16E+00	5.27E-01
	Ci				
Unidentified	Ci				
Total for Period	Ci	3.66E-01	1.18E-06	1.16E+00	5.28E-01

*Analyses are not yet completed. Additional information will be included in the next Semi-Annual Report covering January-June, 1986.

Table A4

Radiation Doses at and Beyond the Site Boundary for 1985*

		Unit	Quarter #1	Quarter #2	Quarter #3	Quarter #4	Year to Date
1. a.	Gamma Air Dose	mrads	NA	4.9E-04	2.90E-03	2.37E-02	2.71E-02
	% of T.S. 3.11.2.2	%	NA	9.8E-03	5.80E-02	4.74E-01	2.71E-01
b.	Beta Air Dose	mrads	NA	3.23E-04	7.57E-03	5.91E-02	6.70E-02
	% of T.S. 3.11.2.2	%	NA	3.23E-03	7.57E-02	5.91E-01	3.35E-01
2.	Maximum Organ Dose	mrem	NA	3.18E-03**	9.91E-03***	4.39E-02***	5.52E-02***
	% of T.S. 3.11.2.3	%	NA	4.24E-02	1.32E-01	5.85E-01	3.68E-01

* Calculations based on parameters and methodologies of the ODCM using historical meteorology. The beta and gamma air doses were calculated using the N sector X/Q at the site boundary. The maximum organ dose was calculated assuming a residence, garden, milk cow and meat animal using the N sector X/Q at 1.5 miles and NE sector D/Q at 1.75 miles. These doses are calculated to estimate percentage of Technical Specification limits.

** The limiting organ is child whole body.

***The limiting organ is the infant thyroid.

Table A5

Estimation Methodology of Total Percent Error

The estimated total error is calculated as follows:

$$\text{Total Percent Error} = (E_1^2 + E_2^2 + E_3^2 \ ,\ldots,\ + E_n^2)^{1/2}$$

Where E_n = Percent error associated with each contributing parameter.

Parameters contributing to errors in the measurement of gaseous effluents are process flow rates, sample collection, analytical counting and tank volumes.

Table A6

Solid Waste Summary for July - December 1985

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

1. Type of Waste	Unit	6-Month Period	Estimated Total Error %
a. Spent resins, filter sludges, evaporator bottoms, etc	M^3 Ci	8.42E+01 6.80E+01	2.50E+01
b. Dry compressible waste, contaminated equipment, etc	M^3 Ci	0.00E+00 0.00E+00	NA NA
c. Irradiated components, control rods, etc	M^3 Ci	0.00E+00 0.00E+00	NA NA
d. Other (describe)	M^3 Ci	0.00E+00 0.00E+00	NA NA

2. Estimate of Major Nuclide Composition for Spent Resins, Filter Sludges, Evaporator Bottoms, etc., as Determined by Measurement

Cobalt 58	%	4.51E+01
Chromium 51	%	6.90E+00
Antimony 124	%	2.99E+01
Iron 55	%	3.20E+00
Zirconium 95	%	1.80E+00
Niobium 95	%	1.70E+00
Iron 59	%	1.50E+00
Cobalt 60	%	5.50E+00
Nickel 63	%	2.80E+00
	%	
	%	
	%	

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
8	Overland (Truck)	Hanford Reservation Richland, Washington (U.S. Ecology)

Table A6 (Continued)

Solid Waste Summary for July - December 1985

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
0	NA	NA

C. ADDITIONAL INFORMATION

1. Thirteen (13) - 182 ft^3 Steel Liners shipped.

   - o 11 liners were evaporator bottoms solidified in cement.
   - o 2 liners were dewatered resin with no solidification media used.

2. Nineteen (19) - 29.3 ft^3 Disposable Demineralizers which were dewatered and not solidified.

3. One (1) - 50.5 ft^3 High Integrity Container with non-solidified filters.

4. Types of containers:

   Thirty-one (31) - DOT Strong Tight Containers
   One (1) - USNRC approved Type B Container
   One (1) - USNRC approved Type A Container

Table A7

Effluent Monitoring Instrumentation Out of Service Greater Than 30 Days

Instrument	Inoperability Date	Inoperability Cause	Explanation
RU-141/142	10/13/85 to 12/8/85	Monitor was inoperable due to inappropriate handover from low range to high range.	Troubleshooting delays and installation of a separate grounding system to these monitors. Calibration of the monitors.
H_2/O_2 Analyzer	5/25/85 to Present	Design Change Package (DCP) rerouting Analyzer sample tap off and installing condensate pots has been implemented. Occasional introduction of condensate into Analyzer still occurs, preventing completion of Surveillance Tests.	DCP completion took longer than anticipated since implementation of DCP required Gaseous Radwaste System to be shut down. Administrative controls implemented to monitor for condensate. Surveillance Test scheduled to be performed in February 1986.

APPENDIX B

METEOROLOGY

JOINT FREQUENCY DISTRIBUTION TABLES

The tables presented in this section are results obtained from processing the hourly meteorological data collected at the Palo Verde Nuclear Generating Station for the period July-December 1985. The joint frequency distribution (JFD) tables represent the frequency, in terms of the number of observations, that a particular wind speed, wind direction, and stability category occurred simultaneously. On a quarterly, semi-annual and annual basis, the JFDs were produced for 35-foot wind speed and wind direction by atmospheric stability class corresponding to the seven Pasquill stability categories, and for wind speed and wind direction for all stability classes combined. Atmospheric stability was classified per Regulatory Guide 1.23, using the 200-foot to 35-foot temperature difference (delta T). JFDs are also presented for the batch releases for both the third and fourth quarters.

Table B1

JFDs of 35-Foot Wind Versus Delta T

July - September 1985

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE THIRD QUARTER 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/1/85 - 9/30/85

*** THIRD QUARTER ***
STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.51- 5.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.51- 6.50	0	0	0	0	0	0	1	0	2	0	1	0	0	0	0	0	4
6.51- 8.50	0	0	0	0	0	1	1	1	2	1	5	5	0	0	0	0	16
8.51-11.50	0	0	0	0	2	0	0	1	5	14	36	9	2	4	1	0	74
11.51-14.50	0	0	0	0	0	0	0	0	0	2	14	4	0	0	2	1	23
14.51-20.50	0	0	0	0	1	1	0	0	0	0	1	0	0	0	1	1	5
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	3	2	2	2	9	17	57	18	2	4	4	2	122

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.51- 5.50	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
5.51- 6.50	0	0	1	0	2	1	4	2	1	3	0	1	0	0	0	0	15
6.51- 8.50	0	1	0	1	2	3	7	3	7	7	19	4	5	1	0	1	61
8.51-11.50	1	0	0	0	2	2	0	1	4	8	23	9	3	0	0	2	55
11.51-14.50	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	0	8
14.51-20.50	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	4
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	1	1	1	6	7	11	6	12	19	49	16	9	1	1	4	145

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE THIRD QUARTER 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/ 1/85 - 9/30/85

*** THIRD QUARTER ***
STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	2	2	2	4	0	0	0	1	0	0	0	11
4.51- 5.50	0	0	0	1	3	5	2	5	7	5	4	2	2	0	1	0	37
5.51- 6.50	0	1	1	1	4	3	6	9	9	10	3	2	1	0	0	1	51
6.51- 8.50	0	1	1	0	5	3	3	8	3	4	7	3	4	2	1	0	45
8.51-11.50	0	0	1	0	2	0	2	1	0	5	8	7	5	0	0	0	31
11.51-14.50	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	5
14.51-20.50	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	3
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	2	3	2	17	14	16	25	24	24	22	15	14	2	2	1	183

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	1	0	1	0	1	2	0	1	1	2	1	1	0	1	0	0	12
2.51- 3.50	0	2	0	4	2	3	3	3	3	2	3	1	1	2	1	0	30
3.51- 4.50	1	1	1	3	7	11	10	6	7	3	4	2	1	1	0	0	58
4.51- 5.50	0	0	2	0	10	5	12	6	15	5	6	3	5	2	1	0	72
5.51- 6.50	1	0	0	0	3	5	3	5	5	4	4	5	2	0	1	0	38
6.51- 8.50	1	0	0	1	4	3	5	3	4	5	10	8	2	0	3	0	49
8.51-11.50	1	2	2	1	4	3	0	2	2	4	19	6	8	1	1	0	56
11.51-14.50	0	1	1	0	1	1	1	2	1	1	25	2	0	1	0	1	38
14.51-20.50	0	0	0	1	0	0	2	2	1	1	10	0	0	0	1	1	19
>20.50	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	0	4
TOTAL	5	6	7	10	34	33	36	31	39	27	82	28	20	8	8	2	376

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE THIRD QUARTER 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/ 1/85 - 9/30/85

*** THIRD QUARTER ***
STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	3
1.51- 2.50	1	1	2	4	3	0	1	0	4	0	4	3	1	2	0	1	27
2.51- 3.50	4	2	0	3	2	0	2	1	4	1	1	2	3	0	1	3	29
3.51- 4.50	1	2	2	2	9	2	0	4	6	1	4	3	3	2	2	0	43
4.51- 5.50	1	1	0	1	2	3	4	2	0	2	4	9	4	0	1	1	35
5.51- 6.50	1	3	0	3	6	1	4	0	0	4	6	3	2	0	1	0	34
6.51- 8.50	1	1	4	4	13	2	2	4	1	7	26	9	8	1	0	2	85
8.51-11.50	0	2	3	1	3	2	0	0	3	6	48	14	4	2	0	0	88
11.51-14.50	0	1	0	1	1	0	1	0	1	1	29	3	0	4	0	0	42
14.51-20.50	0	0	0	0	0	1	1	0	0	1	7	0	1	0	1	1	13
>20.50	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3
TOTAL	9	13	11	19	40	11	16	12	19	24	129	46	26	11	7	9	402

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	1	4
1.51- 2.50	8	3	7	1	2	2	0	1	2	0	2	2	3	3	2	4	42
2.51- 3.50	12	5	9	0	2	2	2	0	1	3	2	5	3	2	0	5	53
3.51- 4.50	4	1	2	3	3	3	1	3	5	3	5	3	3	3	2	2	46
4.51- 5.50	4	2	2	2	3	0	0	0	0	1	6	1	0	2	2	1	26
5.51- 6.50	0	0	2	1	1	0	0	0	4	4	4	4	2	2	0	0	24
6.51- 8.50	3	0	0	1	8	1	1	0	0	5	18	2	3	1	1	1	45
8.51-11.50	0	0	4	0	4	1	0	0	0	1	6	5	3	2	0	0	26
11.51-14.50	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
TOTAL	32	11	26	8	25	10	4	4	13	17	44	22	18	15	7	14	270

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE THIRD QUARTER 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/1/85 - 9/30/85

*** THIRD QUARTER ***
STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET .

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
1.51- 2.50	14	6	3	1	1	0	1	1	2	2	1	0	3	4	5	4	48
2.51- 3.50	24	14	13	5	7	2	2	2	3	3	2	0	1	5	4	12	99
3.51- 4.50	11	25	10	5	4	1	0	0	2	1	0	2	2	0	5	2	70
4.51- 5.50	8	11	8	3	1	0	0	0	0	0	0	1	2	0	0	3	37
5.51- 6.50	3	4	6	2	2	0	0	0	1	0	0	1	0	0	2	2	23
6.51- 8.50	8	2	1	0	0	0	0	0	0	1	2	0	0	1	1	0	16
8.51-11.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11.51-14.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.51-20.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	70	62	41	16	15	3	4	4	8	7	6	4	8	10	17	23	298

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	2	0	0	0	3	0	1	2	1	0	1	0	0	0	0	1	11
1.51- 2.50	24	10	13	6	7	4	2	3	9	4	8	6	7	10	7	9	129
2.51- 3.50	40	23	22	12	13	7	9	6	11	9	8	8	8	9	6	20	211
3.51- 4.50	17	29	15	13	23	19	13	15	24	8	13	10	10	6	9	4	228
4.51- 5.50	13	14	12	7	19	14	18	13	22	14	20	16	13	4	5	5	209
5.51- 6.50	5	8	10	7	18	10	18	16	22	25	18	16	7	2	4	3	189
6.51- 8.50	13	5	6	7	32	13	19	19	17	30	87	31	22	6	6	4	317
8.51-11.50	2	4	10	2	17	8	2	5	14	38	140	50	25	9	2	2	330
11.51-14.50	1	2	1	1	3	2	3	2	2	4	75	12	1	5	2	2	118
14.51-20.50	0	0	0	1	3	2	4	2	2	2	19	0	2	0	4	4	45
>20.50	0	0	0	0	2	1	0	1	0	1	0	0	2	0	1	1	9
TOTAL	117	95	89	56	140	80	89	84	24	1135	389	149	97	51	46	55	1796

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE THIRD QUARTER 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/1/85 - 9/30/85

*** THIRD QUARTER ***

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH
TOTAL NUMBER OF OBSERVATIONS: 2208
TOTAL NUMBER OF VALID OBSERVATIONS: 1796
TOTAL NUMBER OF MISSING OBSERVATIONS: 412
PERCENT DATA RECOVERY FOR THIS PERIOD: 81.3 %
MEAN WIND SPEED FOR THIS PERIOD: 7.0 MPH
TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
6.79	8.07	10.19	20.94	22.38	15.03	16.59

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	3	2	2	2	9	17	57	18	2	4	4	2	0
B	1	1	1	1	6	7	11	6	12	19	49	16	9	1	1	4	0
C	0	2	3	2	17	14	16	25	24	24	22	15	14	2	2	1	0
D	5	6	7	10	34	33	36	31	39	27	82	28	20	8	8	2	0
E	9	13	11	19	40	11	16	12	19	24	129	46	26	11	7	9	0
F	32	11	26	8	25	10	4	4	13	17	44	22	18	15	7	14	0
G	70	62	41	16	15	3	4	4	8	7	6	4	8	10	17	23	0
TOTAL	117	95	89	56	140	80	89	84	124	135	389	149	97	51	46	55	0

Table B2

JFDs of 35-Foot Wind Versus Delta T

October - December 1985

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE FOURTH QUARTER 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 10/1/85 - 12/31/85

*** FOURTH QUARTER ***
STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
4.51- 5.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.51- 6.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.51- 8.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.51-11.50	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
11.51-14.50	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
14.51-20.50	0	0	0	0	0	0	0	0	2	0	5	0	0	0	0	0	7
>20.50	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
TOTAL	0	0	1	0	0	0	0	0	3	7	8	0	0	0	0	0	19

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4.51- 5.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5.51- 6.50	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
6.51- 8.50	0	0	0	0	1	1	0	0	0	1	0	0	2	0	0	0	5
8.51-11.50	0	0	0	0	2	3	0	0	0	1	2	0	1	0	0	0	9
11.51-14.50	0	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	5
14.51-20.50	0	0	0	2	0	0	0	0	0	3	1	0	1	1	0	0	8
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	4	4	5	1	0	0	7	4	1	4	1	0	0	31

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE FOURTH QUARTER 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 10/1/85 - 12/31/85

*** FOURTH QUARTER ***
STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
4.51- 5.50	0	0	1	1	1	0	0	0	0	2	2	0	0	0	0	0	7
5.51- 6.50	0	0	0	1	1	2	1	0	0	2	1	0	0	0	0	0	8
6.51- 8.50	0	5	1	0	7	2	0	2	2	0	2	1	4	1	0	0	27
8.51-11.50	1	1	1	1	1	3	0	1	2	1	0	0	0	0	0	0	12
11.51-14.50	0	0	0	0	2	2	0	0	0	0	1	0	0	0	0	0	5
14.51-20.50	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	4
>20.50	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
TOTAL	1	6	3	3	13	9	1	3	5	6	8	2	4	2	0	0	66

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
0.76- 1.50	0	0	0	0	2	0	2	1	1	0	0	1	0	1	1	3	12
1.51- 2.50	4	4	4	7	7	8	18	10	9	9	4	8	11	1	6	5	115
2.51- 3.50	6	7	3	12	10	11	9	9	12	20	18	10	6	1	2	2	138
3.51- 4.50	5	3	6	23	15	16	10	9	13	7	18	9	1	3	4	2	144
4.51- 5.50	3	1	2	4	7	8	4	6	3	6	6	4	1	1	0	2	58
5.51- 6.50	0	2	0	2	8	5	2	1	3	1	5	3	4	2	1	1	40
6.51- 8.50	1	0	2	2	3	3	4	2	0	5	5	0	1	0	0	0	28
8.51-11.50	3	3	0	4	7	0	0	2	0	3	2	1	2	1	0	0	28
11.51-14.50	2	0	1	5	1	0	2	1	0	0	2	0	1	1	0	0	16
14.51-20.50	0	0	1	1	1	0	0	0	5	2	5	0	1	1	0	0	17
>20.50	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5
TOTAL	24	20	19	60	61	51	51	41	51	53	65	36	28	12	14	15	602

PVNGS JFD: 35FT WIND VS DELTA T (200'-35) FR THE FOURTH QUARTER 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 10/ 1/85 - 12/31/85

*** FOURTH QUARTER ***
STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	3
0.76- 1.50	2	1	2	0	0	2	1	3	2	2	1	1	3	1	1	2	24
1.51- 2.50	6	4	3	3	2	2	1	4	6	5	2	0	2	5	3	5	53
2.51- 3.50	1	2	0	4	4	1	0	2	7	4	5	1	3	1	3	1	39
3.51- 4.50	0	0	0	3	1	2	0	3	0	4	4	2	0	0	1	1	21
4.51- 5.50	1	0	4	0	0	1	2	2	2	8	5	1	0	3	0	0	29
5.51- 6.50	0	1	0	1	2	0	0	2	1	1	2	3	2	0	0	2	17
6.51- 8.50	1	2	0	3	3	0	4	2	2	4	4	1	3	5	2	1	37
8.51-11.50	1	0	1	1	1	0	1	1	2	9	5	1	1	4	0	1	29
11.51-14.50	1	0	2	0	0	0	0	0	1	4	2	1	0	2	0	0	13
14.51-20.50	0	0	0	1	0	0	0	0	1	4	1	0	0	0	0	0	7
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	13	10	12	16	13	8	9	19	24	45	31	11	14	21	10	13	272

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	3
0.76- 1.50	2	2	0	1	0	0	0	0	1	2	0	0	2	3	3	2	18
1.51- 2.50	9	9	7	8	2	1	2	2	4	1	3	5	6	5	6	9	79
2.51- 3.50	16	19	9	1	1	0	4	0	6	5	2	4	3	0	4	8	82
3.51- 4.50	4	6	4	4	1	0	2	5	2	3	1	2	3	3	4	8	52
4.51- 5.50	1	0	3	1	1	0	0	1	1	3	0	3	0	3	4	2	23
5.51- 6.50	2	0	0	0	0	0	0	0	1	0	0	1	1	0	2	2	9
6.51- 8.50	0	1	0	1	0	1	0	0	0	2	1	0	2	4	2	2	16
8.51-11.50	6	4	0	0	0	0	0	0	0	3	2	0	0	0	2	2	19
11.51-14.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	40	41	23	16	5	2	8	8	15	19	9	15	17	18	28	35	302

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE FOURTH QUARTER 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 10/1/85 - 12/31/85

*** FOURTH QUARTER ***
STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
0.76- 1.50	18	8	5	1	4	1	0	1	1	0	1	1	3	5	4	7	60
1.51- 2.50	77	40	17	8	3	6	1	2	2	2	5	8	10	9	18	31	239
2.51- 3.50	73	57	20	8	7	2	0	3	4	1	1	3	2	9	12	36	238
3.51- 4.50	37	39	13	2	3	0	3	0	3	0	0	0	1	1	4	16	122
4.51- 5.50	18	17	9	0	0	0	0	1	1	0	1	1	0	2	3	4	57
5.51- 6.50	9	8	1	1	0	0	0	0	0	0	0	1	0	0	0	3	23
6.51- 8.50	5	12	2	0	0	0	0	0	0	0	0	0	0	0	0	2	21
8.51-11.50	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
11.51-14.50	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	240	186	67	20	17	9	4	7	11	3	8	14	16	26	41	99	770

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	9
0.76- 1.50	22	11	7	2	6	3	3	5	5	4	2	3	8	10	9	14	114
1.51- 2.50	96	57	32	26	14	17	22	18	22	17	14	21	29	20	33	50	488
2.51- 3.50	96	85	32	25	22	14	13	14	29	30	26	18	14	11	21	47	497
3.51- 4.50	46	48	23	32	20	18	15	17	18	17	23	14	5	8	13	27	344
4.51- 5.50	23	18	19	6	9	9	7	10	7	19	14	9	1	9	7	8	175
5.51- 6.50	11	11	1	6	11	8	3	3	5	4	8	8	7	2	3	8	99
6.51- 8.50	7	20	5	6	14	7	8	6	4	12	12	2	12	10	4	5	134
8.51-11.50	14	12	2	6	11	6	1	4	4	18	12	2	4	5	2	3	106
11.51-14.50	3	1	3	6	4	2	2	1	1	7	8	2	1	3	1	0	45
14.51-20.50	0	0	1	4	2	0	0	0	9	9	14	0	2	2	0	0	43
>20.50	0	0	0	0	0	0	0	0	5	3	0	0	0	0	0	0	8
TOTAL	318	263	125	119	113	84	74	78	109	140	133	79	83	80	93	162	2062

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE FOURTH QUARTER 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 10/ 1/85 - 12/31/85

*** FOURTH QUARTER ***

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH
TOTAL NUMBER OF OBSERVATIONS: 2208
TOTAL NUMBER OF VALID OBSERVATIONS: 2062
TOTAL NUMBER OF MISSING OBSERVATIONS: 146
PERCENT DATA RECOVERY FOR THIS PERIOD: 93.4 %
MEAN WIND SPEED FOR THIS PERIOD: 4.4 MPH
TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
0.92	1.50	3.20	29.19	13.19	14.65	37.34

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	1	0	0	0	0	0	3	7	8	0	0	0	0	0	0
B	0	0	0	4	4	5	1	0	0	7	4	1	4	1	0	0	0
C	1	6	3	3	13	9	1	3	5	6	8	2	4	2	0	0	0
D	24	20	19	60	61	51	51	41	51	53	65	36	28	12	14	15	1
E	13	10	12	16	13	8	9	19	24	45	31	11	14	21	10	13	3
F	40	41	23	16	5	2	8	8	15	19	9	15	17	18	28	35	3
G	240	186	67	20	17	9	4	7	11	3	8	14	16	26	41	99	2
TOTAL	318	263	125	119	113	84	74	78	109	140	133	79	83	80	93	162	9

Table B3

JFDs of 35-Foot Wind Versus Delta T

July - December 1985

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR JUL - DEC 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/1/85 - 12/31/85

*** JULY-DECEMBER ***
STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
4.51- 5.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.51- 6.50	0	0	0	0	0	0	1	0	2	0	1	0	0	0	0	0	4
6.51- 8.50	0	0	0	0	0	1	1	1	2	1	5	5	0	0	0	0	16
8.51-11.50	0	0	0	0	2	0	0	1	5	15	37	9	2	4	1	0	76
11.51-14.50	0	0	0	0	0	0	0	0	0	4	16	4	0	0	2	1	27
14.51-20.50	0	0	0	0	1	1	0	0	2	0	6	0	0	0	1	1	12
>20.50	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
TOTAL	0	0	1	0	3	2	2	2	12	24	65	18	2	4	4	2	141

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4.51- 5.50	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	3
5.51- 6.50	0	0	1	1	2	2	4	2	1	3	0	1	0	0	0	0	17
6.51- 8.50	0	1	0	1	3	4	7	3	7	8	19	4	7	1	0	1	66
8.51-11.50	1	0	0	0	4	5	0	1	4	9	25	9	4	0	0	2	64
11.51-14.50	0	0	0	1	1	0	0	0	0	1	7	3	0	0	0	0	13
14.51-20.50	0	0	0	2	0	0	0	0	0	3	2	0	2	1	1	1	12
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	1	1	5	10	12	12	6	12	26	53	17	13	2	1	4	176

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR JUL - DEC 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/1/85 - 12/31/85

*** JULY-DECEMBER ***
STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	2	2	2	4	0	0	1	1	1	0	0	13
4.51- 5.50	0	0	1	2	4	5	2	5	7	7	6	2	2	0	1	0	44
5.51- 6.50	0	1	1	2	5	5	7	9	9	12	4	2	1	0	0	1	59
6.51- 8.50	0	6	2	0	12	5	3	10	5	4	9	4	8	3	1	0	72
8.51-11.50	1	1	2	1	3	3	2	2	2	6	8	7	5	0	0	0	43
11.51-14.50	0	0	0	0	3	3	1	0	0	0	1	1	1	0	0	0	10
14.51-20.50	0	0	0	0	3	0	0	0	2	0	2	0	0	0	0	0	7
>20.50	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
TOTAL	1	8	6	5	30	23	17	28	29	30	30	17	18	4	2	1	249

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
0.76- 1.50	0	0	0	0	2	0	2	1	1	0	0	1	0	1	1	3	12
1.51- 2.50	5	4	5	7	8	10	18	11	10	11	5	9	11	2	6	5	127
2.51- 3.50	6	9	3	16	12	14	12	12	15	22	21	11	7	3	3	2	168
3.51- 4.50	6	4	7	26	22	27	20	15	20	10	22	11	2	4	4	2	202
4.51- 5.50	3	1	4	4	17	13	16	12	18	11	12	7	6	3	1	2	130
5.51- 6.50	1	2	0	2	11	10	5	6	8	5	9	8	6	2	2	1	78
6.51- 8.50	2	0	2	3	7	6	9	5	4	10	15	8	3	0	3	0	77
8.51-11.50	4	5	2	5	11	3	0	4	2	7	21	7	10	2	1	0	84
11.51-14.50	2	1	2	5	2	1	3	3	1	1	27	2	1	2	0	1	54
14.51-20.50	0	0	1	2	1	0	2	2	6	3	15	0	1	1	1	1	36
>20.50	0	0	0	0	2	0	0	1	5	0	0	0	1	0	0	0	9
TOTAL	29	26	26	70	95	84	87	72	90	80	147	64	48	20	22	17	978

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR JUL - DEC 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/1/85 - 12/31/85

*** JULY-DECEMBER ***
STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	3
0.76- 1.50	2	1	2	0	1	2	2	4	2	2	1	1	3	1	1	2	27
1.51- 2.50	7	5	5	7	5	2	2	4	10	5	6	3	3	7	3	6	80
2.51- 3.50	5	4	0	7	6	1	2	3	11	5	6	3	6	1	4	4	68
3.51- 4.50	1	2	2	5	10	4	0	7	6	5	8	5	3	2	3	1	64
4.51- 5.50	2	1	4	1	2	4	6	4	2	10	9	10	4	3	1	1	64
5.51- 6.50	1	4	0	4	8	1	4	2	1	5	8	6	4	0	1	2	51
6.51- 8.50	2	3	4	7	16	2	6	6	3	11	30	10	11	6	2	3	122
8.51-11.50	1	2	4	2	4	2	1	1	5	15	53	15	5	6	0	1	117
11.51-14.50	1	1	2	1	1	0	1	0	2	5	31	4	0	6	0	0	55
14.51-20.50	0	0	0	1	0	1	1	0	1	5	8	0	1	0	1	1	20
>20.50	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3
TOTAL	22	23	23	35	53	19	25	31	43	69	160	57	40	32	17	22	674

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	3
0.76- 1.50	2	2	0	1	2	0	0	0	2	2	0	0	2	3	3	3	22
1.51- 2.50	17	12	14	9	4	3	2	3	6	1	5	7	9	8	8	13	121
2.51- 3.50	28	24	18	1	3	2	6	0	7	8	4	9	6	2	4	13	135
3.51- 4.50	8	7	6	7	4	3	3	8	7	6	6	5	6	6	6	10	98
4.51- 5.50	5	2	5	3	4	0	0	1	1	4	6	4	0	5	6	3	49
5.51- 6.50	2	0	2	1	1	0	0	0	5	4	4	5	3	2	2	2	33
6.51- 8.50	3	1	0	2	8	2	1	0	0	7	19	2	5	5	3	3	61
8.51-11.50	6	4	4	0	4	1	0	0	0	4	8	5	3	2	2	2	45
11.51-14.50	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	3
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
TOTAL	72	52	49	24	30	12	12	12	28	36	53	37	35	33	35	49	572

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR JUL - DEC 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/1/85 - 12/31/85

*** JULY-DECEMBER ***
STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
0.76- 1.50	20	8	5	1	4	1	0	2	1	0	2	1	3	5	4	7	64
1.51- 2.50	91	46	20	9	4	6	2	3	4	4	6	8	13	13	23	35	287
2.51- 3.50	97	71	33	13	14	4	2	5	7	4	3	3	3	14	16	48	337
3.51- 4.50	48	64	23	7	7	1	3	0	5	1	0	2	3	1	9	18	192
4.51- 5.50	26	28	17	3	1	0	0	1	1	0	1	2	2	2	3	7	94
5.51- 6.50	12	12	7	3	2	0	0	0	1	0	0	2	0	0	2	5	46
6.51- 8.50	13	14	3	0	0	0	0	0	0	1	2	0	0	1	1	2	37
8.51-11.50	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
11.51-14.50	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
14.51-20.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	310	248	108	36	32	12	8	11	19	10	14	18	24	36	58	122	1068

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	9
0.76- 1.50	24	11	7	2	9	3	4	7	6	4	3	3	8	10	9	15	125
1.51- 2.50	120	67	45	32	21	21	24	21	31	21	22	27	36	30	40	59	617
2.51- 3.50	136	108	54	37	35	21	22	20	40	39	34	26	22	20	27	67	708
3.51- 4.50	63	77	38	45	43	37	28	32	42	25	36	24	15	14	22	31	572
4.51- 5.50	36	32	31	13	28	23	25	23	29	33	34	25	14	13	12	13	384
5.51- 6.50	16	19	11	13	29	18	21	19	27	29	26	24	14	4	7	11	288
6.51- 8.50	20	25	11	13	46	20	27	25	21	42	99	33	34	16	10	9	451
8.51-11.50	16	16	12	8	28	14	3	9	18	56	152	52	29	14	4	5	436
11.51-14.50	4	3	4	7	7	4	5	3	3	11	83	14	2	8	3	2	163
14.51-20.50	0	0	1	5	5	2	4	2	11	11	33	0	4	2	4	4	88
>20.50	0	0	0	0	2	1	0	1	5	4	0	0	2	0	1	1	17
TOTAL	435	358	214	175	253	164	163	162	233	275	522	228	180	131	139	217	3858

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR JUL - DEC 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/1/85 - 12/31/85

*** JULY-DECEMBER **

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH
TOTAL NUMBER OF OBSERVATIONS: 4416
TOTAL NUMBER OF VALID OBSERVATIONS: 3858
TOTAL NUMBER OF MISSING OBSERVATIONS: 558
PERCENT DATA RECOVERY FOR THIS PERIOD: 87.4%
MEAN WIND SPEED FOR THIS PERIOD: 5.6 MPH
TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
3.65	4.56	6.45	25.35	17.47	14.83	27.68

DISTRIBUTION OF WIND DIRECTION VS STABILI TY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	1	0	3	2	2	2	12	24	65	18	2	4	4	2	0
B	1	1	1	5	10	12	12	6	12	26	53	17	13	2	1	4	0
C	1	8	6	5	30	23	17	28	29	30	30	17	18	4	2	1	0
D	29	26	26	70	95	84	87	72	90	80	147	64	48	20	22	17	1
E	22	23	23	35	53	19	25	31	43	69	160	57	40	32	17	22	3
F	72	52	49	24	30	12	12	12	28	36	53	37	35	33	35	49	3
G	310	248	108	36	32	12	8	11	19	10	14	18	24	36	58	122	2
TOTAL	435	358	214	175	253	164	163	162	233	275	522	228	180	131	139	217	9

Table B4

JFDs of 35-Foot Wind Versus Delta T

January - December 1985

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR JAN - DEC 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 1/ 1/85 - 12/31/85

*** ANNUAL ***
STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
4.51- 5.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.51- 6.50	0	0	0	0	0	1	3	0	3	1	1	1	0	0	0	0	10
6.51- 8.50	0	0	0	0	2	4	2	2	4	7	11	7	1	0	0	0	40
8.51-11.50	1	0	0	0	9	4	2	3	8	23	67	22	8	5	1	1	154
11.51-14.50	0	0	0	0	4	1	0	0	1	8	53	14	5	1	4	3	94
14.51-20.50	0	0	0	0	4	1	0	0	2	4	26	2	1	4	6	2	52
>20.50	0	0	0	0	0	0	0	0	0	4	5	0	0	0	0	0	9
TOTAL	1	0	1	0	19	11	7	5	19	49	163	46	15	10	11	6	363

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
4.51- 5.50	1	0	0	0	1	3	2	0	1	1	0	0	0	0	0	0	9
5.51- 6.50	0	1	1	1	6	3	5	3	1	5	0	2	1	0	0	0	29
6.51- 8.50	1	1	0	1	5	4	10	7	18	14	31	9	13	1	2	2	119
8.51-11.50	1	0	0	0	10	8	0	2	10	22	48	16	8	0	3	4	132
11.51-14.50	0	0	0	1	6	0	0	0	0	5	20	10	2	1	4	0	49
14.51-20.50	0	0	1	2	0	0	0	0	0	6	7	1	3	2	1	1	24
>20.50	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
TOTAL	3	2	2	5	28	19	17	12	30	54	108	38	27	4	10	7	366

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR JAN - DEC 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 1/ 1/85 - 12/31/85

*** ANNUAL ***
STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
3.51- 4.50	0	0	1	0	1	3	4	2	8	2	0	1	1	1	0	0	24
4.51- 5.50	1	1	4	4	11	11	12	14	14	9	9	3	2	0	1	0	96
5.51- 6.50	0	2	2	4	14	9	21	18	21	20	8	5	3	1	0	1	129
6.51- 8.50	2	6	2	2	22	9	8	15	27	14	23	10	12	3	4	1	160
8.51-11.50	2	2	2	1	6	5	3	2	6	14	29	12	7	3	1	3	98
11.51-14.50	0	0	0	0	7	3	1	0	2	2	6	5	1	0	1	0	28
14.51-20.50	0	1	0	0	6	0	0	0	3	0	5	1	0	1	1	1	19
>20.50	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
TOTAL	5	12	11	11	67	40	49	51	81	63	80	37	26	10	9	6	558

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
0.76- 1.50	0	1	0	0	3	0	2	2	2	0	0	1	0	1	1	3	16
1.51- 2.50	7	8	9	10	13	13	21	14	12	17	10	10	14	3	9	5	175
2.51- 3.50	11	16	9	30	27	27	25	24	34	32	28	21	10	7	6	8	315
3.51- 4.50	12	8	16	39	43	41	44	33	42	24	31	13	3	8	5	7	369
4.51- 5.50	5	4	8	10	34	26	27	21	31	19	18	8	9	4	3	4	231
5.51- 6.50	2	3	1	6	18	18	14	16	14	14	21	9	8	4	3	2	153
6.51- 8.50	2	1	3	10	25	9	17	12	11	13	29	13	7	1	7	2	162
8.51-11.50	4	8	5	8	14	4	2	7	3	18	31	22	21	6	6	1	160
11.51-14.50	3	1	4	7	9	1	3	4	1	1	38	8	7	3	5	3	98
14.51-20.50	0	0	1	2	3	0	2	2	7	5	26	9	10	6	4	1	78
>20.50	0	0	0	0	2	0	0	1	6	0	3	0	2	2	0	0	16
TOTAL	46	50	56	122	191	139	157	36	163	143	235	114	91	45	49	36	1774

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR JAN - DEC 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 1/1/85 - 12/31/85

*** ANNUAL ***
STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	3
0.76- 1.50	2	1	2	0	2	2	2	4	4	4	2	1	5	1	1	2	35
1.51- 2.50	14	9	9	8	9	6	6	5	16	9	7	6	8	11	6	8	137
2.51- 3.50	9	12	5	9	10	3	5	7	16	12	9	5	8	2	6	5	123
3.51- 4.50	3	6	7	8	10	6	2	10	12	12	12	7	7	3	6	1	112
4.51- 5.50	4	5	7	1	4	5	7	4	4	16	18	11	6	4	2	1	99
5.51- 6.50	4	4	3	6	9	6	4	2	2	11	19	15	4	3	3	2	97
6.51- 8.50	4	6	5	11	17	3	11	8	6	25	52	27	20	7	4	4	210
8.51-11.50	1	3	4	6	9	3	2	1	7	23	100	35	15	11	2	5	227
11.51-14.50	1	2	2	3	1	0	1	0	4	10	57	24	2	11	7	1	126
14.51-20.50	0	0	0	2	2	1	1	0	3	5	17	2	2	5	3	1	44
>20.50	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	4
TOTAL	42	48	44	54	73	35	41	41	74	128	293	133	78	58	41	31	1217

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	3
0.76- 1.50	6	3	2	2	2	2	0	0	2	3	1	2	2	3	3	3	36
1.51- 2.50	29	17	18	11	7	6	4	7	11	4	8	10	15	13	10	15	185
2.51- 3.50	43	35	24	5	5	4	10	3	12	12	14	17	10	8	11	24	237
3.51- 4.50	17	18	13	13	6	7	4	10	12	9	12	10	10	8	12	13	174
4.51- 5.50	8	6	9	5	6	1	0	4	4	11	16	9	2	6	6	5	98
5.51- 6.50	5	1	4	4	3	2	0	2	7	10	15	10	7	3	3	6	82
6.51- 8.50	6	4	4	3	10	2	3	0	0	14	50	12	15	8	5	7	143
8.51-11.50	7	5	5	2	4	1	0	0	1	14	40	12	10	3	3	8	115
11.51-14.50	1	1	0	0	0	0	0	0	1	1	5	0	0	0	2	1	12
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
TOTAL	122	90	79	45	43	26	21	26	50	78	161	82	72	52	55	82	1087

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR JAN - DEC 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 1/1/85 - 12/31/85

*** ANNUAL ***
STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
0.76- 1.50	22	12	8	1	8	1	3	5	2	0	3	1	4	6	8	9	93
1.51- 2.50	134	74	29	19	9	11	5	7	7	7	8	11	23	19	30	53	446
2.51- 3.50	181	133	57	21	17	6	3	8	14	7	6	5	8	26	28	69	589
3.51- 4.50	108	124	46	11	20	3	5	1	5	2	3	3	4	7	23	41	406
4.51- 5.50	43	64	39	6	3	1	1	1	1	3	1	4	6	5	7	20	205
5.51- 6.50	20	24	23	8	3	0	0	0	1	0	4	3	2	3	4	13	108
6.51- 8.50	22	28	6	3	0	0	0	0	0	6	3	3	0	1	4	10	86
8.51-11.50	6	5	0	1	0	0	0	0	0	0	7	0	0	0	0	0	19
11.51-14.50	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
14.51-20.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	536	465	208	70	60	22	18	22	30	25	36	30	47	67	104	215	1957

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	9
0.76- 1.50	30	17	12	3	15	5	7	11	10	7	6	5	11	11	13	17	180
1.51- 2.50	184	108	66	48	38	36	36	33	47	37	33	37	60	46	55	81	945
2.51- 3.50	244	196	95	65	59	40	43	42	76	63	57	48	36	44	52	106	1266
3.51- 4.50	140	156	83	71	80	61	59	56	79	52	58	34	25	27	46	62	1089
4.51- 5.50	62	80	67	26	59	47	49	44	55	59	62	35	25	19	19	30	738
5.51- 6.50	31	35	34	29	53	39	47	41	49	61	68	45	25	14	13	24	608
6.51- 8.50	37	46	20	30	81	31	51	44	66	93	199	81	68	21	26	26	920
8.51-11.50	22	23	16	18	52	25	9	15	35	114	322	119	69	28	16	22	905
11.51-14.50	5	5	6	11	27	5	5	4	9	27	180	61	17	16	23	8	409
14.51-20.50	0	1	2	6	15	2	4	2	15	20	81	15	16	18	15	6	218
>20.50	0	0	0	0	2	1	0	1	6	7	10	0	4	2	1	1	35
TOTAL	755	667	401	307	481	292	310	293	447	540	1076	480	356	246	279	383	7322

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR JAN - DEC 1985
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 1/ 1/85 - 12/31/85

*** ANNUAL ***

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH
TOTAL NUMBER OF OBSERVATIONS: 8760
TOTAL NUMBER OF VALID OBSERVATIONS: 7322
TOTAL NUMBER OF MISSING OBSERVATIONS: 1438
PERCENT DATA RECOVERY FOR THIS PERIOD: 83.6 %
MEAN WIND SPEED FOR THIS PERIOD: 6.1 MPH
TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
4.96	5.00	7.62	24.23	16.62	14.85	26.73

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	1	0	1	0	19	11	7	5	19	49	163	46	15	10	11	6	0
B	3	2	2	5	28	19	17	12	30	54	108	38	27	4	10	7	0
C	5	12	11	11	67	40	49	51	81	63	80	37	26	10	9	6	0
D	46	50	56	122	191	139	157	136	163	143	235	114	91	45	49	36	1
E	42	48	44	54	73	35	41	41	74	128	293	133	78	58	41	31	3
F	122	90	79	45	43	26	21	26	50	78	161	82	72	52	55	82	3
G	536	465	208	70	60	22	18	22	30	25	36	30	47	67	104	215	2
TOTAL	755	667	401	307	481	292	310	293	447	540	1076	480	356	246	279	383	9

Table B5

JFDs of 35-Foot Wind Versus Delta T

July - September 1985 Batch Releases

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE JUL-SEP 1985 BATCH RELEASES
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/ 1/85 - 9/30/85

*** JULY-SEPTEMBER ***
STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEE T

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.51- 5.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.51- 6.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.51- 8.50	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
8.51-11.50	0	0	0	0	0	0	0	0	2	4	6	1	0	0	0	0	13
11.51-14.50	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	3	5	10	1	0	0	0	0	19

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOT
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.51- 5.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.51- 6.50	0	0	1	0	0	0	1	2	1	0	0	0	0	0	0	0	5
6.51- 8.50	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	1	5
8.51-11.50	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0	9
11.51-14.50	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	1	0	0	0	1	2	3	2	8	1	0	1	0	1	20

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE JUL-SEP 1985 BATCH RELEASES
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/ 1/85 - 9/30/85

*** JULY-SEPTEMBER ***
STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4.51- 5.50	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	3
5.51- 6.50	0	0	0	0	0	0	1	0	1	4	0	0	0	0	0	0	6
6.51- 8.50	0	0	0	0	0	1	0	1	0	0	1	0	1	0	1	0	5
8.51-11.50	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	4
11.51-14.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
14.51-20.50	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	4	2	2	2	5	2	0	3	0	1	0	21

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	3
3.51- 4.50	0	0	0	0	1	2	3	1	0	0	0	0	0	0	0	0	7
4.51- 5.50	0	0	0	0	2	0	2	1	2	2	0	1	0	0	1	0	11
5.51- 6.50	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
6.51- 8.50	0	0	0	0	0	0	2	1	1	1	0	0	0	0	1	0	6
8.51-11.50	0	0	0	0	0	0	0	1	1	2	4	1	0	1	0	0	10
11.51-14.50	0	0	0	0	0	0	0	1	0	0	3	0	0	1	0	0	5
14.51-20.50	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	3	2	7	8	6	6	8	2	0	2	2	0	46

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE JUL-SEP 1985 BATCH RELEASES
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/ 1/85 - 9/30/85

*** JULY-SEPTEMBER ***
STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	1	1	0	0	0	0	0	0	1	0	0	1	2	0	0	0	6
3.51- 4.50	0	0	1	0	1	1	0	0	0	0	0	0	1	0	1	0	5
4.51- 5.50	0	0	0	1	1	0	1	1	0	1	0	1	0	0	1	0	7
5.51- 6.50	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	3
6.51- 8.50	0	0	0	0	3	0	0	0	0	0	2	3	2	0	0	0	10
8.51-11.50	0	0	1	1	1	0	0	0	0	0	4	0	0	0	0	0	7
11.51-14.50	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0	8
14.51-20.50	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	1	2	2	6	1	2	1	1	2	14	7	5	0	2	0	47

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	1	4	0	1	1	1	0	0	0	1	0	0	0	0	0	9
3.51- 4.50	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
4.51- 5.50	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	4
5.51- 6.50	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	3
6.51- 8.50	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	1	5
8.51-11.50	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	4
11.51-14.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	1	5	1	4	2	1	0	1	3	3	0	2	3	1	1	28

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE JUL-SEP 1985 BATCH RELEASES
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/ 1/85 - 9/30/85

*** JULY-SEPTEMBER ***
STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	2	6
2.51- 3.50	4	2	1	2	2	0	0	0	1	0	0	0	0	0	0	0	12
3.51- 4.50	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	4
4.51- 5.50	2	2	1	0	1	0	0	0	0	0	0	0	2	0	0	1	9
5.51- 6.50	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2	6
6.51- 8.50	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4
8.51-11.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11.51-14.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	9	6	3	5	3	0	1	0	1	0	0	2	2	1	3	5	41

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1.51- 2.50	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	2	6
2.51- 3.50	5	4	5	2	3	1	1	1	2	1	2	1	2	0	0	0	30
3.51- 4.50	0	0	2	2	2	4	3	1	0	0	0	2	1	1	1	0	19
4.51- 5.50	2	2	1	2	5	2	3	3	2	4	1	2	2	0	2	1	34
5.51- 6.50	1	0	2	0	1	0	3	2	4	7	0	1	0	0	2	2	25
6.51- 8.50	2	1	0	0	3	2	2	2	4	3	4	3	3	2	4	2	37
8.51-11.50	0	0	1	1	2	0	0	1	3	8	22	3	4	2	0	0	47
11.51-14.50	0	0	0	0	0	0	1	1	0	0	15	1	0	1	0	0	19
14.51-20.50	0	0	0	0	0	0	0	2	1	0	1	0	0	0	0	0	4
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	10	8	11	8	16	9	14	13	17	23	45	13	12	7	9	7	222

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE JUL-SEP 1985 BATCH RELEASES
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 7/1/85 - 9/30/85

*** JULY-SEPTEMBER ***

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH
TOTAL NUMBER OF OBSERVATIONS: 222
TOTAL NUMBER OF VALID OBSERVATIONS: 222
TOTAL NUMBER OF MISSING OBSERVATIONS: 0
PERCENT DATA RECOVERY FOR THIS PERIOD: 100.0%
MEAN WIND SPEED FOR THIS PERIOD: 7.3 MPH
NUMBER OF OBSERVATIONS WITH BACKUP STABILITY: 7
TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 7

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
8.56	9.01	9.46	20.72	21.17	12.61	18.47

DISTRIBUTION OF WIND DIRECTION VS STABILI TY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	3	5	10	1	0	0	0	0	0
B	0	0	1	0	0	0	1	2	3	2	8	1	0	1	0	1	0
C	0	0	0	0	0	4	2	2	2	5	2	0	3	0	1	0	0
D	0	0	0	0	3	2	7	8	6	6	8	2	0	2	2	0	0
E	1	1	2	2	6	1	2	1	1	2	14	7	5	0	2	0	0
F	0	1	5	1	4	2	1	0	1	3	3	0	2	3	1	1	0
G	9	6	3	5	3	0	1	0	1	0	0	2	2	1	3	5	0
TOTAL	10	8	11	8	16	9	14	13	17	23	45	13	12	7	9	7	0

Table B6

JFDs of 35-Foot Wind Versus Delta T

October - December 1985 Batch Releases

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE OCT-DEC 1985 BATCH RELEASES
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 10/ 1/85 - 12/31/85

*** OCTOBER-DECEMBER ***
STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
1.51- 2.50	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
2.51- 3.50	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	3
3.51- 4.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.51- 5.50	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5.51- 6.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.51- 8.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.51-11.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11.51-14.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.51-20.50	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2	0	0	0	1	0	0	0	2	0	1	1	0	0	1	0	8

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4.51- 5.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.51- 6.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.51- 8.50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
8.51-11.50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
11.51-14.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.51-20.50	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	4
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	2	1	0	3	1	0	0	7

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE OCT-DEC 1985 BATCH RELEASES
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 10/ 1/85 - 12/31/85

*** OCTOBER-DECEMBER ***
STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.51- 2.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.51- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 4.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.51- 5.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.51- 6.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.51- 8.50	0	4	0	0	1	1	0	0	0	0	2	0	1	0	0	0	9
8.51-11.50	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
11.51-14.50	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
14.51-20.50	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	5	0	0	2	1	0	0	1	0	3	0	1	0	0	0	14

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
0.76- 1.50	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2
1.51- 2.50	0	1	2	1	2	3	3	4	6	3	1	0	3	0	2	2	33
2.51- 3.50	3	0	0	4	4	4	3	2	4	6	3	4	1	1	0	0	39
3.51- 4.50	4	2	2	2	3	6	5	1	3	2	7	3	0	0	0	1	41
4.51- 5.50	3	0	2	2	1	1	0	2	0	1	1	0	0	0	0	2	15
5.51- 6.50	0	1	0	1	0	1	0	1	3	0	1	0	1	1	1	1	12
6.51- 8.50	1	0	1	0	0	0	1	0	0	2	2	0	0	0	0	0	7
8.51-11.50	2	2	0	1	2	0	0	2	0	0	0	0	1	0	0	0	10
11.51-14.50	2	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0	6
14.51-20.50	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	15	6	8	11	12	15	14	12	16	14	16	7	7	3	3	7	166

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE OCT-DEC 1985 BATCH RELEASES
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 10/ 1/85 - 12/31/85

*** OCTOBER-DECEMBER ***
STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	3
0.76- 1.50	1	1	0	0	0	1	0	2	0	0	0	0	0	0	1	0	6
1.51- 2.50	2	1	1	1	1	0	0	3	1	1	0	0	1	1	1	2	16
2.51- 3.50	0	1	0	0	1	0	0	1	3	1	0	0	1	0	0	0	8
3.51- 4.50	0	0	2	0	0	0	0	1	0	2	0	1	0	0	0	0	6
4.51- 5.50	0	1	0	0	0	0	1	1	1	0	2	0	0	1	0	0	7
5.51- 6.50	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
6.51- 8.50	0	1	0	1	0	0	0	1	0	1	0	0	1	2	0	0	7
8.51-11.50	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	4
11.51-14.50	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	3
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	5	5	4	3	3	1	1	10	5	5	2	1	3	6	2	3	62

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
0.76- 1.50	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	4
1.51- 2.50	1	4	1	1	0	0	2	1	0	0	1	1	5	1	0	2	20
2.51- 3.50	4	5	4	1	0	0	2	0	3	2	0	1	1	0	1	4	28
3.51- 4.50	2	1	1	1	0	0	0	1	0	1	0	1	2	0	2	3	15
4.51- 5.50	1	0	0	0	0	0	0	0	1	1	0	1	0	1	1	0	6
5.51- 6.50	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6.51- 8.50	0	1	0	0	0	0	0	0	0	1	0	0	1	1	2	1	7
8.51-11.50	0	2	0	0	0	0	0	0	0	1	0	0	0	0	1	2	6
11.51-14.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	10	13	6	3	0	0	4	2	4	6	1	4	9	4	9	13	89

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE OCT-DEC 1985 BATCH RELEASES
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 10/ 1/85 - 12/31/85

*** OCTOBER-DECEMBER ***
STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
0.76- 1.50	4	1	1	0	1	0	0	0	0	0	0	0	2	1	0	2	12
1.51- 2.50	22	13	6	2	0	1	0	0	1	0	0	2	4	1	0	10	62
2.51- 3.50	24	22	6	2	3	0	0	1	4	1	0	1	0	5	3	6	78
3.51- 4.50	12	14	2	2	0	0	1	0	1	0	0	0	1	0	1	7	41
4.51- 5.50	8	4	3	0	0	0	0	0	1	0	1	1	0	0	0	1	19
5.51- 6.50	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6.51- 8.50	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8.51-11.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11.51-14.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.51-20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	71	59	18	6	4	1	1	1	7	1	1	4	7	7	4	26	219

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 35.00 FEET

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	5
0.76- 1.50	6	2	1	0	1	1	1	2	0	0	0	0	2	2	3	4	25
1.51- 2.50	26	19	10	5	3	4	5	8	9	4	2	3	13	3	3	16	133
2.51- 3.50	32	28	10	7	8	4	5	4	15	10	3	7	3	6	4	10	156
3.51- 4.50	18	17	7	5	3	6	6	3	4	6	7	5	3	0	3	11	104
4.51- 5.50	12	5	5	2	2	1	1	3	3	2	4	2	0	2	1	3	48
5.51- 6.50	2	4	0	1	1	1	0	2	3	0	1	0	1	1	1	1	19
6.51- 8.50	1	8	1	1	1	1	1	1	0	4	4	0	4	3	2	1	33
8.51-11.50	4	5	0	2	2	0	0	2	1	1	0	0	2	1	1	3	24
11.51-14.50	3	0	2	0	1	0	1	0	0	0	0	0	1	2	1	0	11
14.51-20.50	0	0	0	0	0	0	0	0	0	1	4	0	1	1	0	0	7
>20.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	104	88	63	23	22	18	20	25	35	28	25	17	30	21	19	49	565

PVNGS JFD: 35FT WIND VS DELTA T (200'-35') FOR THE OCT-DEC 1985 BATCH RELEASES
SITE IDENTIFIER: PVNGS
DATA PERIOD EXAMINED: 10/ 1/85 - 12/31/85

*** OCTOBER-DECEMBER ***

STABILITY BASED ON: DELTA T BETWEEN 200.0 AND 35.0 FEET
WIND MEASURED AT: 35.0 FEET
WIND THRESHOLD AT: 0.75 MPH
TOTAL NUMBER OF OBSERVATIONS: 566
TOTAL NUMBER OF VALID OBSERVATIONS: 565
TOTAL NUMBER OF MISSING OBSERVATIONS: 1
PERCENT DATA RECOVERY FOR THIS PERIOD: 99.8 %
MEAN WIND SPEED FOR THIS PERIOD: 4.0 MPH
NUMBER OF OBSERVATIONS WITH BACKUP STABILITY: 18
TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 18

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
1.42	1.24	2.48	29.38	10.97	15.75	38.76

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	2	0	0	0	1	0	0	0	2	0	1	1	0	0	1	0	0
B	0	0	0	0	0	0	0	0	0	2	1	0	3	1	0	0	0
C	1	5	0	0	2	1	0	0	1	0	3	0	1	0	0	0	0
D	15	6	8	11	12	15	14	12	16	14	16	7	7	3	3	7	0
E	5	5	4	3	3	1	1	10	5	5	2	1	3	6	2	3	3
F	10	13	6	3	0	0	4	2	4	6	1	4	9	4	9	13	1
G	71	59	18	6	4	1	1	1	7	1	1	4	7	7	4	26	1
TOTAL	104	88	36	23	22	18	20	25	35	28	25	17	30	21	19	49	5

APPENDIX C

DOSE CALCULATIONS

GASEOUS EFFLUENT DOSE CALCULATION

Doses to the maximum individual and the surrounding population resulting from the release of radioactive material in gaseous effluents from the Palo Verde Nuclear Generating Station were calculated using the GASPAR computer program. Four locations were selected for dose calculations the site boundary, the nearest residence, the nearest garden, and the PVNGS Visitors Center. GASPAR implements the radiological dose models of Regulatory Guide 1.109 for determining the radiation exposure to man from four principal atmospheric exposure pathways: Plume, ground, inhalation, and ingestion. The ingestion pathways considered were cow milk, goat milk, meat, and vegetables. Doses to the maximum individual and the population are calculated as a function of age group and pathway for significant body organs.' Assumptions and data sources used for input to the GASPAR code are described on page C6.

Table C1 presents the doses on a quarterly, semi-annual and annual basis for the site boundary, the maximum individual in the general public and the Visitors Center. The locations for which data are presented represent the highest annual doses. It should be noted that locations may be different than reported in the January-June 1985 report because of results of the December 1985 land use census, and because the fourth quarter contributes over 90% of the annual dose. Therefore the locations with the highest fourth quarter dose have the highest annual dose.

Table C2 presents the population doses for year 1985. Table C-3 summarizes the individual doses and compares the result to PVNGS Technical Specification limits.

Direct radiation doses resulting from the operation of PVNGS were not detectable at the site boundary.

Table C3 also presents the annual dose to the general public due to releases of radioactivity and radiation from uranium fuel cycle sources as required by PVNGS Technical Specification 3.11.4.

TABLE C1

DOSES TO SPECIAL LOCATIONS FOR 1985

SITE BOUNDARY 1.87 miles S

	BETA	GAMMA
AIR DOSES(MRAD)		
1ST SEMI-ANNUAL	1.85E-04	1.81E-04
3RD QUARTER	3.28E-03	1.16E-03
4TH QUARTER	1.23E-01	4.91E-02
2ND SEMI-ANNUAL	1.26E-01	5.03E-02
ANNUAL	1.26E-01	5.04E-02

	T. BODY	SKIN
MAXIMUM INDIVIDUAL(MREM)		
1ST SEMI-ANNUAL	1.16E-04	2.20E-04
3RD QUARTER	6.79E-04	1.87E-03
4TH QUARTER	2.96E-02	8.10E-02
2ND SEMI-ANNUAL	3.03E-02	8.29E-02
ANNUAL	3.04E-02	8.31E-02

MAXIMUM INDIVIDUAL IN GENERAL PUBLIC LOCATED AT
A RESIDENCE 4.50 miles S

(MREM)	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
1ST SEMI-ANNUAL								
ADULT	2.74E-04	2.74E-04	5.04E-05	2.74E-04	2.74E-04	2.74E-04	2.74E-04	3.22E-04
TEEN	2.75E-04	2.75E-04	5.04E-05	2.75E-04	2.75E-04	2.75E-04	2.75E-04	3.23E-04
CHILD	2.49E-04	2.49E-04	5.04E-05	2.49E-04	2.49E-04	2.49E-04	2.49E-04	2.97E-04
INFANT	1.65E-04	1.65E-04	5.04E-05	1.65E-04	1.65E-04	1.65E-04	1.65E-04	2.13E-04
3RD QUARTER								
ADULT	4.54E-04	4.54E-04	3.47E-04	4.54E-04	4.54E-04	5.65E-04	4.54E-04	1.07E-03
TEEN	4.55E-04	4.55E-04	3.47E-04	4.55E-04	4.55E-04	5.91E-04	4.54E-04	1.07E-03
CHILD	4.42E-04	4.42E-04	3.47E-04	4.42E-04	4.43E-04	5.96E-04	4.42E-04	1.05E-03
INFANT	4.02E-04	4.02E-04	3.47E-04	4.02E-04	4.02E-04	5.42E-04	4.02E-04	1.01E-03
4TH QUARTER								
ADULT	1.50E-02	1.50E-02	1.48E-02	1.50E-02	1.50E-02	1.87E-02	1.49E-02	4.09E-02
TEEN	1.50E-02	1.50E-02	1.48E-02	1.50E-02	1.50E-02	1.96E-02	1.49E-02	4.09E-02
CHILD	1.49E-02	1.49E-02	1.48E-02	1.49E-02	1.50E-02	2.02E-02	1.49E-02	4.09E-02
INFANT	1.49E-02	1.49E-02	1.48E-02	1.49E-02	1.49E-02	1.97E-02	1.49E-02	4.08E-02
2ND SEMI-ANNUAL								
ADULT	1.54E-02	1.54E-02	1.51E-02	1.54E-02	1.54E-02	1.92E-02	1.54E-02	4.19E-02
TEEN	1.54E-02	1.54E-02	1.51E-02	1.54E-02	1.54E-02	2.02E-02	1.54E-02	4.19E-02
CHILD	1.54E-02	1.54E-02	1.51E-02	1.54E-02	1.54E-02	2.08E-02	1.54E-02	4.19E-02
INFANT	1.53E-02	1.53E-02	1.51E-02	1.53E-02	1.53E-02	2.02E-02	1.53E-02	4.18E-02
ANNUAL								
ADULT	1.57E-02	1.57E-02	1.52E-02	1.57E-02	1.57E-02	1.95E-02	1.57E-02	4.23E-02
TEEN	1.57E-02	1.57E-02	1.52E-02	1.57E-02	1.57E-02	2.05E-02	1.57E-02	4.23E-02
CHILD	1.56E-02	1.56E-02	1.52E-02	1.56E-02	1.56E-02	2.11E-02	1.56E-02	4.22E-02
INFANT	1.54E-02	1.54E-02	1.52E-02	1.54E-02	1.54E-02	2.04E-02	1.54E-02	4.20E-02

VISITOR CENTER 0.45 miles WNW

(MREM)	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
4TH QUARTER								
ADULT	8.24E-03	8.23E-03	8.16E-03	8.24E-03	8.24E-03	1.05E-02	8.23E-03	2.23E-02
TEEN	8.24E-03	8.23E-03	8.16E-03	8.24E-03	8.25E-03	1.11E-02	8.23E-03	2.23E-02
CHILD	8.23E-03	8.22E-03	8.16E-03	8.23E-03	8.24E-03	1.15E-02	8.22E-03	2.23E-02
INFANT	8.20E-03	8.19E-03	8.16E-03	8.20E-03	8.21E-03	1.12E-02	8.19E-03	2.22E-02

TABLE C2

INTEGRATED POPULATION DOSES FOR 1985

MANREM/YR

JANUARY-JUNE 1985

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.49E-04	1.60E-04	5.10E-04
INHAL	3.53E-03	3.53E-03	0.00E-01	3.53E-03	3.53E-03	3.53E-03	3.53E-03	3.53E-03
VEGET	1.10E-02	1.10E-02	0.00E-01	1.10E-02	1.10E-02	1.10E-02	1.10E-02	1.10E-02
COW MILK	1.47E-03	1.47E-03	0.00E-01	1.47E-03	1.47E-03	1.47E-03	1.47E-03	1.47E-03
MEAT	3.44E-04	3.44E-04	0.00E-01	3.44E-04	3.44E-04	3.44E-04	3.44E-04	3.44E-04
TOTAL	1.65E-02	1.65E-02	1.49E-04	1.65E-02	1.65E-02	1.65E-02	1.65E-02	1.68E-02

JULY-SEPTEMBER 1985

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	3.78E-03	3.78E-03	3.78E-03	3.78E-03	3.78E-03	3.78E-03	3.78E-03	1.29E-02
GROUND	3.19E-07	3.19E-07	3.19E-07	3.19E-07	3.19E-07	3.19E-07	3.19E-07	3.87E-07
INHAL	2.08E-03	2.08E-03	3.39E-06	2.09E-03	2.09E-03	3.49E-03	2.08E-03	2.08E-03
VEGET	6.67E-03	6.67E-03	8.49E-06	6.68E-03	6.68E-03	1.01E-02	6.67E-03	6.67E-03
COW MILK	8.37E-04	8.36E-04	1.34E-06	8.38E-04	8.39E-04	1.35E-03	8.36E-04	8.36E-04
MEAT	2.32E-04	2.32E-04	1.01E-09	2.32E-04	2.32E-04	2.33E-04	2.32E-04	2.32E-04
TOTAL	1.36E-02	1.36E-02	3.80E-03	1.36E-02	1.36E-02	1.89E-02	1.36E-02	2.27E-02

OCTOBER-DECEMBER 1985

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	8.06E-02	8.06E-02	8.06E-02	8.06E-02	8.06E-02	8.06E-02	8.06E-02	2.76E-01
GROUND	1.95E-06	1.95E-06	1.95E-06	1.95E-06	1.95E-06	1.95E-06	1.95E-06	2.36E-06
INHAL	2.31E-03	2.28E-03	7.07E-05	2.36E-03	2.42E-03	3.08E-02	2.26E-03	2.26E-03
VEGET	7.02E-03	6.99E-03	7.45E-05	7.06E-03	7.12E-03	3.67E-02	6.97E-03	6.97E-03
COW MILK	9.86E-04	9.82E-04	8.03E-06	9.90E-04	9.96E-04	4.09E-03	9.80E-04	9.80E-04
MEAT	8.39E-04	8.39E-04	1.20E-08	8.39E-04	8.39E-04	8.45E-04	8.39E-04	8.39E-04
TOTAL	1.21E-01	1.21E-01	8.48E-02	1.21E-01	1.22E-01	1.88E-01	1.21E-01	3.26E-01

JANUARY-DECEMBER 1985

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	8.46E-02	8.46E-02	8.46E-02	8.46E-02	8.46E-02	8.46E-02	8.46E-02	2.89E-01
GROUND	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.26E-06	2.75E-06
INHAL	7.93E-03	7.90E-03	7.40E-05	7.97E-03	8.04E-03	3.79E-02	7.88E-03	7.88E-03
VEGET	2.47E-02	2.46E-02	8.30E-05	2.47E-02	2.48E-02	5.77E-02	2.46E-02	2.46E-02
COW MILK	3.30E-03	3.29E-03	9.36E-06	3.30E-03	3.31E-03	6.92E-03	3.29E-03	3.29E-03
MEAT	8.39E-04	8.39E-04	1.20E-08	8.39E-04	8.39E-04	8.45E-04	8.39E-04	8.39E-04
TOTAL	1.21E-01	1.21E-01	8.48E-02	1.21E-01	1.22E-01	1.88E-01	1.21E-01	3.26E-01

Table C3

Summary of Individual Doses for 1985

	Unit	Quarter #2	Quarter #3	Quarter #4	Year to Date
Gamma Air Dose	mrad	1.81E-04	1.16E-03	4.91E-02	5.04E-02
T.S. 3.11.2.2 Limit	mrad	5.00E+00	5.00E+00	5.00E+00	1.00E+01
% T.S. Limit	%	3.62E-03	2.32E-02	9.82E-01	5.04E-01
Beta Air Dose	mrad	1.85E-04	3.28E-03	1.23E-01	1.26E-01
T.S. 3.11.2.2 Limit	mrad	1.00E+01	1.00E+01	1.00E+01	2.00E+01
% T.S. Limit	%	1.85E-03	3.28E-02	1.23E+00	6.30E-01
Maximum Organ Dose	mrem	2.49E-04*	5.96E-04*	2.02E-02*	2.11E-02*
T.S. 3.11.2.3 Limit	mrem	7.50E+00	7.50E+00	7.50E+00	1.50E+01
% T.S. Limit	%	3.32E-03	7.95E-03	2.69E-01	1.41E-01

*The limiting organ dose is the child thyroid resulting from exposure in the South Sector at 4.5 miles. Technical Specification 3.11.4 has higher limits than Technical Specification 3.11.2.3 and therefore the percent Technical Specification limits are more conservative based on Technical Specification 3.11.2.3 limits than on Technical Specification 3.11.4.

DOSE CALCULATION MODELS

The GASPAR computer code was used to evaluate the radiological consequences of the routine release of gaseous effluents. GASPAR implements the dose calculational methodologies of Regulatory Guide 1.109, Revision 1.

Source terms for each quarter are combined with station-specific demographic data and each quarter's atmospheric diffusion estimates for gaseous dose calculations.

Atmospheric diffusion estimates are obtained from the XOQDOQ computer code using onsite meteorological data as input. Doses for the semi-annual and annual period are the summation of the quarterly doses. Additional input to GASPAR includes the following site specific data:

- 0 to 5 mile land use census conducted in December 1985. The following changes in land use were identified between August 1984 and December 1985; deletion of all milk animals within 5 miles, deletion of gardens at several residences, changes in location of nearest residence in several sectors.
- 0 to 5 mile population distribution based on the land use census conducted June-August, 1984
- 5 to 50 mile population distribution from PVNGS ER-OL Figure 2.1-6.
- The population distribution of metropolitan Phoenix greater than 50 miles from PVNGS, based on the 1980 census results, were conservatively included in the 40 to 50 mile sectors.
- Absolute humidity of 6.0 g/m^3 from PVNGS ER-OL Table 2.3-34.
- The fraction of the year that vegetables are grown (0.67) from PVNGS ER-OL Section 2.1.3.4.
- The fraction of daily feed derived from pasture and length of grazing season for milk animals (0.35 and 0.75) from PVNGS ER-OL Section 2.1.3.4.
- The fraction of daily feed derived from pasture and length of grazing season for meat animals (0.05 and 0.25) from PVNGS ER-OL Section 2.1.3.4.
- Length of stay at the PVNGS Visitors Center was estimated to be a maximum of 8 hours per year in the quarter yielding the highest dose.

Other values used for input to GASPAR are default values from Regulatory Guide 1.109 Revision 1.

APPENDIX D

CHANGE PAGES TO JANUARY - JUNE 1985 SEMI-ANNUAL REPORT

5.2 Liquid

None

6.0 Abnormal Releases

None

7.0 Offsite Dose Calculation Manual (ODCM) Process Control Program (PCP) and Preplanned Alternate Sampling Program (PASP) Revisions

There have been no revisions to the ODCM or PCP. The PASP was resubmitted to the Office of Inspection and Enforcement Region V, on May 22, 1985 in accordance with Section 6.0 of PVNGS Technical Specification. As of this report period the PASP had not been approved by Regional Administrator as required by PVNGS Technical Specification 6.16.1.

8.0 Effluents and Solid Wastes

8.1 Gaseous Effluents

There were no gaseous effluents for the first quarter. The gaseous effluents for the second quarter are included in Tables A2 and A3. Included in Tables A2 and A3 are summaries of the effluents, estimated total error, and MDAs.

8.2 Liquid Effluents

There were no liquid effluents from the PVNGS site.

8.3 Solid Waste

There were no solid waste shipments from the PVNGS site.

9.0 Miscellaneous Information

The land use census was conducted from June through August 1984. As a result of this census no changes have occurred to the radiological environmental monitoring program.

Table A-6 presents the effluent monitoring instrumentation out of service for more than 30 days as required by PVNGS Technical Specification 3.3.3.9.

Releases made to the Evaporation Pond have been limited at the tank to the concentrations specified in Technical Specification 3.11.1.1. In addition, PVNGS has imposed a limit of 3x10-3 uCi/ml for tritium in tanks released to the evaporation pond. This is the maximum permissible concentration for unrestricted areas for tritium in water from 10CFR20 Appendix B.

During this report period a planned release was made to the condensate storage tank. All radionuclide concentrations were within the limits

addressed above although there was detectable tritium activity. Through condenser overboards and polisher regenerations, some tritiated water would eventually arrive at the evaporation pond. Because tritium would be released into the environment through evaporation of the pond and cooling tower water, a dose determination was made using the conservative assumption that the entire tritium content of the tank released to the condensate storage tank reached the evaporation pond where it was then released to the environment. Using this conservative assumption, the organ dose rate was 7.02E-06 mrem/year. The child whole body dose to the nearest resident was 5.24E-06 mrem. These doses were calculated using the methodology and parameters of the Unit 1 ODCM and standard dispersion techniques. This release contributed to less than 1% of the quarterly accumulated dose.

In the future, the evaporation pond will be monitored in accordance with Technical Specification 3.12.1. Periodically, the tritium release due to evaporation of the pond will be assessed. This tritium will not be included in gaseous effluent dose calculations unless it becomes a major contributing dose pathway, i.e., contributing more than 10% of the doses evaluated by the ODCM.

Table A1

Gaseous Effluents - Minimum Detectable Activity

Nuclide	MDA (uCi/cc)
Krypton 85	1.0 E-05
Krypton 85m	3.8 E-08
Krypton 87	1.6 E-07
Krypton 88	1.4 E-07
Xenon 133	*
Xenon 135	2.9 E-08
Xenon 135m	5.6 E-06
Xenon 138	2.2 E-05
Xenon 133m	2.5 E-07
Iodine 131	1.2 E-13
Iodine 133	3.0 E-13
Iodine 135	1.9 E-11
Strontium 89	5.0 E-16
Strontium 90	5.0 E-16
Cesium 134	9.9 E-14
Cesium 137	1.2 E-13
Barium 140	3.8 E-13
Lanthanum 140	2.9 E-13
Manganese 54	1.1 E-13
Iron 59	2.3 E-13
Cobalt 58	1.1 E-13
Cobalt 60	1.4 E-13
Zinc 65	2.5 E-13
Bromine 82	3.1 E-13
Molybdenum 99	1.2 E-12
Cerium 141	9.5 E-14
Cerium 144	4.2 E-13
Hydrogen 3	2.6 E-08

* Activity identified

Table A2

Gaseous Effluents-Summation of All Releases

	Unit	Quarter #1	Quarter #2	Est. Total Error % ***
A. Fission & Activation Gases				
Total release	Ci	NA	1.01E+00	4.6E+01
Average release rate for period	uCi/sec	NA	3.16E-01	
Percent of Technical Specification Limit	%	NA	**	
B. Iodines				
Total Iodine-131	Ci	NA	0	5.2E+01
Average release rate for period	uCi/sec	NA	0	
Percent of Technical Specification Limit	%	NA	**	
C. Particulates				
Particulates with half-lives 8 days	Ci	NA	2.29E-06	2.4E+01
Average release rate for period	uCi/sec	NA	7.16E-07	
Percent of Technical Specification Limit	%	NA	**	
Gross alpha radioactivity	Ci	NA	6.23E-08	
D. Tritium				
Total release	Ci	NA	2.02E+00*	4.0E+01
Average release rate for period	uCi/sec	NA	6.32E-01	
Percent of Technical Specification Limit	%	NA	**	

* Additional information is provided in Section 9.0, Miscellaneous Information

** See Table A4 for percent of PVNGS Technical Specification Limits based on the doses calculated in Appendix C.

*** Estimated total error methodology is presented in Table A5.

Table A3
Gaseous Effluents-Ground Level Releases

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1. Fission gases					
Krypton-85	Ci	N/A	<MDA*	N/A	<MDA
Krypton-85m	Ci	N/A	<MDA	N/A	<MDA
Krypton-87	Ci	N/A	<MDA	N/A	<MDA
Krypton-88	Ci	N/A	<MDA	N/A	<MDA
Xenon-133	Ci	N/A	7.82E-01	N/A	3.05E-03
Xenon-135	Ci	N/A	<MDA	N/A	9.23E-04
Xenon-135m	Ci	N/A	<MDA	N/A	<MDA
Xenon-138	Ci	N/A	<MDA	N/A	<MDA
	Ci	N/A		N/A	
Argon-41	Ci	N/A	<MDA	N/A	2.26E-01
	Ci	N/A		N/A	
	Ci	N/A		N/A	
	Ci	N/A		N/A	
	Ci	N/A		N/A	
Unidentified	Ci	N/A		N/A	
Total for Period	Ci	N/A	7.82E-01	N/A	2.30E-01
2. Iodines					
Iodine-131	Ci	N/A	<MDA	N/A	<MDA
Iodine-133	Ci	N/A	<MDA	N/A	<MDA
Iodine-135	Ci	N/A	<MDA	N/A	<MDA
Total for Period	Ci	N/A	<MDA	N/A	<MDA
3. Particulates					
Strontium-89	Ci	N/A	<MDA	N/A	<MDA
Strontium-90	Ci	N/A	<MDA	N/A	<MDA
Cesium-134	Ci	N/A	<MDA	N/A	<MDA
Cesium-137	Ci	N/A	<MDA	N/A	<MDA
Barium-lanthanum-140	Ci	N/A	<MDA	N/A	<MDA
	Ci	N/A		N/A	
Tritium	Ci	N/A	2.02E+00**	N/A	<MDA
Bromine-82	Ci	N/A	<MDA	N/A	2.29E-06
	Ci	N/A		N/A	
	Ci	N/A		N/A	
	Ci	N/A		N/A	
Total	Ci	N/A	2.02+00	N/A	2.29E-06

* See Table A1 for the MDA values.

** Additional information is provided in Section 9.0, Miscellaneous Information.

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February 28, 1986
ANPP-35347-EEVB/LJM/98.05

Mr. John B. Martin
Region V
U.S. Nuclear Regulatory Commission
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596-5368

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1 and 2
Docket Nos. STN 50-528 (License NPF-41)
STN 50-529 (License NPF-46)
Semiannual Radioactive Effluent Release Report
File: 86-056-026; G.1.01.10

Dear Mr. Martin:

Pursuant to 10 CFR 50.36a(2) and in accordance with Technical Specification 6.9.1.8, attached please find two copies of the Semiannual Radioactive Effluent Release Report for the Palo Verde Nuclear Generating Station Units 1 and 2 for the six month period ending December 30, 1985.

If you have any questions or require further information, please contact me.

Very truly yours,

E. E. Van Brunt

E. E. Van Brunt, Jr.
Executive Vice President
Project Dirctor

EEVB/LJM/rw
Attachments

cc: E. A. Licitra (1 copy)
R. P. Zimmerman (1 copy)
A. C. Gehr (1 copy)

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