

NORTHEAST NUCLEAR ENERGY COMPANY

MILLSTONE NUCLEAR POWER STATION

UNITS NO. 1 & NO. 2

**RETURN TO REACTOR DOCKET  
FILES**

SEMIANNUAL RADIOACTIVE EFFLUENTS

RELEASE REPORT

January 1, 1979 - June 30, 1979

600120  
50-245/336  
LA 8-29-79  
7909100489

**RETURN TO REACTOR DOCKET  
FILES**

Operating License No's. DPR-21 & DPR-65

Docket No's. 50-245 & 50-336

August 29, 1979

7909100491

## INTRODUCTION

1.0 This report is being submitted for Northeast Nuclear Energy Company's, Millstone Nuclear Power Station, Units No. 1 and No. 2 in accordance with the requirements of 10CFR50.36a, and the Technical Specifications and in the format outlined by U. S. NRC Regulatory Guide 1.21.

During the period covered by this report, Unit No. 1 operated with a unit capacity factor of 52% and Unit No. 2 with a unit capacity factor of 49%.

Unit No. 1 was shutdown for refueling from 4/28/79 to 6/28/79.

Unit No. 2 was shutdown for refueling from 3/10/79 to 5/23/79.

A single report is being submitted for both units as the two units share a number of items related to this report. However, release data and dose calculations are presented separately for each unit.

RADIOACTIVE EFFLUENT RELEASES

2.0 The plants were operated in accordance with the Technical Specifications. The liquid and airborne radioactive effluents are given in the attached tables as follows:

Table 2.1-1	Unit 1 Liquid Effluents-Summation
Table 2.1-2	Unit 1 Liquid Effluents-Batch Mode
Table 2.1-3	Unit 1 Gaseous Effluents-Summation
Table 2.1-4	Unit 1 Gaseous Effluents-Elevated Continuous
Table 2.2-1	Unit 2 Liquid Effluents-Summation
Table 2.2-2	Unit 2 Liquid Effluents-Continuous Mode
Table 2.2-3	Unit 2 Liquid Effluents-Batch Mode
Table 2.2-4	Unit 2 Gaseous Effluents-Summation
Table 2.2-5	Unit 2 Gaseous Effluents-Mixed Continuous - Unit 2 Ventilation
Table 2.2-6	Unit 2 Gaseous Effluents Elevated or Mixed Batch - Unit 2 Containment Purges
Table 2.2-7	Unit 2 Gaseous Effluents-Elevated Batch - Unit 2 Waste Gas Tanks
Table 2.3-1	Supplemental Information

MILLSTONE NUCLEAR POWER STATION - UNIT No. 1EFFLUENT AND WASTE DISPOSAL REPORT  
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASESYear 1979

Units	JAN.	FEB.	MARCH	QUARTERLY TOTALS	Est. Total Error, %
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## A. Fission and Activation Products

. Total released(not including H-3,Gases, Alpha)	Ci	3.63E-02	3.46E-03	5.28E-03	4.50E-02	1.50E+01
. Average diluted concentration during period	uCi/ml	2.88E-08	5.65E-09	2.87E-09	1.21E-08	
. Percent of applicable limit **	%	-	-	-	** 0.45	

\*\* Based on limit of 10.0 curies per quarter - E.T.S., 2.4.1.2.E

## B. Tritium

. Total Released	Ci	9.78E-01	5.04E-01	3.02E-01	1.78E+00	1.50E+01
. Average diluted concentration during period	uCi/ml	7.76E-07	8.24E-07	1.64E-07	4.80E-07	

## C. Dissolved and Entrained Gases

. Total Released	Ci	2.06E-01	1.11E-01	9.57E-03	3.27E-01	1.50E+01
. Average diluted concentration during period	uCi/ml	1.63E-07	1.81E-07	5.20E-09	8.81E-08	

## D. Gross Alpha Radioactivity

. Total Released	Ci	≤ 4.73E-05	≤ 1.92E-05	≤ 1.55E-05	≤ 8.20E-05	1.50E+01
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. Volume of waste released(Prior to dilution)	liters	6.94E+05	2.74E+05	2.21E+05	1.19E+06	1.00E+01
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. Volume of dilution water used during period	liters	1.26E+09	6.12E+08	1.84E+09	3.71E+09	1.00E+01
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TABLE 2.1-1 (Continued)

MILLSTONE NUCLEAR POWER STATION - UNIT No. 1EFFLUENT AND WASTE DISPOSAL REPORT  
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASESYear 1979

Units	APRIL	MAY	JUNE	QUARTERLY TOTALS	Est. Total Error, %
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## A. Fission and Activation Products

1. Total released(not including H-3,Gases, Alpha)	Ci	4.26E-03	4.19E-02	1.00E-01	1.46E-01	1.50E+01
2. Average diluted concentration during period	uCi/ml	2.51E-09	2.33E-07	1.59E-06	7.72E-08	
3. Percent of applicable limit **	%	-	-	-	** 1.46	

\*\* Based on limit of 10.0 curies per quarter - E.T.S., 2.4.1.2.E

## B. Tritium

1. Total Released	Ci	5.89E-01	1.37E+00	8.69E-01	2.83E+00	1.50E+01
2. Average diluted concentration during period	uCi/ml	3.46E-07	7.61E-06	1.38E-05	1.50E-06	

## C. Dissolved and Entrained Gases

1. Total Released	Ci	1.69E-02	≤ 8.03E-04	≤ 5.53E-04	1.69E-02	1.50E+01
2. Average diluted concentration during period	uCi/ml	9.94E-09	≤ 4.46E-09	≤ 3.81E-09	8.94E-09	

## D. Gross Alpha Radioactivity

1. Total Released	Ci	≤ 2.67E-05	≤ 7.49E-05	8.43E-05	8.43E-05	1.50E+01
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E. Volume of waste released(Prior to dilution)	liters	3.80E+05	1.07E+06	8.60E+05	2.30E+06	1.00E+01
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F. Volume of dilution water used during period	liters	1.70E+09	1.80E+08	6.28E+07	1.89E+09	1.00E+01
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TABLE 2.1-2

MILLSTONE NUCLEAR POWER STATION UNIT No. 1

EFFLUENT AND WASTE DISPOSAL REPORT

YEAR 1979

LIQUID EFFLUENTS - BATCH MODE

Nuclides Released	Unit	JAN.	FEB.	MARCH	Quarterly Total
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I-131	Ci	7.85E-04	1.61E-03	6.34E-04	3.02E-03
Ba,La-140	Ci	6.22E-04	≤ 2.83E-04	1.44E-04	7.66E-04
Cs-134	Ci	4.70E-04	-	7.00E-05	5.40E-04
Cs-137	Ci	2.28E-03	-	2.70E-04	2.55E-03
Co-58	Ci	6.45E-04	1.08E-05	2.87E-04	9.43E-04

Co-60	Ci	2.23E-02	7.89E-04	2.42E-03	2.55E-02
Mn-54	Ci	5.87E-03	3.70E-04	7.48E-04	6.99E-03
Cr-51	Ci	1.72E-03	3.10E-04	1.77E-04	2.21E-03
Zr-95	Ci	6.20E-05	-	9.86E-06	7.19E-05
Nb-95	Ci	3.20E-04	-	1.88E-05	3.39E-04

Fe-59	Ci	3.58E-04	-	1.17E-05	3.70E-04
I-135	Ci	6.00E-05	-	3.14E-04	3.74E-04
I-133	Ci	-	3.14E-04	9.19E-05	4.06E-04
Sr-89	Ci	6.65E-04	≤ 8.22E-06	3.33E-05	6.98E-04
Sr-90	Ci	1.28E-04	≤ 1.37E-06	4.00E-06	1.32E-04

Ru-105	Ci	-	5.34E-05	1.59E-05	6.93E-05
Ce-141	Ci	-	-	1.69E-05	1.69E-05
Ag-110m	Ci	-	-	4.88E-06	4.88E-06
Nb-97	Ci	-	-	5.97E-06	5.97E-06
	Ci				

	Ci				
	Ci				
	Ci				
	Ci				
	Ci				

Total for period(above)	Ci	3.63E-02	3.46E-03	5.28E-03	4.50E-02
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xenon-133	Ci	1.61E-01	7.03E-02	3.81E-03	2.35E-01
xenon-135	Ci	4.47E-02	4.10E-02	5.76E-03	9.15E-02
	Ci				

## EFFLUENT AND WASTE DISPOSAL REPORT

YEAR 1979

## LIQUID EFFLUENTS - BATCH MODE

Nuclides Released	Unit	APRIL	MAY	JUNE	Quarterly Total
I-131	ci	2.30E-04	9.18E-04	2.71E-06	1.15E-03
Ba,La-140	ci	1.03E-04	1.69E-04	1.44E-05	2.97E-04
Cs-134	ci	2.20E-05	2.48E-04	1.03E-04	3.73E-04
Cs-137	ci	7.66E-05	1.05E-03	4.44E-04	1.57E-03
Co-58	ci	1.24E-04	9.93E-04	1.32E-03	2.94E-03
Co-60	ci	2.02E-03	2.35E-02	3.29E-02	5.84E-02
Mn-54	ci	1.11E-03	8.99E-03	8.50E-03	1.86E-02
Cr-51	ci	3.91E-04	2.40E-03	5.18E-05	2.85E-03
Ru 105	ci	1.35E-04	1.66E-04	2.02E-04	5.03E-04
Zr-97	ci	8.82E-06	-	-	8.82E-06
Nb-95	ci	5.64E-06	8.05E-04	6.01E-04	1.41E-03
Fe 59	ci	1.84E-05	5.95E-04	8.50E-04	1.46E-03
Ce-144	ci	-	6.07E-04	7.64E-05	6.83E-04
Sr-89	ci	1.30E-05	4.49E-05	3.44E-05	9.23E-05
Sr-90	ci	3.66E-06	≤ 6.42E-05	6.67E-06	1.03E-05
Ce-141	ci	-	1.09E-03	5.44E-02	5.55E-02
Ag-110m	ci	-	1.29E-05	7.05E-06	2.00E-05
Nb-97	ci	-	1.58E-05	8.64E-06	2.44E-05
W-187	ci	-	6.94E-05	-	6.94E-05
Zr-95	ci	-	1.29E-04	1.96E-04	3.25E-04
Zn 65	ci	-	1.03E-04	2.00E-05	1.23E-04
I-133	ci	-	-	2.41E-06	2.41E-06
Sr-91	ci	-	-	3.52E-05	3.52E-05
Sr-92	ci	-	-	9.08E-07	9.08E-07
	ci	-	-	-	-
Total for period(above)	ci	4.26E-03	4.19E-02	1.00E-01	1.46E-01
xenon-133	ci	7.79E-03	≤ 6.35E-04	≤ 4.27E-04	7.79E-03
xenon-135	ci	9.13E-03	≤ 1.68E-04	≤ 1.26E-04	9.13E-03
	ci				

TABLE 2.1-3

MILLSTONE NUCLEAR POWER STATION - UNIT No. 1EFFLUENT AND WASTE DISPOSAL REPORT  
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

Mar 1979

Units	JAN.	FEB.	MARCH	QUARTERLY TOTALS	Est. Total Error, %
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## Fission and Activation Gases

1. Total Released	Ci	2.55E+03	2.47E+03	4.14E+03	9.16E+03	2.50E+01
2. Average Release Rate For Period	uCi/sec	9.52E+02	1.02E+03	1.55E+03	1.18E+03	
3. Percent of Technical Specification Limit	%	-	-	-	* 0.384	

\* Limit as per E.T.S. Equation 2.4.2.2.B.1

## Iodines

1. Total Iodine - 131	Ci	8.02E-02	6.48E-02	5.97E-02	2.05E-01	2.50E+01
2. Average Release Rate For Period	uCi/sec	2.99E-02	2.68E-02	2.23E-02	2.64E-02	

## Particulates

1. Particulates With Half-lives > 8 Days	Ci	2.31E-02	2.97E-02	3.01E-02	8.30E-02	2.50E+01
2. Average Release Rate For Period	uCi/sec	8.62E-03	1.23E-02	1.12E-02	1.07E-02	
3. Percent of Technical Specification Limit	%	-	-	-	* 3.88	
4. Gross Alpha Radioactivity	Ci	4.24E-06	2.05E-06	2.84E-06	9.13E-06	

\* Limit as per E.T.S. Equation 2.4.2.2.B.2

## Tritium

1. Total Released	Ci	1.51E+00	2.58E+00	1.00E+01	1.41E+01	2.50E+01
2. Average Release Rate For Period	uCi/sec	5.64E-01	1.07E+00	3.73E+00	1.81E+00	



EFFLUENT AND WASTE DISPOSAL REPORT  
 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

ar 1979

Units	APRIL	MAY	JUNE	QUARTERLY TOTALS	Est. Total Error, %
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Fission and Activation Gases

1. Total Released	Ci	2.80E+03	3.65E+01	1.72E+02	3.01E+03	2.50E+01
2. Average Release Rate For Period	uCi/sec	1.03E+03	1.36E+01	6.64E+01	3.83E+02	
3. Percent of Technical Specification Limit	%	-	-	-	* 0.15	

\* Limit as per E.T.S. Equation 2.4.2.2.B.1

Iodines

1. Total Iodine - 131	Ci	6.75E-02	2.81E-02	2.27E-04	9.58E-02	2.50E+01
2. Average Release Rate For Period	uCi/sec	2.60E-02	1.05E-02	3.76E-05	1.22E-02	

Particulates

1. Particulates With Half-lives > 8 Days	Ci	3.31E-02	1.52E-03	3.19E-03	3.78E-02	2.50E+01
2. Average Release Rate For Period	uCi/sec	1.28E-02	5.68E-04	1.23E-03	4.81E-03	
3. Percent of Technical Specification Limit	%	-	-	-	* 2.01	
4. Gross Alpha Radioactivity	Ci	1.18E-06	3.93E-06	6.40E-06	1.14E-05	

\* Limit as per E.T.S. Equation 2.4.2.2.B.2

Tritium

1. Total Released	Ci	5.84E+00	2.28E+00	3.66E+00	1.13E+01	2.50E+01
2. Average Release Rate For Period	uCi/sec	2.25E+00	8.51E-01	1.41E+00	1.50E+00	

EFFLUENT AND WASTE DISPOSAL REPORT

YEAR 1979

GASEOUS EFFLUENTS-ELEVATED RELEASE - CONTINUOUS MODE

Nuclides Released	Unit	JAN.	FEB.	MARCH	Quarterly Total
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1. Fission gases

Xe-138	Ci	5.75E+02	6.18E+02	7.86E+02	1.98E+03
Kr-87	Ci	5.04E+01	4.44E+01	5.53E+01	1.50E+02
Kr-88	Ci	2.00E+01	-	-	2.00E+01
Kr-85m	Ci	5.03E+01	5.05E+01	9.06E+01	1.91E+02
Xe-135	Ci	1.67E+02	2.17E+02	1.50E+02	5.34E+02
Xe-133	Ci	3.18E+01	-	-	3.18E+01
Kr-89	Ci	-	-	-	-
Xe-137	Ci	1.30E+03	1.24E+03	1.27E+03	3.81E+03
Xe-135m	Ci	3.57E+02	3.01E+02	3.56E+02	1.01E+03
Kr-83m	Ci	-	-	-	-
Xe-133m	Ci	-	-	-	-
Xe-131m	Ci	-	-	1.43E+03	1.43E+03
Kr-85	Ci	-	-	-	-
Ar-37	Ci	-	-	-	-
Total For Period	Ci	2.55E+03	2.47E+03	4.14E+03	9.16E+03

2. Iodines

iodine-131	Ci	7.84E-02	6.04E-02	5.56E-02	1.94E-01
iodine-133	Ci	2.38E-01	2.72E-01	2.89E-01	7.99E-01
iodine-135	Ci	2.64E-01	2.78E-01	3.31E-01	8.73E-01
Total for period	Ci	5.80E-01	6.10E-01	6.76E-01	1.87E+00

3. Particulates

I-131	Ci	1.81E-03	4.37E-03	4.09E-03	1.03E-02
Ba,La-140	Ci	1.60E-02	2.09E-02	2.14E-02	5.83E-02
Mn-54	Ci	5.03E-04	6.13E-04	4.58E-04	1.57E-03
Co-58	Ci	8.61E-05	4.23E-05	3.81E-05	1.67E-04
Co-60	Ci	7.92E-04	2.10E-04	6.22E-04	1.62E-03

Cs-134	Ci	5.30E-06	-	-	5.30E-06
Cs-137	Ci	8.80E-05	9.59E-05	6.63E-05	2.50E-04
Fe-59	Ci	1.08E-04	1.65E-04	6.33E-05	3.36E-04
Zn-65	Ci	-	1.26E-05	-	1.26E-04
	Ci				

Sr-89	Ci	3.67E-03	3.30E-03	3.39E-03	1.04E-02
Sr-90	Ci	1.43E-05	1.65E-05	1.50E-05	4.58E-05
	Ci				
	Ci				
	Ci				

EFFLUENT AND WASTE DISPOSAL REPORT

YEAR 1979 GASEOUS EFFLUENTS-ELEVATED RELEASE - CONTINUOUS MODE

Nuclides Released	Unit	APRIL	MAY	JUNE	Quarterly Total
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1. Fission gases

Xe-138	Ci	3.06E+02	5.67E+00	3.04E+01	3.42E+02
Kr-87	Ci	7.81E+00	-	-	7.81E+00
Kr-88	Ci	2.81E+01	2.30E-01	-	2.83E+01
Kr-85m	Ci	1.01E+02	7.10E-01	3.27E+00	1.05E+02
Xe-135	Ci	2.02E+02	1.51E+00	2.86E+01	2.32E+02
Xe-133	Ci	4.80E+01	1.90E+01	2.37E+01	9.07E+01
Kr-89	Ci	-	-	-	-
Xe-137	Ci	9.48E+02	6.35E+00	4.62E+01	1.00E+03
Xe-135m	Ci	4.19E+02	3.02E+00	3.69E+01	4.62E+02
Kr-83m	Ci	-	-	-	-
Xe-133m	Ci	-	-	-	-
Xe-131m	Ci	2.44E+02	-	-	2.44E+02
Kr-85	Ci	-	-	-	-
Ar-37	Ci	-	-	-	-
<b>Total For Period</b>	<b>Ci</b>	<b>2.80E+03</b>	<b>3.65E+01</b>	<b>1.72E+02</b>	<b>3.01E+03</b>

2. Iodines

iodine-131	Ci	6.35E-02	2.80E-02	2.02E-04	9.17E-02
iodine-133	Ci	2.73E-01	4.43E-03	≤ 5.66E-05	2.77E-01
iodine-135	Ci	3.17E-01	≤ 1.44E-05	≤ 1.19E-04	3.17E-01
<b>Total for period</b>	<b>Ci</b>	<b>6.54E-01</b>	<b>3.25E-02</b>	<b>2.02E-04</b>	<b>6.86E-01</b>

3. Particulates

I-131	Ci	4.00E-03	6.67E-05	2.54E-05	4.09E-03
Ba,La-140	Ci	2.39E-02	5.85E-05	1.24E-03	2.52E-02
Mn-54	Ci	1.50E-03	2.69E-04	3.85E-04	2.15E-03
Co-58	Ci	6.16E-05	4.55E-05	5.96E-05	1.67E-04
Co-60	Ci	3.69E-04	7.63E-04	9.19E-04	2.05E-03

Cs-134	Ci	2.65E-05	3.48E-05	3.56E-05	9.69E-05
Cs-137	Ci	9.98E-05	1.48E-04	1.41E-04	3.89E-04
Fe-59	Ci	2.91E-04	4.84E-05	3.81E-05	3.78E-04
Zn-65	Ci	-	1.40E-06	-	1.40E-06
	Ci				

Sr-89	Ci	2.89E-03	7.01E-05	3.47E-04	3.31E-03
Sr-90	Ci	1.27E-05	7.01E-06	6.17E-06	2.59E-05
	Ci				
	Ci				
	Ci				

TABLE 2.2-1

MILLSTONE NUCLEAR POWER STATION - UNIT No. 2EFFLUENT AND WASTE DISPOSAL REPORT  
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASESYear 1979

Units	JANUARY	FEBRUARY	MARCH	QUARTERLY TOTALS	Est. Total Error, %
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## A. Fission and Activation Products

1. Total released(not including H-3,Gases, Alpha)	Ci	5.55E-01	1.81E-01	9.13E-01	1.65E+00	1.50E+01
2. Average diluted concentration during period	µCi/ml	1.91E-08	2.56E-09	4.06E-08	1.35E-08	
3. Percent of applicable limit **	%	5.55E+00	1.81E+00	9.13E+00	1.65E+01	

\*\* Based on limit of 10.0 curies per quarter - E.T.S., 2.4.1.2.E

## B. Tritium

1. Total Released	Ci	3.54E+01	1.95E+01	9.68E+00	6.46E+01	1.50E+01
2. Average diluted concentration during period	µCi/ml	1.22E-06	2.75E-07	4.30E-07	5.30E-07	

## C. Dissolved and Entrained Gases

1. Total Released	Ci	1.06E+00	1.47E+00	9.24E-01	3.45E+00	1.50E+01
2. Average diluted concentration during period	µCi/ml	3.66E-08	2.07E-08	4.11E-08	2.83E-08	

## D. Gross Alpha Radioactivity

1. Total Released	Ci	---	---	---	---	1.50E+01
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1. Volume of waste re-released(Prior to dilution)	liters	3.99E+06	6.36E+06	2.70E+06	1.31E+07	1.00E+01
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2. Volume of dilution water used during period	liters	2.90E+10	7.09E+10	2.25E+10	1.22E+11	1.00E+01
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MILLSTONE NUCLEAR POWER STATION - UNIT No. 2EFFLUENT AND WASTE DISPOSAL REPORT  
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

1979

Units	APRIL	MAY	JUNE	QUARTERLY TOTALS	Est. Total Error, %
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## Fission and Activation Products

Total released(not including H-3,Gases, Alpha)	Ci	4.33E-01	1.51E+00	5.41E-01	2.48E+00	1.50E+01
Average diluted concentration during period	µCi/ml	2.04E-07	5.01E-08	6.47E-09	2.14E-08	
Percent of applicable limit **	%	4.33E+00	1.51E+01	5.41E+00	2.48E+01	

\*\* Based on limit of 10.0 curies per quarter - E.T.S., 2.4.1.2.E

## Tritium

Total Released	Ci	1.37E+00	4.52E+00	2.19E+01	2.78E+01	1.50E+01
Average diluted concentration during period	µCi/ml	6.46E-07	1.50E-07	2.62E-07	2.40E-07	

## Dissolved and Entrained Gases

Total Released	Ci	1.79E-03	2.29E-02	5.88E-01	6.13E-01	1.50E+01
Average diluted concentration during period	µCi/ml	8.47E-10	7.59E-10	7.04E-09	5.28E-09	

## Gross Alpha Radioactivity

Total Released	Ci	----	----	----	----	1.50E+01
----------------	----	------	------	------	------	----------

Volume of waste released(Prior to dilution)	liters	3.08E+05	3.22E+06	5.81E+06	9.34E+06	1.00E+01
---	--------	----------	----------	----------	----------	----------

Volume of dilution water used during period	liters	2.12E+09	3.02E+10	8.36E+10	1.16E+11	1.00E+01
---	--------	----------	----------	----------	----------	----------

MILLSTONE NUCLEAR POWER STATION UNIT No. 2

## EFFLUENT AND WASTE DISPOSAL REPORT

Steam Generator Blowdown

YEAR 1979

## LIQUID EFFLUENTS - CONTINUOUS

Nuclides Released	Unit	JANUARY	FEBRUARY	MARCH	Quarterly Total
-------------------	------	---------	----------	-------	-----------------

I-131	Ci	6.63E-03	3.25E-03	2.00E-03	1.19E-02
I-133	Ci	5.20E-04	2.39E-03	- - - -	2.91E-03
I-134	Ci	2.17E-05	- - - -	- - - -	2.17E-05
Cs-134	Ci	6.98E-05	- - - -	4.86E-04	5.56E-04
Cs-136	Ci	4.13E-05	- - - -	8.65E-05	1.28E-04

Cs-137	Ci	1.16E-04	- - - -	7.82E-04	8.98E-04
Co-60	Ci	2.64E-04	1.14E-03	7.50E-04	2.15E-03
Mn-56	Ci	1.68E-05	- - - -	- - - -	1.68E-05
La-141	Ci	6.26E-04	- - - -	- - - -	6.26E-04
Na-24	Ci	2.18E-04	2.76E-03	1.02E-03	4.00E-03

Co-58	Ci	- - - -	- - - -	1.14E-03	1.14E-03
Mn-54	Ci	- - - -	- - - -	3.69E-04	3.69E-04
Sr-89	Ci	$\leq 1.04E-04$	7.53E-04	$\leq 5.81E-05$	7.53E-04
Sr-90	Ci	$\leq 1.92E-05$	$\leq 1.43E-04$	$\leq 1.25E-05$	- - - -
Totals For Period	Ci	8.52E-03	1.03E-02	6.63E-03	2.55E-02

	Ci				
H-3	Ci	1.75E-02	1.53E-01	1.40E-03	1.72E-01
	Ci				
Gross Alpha	Ci	$\leq 1.18E-04$	$\leq 3.63E-04$	$\leq 1.16E-04$	- - - -
	Ci				

	Ci				
	Ci				
	Ci				
	Ci				
	Ci				

Total for period(above)	Ci				
-------------------------	----	--	--	--	--

xenon-135	Ci	$\leq 3.76E-03$	$\leq 3.01E-03$	3.51E-03	3.51E-03
xenon-135	Ci	5.10E-04	$\leq 8.93E-04$	$\leq 5.53E-04$	5.10E-04
	Ci				

TABLE 2.2-2 (Continued)

MILLSTONE NUCLEAR POWER STATION - UNIT No. 2

EFFLUENT AND WASTE DISPOSAL REPORT

Steam Generator Blowdown

YEAR 1979

LIQUID EFFLUENTS-CONTINUOUS MODE

Nuclides Released	Unit	APRIL	MAY	JUNE	Quarterly Total
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
I-131	Ci		≤ 1.30E-04	≤ 1.40E-04	-----
Ba,La-140	Ci		≤ 1.04E-03	≤ 1.13E-03	-----
Cs-134	Ci		7.43E-04	4.12E-03	4.86E-03
Cs-137	Ci		1.63E-03	4.60E-03	6.23E-03
Mn-54	Ci		1.70E-04	3.25E-04	4.95E-04
Sr-89	Ci		≤ 5.53E-05	≤ 2.02E-04	-----
Sr-90	Ci		≤ 1.11E-05	≤ 3.78E-05	-----
	Ci				
Total For Period	Ci		2.54E-03	9.05E-03	1.16E-02
	Ci				
H-3	Ci		5.51E-02	3.47E-02	8.98E-02
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
Total for period (above)	Ci				
xenon-133	Ci		≤ 6.33E-04	≤ 6.48E-04	-----
xenon-135	Ci		≤ 2.31E-04	≤ 1.51E-04	-----
	Ci				

REFUELING - NO DISCHARGES THIS PERIOD

TABLE 2.2-3

MILLSTONE NUCLEAR POWER STATION UNIT No. 2

## EFFLUENT AND WASTE DISPOSAL REPORT

YEAR 1979

LIQUID EFFLUENTS - BATCH MODE

Liquid Rad Waste

Nuclides Released	Unit	JANUARY	FEBRUARY	MARCH	Quarterly Total
I-131	Ci	4.92E-02	1.17E-02	4.17E-02	1.03E-01
Ba,La-140	Ci	6.55E-05	≤ 7.68E-05	1.22E-04	1.82E-04
Cs-134	Ci	1.55E-01	1.22E-02	4.64E-02	2.14E-01
Cs-137	Ci	1.83E-01	1.98E-02	4.44E-02	2.47E-01
Co-58	Ci	1.45E-02	1.23E-02	5.41E-01	5.68E-01
Co-60	Ci	4.60E-02	9.18E-02	1.06E-01	2.44E-01
Mn-54	Ci	7.80E-03	1.01E-02	1.13E-02	2.92E-02
Ce-144	Ci	3.86E-05	2.84E-04	- - - -	3.23E-04
Mo-99	Ci	1.43E-04	6.69E-06	8.99E-04	1.05E-03
Cr-51	Ci	2.69E-04	3.33E-04	5.48E-02	5.54E-02
I-133	Ci	5.18E-04	2.78E-04	6.08E-04	1.40E-03
Nb-97	Ci	1.22E-02	1.22E-03	1.86E-02	3.20E-02
Ag110m	Ci	1.03E-03	9.99E-04	1.51E-02	1.71E-02
W-187	Ci	8.20E-05	1.78E-04	2.06E-03	2.32E-03
Ru-105	Ci	5.96E-04	6.43E-04	4.17E-03	5.41E-03
Zr-95	Ci	5.06E-05	3.23E-04	2.33E-03	2.70E-03
Nb-95	Ci	9.81E-04	1.25E-03	5.56E-03	7.79E-03
Cs-136	Ci	3.66E-02	3.45E-04	6.45E-03	4.34E-02
Zn-65	Ci	1.74E-05	3.52E-05	6.02E-05	1.13E-04
Na-24	Ci	3.82E-02	7.22E-03	6.57E-04	4.61E-02
Sr-92	Ci	8.73E-05	8.67E-05	7.99E-06	1.82E-04
I-132	Ci	- - - -	1.89E-05	- - - -	1.89E-05
I-135	Ci	- - - -	1.96E-05	- - - -	1.96E-05
Sr-89	Ci	7.52E-05	3.04E-04	1.56E-04	5.35E-04
Sr-90	Ci	≤ 7.21E-06	3.04E-05	1.46E-05	4.50E-05
Zr-97	Ci	- - - -	- - - -	1.04E-05	1.04E-05
Mn-56	Ci	- - - -	- - - -	8.49E-06	8.49E-06
Fe-59	Ci	- - - -	- - - -	3.39E-03	3.39E-03
Total For Period	Ci	5.46E-01	1.71E-01	9.06E-01	1.62E+00
H-3	Ci	3.54E+01	1.93E+01	9.68E+00	6.44E+01
Gross Alpha	Ci	≤ 4.12E-05	≤ 8.19E-05	≤ 9.68E+00	- - - -
xenon-133	Ci	1.05E+00	1.47E+00	9.23E-01	3.44E+00
xenon-135	Ci	5.32E-03	2.87E-03	6.58E-04	8.85E-03
	Ci				



TABLE 2.2-3 (Continued)

MILLSTONE NUCLEAR POWER STATION UNIT No. 2

## EFFLUENT AND WASTE DISPOSAL REPORT

Liquid Rad Waste

YEAR 1979

## LIQUID EFFLUENTS - BATCH MODE

Nuclides Released	Unit	APRIL	MAY	JUNE	Quarterly Total
I-131	Ci	1.85E-03	- - - -	6.96E-05	1.92E-03
Ba, La-140	Ci	6.80E-04	≤ 9.62E-06	1.96E-05	6.99E-04
Cs-134	Ci	1.14E-02	3.14E-02	1.19E-02	5.47E-02
Cs-137	Ci	1.16E-02	3.47E-02	1.22E-02	5.85E-02
Co-58	Ci	1.38E-01	5.39E-01	1.79E-01	8.56E-01
Co-60	Ci	1.89E-01	5.94E-01	2.34E-01	1.02E+00
Mn-54	Ci	1.89E-02	6.01E-02	2.42E-02	1.03E-01
Ce-144	Ci	1.82E-04	2.84E-03	3.40E-05	3.06E-03
Cr-51	Ci	3.26E-02	1.12E-01	1.71E-02	1.62E-01
I-133	Ci	2.28E-05	3.67E-05	1.14E-04	1.74E-04
Ag-110m	Ci	4.48E-03	2.14E-02	1.08E-02	3.67E-02
Nb-97	Ci	8.71E-03	2.11E-02	1.23E-02	4.21E-02
Ru-105	Ci	4.18E-03	2.56E-02	5.35E-03	3.51E-02
Zr-95	Ci	3.12E-03	1.85E-02	4.76E-03	2.64E-02
Nb-95	Ci	6.41E-03	3.58E-02	1.16E-02	5.38E-02
Cs-136	Ci	6.43E-05	1.84E-04	4.74E-04	7.22E-04
Fe-59	Ci	2.18E-03	7.42E-03	2.20E-03	1.18E-02
I-135	Ci	3.72E-05	- - - -	- - - -	3.72E-05
W-187	Ci	- - - -	1.55E-03	1.86E-03	3.41E-03
Ce-141	Ci	- - - -	4.63E-04	- - - -	4.63E-04
Zr-97	Ci	- - - -	1.59E-05	- - - -	1.59E-05
Na-24	Ci	- - - -	5.99E-04	1.34E-03	1.94E-03
Sr-92	Ci	- - - -	6.27E-04	2.60E-03	3.23E-03
Ni-65	Ci	- - - -	3.62E-05	- - - -	3.62E-05
I-132	Ci	- - - -	- - - -	5.61E-05	5.61E-05
Sr-91	Ci	- - - -	- - - -	2.06E-05	2.06E-05
Sr-89	Ci	≤ 1.23E-05	≤ 4.04E-05	1.54E-05	1.54E-05
Sr-90	Ci	1.26E-06	3.94E-05	6.08E-06	4.67E-05
	Ci				
Totals For Period	Ci	4.33E-01	1.51E+00	5.32E-01	2.48E+00
Gross Alpha		≤ 2.16E-05	≤ 4.04E-05	≤ 3.85E-05	- - - -
xenon-133	Ci	1.77E-03	2.27E-02	5.88E-01	6.13E-01
xenon-135	Ci	2.48E-05	2.22E-04	1.55E-04	4.02E-02
H-3	Ci	1.37E+00	4.46E+00	2.19E+01	2.77E+01

TABLE 2.2-4

MILLSTONE NUCLEAR POWER STATION - UNIT No. 2EFFLUENT AND WASTE DISPOSAL REPORT  
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

Mar 1979

Units	JANUARY	FEBRUARY	MARCH	QUARTERLY TOTALS	Est. Total Error, %
-------	---------	----------	-------	---------------------	------------------------

## Fission and Activation Gases

Total Released	Ci	9.24E+00	9.78E+00	3.59E+01	5.49E+01	2.50E+01
Average Release Rate For Period	uCi/sec	3.45E+00	4.04E+00	1.34E+01	7.06E+00	
Percent of Technical Specification Limit	%	-----	-----	-----	-----	

## Iodines

Total Iodine - 131	Ci	4.19E-04	2.21E-04	1.15E-03	1.79E-03	2.50E+01
Average Release Rate For Period	uCi/sec	1.56E-04	9.15E-05	4.28E-04	2.30E-04	

## Particulates

Particulates With Half-lives > 8 Days	Ci	3.11E-03	2.00E-05	2.10E-04	3.34E-03	2.50E+01
Average Release Rate For Period	uCi/sec	1.16E-03	8.26E-06	7.82E-05	4.29E-04	
Percent of Technical Specification Limit	%	-----	-----	-----	-----	
Gross Alpha Radioactivity	Ci	≤ 4.23E-08	≤ 1.06E-07	≤ 5.46E-08	-----	

## Tritium

Total Released	Ci	1.51E-04	≤ 3.62E+00	2.05E+01	2.05E+01	2.50E+01
Average Release Rate For Period	uCi/sec	5.63E-05	-----	7.65E+00	2.63E+00	

MILLSTONE NUCLEAR POWER STATION - UNIT No. 2EFFLUENT AND WASTE DISPOSAL REPORT  
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

r 1979

Units	APRIL	MAY	JUNE	QUARTERLY TOTALS	Est. Total Error, %
-------	-------	-----	------	---------------------	------------------------

## Fission and Activation Gases

Total Released	Ci	6.97E+00	4.16E+00	9.92E+00	2.11E+01	2.50E+01
Average Release Rate For Period	uCi/sec	2.69E+00	1.55E+00	3.83E+00	2.68E+00	
Percent of Technical Specification Limit	%	-----	-----	-----	-----	

## Iodines

Total Iodine - 131	Ci	3.84E-04	7.68E-05	2.50E-04	7.11E-04	2.50E+01
Average Release Rate For Period	uCi/sec	1.48E-04	2.87E-05	9.65E-05	9.10E-05	

## Particulates

Particulates With Half-lives > 8 Days	Ci	8.63E-05	1.01E-03	2.33E-05	1.12E-03	2.50E+01
Average Release Rate For Period	uCi/sec	3.33E-05	3.76E-04	8.99E-06	1.42E-04	
Percent of Technical Specification Limit	%	-----	-----	-----	-----	
Gross Alpha Radioactivity	Ci	≤ 6.76E-08	≤ 5.02E-08	≤ 4.88E-08	-----	

## Tritium

Total Released	Ci	≤ 1.65E+00	6.24E+00	6.18E+00	1.24E+01	2.50E+01
Average Release Rate For Period	uCi/sec	-----	2.33E+00	2.39E+00	1.58E+00	

MILLSTONE NUCLEAR POWER STATION - UNIT No. 2

## EFFLUENT AND WASTE DISPOSAL REPORT

Unit 2 Ventilation

YEAR 1979

GASEOUS EFFLUENTS - GROUND-LEVEL RELEASES - CONTINUOUS MODE

Nuclides Released	Unit	JANUARY	FEBRUARY	MARCH	Quarterly Total
-------------------	------	---------	----------	-------	-----------------

## 1. Fission gases

Xe-133	Ci	8.79E+00	9.65E+00	3.46E+01	5.30E+01
Kr-85	Ci	9.39E-03	1.32E-01	1.28E+00	1.42E+00
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
Total for period	Ci	8.80E+00	9.78E+00	3.59E+01	5.45E+01

## 2. Iodines

iodine-131	Ci	2.22E-04	2.17E-04	1.09E-03	1.53E-03
iodine-133	Ci	7.55E-05	5.21E-05	1.42E-04	2.70E-04
iodine-135	Ci	2.22E-04	1.15E-04	2.73E-04	6.10E-04
Total for period	Ci	5.20E-04	3.84E-04	1.51E-03	2.41E-03

## 3. Particulates

I-131	Ci	1.93E-05	4.38E-06	5.92E-06	2.96E-05
Ba, La-140	Ci	≤ 4.97E-07	≤ 3.52E-07	3.74E-06	3.74E-06
Co-58	Ci	- - - -	- - - -	2.32E-06	2.32E-06
Co-60	Ci	1.29E-05	1.08E-05	2.09E-05	4.46E-05
Mn-54	Ci	1.80E-06	1.95E-06	2.29E-06	6.04E-06

Cs-137	Ci	2.89E-06	2.77E-06	5.29E-06	1.10E-05
Fe-59	Ci	1.56E-07	- - - -	- - - -	1.56E-07
Sr-89	Ci	≤ 5.64E-08	1.16E-07	≤ 5.46E-08	1.16E-07
Sr-90	Ci	≤ 2.12E-08	≤ 1.57E-08	≤ 5.73E-08	- - - -
Totals For Period	Ci	3.71E-05	2.00E-05	4.05E-05	9.76E-05

	Ci				
	Ci				
	Ci				
H-3	Ci	≤ 1.27E+00	≤ 3.62E+00	2.05E+01	2.05E+01
Gross Alpha	Ci	≤ 4.23E-08	≤ 1.06E-07	≤ 5.46E-08	- - - -

MILLSTONE NUCLEAR POWER STATION - UNIT No. 2

## EFFLUENT AND WASTE DISPOSAL REPORT

Unit 2 Ventilation

YEAR 1979 GASEOUS EFFLUENTS - GROUND-LEVEL RELEASES - CONTINUOUS MODE

Nuclides Released	Unit	APRIL	MAY	JUNE	Quarterly Total
-------------------	------	-------	-----	------	-----------------

## 1. Fission gases

Xe-133	Ci	6.77E+00	1.71E+00	9.24E+00	1.77E+01
Kr-85	Ci	2.04E-01	2.79E-01	6.86E-01	1.17E+00
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
Total for period	Ci	6.97E+00	1.99E+00	9.92E+00	1.89E+01

## 2. Iodines

Iodine-131	Ci	3.81E-04	7.51E-05	2.50E-04	7.06E-04
Iodine-133	Ci	1.91E-05	5.48E-06	9.25E-05	1.17E-04
Iodine-135	Ci	2.29E-05	1.34E-05	2.75E-04	3.11E-04
Total for period	Ci	4.23E-04	9.40E-05	6.17E-04	1.13E-03

## 3. Particulates

I-131	Ci	2.75E-06	1.70E-06	- - - -	4.45E-06
Ba, La-140	Ci	8.70E-07	1.25E-06	1.82E-06	3.94E-06
Co-58	Ci	1.90E-06	1.61E-06	4.90E-07	4.00E-06
Co-60	Ci	7.45E-05	1.54E-05	1.47E-05	1.05E-04
Mn-54	Ci	1.69E-06	1.41E-06	1.68E-06	4.78E-06

Cs-137	Ci	2.84E-06	2.64E-06	3.09E-06	8.57E-06
Zn-65	Ci	1.60E-06	- - - -	- - - -	1.60E-06
Cs-134	Ci	1.30E-07	2.51E-07	1.49E-06	1.87E-06
Sr-89	Ci	≤ 7.51E-08	≤ 8.66E-08	3.90E-08	3.90E-08
Sr-90	Ci	≤ 3.00E-08	≤ 1.73E-08	2.60E-08	2.60E-08

Total For Period	Ci	8.63E-05	2.43E-05	2.33E-05	1.34E-04
	Ci				
	Ci				
H-3	Ci	≤ 1.65E+00	6.24E+00	6.18E+00	1.24E+01
Gross Alpha	Ci	≤ 6.76E-08	≤ 5.02E-08	≤ 4.88E-08	- - - -











TABLE 2.3-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT  
SUPPLEMENTAL INFORMATION

FACILITY: Millstone Unit No's. 1 and 2

1. REGULATORY LIMITS

a. Noble Gases

$$\sum_i Q_{is} [3.2 \bar{E}_{i\gamma} + 0.04 \bar{E}_{i\beta}] + Q_v [23 \bar{E}_{i\gamma} + 58 \bar{E}_{i\beta}] \leq 1$$

where,

$Q_{is}$  = release rate from the main stack of Unit 1 in Ci/sec  
(elevated releases)

$Q_v$  = release rate from unit 2 vent in Ci/sec (mixed release)

$i$  = the individual nuclide

$\bar{E}_{i\gamma}$  = the average gamma energy per disintegration (MeV)

$\bar{E}_{i\beta}$  = the average beta energy per disintegration (MeV)

b. All radioiodines and particulates with half lives greater than eight days.

$$7.9 \times 10^4 Q_s + 3.04 \times 10^6 Q_v \leq 1$$

c. Liquid effluents

10 Ci per calendar quarter per unit excluding tritium and dissolved gases.

2. MAXIMUM PERMISSIBLE CONCENTRATIONS

All maximum permissible concentrations for airborne and liquid releases are as specified in 10CFR20, Appendix B, Table II for the soluble form of the nuclide.

3. AVERAGE ENERGY

Millstone Environmental Technical Specifications, Table 2.4-5.

TABLE 2.3-1 (continued)

4. MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

a. Unit 1 Stack - Gaseous Releases

(1) Fission and Activation Gases

Stack monitors continuously record the effluent activity and flow rate. During periods when the augmented off-gas system is not operable, the radiation monitor reading is related to  $\mu\text{Ci}$  by off-gas sampling at the steam jet air ejectors and subsequent isotopic analysis. The isotopic activity at the SJAE is mathematically decayed to establish the activity in the stack using the known holdup time. During periods of augmented off-gas system operation, samples are taken directly from the stack with a subsequent isotopic analysis. In both cases, the calculated activity in the stack is then correlated to the monitor reading. The isotopic concentrations at the release point are multiplied by the total stack flow to obtain total  $\mu\text{Ci}$  release for each isotope.

(2) Iodines and Particulates

Charcoal cartridges and particulate filters are used to collect iodines and particulates, respectively. The filters are then analyzed for isotopic content using a gamma spectrometer; particulate filters are also analyzed for strontium. Isotopic concentrations are multiplied by the release flow rate to determine the total amount of activity released.

b. Unit 1 & Unit 2 Liquid Effluents

There are eight tanks which are used to discharge liquids containing radioactivity to the environs; they are:

- Unit 1 - Decontamination Solution Tank
- Unit 1 - Floor Drain Sample Tanks (2)
- Unit 1 - Waste Sample Tanks (2)
- Unit 2 - Clean Waste Monitor Tanks (2)
- Unit 2 - Aerated Waste Monitor Tank

Prior to release, a tank is recirculated for two equivalent tank volumes, a sample is drawn and analysed on the Ge(Li) gamma spectrometer for individual radionuclide composition. An aliquot of the sample is analyzed for tritium. Isotopic concentrations are multiplied by the volume released to obtain the total activity released.

A proportional aliquot of each discharge is retained for composite analysis for strontium and gross alpha.

TABLE 2.3-1 (continued)

c. Unit 2 Vent

Total cc's out the Unit 2 Vent per month is multiplied by the isotopic concentrations as measured by gamma spectrometer GE(Li) analysis of grab samples of gases, iodine and particulates to obtain total  $\mu\text{Ci}$  released from the Vent.

d. Unit 2 Containment Purges

Grab samples are taken for gaseous, particulate, and iodine. These are analyzed on GE(Li) gamma spectrometer and concentrations computed. Computed concentrations are then multiplied by the purge volume for total  $\mu\text{Ci}$  released.

Tritium collection is by the gas washing bottle method. The sample is counted on a liquid scintillation counter. Concentration is computed using worst possible case, 100% humidity. Concentration is multiplied by volume purged to give total  $\mu\text{Ci}$  released.

e. Estimates of Errors

Estimates of errors associated with radioactivity measurements were estimated using the following guidelines:

- (1) Sampling and Data Collection - 10% accounts for variation in personnel obtaining required data.
- (2) Calibration - 5% instrument calibration to NBS standards.
- (3) Counting of Samples - 10% maximum error due to counting statistics.
- (4) Flow and Level Measurements - 10% maximum errors on volumes released.

TABLE 2.3-1(continued)

## 5. BATCH RELEASES

	Unit 1 Liquids	Unit 2 Liquids	Unit 2 Waste Gas Tanks	Unit 2 Cont. Purges
a. Number of Batch Releases	60	184	15	20
b. Total Time (Minutes)	10,872	20,068	9,160	14,284
c. Maximum Time-One Batch (Minutes)	473	895	3,160	2,730
d. Average Time (Minutes)	181	109	611	714
e. Minimum Time-One Batch (Minutes)	70	42	27	57

Liquids - Average Stream Flow - Not Applicable - Ocean Site

## 6. ABNORMAL RELEASES

a. Millstone Nuclear Power Station Unit 2 - Gaseous Release

A non-routine release occurred between 1950 on 3/7/79 and 1130 on 3/8/79. A leak in the Unit 2 Degassifier allowed radioactive gas to contaminate the Aux. Steam Returns. The radioactive gas in the returns were released to the Unit 2 Turbine Building via the Aux. Steam Surge Tank vent.

The results of the isotopic analysis of the radioactive gases in the returns were as follows:

Xe - 133	-	2.10 E-04	µCi/ml
Xe - 135	-	2.36 E-05	µCi/ml
Kr - 85m	-	3.37 E-06	µCi/ml
Kr - 87	-	2.23 E-06	µCi/ml
Ar - 41	-	<u>1.76 E-06</u>	µCi/ml

Total		2.41 E-04	µCi/ml
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The estimated total activity released during this leak was 0.11 Ci.

b. Millstone Nuclear Power Station Unit 1 - Liquid Release

A sample was obtained from yard drain catch basin #3 on June 6, 1979, as required by Surveillance Procedure SP821/2821. It was analyzed for isotopic content and results showed 9.01 E-07 µCi/ml Cs-137.

SP821/2821 was instituted in order to monitor the storm drain system after an unmonitored release occurred in November, 1976 (Reported to the NRC at that time). This sampling program shows low levels of contamination present periodically and is attributed to residual activity remaining after that occurrence.

3.0 Radioactive Solid Waste

The units were operated in accordance with Environmental Technical Specification Section 2.4.3. Summaries of solid waste shipments for each unit are given in the attached Tables 3.1 and 3.2

TABLE 3.1

Millstone Unit No. 1

Effluent and Waste Disposal Semi-Annual Report  
Solid Waste and Irradiated Fuel Shipments  
January - June 1979

A. Solid Waste shipped off-site for burial and disposal (Not Irradiated Fuel)

1. Type of Waste	Unit	6 Month Period	Est. Total Error %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m <sup>3</sup> Ci	5.85E2 7.56E2	2.5E1
b. Dry compressible waste, contaminated equipment, etc.	m <sup>3</sup> Ci	7.23E2 4.15E0	3.0E1
c. Irradiated components, control rods etc.	m <sup>3</sup> Ci	2.48E0 1.50E2	2.5E1
d. Other (Describe)	m <sup>3</sup> Ci	E E	

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

a. Co <sup>60</sup>	2.68E1%
Fe <sup>55</sup>	2.02E1%
Kr <sup>85</sup> , Mn <sup>54</sup> , Xe <sup>131m</sup>	3.65E1%
I <sup>131</sup> , La <sup>140</sup> , Cs <sup>137</sup> , Co <sup>58</sup> , Sr <sup>89</sup>	1.25E1%
Xe <sup>133</sup> , Ce <sup>141</sup> , Ba <sup>140</sup> , Cs <sup>134</sup> , Ni <sup>63</sup> , Sr <sup>90</sup> , Ce <sup>144</sup> , Nb <sup>95</sup>	3.0 E0%
Co <sup>57</sup> , Sb <sup>124</sup> , Ru <sup>105</sup> , I <sup>133</sup> , Zr <sup>95</sup> , Zn <sup>65</sup> , Cr <sup>51</sup> , Nb <sup>95</sup> , Xe <sup>133m</sup>	1.0 E0%
b. Co <sup>60</sup>	5.16E1%
Mn <sup>54</sup>	3.04E1%
Co <sup>58</sup> , Ce <sup>144</sup> , Cr <sup>51</sup> , Fe <sup>59</sup>	1.52E1%
Fe <sup>55</sup> , Cs <sup>137</sup> , Cs <sup>134</sup> , Ce <sup>141</sup> , Zr <sup>95</sup> , Nb <sup>95</sup> , Sr <sup>90</sup> , Ni <sup>63</sup>	2.80E0%
c. Fe <sup>55</sup>	7.60E1%
Co <sup>60</sup>	1.80E1%
Mn <sup>54</sup>	3.00E0%
Ni <sup>63</sup>	2.00E0%
Co <sup>58</sup>	1.00E0%

3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
99	Truck (Sole Use)	Barnwell, SC
1	Truck (Sole Use)	Vallecitos Nuclear Center Pleasanton, CA

Table 3.1 (Continued)

B. Irradiated Fuel Shipments (Disposition)

None

NOTE: Unit II type b waste is included in this report.



TABLE 3.2

## Millstone Unit No. 2

Effluent and Waste Disposal Semi-Annual Report  
Solid Waste and Irradiated Fuel Shipments  
January - June 1979

## A. Solid Waste shipped off-site for burial and disposal (Not Irradiated Fuel)

1. Type of Waste	Unit	6 Month Period	Est. Total Error %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m <sup>3</sup> Ci	1.12E2 1.75E0	2.5E1
*b. Dry compressible waste, contaminated equipment, etc.	m <sup>3</sup> Ci	E E	E
c. Irradiated components, control rods, etc.	m <sup>3</sup> Ci	5.66E-2 1.74E3	2.5E1
d. Other (Describe)	m <sup>3</sup> Ci	E E	E

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

a. Co <sup>58</sup>	5.11E1%
Mn <sup>54</sup> , Co <sup>60</sup>	2.27E1%
Cs <sup>137</sup> , Cs <sup>134</sup> , Sb <sup>124</sup> , Fe <sup>55</sup>	2.32E1%
Nb <sup>97</sup> , Ag <sup>110m</sup> , Nb <sup>95</sup> , I <sup>131</sup> , Zr <sup>95</sup>	2.50E0%
Sr <sup>89</sup> , Sr <sup>90</sup> , Ni <sup>63</sup> , Ru <sup>105</sup> , Sr <sup>92</sup> , Co <sup>57</sup> , Cs <sup>138</sup>	0.50E0%
c. Cr <sup>51</sup>	4.82E1%
Fe <sup>55</sup>	1.67E1%
Co <sup>58</sup> , Co <sup>60</sup> , Zr <sup>95</sup> , Nb <sup>95</sup>	2.98E1%
Mn <sup>54</sup> , Fe <sup>59</sup> , Ni <sup>63</sup> , Nb <sup>95m</sup>	4.29E0%
Ni <sup>59</sup> , Sr <sup>89</sup> , Y <sup>90</sup> , Y <sup>91</sup>	1.01E0%

## 3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
13	Truck (Sole Use)	Barnwell, SC
1	Truck (Sole Use)	Battelle Lab Plain City, OH

## B. Irradiated Fuel Shipments (Disposition)

None

\*NOTE: Unit II type b waste is shipped via Unit 1.

METEOROLOGY - JOINT FREQUENCY DISTRIBUTION

4.0 The joint-frequency distributions for the continuous and batch releases are given in the tables at the end of this report.

## OFFSITE DOSE ESTIMATES

5.0 In accordance with the requirements of the Technical Specifications and Regulatory Guide 1.21, the off-site dose to humans from the gaseous and liquid radioactive effluents of Millstone have been estimated.

These estimations are performed using measured effluent data, measured meteorological data, and calculational models developed by the U. S. Nuclear Regulatory Commission.

The dose estimates generally tend to be conservative due to the use of conservative assumptions in the calculational models. More realistic estimates of the off-site dose are obtained by analysis of the environmental monitoring data. A comparison of the doses estimated by each of the above methods will be presented in the Annual Radiological Environmental Monitoring Report due to be published May 1, 1979.

### 1. Dose Models

#### a. Airborne Effluents

Maximum individual doses and population doses due to the release of noble gases, radioiodines and particulates were calculated using the computer code GASPAR<sup>(1)</sup>, with the exception of Unit 1 noble gas doses. The maximum individual dose due to direct exposure from the Unit 1 noble gas plume was calculated using the computer code AIREM<sup>(2)</sup>.

The Gaspar code uses the semi-infinite cloud model to implement the dose models of U.S.N.R.C. Regulatory Guide 1.109 (October, 1977).

The values of average effluent concentration (X/Q) and average relative deposition (D/Q) used in the GASPARG code were generated using a meteorological computer code which implements the assumptions given in Section C of NRC Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors".

Releases from the Millstone Unit 1 375-foot stack are considered to be elevated at all times. The Pasquill stability classes were determined using the temperature gradient between the 33-foot and 447-foot levels of the meteorological tower.

Releases from the Unit 2, 145 foot vent stack were considered as a mixed mode release (partially elevated and partially ground). The Pasquill stability classes were determined using the temperature gradient between the 33 foot and 142 foot levels of the meteorological tower.

The GASPARG code was run separately for continuous releases from the MP2 vent (building ventilation), batch releases from the MP2 vent (containment purges) and MP2 batch releases from the MP1 stack (waste gas tanks). The resulting doses were then summed to determine the total Unit 2 dose.

The Unit 1 releases are from a 375 foot elevated stack and the use of the GASPARG semi-infinite cloud model would lead to an underestimate of the dose due to direct exposure from the plume at distances within 2 miles of the stack. Therefore, the AIREM code was implemented to determine the maximum individual exposure from an overhead finite gamma cloud.

The AIREM code uses a sector averaged Gaussian diffusion model and includes ground and inversion lid reflections, radionuclide decay, first daughter in-growth, ground deposition and cloud depletion, and contributions to dose from radionuclides in clouds at all azimuths. The finite cloud model used is a modified version of R. E. Cooper's EGAD code (3).

b. Liquid Effluents

Maximum individual and population doses due to the release of radioactive liquid effluents were calculated using the computer code LADTAP<sup>(4)</sup>.

The code implements the dose models and parameters given in Regulatory Guide 1.109 (October, 1977).

2. Results

a. Airborne Effluents

The calculated doses are presented in Tables 5.1.1 and 5.1.2.

For population doses, the GASPAR code calculates the dose to the whole body, GI-tract, bone, liver, kidney, thyroid, lung and skin from each of the following pathways: direct exposure from the plume, direct exposure from ground deposition, inhalation, vegetation, cow's milk and meat.

The values presented in the attached table are a total from all pathways, but only the whole body, skin and maximum organ dose are presented. The maximum organ dose in all cases was to the thyroid, and thus, the dose to all other organs was less than that shown for the thyroid.

For the dose to the maximum individual, the GASPAR program calculates the dose to the same organs listed above for the following pathways: direct exposure to the plume (except for Unit 1 finite cloud doses), exposure from ground deposition, inhalation, vegetation, meat, cow's milk and goat's milk. The doses are calculated for adults, teenagers, children and infants separately. Again, the maximum organ dose was to the thyroid.

For the ground deposition and inhalation pathways, the maximum individual dose is calculated at the off-site location of maximum decayed X/Q where a potential for dose exists.

For the vegetation pathway, the maximum individual dose is calculated at the vegetable garden of highest depleted X/Q. For the meat, cow's milk and goat's milk pathways, the calculated dose is included as the maximum individual dose only at locations and times where these pathways actually exist. Doses were calculated at the cow farm and goat farm of maximum deposition. The doses presented in Tables 5.1.1 and 5.1.2, are the maximum doses observed.

The AIREM code calculates the individual whole body and skin dose for each sector-segment. The maximum individual dose is obtained by taking the maximum AIREM result at the off-site location where a potential for dose exists and multiplying by a factor of 0.7 to compensate for building shielding and occupancy.

b. Liquid Effluents

The calculated doses are presented in Tables 5.1.1 and 5.1.2.

The LADTAP code performs calculations for the following pathways: fish, shellfish, algae, drinking water, irrigated food, shoreline activity, swimming and boating. At Millstone, the algae, drinking water and irrigated food pathways do not exist, and thus, only the other pathways are included in the totals given in Tables 5.1.1 and 5.1.2.

Doses are calculated for the whole body, skin, thyroid, GI-LLI, bone, liver, kidney and lungs.

Tables 5.1.1 and 5.1.2 present the doses to the whole body, thyroid, and the maximum organ dose, which was to the Gastro-Intestinal tract - lower large intestine (GI-LLI). The dose to all other organs was less than those given for the GI tract.

Calculations are performed for adults, teenagers, children and infants separately. Unless otherwise noted in the table, the doses given are adult doses.

3. Analysis of Results

The doses are well below permissible levels and are of no significance as far as effects on the general population. For perspective, Table 5.2 presents a comparison between the doses due to plant operation and doses received from other sources such as the naturally occurring background levels. The Table also presents the legally allowed levels.

Clearly the plant effects are insignificant when compared to radiation received from other sources.

FOOTNOTES

- (1) GASPAR Dose Code, K. F. Eckerman, Radiological Assessment Branch, U. S. Nuclear Regulatory Commission, Washington, D. C., - Revised 2/20/76.
- (2) AIREM Program Manual - A computer Code for Calculating Doses, Population Doses; and Ground Depositions due to Atmospheric Emissions of Radionuclides, J. A. Marlin, Jr., C. B. Nelson and P. A. Cuny, U. S. EPA Office of Radiation Programs, Washington, D. C., May, 1974.
- (3) Cooper, R. E., EGAD - A Computer Program to Compute Dose Integrals from External Gamma Emitters, DP-1304. Mathematics and Computers (TID-4500, VC32), Savannah River Laboratory, Aiken, S. C., September, 1972.
- (4) LADTAP - U. S. Nuclear Regulatory Commission; Washington, D. C.



TABLE 5.1.1  
Off-Site Dose Estimates  
Millstone Unit No. 1

		<u>1979</u>	
A. <u>Airborne Effluents</u>	<u>Units</u>	<u>Jan-Mar</u>	<u>Apr-June</u>
1. Maximum Individual Dose	Millirem		
a. Whole Body		3.2(-2) <sup>a,b</sup>	2.4(-2) <sup>f</sup>
b. Skin		3.2(-2) <sup>b</sup>	2.4(-2) <sup>f</sup>
c. Thyroid		8.3(-3) <sup>c</sup>	6.0(-1) <sup>e</sup>
2. Population Dose 0-50 Miles	Person-Rem		
a. Whole Body		1.9(0)	1.6(0)
b. Skin		9.7(0)	6.6(0)
c. Thyroid		2.4(0)	4.5(0)
3. Average Dose 0-50 Miles	Millirem		
a. Whole Body		6.4(-4)	5.5(-4)
b. Skin		3.3(-3)	2.3(-3)
c. Thyroid		8.1(-4)	1.6(-3)
B. <u>Liquid Effluents</u>			
1. Maximum Individual Dose	Millirem		
a. Whole Body		4.4(-4) <sup>d</sup>	1.5(-3) <sup>d</sup>
b. Max Organ (GI-LLI)		1.8(-3)	9.3(-3)
c. Thyroid		5.6(-4) <sup>d</sup>	1.1(-3) <sup>d</sup>
2. Population Dose 0-50 Miles	Person-Rem		
a. Whole Body		3.9(-3)	1.4(-2)
b. Max Organ (GI-LLI)		8.3(-3)	4.2(-2)
c. Thyroid		3.9(-3)	1.0(-2)
3. Average Dose 0-50 Miles	Millirem		
a. Whole Body		1.3(-6)	4.7(-6)
b. Max Organ (GI-LLI)		2.8(-6)	1.4(-5)
c. Thyroid		1.3(-6)	3.7(-6)

- a.  $3.2(-2) = 3.2 \times 10^{-2}$   
b. At a location 1640 meters ESE  
c. Child inhalation dose at critical residence - 2570 meters ESE  
d. Teenager dose - other doses are adult doses.  
e. Infant thyroid dose at the goat farm of maximum D/Q - 2.5 miles  
f. At a location 810 meters NNE

TABLE 5.1.2

## Off-Site Dose Estimates

## Millstone Unit No. 2

1979

A.	<u>Airborne Effluents</u>	<u>Units</u>	<u>Jan-Mar</u>	<u>Apr-Jun</u>
1.	Maximum Individual Dose	Millirem		
	a. Whole Body		8.1(-3) <sup>a,b</sup>	6.6(-4) <sup>e</sup>
	b. Skin		1.9(-2) <sup>b</sup>	2.1(-3) <sup>e</sup>
	c. Thyroid		4.4(-3) <sup>c</sup>	5.4(-2) <sup>f</sup>
2.	Population Dose 0-50 Miles	Person-Rem		
	a. Whole Body		5.1(-1)	3.1(-1)
	b. Skin		1.4(0)	3.7(-1)
	c. Thyroid		7.3(-1)	3.9(-1)
3.	Average Dose 0-50 Miles	Millirem		
	a. Whole Body		1.8(-4)	1.1(-4)
	b. Skin		4.8(-4)	1.3(-4)
	c. Thyroid		2.5(-4)	1.3(-4)
B.	<u>Liquid Effluents</u>			
1.	Maximum Individual Dose	Millirem		
	a. Whole Body		9.6(-3) <sup>d</sup>	2.8(-2) <sup>d</sup>
	b. Max Organ (GI-LLI)		4.1(-2)	2.4(-1)
	c. Thyroid		1.5(-2) <sup>d</sup>	1.8(-2) <sup>d</sup>
2.	Population Dose 0-50 Miles	Person-Rem		
	a. Whole Body		7.8(-2)	2.5(-1)
	b. Max Organ (GI-LLI)		1.7(-1)	9.2(-1)
	c. Thyroid		8.8(-2)	1.7(-1)
3.	Average Dose 0-50 Miles	Millirem		
	a. Whole Body		2.6(-5)	8.3(-5)
	b. Max Organ (GI-LLI)		5.7(-5)	3.1(-4)
	c. Thyroid		2.4(-5)	5.7(-5)

a.  $8.1(-3) = 8.1 \times 10^{-3}$ 

b. At a location 2080 meters ESE

c. Teenager thyroid dose at critical residence - 640 meters NE

d. Teenager dose - other doses are adult doses.

e. At a location 640 meters NE

f. Child thyroid dose at critical vegetable garden - 640 meters NE

TABLE 5.2

Comparison of Whole Body Doses

I.	<u>Doses Due to Millstone (Jan-June 1979)</u>	<u>6 Month Dose</u>
A.	Maximum Individual - Unit 1 Liquids	0.0019 mrem
B.	Maximum Individual - Unit 1 Gases	0.056 mrem
C.	Maximum Individual -Unit 2 Liquids	0.038 mrem
D.	Maximum Individual - Unit 2 Gases	0.0088 mrem
E.	Average Individual (0-50 miles) - Unit 1 Liquids	0.000006 mrem
F.	Average Individual (0-50 miles) - Unit 1 Gases	0.0012 mrem
G.	Average Individual (0-50 miles) - Unit 2 Liquids	0.00011 mrem
H.	Average Individual (0-50 miles) - Unit 2 Gases	0.00029 mrem
II.	<u>Legal Limits from Nuclear Power Plants</u>	<u>Annual Limit</u>
A.	Maximum Individual	500 mrem
B.	Average Dose to a Large Population	170 mrem
III.	<u>Doses from Other Sources</u>	<u>6 Month Dose</u>
A.	Natural Background in Connecticut-Cosmic, Terrestrial and Food Products	62 mrem
B.	Radioactivity from Building Materials (varies from Wood to Stone House)	6-17 mrem
C.	One Chest X-Ray	30-70 mrem
D.	Air Travel (round trip - Cross Country)	4 mrem

MILLSTONE NO. 1

METEOROLOGICAL

JOINT FREQUENCY

DATA FOR

CONTINUOUS RELEASES

1/1/79 through 6/30/79

MILLSTONE NUCLEAR POWER STATION UNIT 1  
CONTINUOUS  
WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
DELTA T INTERVAL = 447 - 33 FT  
PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315  
DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY A -- DELTA T LESS THAN OR EQUAL TO -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	4	1	0	5
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	0	0	0	4	1	0	5

NO. OF VALID OBSERVATION = 5

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY B -- DELTA T LESS THAN OR EQUAL TO -1.7 AND GREATER THAN -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	1	0	1
NW	0	0	0	0	0	5	0	0	5
NNW	0	0	0	2	0	0	0	0	2
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	0	2	0	5	1	0	

NO. OF VALID OBSERVATION = 0

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY C -- DELTA T LESS THAN OR EQUAL TO -1.5 AND GREATER THAN -1.7 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	1	0	0	0	0	1
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	1	0	0	0	0	1
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	1	1	1	0	0	3
W	0	0	0	0	0	1	0	0	1
WNW	0	0	0	2	8	12	4	0	26
NW	0	0	2	9	22	15	1	0	49
NNW	0	0	2	3	2	3	4	0	14
N	0	0	0	0	1	1	0	0	2
ALL SECTORS	0	0	4	17	34	33	9	0	

NO. OF VALID OBSERVATION = 97

NO. OF CALMS (MS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY D -- DELTA T LESS THAN OR EQUAL TO -0.5 AND GREATER THAN -1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	2	1	13	27	16	4	0	0	69
NE	0	11	12	9	27	11	0	0	70
ENE	3	7	13	17	11	5	0	0	56
E	1	1	12	11	14	6	2	4	51
ESE	0	1	4	8	7	0	0	0	20
SE	0	2	1	2	2	0	0	0	7
SSE	0	5	3	2	0	0	0	0	10
S	0	0	1	2	2	0	0	0	5
SSW	0	1	2	7	4	0	0	0	14
SW	3	5	4	8	3	1	0	0	24
WSW	0	1	10	23	21	9	1	0	65
W	0	10	8	42	55	14	0	0	129
WNW	2	6	38	78	35	16	6	0	181
NW	3	7	42	122	102	81	5	0	362
NNW	0	7	43	64	36	28	4	0	184
N	0	6	20	47	21	3	0	0	99
ALL SECTORS	14	79	226	469	358	178	18	4	

NO. OF VALID OBSERVATION = 1346

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0



## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY E -- DELTA T LESS THAN OR EQUAL TO 1.5 AND GREATER THAN -0.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	1	2	5	4	5	2	0	0	19
NE	0	2	7	5	7	1	0	0	22
ENE	2	4	7	11	5	0	1	0	28
E	2	5	4	7	5	3	3	3	32
ESE	0	3	3	4	2	1	5	0	18
SE	0	0	6	2	4	1	2	2	17
SSE	1	4	3	1	2	7	1	3	22
S	4	5	4	5	6	3	3	0	28
SSW	0	2	9	15	4	5	12	6	53
SW	0	1	5	2	3	13	12	0	36
WSW	3	7	0	3	7	2	8	0	30
W	0	7	4	6	6	0	0	0	23
WNW	0	8	5	4	2	0	0	0	19
NW	1	4	6	7	1	0	0	0	19
NNW	1	5	6	6	5	0	0	0	23
N	0	2	2	7	5	1	0	0	17
ALL SECTOR	13	59	76	89	69	39	47	14	

NO. OF VALID OBSERVATION = 407

NO. OF CALMS (WS LT 0.5M/SEC) = 1

NO. OF MISSING WD/WS = 0

## MILLSTONE NUCLEAR POWER STATION AT 1

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY F -- DELTA T LESS THAN OR EQUAL TO 4.0 AND GREATER THAN 1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							GT 20.1	ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		
NNE	0	0	0	0	0	0	0	0	0
NE	1	0	1	0	0	0	0	0	2
ENE	1	0	2	0	0	0	0	0	3
E	0	0	1	3	1	0	0	0	5
ESE	0	2	0	1	0	0	0	0	3
SE	2	0	1	0	0	0	5	3	11
SSE	0	4	2	1	2	3	3	1	16
S	3	1	1	1	0	16	7	0	37
SSW	3	1	1	4	4	9	24	9	55
SW	0	2	1	0	0	3	2	0	8
WSW	0	6	6	2	3	0	0	0	17
W	0	4	1	0	2	0	0	0	7
WNW	0	2	3	0	0	0	0	0	5
NW	0	2	3	1	0	0	0	0	6
NNW	1	3	0	2	2	0	0	0	8
N	0	1	1	1	0	0	0	0	3
ALL SECTOR	11	28	24	16	22	31	41	13	

NO. OF VALID OBSERVATION = 180

NO. OF CALMS (MS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY G -- DELTA T GREATER THAN 4.0 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	0	1	0	0	0	0	0	0	1
NE	0	1	1	0	0	0	0	0	2
ENE	0	0	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	1	0	1
S	0	0	0	0	0	10	7	0	17
SSW	0	0	2	1	0	2	0	0	5
SW	0	2	2	0	0	0	0	0	4
WSW	0	2	0	0	0	0	0	0	2
W	0	1	4	1	0	0	0	0	6
WNW	1	2	2	2	0	0	0	0	7
NW	0	1	0	0	0	0	0	0	1
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTORS	1	10	12	4	0	12	8	0	

NO. OF VALID OBSERVATION = 47

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## MILLSTONE NUCLEAR POWER STATION UNIT 1

05/23/79 PAC

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

## ALL STABILITY CLASSES

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	3	10	18	32	21	6	0	0	90
NE	1	14	21	14	34	12	0	0	96
ENE	6	9	23	28	16	5	1	0	88
E	3	6	17	21	20	9	5	7	88
ESE	0	6	7	14	9	1	5	0	42
SE	2	2	8	4	6	1	7	5	35
SSE	1	13	8	4	4	10	5	4	49
S	5	6	6	8	16	29	17	0	87
SSW	3	4	14	27	12	16	36	15	127
SW	3	10	12	10	6	17	14	0	72
WSW	3	16	17	31	32	12	9	0	120
W	0	22	17	49	63	15	0	0	166
WNW	3	18	49	86	45	28	11	0	240
NW	4	14	53	140	125	105	7	0	448
NNW	2	15	52	79	47	31	8	0	234
N	11	11	23	60	27	5	0	0	126
ALL SECTOR	59	176	345	607	463	302	125	31	

NO. OF POSSIBLE OBSERVATIONS = 2160  
 NO. OF VALID OBSERVATIONS = 2109

NO. OF VALID NON-CALM CONCURRENT WD/WS/DT = 2095  
 NO. OF CALMS (WS LT 0.5M/SEC) = 1

NO. OF MISSING WD/WS = 51  
 NO. OF MISSING DELTA T = 64

HILLSTONE NUCLEAR POWER STATION / UNIT 1  
CONTINUOUS

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY A -- DELTA T LESS THAN OR EQUAL TO -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	1	0	0	0	0	1
NNW	0	0	1	1	0	0	0	0	2
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	1	2	0	0	0	0	

NO. OF VALID OBSERVATION = 3

NO. OF CALMS (MS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY B -- DELTA T LESS THAN OR EQUAL TO -1.7 AND GREATER THAN -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	1	0	0	0	0	0	0	1
SW	0	0	1	0	0	0	0	0	1
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	2	0	0	0	2
NW	0	0	0	4	1	3	0	0	8
NNW	0	0	2	0	0	0	0	0	2
N	0	1	0	0	0	0	0	0	1
ALL SECTOR	0	2	4	4	3	3	0	0	

NO. OF VALID OBSERVATION = 16

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## MILLSTONE NUCLEAR POWER STATION / UNIT 1

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY C -- DELTA T LESS THAN OR EQUAL TO -1.5 AND GREATER THAN -1.7 DEG C PER 100 METERS

## SPEED IN METERS PER SECOND

DIRECTION	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	ALL
NNE	0	1	0	2	0	0	0	0	3
NE	0	1	0	0	0	0	0	0	1
ENE	0	0	1	1	0	1	0	0	3
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	2	1	0	0	0	0	3
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	1	0	0	1
W	0	0	0	0	0	0	0	0	0
WNW	0	0	1	4	2	1	0	0	8
NW	0	0	2	9	4	3	0	0	18
NNW	0	0	4	3	3	1	0	0	11
N	0	0	5	0	0	0	0	0	5
ALL SECTOR	0	2	15	20	9	7	0	0	

NO. OF VALID OBSERVATION = 53

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY D -- DELTA T LESS THAN OR EQUAL TO -0.5 AND GREATER THAN -1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	3	13	11	20	12	10	0	0	69
NE	1	6	21	26	2	0	0	0	56
ENE	0	5	11	30	8	1	0	0	55
E	0	4	7	6	25	28	0	0	70
ESE	1	9	7	4	10	2	0	0	33
SE	0	9	14	3	0	0	0	0	26
SSE	2	5	6	1	0	0	0	0	14
S	1	4	11	5	2	1	0	0	24
SSW	1	3	7	22	7	1	0	0	41
SW	0	1	9	12	6	1	0	0	29
WSW	0	5	15	7	12	12	5	0	52
W	2	1	8	10	3	9	1	0	34
WNW	0	4	9	21	8	3	0	0	45
NW	0	5	14	39	20	19	0	0	95
NNW	1	6	18	44	12	6	0	0	87
N	0	7	10	17	8	1	0	0	43
ALL SECTOR	12	65	178	267	155	94	4	0	

NO. OF VALID OBSERVATION = 773

NO. OF CALMS (MS LT 0.5M/SEC) = 0

NO. OF MISSING WD/MS = 33



## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY E -- DELTA T LESS THAN OR EQUAL TO 1.5 AND GREATER THAN -0.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	1	10	4	2	3	1	0	0	21
NE	6	9	9	1	0	0	0	0	17
ENE	3	5	3	5	0	0	0	0	16
E	1	6	6	3	7	7	0	0	30
ESE	1	1	19	12	2	6	0	0	37
SE	0	5	15	16	3	8	0	0	47
SSE	1	15	23	19	4	3	1	0	66
S	2	8	36	28	8	16	4	0	102
SSW	1	12	43	33	22	8	1	1	121
SW	1	11	29	44	28	1	0	0	114
WSW	2	4	31	55	41	29	2	0	164
W	3	5	11	23	6	0	0	0	48
WNW	4	5	7	4	3	0	0	0	23
NW	2	5	12	7	7	0	0	0	33
NNW	4	2	1	7	13	0	0	0	27
N	4	7	5	0	3	1	0	0	20
ALL SECTOR	36	106	246	299	190	80	8	1	

NO. OF VALID OBSERVATION = 888

NO. OF CALMS (WS LT 0.5M/SEC) = 2

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY F — DELTA T LESS THAN OR EQUAL TO 4.0 AND GREATER THAN 1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	1	1	1	0	0	0	0	0	3
NE	4	3	0	2	0	0	0	0	9
ENE	2	2	0	1	1	0	0	0	6
E	0	3	3	0	2	1	0	0	9
ESE	1	1	1	1	0	1	0	0	9
SE	3	2	6	0	2	1	5	1	20
SSE	1	6	11	6	6	6	6	0	42
S	1	3	8	8	7	4	1	0	34
SSW	2	3	15	10	4	1	0	0	35
SW	2	1	8	16	10	0	0	0	37
WSW	3	4	7	15	9	1	0	0	37
W	0	2	6	6	2	1	0	0	17
WNW	3	6	3	5	0	0	0	0	17
NW	0	1	2	8	3	0	0	0	14
NNW	0	3	2	5	1	0	0	0	11
N	1	2	0	5	0	0	0	0	8
ALL SECTOR	24	43	73	86	47	16	12	1	

NO. OF VALID OBSERVATION = 304

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY G — DELTA T GREATER THAN 4.0 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	1	0	0	0	0	0	1
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	1	0	0	0	1	0	2
SSE	0	0	0	0	0	5	1	0	6
S	0	0	0	0	0	0	0	0	0
SSW	0	1	0	0	0	0	0	0	1
SW	0	0	0	0	5	0	0	0	5
WSW	0	0	3	3	5	2	0	0	13
W	0	1	2	1	1	0	0	0	5
WNW	0	0	0	3	1	0	0	0	4
W	0	0	0	1	0	0	0	0	1
NNW	0	2	2	2	0	0	0	0	6
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	4	9	10	12	7	2	0	

NO. OF VALID OBSERVATION \* 44

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

## ALL STABILITY CLASSES

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	5	25	17	24	15	11	0	0	97
NE	11	15	26	29	2	0	0	0	83
ENE	5	12	16	37	9	2	0	0	81
E	1	13	16	9	34	36	0	0	109
ESE	5	11	23	17	12	9	0	0	75
SE	3	16	36	19	5	9	6	1	95
SSE	4	26	40	26	10	14	8	0	128
S	4	17	55	41	17	21	5	0	160
SSW	4	20	67	66	33	10	1	1	202
SW	3	13	48	72	49	2	0	0	187
WSW	5	11	56	78	68	45	5	0	268
W	5	9	27	40	12	10	1	0	104
WNW	7	15	20	37	16	4	0	0	99
NW	2	9	30	69	35	25	0	0	170
NNW	5	13	30	62	29	7	0	0	146
N	5	17	20	22	11	2	0	0	77
ALL SECTOR	72	292	527	648	557	207	26	2	

NO. OF POSSIBLE OBSERVATIONS = 2184  
 NO. OF VALID OBSERVATIONS = 2083

NO. OF VALID NON-CALM CONCURRENT WD/WS/DT = 2079  
 NO. OF CALMS (WS LT 0.5M/SEC) = 2

NO. OF MISSING WD/WS = 101  
 NO. OF MISSING DELTA T = 70

MILLSTONE NO. 2

METEOROLOGICAL

JOINT FREQUENCY

DATA FOR

CONTINUOUS RELEASES

1/1/79 through 6/30/79

## MILLSTONE NUCLEAR POWER STATION UNIT 2

CONTINUOUS

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY A -- DELTA T LESS THAN OR EQUAL TO -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	1	1	0	0	0	0	2
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	6	1	0	0	0	7
SE	0	0	0	3	0	0	0	0	3
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	1	0	0	0	0	0	0	1
SW	0	0	1	2	1	0	0	0	4
WSW	0	0	0	7	9	1	0	0	17
W	0	0	0	1	5	3	0	0	9
WNW	0	0	0	1	3	1	1	0	6
NW	0	0	0	1	11	10	2	0	24
NNW	0	0	1	1	0	0	0	0	2
N	0	0	0	0	1	0	0	0	1
ALL SECTOR	0	1	3	23	31	15	3	0	

NO. OF VALID OBSERVATION = 76

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY B -- DELTA T LESS THAN OR EQUAL TO -1.7 AND GREATER THAN -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	0	0	1	4	2	0	0	0	7
NE	0	0	2	0	0	0	0	0	2
ENE	0	0	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	1	0	0	0	1
SE	0	0	2	4	0	0	0	0	6
SSE	1	0	0	0	0	0	0	0	1
S	0	0	1	1	0	0	0	0	2
SSW	0	0	0	3	0	0	0	0	3
SW	0	0	0	0	1	0	0	0	1
WSW	0	1	0	2	1	0	0	0	4
W	0	0	6	24	6	0	0	0	36
WNW	0	0	14	17	14	7	0	0	52
NW	0	1	9	24	11	9	4	0	58
NNW	0	0	5	6	5	0	0	0	16
N	0	1	2	5	4	0	0	0	12
ALL SECTOR	1	3	43	90	45	16	4	0	

NO. OF VALID OBSERVATION = 202

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY C -- DELTA T LESS THAN OR EQUAL TO -1.5 AND GREATER THAN -1.7 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	0	7	2	2	4	0	0	0	15
NE	0	6	14	2	0	0	0	0	22
ENE	0	2	7	0	0	0	0	0	9
E	0	1	2	3	0	0	0	0	6
ESE	0	1	0	0	0	0	0	0	1
SE	1	1	0	0	0	0	0	0	2
SSE	0	1	1	0	0	0	0	0	2
S	0	1	0	1	0	0	0	0	2
SSW	1	0	0	1	0	0	0	0	2
SW	0	0	5	4	0	0	0	0	9
WSW	0	0	3	6	3	0	0	0	12
W	0	1	1	9	3	1	0	0	15
WNW	0	2	11	18	9	1	0	0	41
NW	0	3	17	28	21	13	1	0	83
NNW	1	4	20	19	8	6	1	0	59
N	0	3	8	8	10	3	0	0	32
ALL SECTORS	3	33	91	101	58	24	2	0	

NO. OF VALID OBSERVATION = 312

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0



## MILLSTONE NUCLEAR POWER STATION UNIT 2

05/23/79

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY D -- DELTA T LESS THAN OR EQUAL TO -0.5 AND GREATER THAN -1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	2	15	25	14	5	0	0	0	61
NE	2	17	16	13	8	0	0	0	56
ENE	6	12	19	13	2	1	0	0	53
E	1	4	15	10	6	8	6	0	52
ESE	0	1	9	2	4	0	0	0	16
SE	0	0	2	5	1	0	0	0	8
SSE	0	3	2	2	1	0	0	0	8
S	0	1	0	2	0	0	0	0	3
SSW	0	0	1	3	0	0	0	0	4
SW	0	2	3	1	0	0	0	0	6
WSW	0	6	6	10	2	11	0	0	35
W	0	13	14	10	12	2	0	0	51
WNW	1	3	31	25	7	0	0	0	67
NW	0	14	46	81	52	8	0	0	203
NNW	1	17	63	70	35	2	0	0	208
N	1	19	46	21	3	1	0	0	91
ALL SECTOR	14	127	320	282	140	33	6	0	

NO. OF VALID OBSERVATION = 922

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY E -- DELTA T LESS THAN OR EQUAL TO 1.5 AND GREATER THAN -0.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	2	3	7	3	0	0	0	0	15
NE	2	8	11	9	12	4	0	0	46
ENE	0	4	3	5	3	0	0	0	15
E	1	6	3	4	2	2	1	0	19
ESE	0	2	6	5	0	7	1	0	21
SE	2	1	6	2	0	0	0	0	11
SSE	1	4	3	1	2	2	0	0	13
S	4	3	6	1	4	1	0	0	19
SSW	0	4	2	2	1	1	0	0	10
SW	0	5	3	5	2	3	0	0	18
WSW	3	2	0	3	4	2	0	0	14
W	1	2	7	5	1	3	0	0	19
WNW	1	3	2	3	1	0	0	0	10
NW	0	3	7	5	0	0	0	0	15
NNW	0	5	15	2	0	0	0	0	22
N	0	6	14	2	0	0	0	0	22
ALL SECTOR	17	61	95	57	32	25	2	0	

NO. OF VALID OBSERVATION = 290

NO. OF CALMS (WS LT 0.5M/SEC) = 1

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY F -- DELTA T LESS THAN OR EQUAL TO 4.0 AND GREATER THAN 1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							GT 20.1	ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		
NNE	3	2	0	0	0	0	0	0	5
NE	1	1	0	0	0	0	0	0	2
ENE	1	4	0	0	0	0	0	0	5
E	2	0	2	1	0	0	0	0	5
ESE	1	2	2	1	0	3	0	0	9
SE	0	0	1	7	3	3	0	0	14
SSE	0	1	1	2	1	0	4	0	9
S	0	2	1	4	1	2	0	0	10
SSW	1	1	11	1	3	28	10	0	55
SW	1	1	2	3	6	10	1	0	24
WSW	1	2	0	1	1	0	0	0	8
W	2	0	0	4	0	0	0	0	6
WNW	3	0	0	0	0	0	0	0	3
NW	2	1	3	0	0	0	0	0	6
NNW	0	2	1	0	0	0	0	0	3
N	0	1	0	0	0	0	0	0	1
ALL SECTOR	18	22	24	24	15	46	15	0	

NO. OF VALID OBSERVATION = 165

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY G -- DELTA T GREATER THAN 4.0 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	3	0	0	0	0	0	0	0	3
NE	1	0	0	0	0	0	0	0	1
ENE	4	1	0	0	0	0	0	0	5
E	0	1	0	0	0	0	0	0	1
ESE	1	1	2	0	0	0	0	0	4
SE	4	3	0	1	1	1	0	0	10
SSE	0	2	2	1	1	0	0	0	6
S	0	3	3	10	14	7	0	0	37
SSW	2	1	3	4	4	11	0	0	25
SW	2	2	2	0	1	0	1	0	8
WSW	1	3	2	1	6	0	0	0	13
W	0	1	0	3	0	0	0	0	4
WNW	0	0	1	0	0	0	0	0	1
NW	1	3	2	0	0	0	0	0	6
NNW	0	2	1	0	0	0	0	0	3
N	1	1	0	0	0	0	0	0	2
ALL SECTOR	20	24	18	20	27	19	1	0	

NO. OF VALID OBSERVATION = 130

NO. OF CALMS (WS LT 0.5M/SEC) = 1

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 JAN 79/0015 - 31 MAR 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

## ALL STABILITY CLASSES

DIRECTION	SPEED IN METERS PER SECOND							GT 20.1	ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		
NNE	10	27	36	23	11	0	0	0	107
NE	6	32	44	25	20	4	0	0	131
ENE	11	23	30	18	5	1	0	0	88
E	4	12	22	18	10	10	7	0	83
ESE	2	7	19	14	6	10	1	0	59
SE	7	5	11	22	5	4	0	0	54
SSE	2	11	9	6	5	2	4	0	39
S	4	10	11	19	19	10	0	0	73
SSW	4	7	17	14	8	40	10	0	100
SW	3	11	16	15	11	13	2	0	71
WSW	5	17	13	32	26	14	0	0	107
W	3	17	28	56	27	9	0	0	140
WNW	5	9	59	64	34	9	1	0	181
NW	3	25	87	139	95	40	7	0	396
NNW	2	30	129	98	48	8	1	0	316
N	2	31	70	36	18	4	0	0	161
ALL SECTOR	73	274	601	599	348	178	33	0	

NO. OF POSSIBLE OBSERVATIONS = 2100  
 NO. OF VALID OBSERVATIONS = 2108

NO. OF VALID NON-CALM CONCURRENT WD/WS/DT = 2095  
 NO. OF CALMS (WS LT 0.5M/SEC) = 2

NO. OF MISSING WD/WS = 52  
 NO. OF MISSING DELTA T = 63

07/23/79

P. 1

MILLSTONE NUCLEAR POWER STATION UNIT 1  
CONTINUOUS

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY A -- DELTA T LESS THAN OR EQUAL TO -1.9 DEG C PER 100 METERS

## SPEED IN METERS PER SECOND

DIRECTION	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	ALL
NNE	0	2	3	10	1	0	0	0	16
NE	0	1	1	2	2	0	0	0	6
ENE	0	0	1	4	0	0	0	0	5
E	0	1	0	0	2	4	0	0	7
ESE	0	0	0	1	0	0	0	0	1
SE	0	0	3	0	0	0	0	0	3
SSE	1	2	0	0	0	0	0	0	3
S	0	8	4	0	0	0	0	0	10
SSW	0	5	2	2	0	0	0	0	9
SW	1	1	2	0	0	0	0	0	4
WSW	0	0	0	2	2	2	0	0	6
W	0	0	0	0	0	0	0	0	0
WNW	0	0	1	6	1	0	0	0	8
NW	0	0	5	11	4	4	0	0	22
NNW	0	0	6	3	3	0	0	0	12
N	0	2	8	3	0	0	0	0	13
ALL SECTOR	2	20	34	44	15	10	0	0	

NO. OF VALID OBSERVATION = 125

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY B — DELTA T LESS THAN OR EQUAL TO -1.7 AND GREATER THAN -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND									ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1		
NNE	1	0	9	3	1	0	0	0	14	
NE	1	2	8	5	5	0	0	0	19	
ENE	0	1	1	5	0	0	0	0	7	
E	0	3	2	2	1	0	0	0	8	
ESE	0	4	9	2	0	0	0	0	11	
SE	0	1	1	0	0	0	0	0	2	
SSE	0	2	3	0	0	0	0	0	5	
S	0	4	2	1	0	0	0	0	7	
SSW	0	0	3	4	0	0	0	0	7	
SW	0	1	1	4	1	0	0	0	7	
WSW	0	0	2	5	5	2	1	0	15	
W	1	0	1	2	6	2	1	0	13	
WNW	0	0	0	9	2	1	0	0	12	
NW	0	2	6	13	4	10	0	0	35	
NNW	0	3	21	18	4	1	0	0	47	
N	1	3	11	11	0	0	0	0	26	
ALL SECTOR	4	26	76	82	27	16	2	0		

NO. OF VALID OBSERVATION = 233      NO. OF CALMS (WS LT 0.5M/SEC) = 0      NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY C -- DELTA T LESS THAN OR EQUAL TO -1.5 AND GREATER THAN -1.7 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	1	8	3	4	2	0	0	0	18
NE	2	8	12	11	0	0	0	0	31
ENE	0	7	11	16	0	0	0	0	34
E	1	4	7	10	15	2	0	0	39
ESE	0	11	11	0	8	2	0	0	32
SE	0	10	4	0	1	0	0	0	15
SSE	3	4	0	1	0	0	0	0	8
S	0	3	2	0	0	0	0	0	5
SSW	0	1	4	2	1	0	0	0	8
SW	0	0	4	2	0	0	0	0	6
WSW	2	1	1	3	3	3	2	0	17
W	0	0	3	0	0	3	2	0	8
WNW	0	4	5	1	0	0	0	0	10
NW	1	2	8	8	3	0	0	0	20
NNW	0	2	20	8	2	0	0	0	32
N	1	4	7	3	0	0	0	0	15
ALL SECTOR	11	67	100	67	39	10	4	0	

NO. OF VALID OBSERVATION = 298

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0



## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY D -- DELTA T LESS THAN OR EQUAL TO -0.5 AND GREATER THAN -1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	3	4	7	3	2	0	0	0	19
NE	0	10	6	7	1	0	0	0	24
ENE	1	2	4	5	0	0	0	0	12
E	0	3	5	19	14	2	0	0	43
ESE	0	4	16	14	4	0	0	0	38
SE	1	4	11	5	2	0	0	0	23
SSE	0	4	1	0	0	0	0	0	5
S	0	2	3	3	0	0	0	0	10
SSW	1	0	4	4	5	0	0	0	14
SW	0	3	7	2	5	0	0	0	17
WSW	1	5	11	5	9	1	0	0	32
W	0	7	3	3	1	0	0	0	14
WNW	0	8	1	3	1	0	0	0	13
NW	2	6	17	7	0	0	0	0	32
NNW	0	8	14	7	0	0	0	0	29
N	2	6	9	2	0	0	0	0	19
ALL SECTOR	11	76	119	91	44	3	0	0	

NO. OF VALID OBSERVATION = 344

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/MS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY E -- DELTA T LESS THAN OR EQUAL TO 1.5 AND GREATER THAN -0.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	3	5	5	1	0	0	0	0	14
NE	2	2	2	0	0	0	0	0	6
ENE	5	3	2	1	0	0	0	0	11
E	2	3	4	4	1	0	0	0	14
ESE	1	6	7	13	2	2	0	0	31
SE	0	5	20	11	3	0	0	0	39
SSE	0	8	4	1	0	0	0	0	13
S	1	6	10	3	10	3	0	0	33
SSW	1	9	14	16	7	0	1	0	48
SW	2	8	16	7	2	1	0	0	36
WSW	1	14	33	19	10	3	1	0	63
W	8	16	35	13	3	1	0	0	76
WNW	3	10	5	7	1	0	0	0	26
NW	4	8	9	3	0	0	0	0	24
NNW	3	3	9	6	0	0	0	0	21
N	6	3	5	0	0	0	0	0	14
ALL SECTOR	42	109	182	105	39	12	2	0	

NO. OF VALID OBSERVATION = 492

NO. OF CALMS (MS LT 0.5M/SEC) = 1

NO. OF MISSING WD/WS = 0

## MILLSTONE NUCLEAR POWER STATION UNIT 1

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY F -- DELTA T LESS THAN OR EQUAL TO 4.0 AND GREATER THAN 1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	3	3	0	1	0	0	0	0	7
NE	2	9	2	1	0	0	0	0	10
ENE	1	0	1	0	0	0	0	0	2
E	1	0	2	0	0	0	0	0	3
ESE	1	7	9	1	5	2	0	0	19
SE	4	7	8	8	2	2	0	0	31
SSE	4	6	14	5	1	6	0	0	36
S	1	19	19	9	2	1	0	0	51
SSW	2	6	9	12	2	1	0	0	32
SW	5	12	21	7	0	0	0	0	45
WSW	0	8	18	18	16	1	0	0	61
W	4	9	7	7	2	1	0	0	30
WNW	6	7	2	2	0	0	0	0	17
NW	7	12	6	1	0	0	0	0	26
NNW	2	6	1	0	0	0	0	0	9
N	1	0	0	0	0	0	0	0	1
ALL SECTOR	44	109	111	66	28	14	0	0	

NO. OF VALID OBSERVATION = 368

NO. OF CALMS (WS LT 0.5M/SEC) = 2

NO. OF MISSING WD/WS = 0

## MILLSTONE NUCLEAR POWER STATION UNIT 1

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY G -- DELTA T GREATER THAN 4.0 DEG C PER 100 METERS

## SPEED IN METERS PER SECOND

DIRECTION	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	ALL
NNE	1	1	1	0	0	0	0	0	3
NE	0	9	2	0	0	0	0	0	7
ENE	2	1	0	0	0	0	0	0	3
E	0	6	0	0	0	0	0	0	6
ESE	0	4	8	0	0	1	0	0	13
SE	0	4	4	7	5	2	0	0	22
SSE	0	1	8	10	3	0	0	0	22
S	1	2	11	4	1	0	0	0	19
SSW	1	5	8	4	2	0	0	0	20
SW	1	2	9	22	4	0	0	0	38
WSW	3	2	10	18	12	3	0	0	48
W	3	3	6	6	0	0	0	0	18
WNW	4	3	1	0	0	0	0	0	8
NW	7	9	1	0	0	0	0	0	17
NNW	1	6	1	0	0	0	0	0	8
N	2	3	1	0	0	0	0	0	6
ALL SECTOR	20	59	71	69	27	6	0	0	

NO. OF VALID OBSERVATION = 254

NO. OF CALMS (WS LT 0.5M/SEC) = 2

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 1 APR 79/0015 - 30 JUN 79/2315  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

## ALL STABILITY CLASSES

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	12	23	28	22	6	0	0	0	91
NE	7	31	33	26	8	0	0	0	103
ENE	9	14	20	31	0	0	0	0	74
E	4	20	20	35	33	8	0	0	120
ESE	2	38	32	31	17	7	0	0	143
SE	5	31	51	31	13	4	0	0	135
SSE	8	27	30	17	4	6	0	0	92
S	3	38	47	18	13	8	0	0	123
SSW	5	26	44	44	17	1	1	0	138
SW	9	27	60	45	12	1	0	0	154
WSW	7	30	78	88	39	13	4	0	281
W	16	35	55	31	12	7	3	0	159
WNW	13	32	15	28	5	1	0	0	94
NW	21	33	48	41	13	14	0	0	172
NNW	6	28	72	42	9	1	0	0	158
N	13	21	41	19	0	0	0	0	94
ALL SECTOR	140	434	894	527	219	71	8	0	

NO. OF POSSIBLE OBSERVATIONS = 2184  
 NO. OF VALID OBSERVATIONS = 2118

NO. OF VALID NON-CALM CONCURRENT WD/WS/DT = 2109  
 NO. OF CALMS (WS LT 0.5M/SEC) = 5

NO. OF MISSING WD/WS = 66  
 NO. OF MISSING DELTA T = 70

MILLSTONE NO. 2

METEOROLOGICAL

JOINT FREQUENCY

DATA FOR

WASTE GAS TANK RELEASES

1/1/79 through 6/30/79

MILLSTONE NUCLEAR POWER STATION UNIT 2  
WASTE GAS TANKS

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 12 JAN 79/1245 - 30 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY A -- DELTA T LESS THAN OR EQUAL TO -1.9 DFG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	0	0	0	0	0	0	0

NO. OF VALID OBSERVATION = 0

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 12 JAN 79/1245 - 30 MAR 79/0930  
 DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY B -- DELTA T LESS THAN OR EQUAL TO -1.7 AND GREATER THAN -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.0	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTORS	0	0	0	0	0	0	0	0	0

NO. OF VALID OBSERVATION = 0

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0



## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 12 JAN 79/1245 - 30 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY C -- DELTA T LESS THAN OR EQUAL TO -1.5 AND GREATER THAN -1.7 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.0	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	0	0	0	0	0	0	0

NO. OF VALID OBSERVATION = 0

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 12 JAN 79/1245 - 30 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY D -- DELTA T LESS THAN OR EQUAL TO -0.5 AND GREATER THAN -1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	13	7	0	0	0	0	0	20
ENE	0	6	9	21	0	0	0	0	36
E	0	0	1	0	0	0	0	0	1
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	20	2	0	0	0	22
SW	0	0	0	8	2	0	0	0	10
WSW	0	0	0	0	0	0	0	0	0
W	0	0	1	21	19	0	0	0	41
WNW	0	0	0	3	2	0	0	0	5
NW	0	0	0	9	10	1	0	0	20
NNW	1	1	1	47	18	0	0	0	68
N	0	0	4	0	0	0	0	0	6
ALL SECTOR	1	22	23	129	53	1	0	0	

NO. OF VALID OBSERVATION = 229

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 12 JAN 79/1245 - 30 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY E -- DELTA T LESS THAN OR EQUAL TO 1.5 AND GREATER THAN -0.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	12	9	0	0	0	21
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	1	4	0	0	0	0	0	0	5
WSW	0	3	0	0	0	0	0	0	3
W	0	1	0	0	0	0	0	0	1
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	3	0	0	0	0	0	3
ALL SECTOR	1	8	3	12	9	0	0	0	

NO. OF VALID OBSERVATION = 33

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 12 JAN 79/1245 - 30 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY F -- DELTA T LESS THAN OR EQUAL TO 4.0 AND GREATER THAN 1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	5	2	0	0	0	0	7
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	5	2	0	0	0	0	

NO. OF VALID OBSERVATION = 7

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 12 JAN 79/1245 - 30 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 09-45 OF EACH HOUR

PASQUILL STABILITY G -- DELTA T GREATER THAN 4.0 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	4	0	0	0	0	0	4
WSW	0	2	2	0	0	0	0	0	4
W	0	1	0	0	0	0	0	0	1
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	3	6	0	0	0	0	0	0

NO. OF VALID OBSERVATION = 9

NO. OF CALMS (MS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 12 JAN 79/1245 - 30 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

## ALL STABILITY CLASSES

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	13	7	0	0	0	0	0	20
ENE	0	6	9	33	9	0	0	0	57
E	0	0	1	0	0	0	0	0	1
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	20	2	0	0	0	22
SW	1	4	4	8	2	0	0	0	19
WSW	0	5	7	2	0	0	0	0	14
W	0	2	1	21	14	0	0	0	43
WNW	0	0	0	3	7	0	0	0	5
NW	0	0	0	9	10	1	0	0	20
NNW	1	1	1	47	18	0	0	0	68
N	0	2	7	0	0	0	0	0	9
ALL SECTOR	2	23	37	143	62	1	0	0	

NO. OF POSSIBLE OBSERVATIONS = 276  
 NO. OF VALID OBSERVATIONS = 276

NO. OF VALID NON-CALM CONCURRENT WD/WS/DI = 278  
 NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0  
 NO. OF MISSING DELTA T = 0

07/23/79

PA

MILLSTONE NUCLEAR POWER STATION / UNIT 2  
WASTE GAS TANKS  
WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
DELTA T INTERVAL = 447 - 33 FT  
PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
DATA PERIOD = 3 MAY 79/1500 - 17 MAY 79/1130  
DATA ACQUISITION INTERVAL = MINUTES 00-00 OF EACH HOUR

PASQUILL STABILITY A -- DELTA T LESS THAN OR EQUAL TO -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	1	0	0	0	0	1
NNW	0	0	4	0	0	0	0	0	4
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	4	1	0	0	0	0	0

NO. OF VALID OBSERVATION = 5

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 MAY 79/1500 - 17 MAY 79/1130  
 DATA ACQUISITION INTERVAL = MINUTES 00-00 OF EACH HOUR

PASQUILL STABILITY B -- DELTA T LESS THAN OR EQUAL TO -1.7 AND GREATER THAN -1.9 DEG C PER 100 METERS

## SPEED IN METERS PER SECOND

DIRECTION	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	ALL
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	3	1	0	2	0	0	6
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	3	1	0	2	0	0	6

NO. OF VALID OBSERVATION =

6

NO. OF CALMS (WS LT 0.5M/SEC) =

0

NO. OF MISSING WD/WS =

0



## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 MAY 79/1500 - 17 MAY 79/1130  
 DATA ACQUISITION INTERVAL = MINUTES 00-00 OF EACH HOUR

PASQUILL STABILITY C -- DELTA T LESS THAN OR EQUAL TO -1.5 AND GREATER THAN -1.7 DEG C PER 100 METERS

## SPEED IN METERS PER SECOND

DIRECTION	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	ALL
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	4	4	8	0	0	16
NNW	0	0	0	1	0	5	0	0	6
N	0	0	0	0	0	0	0	0	0
ALL SECTORS	0	0	0	5	4	13	0	0	0

NO. OF VALID OBSERVATION = 22

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

07/23/79

PA

## MILLSTONE NUCLEAR POWER STATION / UNIT 1

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 MAY 79/1500 - 17 MAY 79/1130  
 DATA ACQUISITION INTERVAL = MINUTES 00-00 OF EACH HOUR

PASQUILL STABILITY D -- DELTA T LESS THAN OR EQUAL TO -0.5 AND GREATER THAN -1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	2	5	10	16	0	0	33
NE	0	1	1	0	0	0	0	0	2
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	1	0	0	0	0	0	1
W	0	2	0	2	0	0	0	0	4
WNW	0	3	4	12	2	0	0	0	21
NW	0	2	11	17	7	10	0	0	39
NNW	0	1	15	10	9	8	0	0	43
N	0	0	2	1	5	5	0	0	13
ALL SECTOR	0	9	36	47	33	47	0	0	

NO. OF VALID OBSERVATION = 172

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 MAY 79/1500 - 17 MAY 79/1130  
 DATA ACQUISITION INTERVAL = MINUTES 00-00 OF EACH HOUR

PASQUILL STABILITY E -- DELTA T LESS THAN OR EQUAL TO 1.5 AND GREATER THAN -0.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	3	3	3	0	0	0	0	0	9
NE	6	5	0	0	0	0	0	0	11
ENE	3	2	0	0	0	0	0	0	5
E	2	1	0	0	0	0	0	0	3
ESE	1	1	0	0	0	0	0	0	2
SE	1	5	0	0	0	0	0	0	6
SSE	2	7	0	0	0	0	0	0	9
S	1	5	5	2	0	0	0	0	11
SSW	0	8	4	5	7	9	2	0	35
SW	1	1	3	9	27	4	0	0	45
WSW	0	2	4	11	16	2	0	0	35
W	0	2	3	8	0	0	0	0	13
WNW	0	4	7	1	0	0	0	0	12
NW	0	5	7	0	0	0	0	0	10
NNW	2	1	0	2	6	1	0	0	12
N	4	1	2	0	0	0	0	0	7
ALL SECTORS	26	51	36	38	56	16	2	0	

NO. OF VALID OBSERVATION = 225

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

07/23/79

PA

## HILLSTONE NUCLEAR POWER STATION / UNIT 1

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 MAY 79/1500 - 17 MAY 79/1130  
 DATA ACQUISITION INTERVAL = MINUTES 00-00 OF EACH HOUR

PASQUILL STABILITY F -- DELTA T LESS THAN OR EQUAL TO 4.0 AND GREATER THAN 1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	2	0	0	0	0	0	0	2
SSE	0	3	13	2	0	0	0	0	18
S	0	9	14	0	0	0	0	0	23
SSW	0	0	6	0	0	0	0	0	6
SW	0	1	4	7	9	0	0	0	21
WSW	0	1	1	15	14	0	0	0	31
W	0	0	2	0	0	0	0	0	2
WNW	0	1	0	0	0	0	0	0	1
NW	1	0	0	0	0	0	0	0	1
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	1	17	40	24	23	0	0	0	

NO. OF VALID OBSERVATION = 105

NO. OF CALMS (MS LT 0.5M/SEC) = 0

NO. OF MISSING WD/MS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 MAY 79/1500 - 17 MAY 79/1130  
 DATA ACQUISITION INTERVAL = MINUTES 00-00 OF EACH HOUR

PASQUILL STABILITY G — DELTA T GREATER THAN 4.0 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	0	0	0	0	0	0	0

NO. OF VALID OBSERVATION = 0

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 MAY 79/1500 - 17 MAY 79/1130  
 DATA ACQUISITION INTERVAL = MINUTES 00-00 OF EACH HOUR

## ALL STABILITY CLASSES

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	3	3	5	5	10	16	0	0	42
NE	0	0	1	0	0	0	0	0	1
ENE	3	2	0	0	0	0	0	0	5
E	2	1	0	0	0	0	0	0	3
ESE	1	1	0	0	0	0	0	0	2
SE	1	7	0	0	0	0	0	0	8
SSE	2	10	13	2	0	0	0	0	27
S	1	14	17	2	0	0	0	0	34
SSW	0	8	10	5	7	9	2	0	41
SW	1	2	7	16	36	4	0	0	66
WSW	0	3	6	26	30	2	0	0	67
W	0	4	5	10	0	0	0	0	19
WNW	0	8	11	13	2	0	0	0	34
NW	1	5	21	23	11	28	0	0	89
NNW	2	2	19	13	15	14	0	0	65
N	4	1	4	1	5	5	0	0	20
ALL SECTOR	27	77	119	116	116	70	2	0	

NO. OF POSSIBLE OBSERVATIONS = 540  
 NO. OF VALID OBSERVATIONS = 535

NO. OF VALID NON-CALM CONCURRENT WD/WS/DT = 535  
 NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 5  
 NO. OF MISSING DELTA T = 5

MILLSTONE NO. 2

METEOROLOGICAL

JOINT FREQUENCY

DATA FOR

CONTAINMENT PURGES

1/1/79 through 6/30/79

## MILLSTONE NUCLEAR POWER STATION UNIT 2

## CONTAINMENT PURGES

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 8 JAN 79/0045 - 11 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTLS 00-45 OF EACH HOUR

PASQUILL STABILITY A -- DELTA T LESS THAN OR EQUAL TO -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	0	0	0	0	0	0	0

NO. OF VALID OBSERVATION = 0

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0



## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 8 JAN 79/0045 - 11 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY B -- DELTA T LESS THAN OR EQUAL TO -1.7 AND GREATER THAN -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.2	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	0	0	0	0	0	0	0

NO. OF VALID OBSERVATION = 0

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## MILLSTONE NUCLEAR POWER STATION UNIT 1

06/13/79

3

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 8 JAN 79/0045 - 11 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY C -- DELTA T LESS THAN OR EQUAL TO -1.5 AND GREATER THAN -1.7 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.0	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	9	0	9
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	0	0	0	0	9	0	0

NO. OF VALID OBSERVATION = 9

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 8 JAN 79/0045 - 11 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY D -- DELTA T LESS THAN OR EQUAL TO -0.5 AND GREATER THAN -1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							GT 20.1	ALL
	0.5-1.5	1.6-3.3	3.4-5.1	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	1	5	2	0	1	0	9
NW	0	0	5	16	3	3	2	0	29
NNW	0	0	5	6	0	0	0	0	11
N	0	0	0	12	0	0	0	0	12
ALL SECTOR	0	0	11	39	5	3	3	0	

NO. OF VALID OBSERVATION = 61

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 2

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 8 JAN 79/0045 - 11 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY E -- DELTA T LESS THAN OR EQUAL TO 1.5 AND GREATER THAN -0.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.5	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	0	0	0	0	4	3	0	0	7
NE	0	0	0	0	3	0	0	0	3
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	1	0	0	0	0	0	0	0	1
SSE	0	0	0	0	0	0	0	0	0
S	0	0	2	0	0	0	0	0	2
SSW	0	2	6	0	0	0	2	2	12
SW	0	1	2	0	0	1	3	0	7
WSW	1	2	0	0	0	0	0	0	3
W	1	4	0	0	0	0	0	0	5
WNW	0	1	3	5	3	0	0	0	12
NW	0	3	8	5	0	0	0	0	16
NNW	0	3	0	2	4	0	0	0	9
N	0	1	1	0	4	3	0	0	9
ALL SECTOR	3	17	22	12	18	7	5	2	

NO. OF VALID OBSERVATION = 60

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 35 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 8 JAN 79/0045 - 11 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY F -- DELTA T LESS THAN OR EQUAL TO 4.0 AND GREATER THAN 1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.0	1.6-3.0	3.4-5.0	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNF	0	0	0	0	0	0	0	0	0
NL	0	0	0	0	0	0	0	0	0
LNE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	2	0	0	0	10	14	26
SW	0	2	2	0	0	0	0	0	4
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	1	0	0	0	0	0	0	0	1
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	1	2	4	0	0	0	10	14	

NO. OF VALID OBSERVATION = 31

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT

DELTA T INTERVAL = 447 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 8 JAN 79/0045 - 11 MAR 79/0930

DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

PASQUILL STABILITY G -- DELTA T GREATER THAN 4.0 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	0	0	0	0	0	0	0	0	0

NO. OF VALID OBSERVATION = 0

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 447 FT  
 DELTA T INTERVAL = 447 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 8 JAN 79/0045 - 11 MAR 79/0930  
 DATA ACQUISITION INTERVAL = MINUTES 00-45 OF EACH HOUR

## ALL STABILITY CLASSES

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		61 20.1
NNE	0	0	0	0	4	3	0	0	7
NE	0	0	0	0	3	0	0	0	3
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	1	0	0	0	0	0	0	0	1
SSE	0	0	0	0	0	0	0	0	0
S	0	0	2	0	0	0	0	0	2
SSW	0	2	8	0	0	0	12	16	38
SW	0	3	4	0	0	1	3	0	11
WSW	1	2	2	9	0	0	0	0	14
W	1	5	0	0	0	0	0	0	6
WNW	0	3	6	10	5	0	10	0	34
NW	0	4	15	22	3	3	2	0	49
NNW	1	3	8	8	4	0	0	0	24
N	0	1	1	12	4	3	0	0	21
ALL SECTOR	4	23	46	61	25	10	27	16	

NO. OF POSSIBLE OBSERVATIONS = 222  
 NO. OF VALID OBSERVATIONS = 219

NO. OF VALID NON-CALM CONCURRENT WD/WS/DI = 187  
 NO. OF CALMS (WS LT 0.9M/SEC) = 0

NO. OF MISSING WD/WS = 12  
 NO. OF MISSING DELTA T = 33

## MILLSTONE NUCLEAR POWER STATION / UNIT 2

## CONTAINMENT PURGES

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT

DELTA T INTERVAL = 142 - 33 FT

PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T

DATA PERIOD = 3 APR 79/0315 - 22 JUN 79/1300

DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY A -- DELTA T LESS THAN OR EQUAL TO -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	1	0	0	0	0	0	0	0	1
SSE	1	0	0	0	0	0	0	0	1
S	1	2	0	0	0	0	0	0	3
SSW	0	1	0	0	0	0	0	0	1
SW	0	3	0	0	0	0	0	0	3
WSW	0	0	1	0	0	0	0	0	1
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0
ALL SECTOR	2	6	1	0	0	0	0	0	

NO. OF VALID OBSERVATION = 10

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0



MILLSTONE NUCLEAR POWER STATION / UNIT 1

WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 30 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 APR 79/0315 - 22 JUN 79/1300  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY B -- DELTA T LESS THAN OR EQUAL TO -1.7 AND GREATER THAN -1.9 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	2
SSW	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	1	0	0	0	0	0	3
W	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	1	0	0	0	0	0	1
NNW	0	1	2	0	0	0	0	0	3
N	0	3	0	0	0	0	0	0	3
ALL SECTOR	0	6	4	0	0	0	0	0	

NO. OF VALID OBSERVATION = 12      NO. OF CALMS (WS LT 0.5M/SEC) = 0      NO. OF MISSING WD/WS = 0

## MILLSTONE NUCLEAR POWER STATION / UNIT 1

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 APR 79/0315 - 22 JUN 79/1300  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY C -- DELTA T LESS THAN OR EQUAL TO -1.5 AND GREATER THAN -1.7 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	1	0	4	0	0	0	0	0	11
NE	2	0	6	2	0	0	0	0	10
ENE	0	0	3	2	0	0	0	0	5
E	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	0	1	0	0	0	0	0	0	1
SSW	1	3	0	0	2	0	0	0	6
SW	0	0	0	0	0	0	0	0	0
WSW	0	0	1	3	3	0	0	0	7
W	0	0	0	0	1	0	0	0	1
WNW	0	0	0	0	0	0	0	0	0
NW	0	0	1	0	0	0	0	0	1
NNW	0	2	6	0	0	0	0	0	8
N	1	4	3	0	0	0	0	0	8
ALL SECTOR	5	10	24	7	6	0	0	0	

NO. OF VALID OBSERVATION = 56      NO. OF CALMS (WS LT 0.5M/SEC) = 0      NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 APR 79/0315 - 22 JUN 79/1300  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY D -- DELTA T LESS THAN OR EQUAL TO -0.5 AND GREATER THAN -1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	2	2	2	0	0	0	0	0	9
NE	1	2	0	1	0	0	0	0	4
ENE	0	1	1	1	0	0	0	0	3
E	0	1	1	2	0	0	0	0	4
ESE	0	0	0	7	0	0	0	0	7
SE	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0
S	1	1	0	0	0	0	0	0	2
SSW	1	1	0	4	7	0	0	0	13
SW	0	2	0	0	0	0	0	0	2
WSW	0	1	7	0	1	0	0	0	9
W	0	0	2	3	0	0	0	0	5
WNW	0	3	1	0	0	0	0	0	4
NW	1	2	5	0	0	0	0	0	11
NNW	0	9	16	9	0	0	0	0	34
N	0	4	15	0	0	0	0	0	19
ALL SECTOR	6	32	50	27	8	0	0	0	

NO. OF VALID OBSERVATION = 126

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 35 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 APR 79/0315 - 22 JUN 79/1300  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY E -- DELTA T LESS THAN OR EQUAL TO 1.5 AND GREATER THAN -0.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	6	4	4	0	0	0	0	0	14
NE	3	2	0	0	0	0	0	0	5
ENE	1	1	0	0	0	0	0	0	2
E	1	7	9	1	0	0	0	0	18
ESE	1	3	11	1	0	0	0	0	16
SE	0	0	8	3	0	0	0	0	11
SSE	0	0	0	0	0	0	0	0	0
S	0	6	0	0	0	0	0	0	6
SSW	0	1	0	5	3	0	0	0	9
SW	0	1	0	0	0	0	0	0	1
WSW	4	4	4	0	0	0	0	0	8
W	3	5	2	0	0	0	0	0	10
WNW	5	5	5	0	0	0	0	0	15
NW	5	1	2	0	0	0	0	0	8
NNW	5	4	12	15	0	0	0	0	36
N	7	0	2	1	0	0	0	0	10
ALL SECTOR	41	40	59	26	3	0	0	0	

NO. OF VALID OBSERVATION = 170

NO. OF CALMS (WS LT 0.5M/SEC) = 4

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 APR 79/0315 - 22 JUN 79/1300  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY F -- DELTA T LESS THAN OR EQUAL TO 4.0 AND GREATER THAN 1.5 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	3	2	1	0	0	0	0	0	6
NE	1	3	3	0	0	0	0	0	7
ENE	2	1	0	0	0	0	0	0	3
E	0	1	0	0	0	0	0	0	1
ESE	1	2	9	0	0	0	0	0	15
SE	4	7	6	7	4	2	0	0	30
SSE	2	3	3	2	5	13	0	0	28
S	2	7	0	1	0	1	0	0	11
SSW	3	6	1	1	0	0	0	0	11
SW	7	5	5	1	0	0	0	0	18
WSW	1	6	13	1	0	0	0	0	21
W	4	4	6	0	0	0	0	0	14
WNW	4	2	0	0	0	0	0	0	6
NW	3	3	1	0	0	0	0	0	7
NNW	4	0	0	1	0	0	0	0	5
N	4	0	0	0	0	0	0	0	4
ALL SECTOR	42	52	48	14	9	16	0	0	

NO. OF VALID OBSERVATION = 189

NO. OF CALMS (WS LT 0.5M/SEC) = 2

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 APR 79/0315 - 22 JUN 79/1300  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

PASQUILL STABILITY G -- DELTA T GREATER THAN 4.0 DEG C PER 100 METERS

DIRECTION	SPEED IN METERS PER SECOND								ALL
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0	GT 20.1	
NNE	0	2	0	0	0	0	0	0	2
NE	0	3	0	0	0	0	0	0	3
ENE	1	1	0	0	0	0	0	0	2
E	0	4	0	0	0	0	0	0	4
ESE	1	3	5	0	0	0	0	0	9
SE	0	3	4	15	13	3	0	0	38
SSE	1	0	2	7	4	2	0	0	16
S	0	1	1	0	3	0	0	0	6
SSW	1	7	0	0	5	0	0	0	13
SW	1	7	3	12	0	0	0	0	23
WSW	2	3	2	11	7	0	0	0	25
W	3	1	3	1	0	0	0	0	8
WNW	5	0	2	0	0	0	0	0	7
NW	0	1	0	0	0	0	0	0	1
NNW	3	0	1	0	0	0	0	0	4
N	2	0	0	0	0	0	0	0	2
ALL SECTOR	20	37	23	46	32	5	0	0	

NO. OF VALID OBSERVATION = 163

NO. OF CALMS (WS LT 0.5M/SEC) = 0

NO. OF MISSING WD/WS = 0

## WIND SPEED/WIND DIRECTION/STABILITY JOINT FREQUENCY DISTRIBUTION

WIND LEVEL = 142 FT  
 DELTA T INTERVAL = 142 - 33 FT  
 PASQUILL STABILITY CLASSES / CLASS DETERMINATION METHOD = DELTA T  
 DATA PERIOD = 3 APR 79/0315 - 22 JUN 79/1300  
 DATA ACQUISITION INTERVAL = MINUTES 00-15 OF EACH HOUR

## ALL STABILITY CLASSES

DIRECTION	SPEED IN METERS PER SECOND							ALL	
	0.5-1.5	1.6-3.3	3.4-5.5	5.6-8.2	8.3-10.8	10.9-15.0	15.1-20.0		GT 20.1
NNE	12	19	11	0	0	0	0	0	42
NE	7	10	9	3	0	0	0	0	29
ENE	4	4	4	3	0	0	0	0	15
E	1	13	10	3	0	0	0	0	27
ESE	3	11	25	8	0	0	0	0	47
SE	5	10	18	25	17	5	0	0	80
SSE	4	3	5	9	9	15	0	0	45
S	4	21	1	1	3	1	0	0	31
SSW	6	19	1	10	17	0	0	0	53
SW	8	16	8	13	0	0	0	0	47
WSW	7	12	30	15	11	0	0	0	75
W	10	10	13	4	1	0	0	0	38
WNW	14	10	8	0	0	0	0	0	32
NW	9	10	10	0	0	0	0	0	29
NNW	12	16	37	25	0	0	0	0	90
N	14	11	20	1	0	0	0	0	46
ALL SECTOR	120	197	210	120	54	21	0	0	

NO. OF POSSIBLE OBSERVATIONS = 746  
 NO. OF VALID OBSERVATIONS = 732  
 NO. OF VALID NON-CALM CONCURRENT WD/WS/DT = 725  
 NO. OF CALMS (WS LT 0.5M/SEC) = 6  
 NO. OF MISSING WD/WS = 14  
 NO. OF MISSING DELTA T = 15

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