

ALABAMA POWER COMPANY  
FARLEY NUCLEAR PLANT UNIT NO. ONE  
LICENSE NO. NPF-2  
AND  
FARLEY NUCLEAR PLANT UNIT NO. TWO  
LICENSE NO. NPF-8

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT  
JULY 1, 1981 THROUGH DECEMBER 31, 1981

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## INTRODUCTION

The Unit No. 1 portion of this semi-annual radioactive release report for the period JULY 1 to DECEMBER 31, 1981 is submitted in accordance with Appendix B to Farley Nuclear Plant License No. NPF-2. Appendix B will hereinafter be referred to as the Environmental Technical Specifications or ETS.

All liquid and airborne discharges to the environment during this reporting period were analyzed in accordance with requirements in the ETS. For all effluent releases, the concentrations of radioactive material were within ETS limits.

The Unit No. 2 portion of this semi-annual radioactive release report for the period JULY 1 to DECEMBER 31, 1981 is submitted in accordance with Appendix A to Farley Nuclear Plant License No. NPF-8. Appendix A will hereinafter be referred to as the Standard Technical Specifications or STS.

All liquid and airborne discharges to the environment during this reporting period were analyzed in accordance with requirements in the STS and the Offsite Dose Calculation Manual (ODCM) which it references. For all effluent releases, the concentrations of radioactive material were within STS limits.

## EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT SUPPLEMENTARY INFORMATION

### 1. Regulatory Limits

#### a. Fission and Activation Gases

The release rate limit at any time of noble gases to areas at or beyond the site boundary shall be such that

$$10^6 \frac{\text{pCi}}{\text{uCi}} \sum_i^{14} \left[ K_i \sum_v^2 \left[ (\bar{X}/\bar{Q})_v Q_{iv} \right] \right] < 500 \text{ mrem/yr}$$

and

$$10^6 \frac{\text{pCi}}{\text{uCi}} \sum_i^{14} \left[ (L_i + 1.1 M_i) \sum_v^2 \left[ (\bar{X}/\bar{Q})_v Q_{iv} \right] \right] < 3000 \text{ mrem/yr}$$

where the terms are defined in section 2.3 of the ETS and in the ODCM.

#### b. Iodines and Particulates

The release rate limit for sampling period of all radioiodines and radioactive materials in particulate form and radionuclides other than noble gases released to the environs as part of the gaseous wastes from the site shall be such that

$$10^6 \frac{\text{pCi}}{\text{uCi}} \sum_i^{18} \left[ P_i \sum_v^2 \left[ (\bar{X}/\bar{Q})_{mv} Q_{iv} \right] \right] < 6.3 \text{ mrem/yr}$$

where the terms are defined in Section 2.3 of ETS and the ODCM.

#### c. Liquid Effluents

The concentration of radioactive materials released in liquid effluents to unrestricted areas from all reactors at the site shall not exceed at any time the values specified in 10 CFR Part 20, Appendix B, Table II, Column 2. The concentration of dissolved or entrained noble gases, released in liquid effluents to unrestricted areas from all reactors at the site, shall not exceed at any time  $4 \text{ E-5 } \mu\text{Ci/ml}$  in water.

### 2. Maximum Permissible Concentrations

- a. Airborne - The maximum permissible concentration of radioactive materials in gaseous effluents is limited by the dose rate restrictions of 10CFR20. In this case, the maximum permissible concentrations are actually determined by the dose factors in the ETS and ODCM.

b. Liquid - 10 CFR Part 20, Appendix B Table II, Column 2.\*

\*NOTE: The MPC chosen is the most conservative value of either the soluble or insoluble MPC for each isotope.

3. Average Energy

Not Applicable for Farley's ETS or STS.

4. Measurements and Approximations of Total Activity

The following discussion details the methods used to measure and approximate total activity for the following:

- a. Fission and Activation Gases
- b. Iodines
- c. Particulates
- d. Liquid Effluents

Tables 5 and 6 give sampling frequencies and minimum detectable concentration requirements for the analysis of liquid and gaseous effluent streams.

Values in the attached tables given as zero do not mean that the nuclides were not present. A zero indicates that the nuclide was not present at levels greater than the sensitivity requirements shown in Tables 5 and 6. For some nuclides, lower detection limits than required may be readily achievable; when a nuclide is measured below its stated limits, it is reported.

Fission and Activation Gases

The following noble gases are considered in evaluating gaseous airborne discharge:

Ar-41 Unit #1 only	Kr-89 Unit #1 only	Xe-133
Kr-85m Unit #1 only	Kr-90 Unit #1 only	Xe-135m Unit #1 only
Kr-85 Unit #1 only	Xe-131m Unit #1 only	Xe-135
Kr-87	Xe-133m	Xe-137 Unit #1 only
Kr-88		Xe-138

Periodic grab samples from plant effluent streams are analyzed by a computerized pulse height analyzer system utilizing high resolution germanium detectors. (See Table 6 for sampling and analytical requirements). Isotopic values thus obtained are used for dose release rate calculations as given in section 1a of this report. Only those nuclides that are detected are used in this computation. During the period between grab samples, the amount of radioactivity released is based on the effluent monitor readings. Monitors are assigned a calibration factor based upon the last isotopic analysis using the following relationship:

$$CF_1 = A_1 \div m, \text{ where}$$

$CF_1$  = isotopic calibration factor for isotope 1.

$A_i$  = concentration of isotope in the grab sample, in  $\mu\text{Ci/ml}$ .

$m$  = net monitor reading associated with the effluent stream.  
(determined at time of grab sample)

These calibration factors along with the hourly effluent monitor readings are input to the laboratory computer where the release rates for individual nuclides are calculated and stored.

To ensure that isotopic distributions do not change significantly during major operational occurrences, the frequency of grab sampling is increased to satisfy the requirements of footnote "C" of Table 6-1, "Radioactive Gaseous Waste Sampling and Analysis Program" (ETS Table 2-2) or footnotes b & d of Table 4.11-2, "Radioactive Gaseous Waste Sampling and Analysis Program", (STS Table 4.11-2).

#### Particulate and Iodine

The radioiodines and radioactive materials in particulate forms to be considered are:

P-32 Unit #2 only	Sr-89	Cs-134
Cr-51 Unit #1 only	Sr-90	Cs-136 Unit #1 only
Zn-65	Zr-95 Unit #1 only	Cs-137
Mn-54	Sb-124 Unit #1 only	Ba-140 Unit #1 only
Fe-55 Unit #2 only	I-131	Ce-141
Fe-59	I-133	Ce-144 Unit #2 only
Co-58		Other nuclides with
Co-60		half-life greater
		than 8 days

#### Continuous Releases

Continuous sampling is performed on the continuous release points (i.e. the Plant Vent Stack, Containment Purge and the Turbine Building Vent). Particulate material is collected by filtration. Iodines are collected by absorption on a charcoal filter. Periodically these filters are removed and analyzed on the pulse height analyzer to identify and quantify radioactive materials collected on the filters. Particulate filters are then analyzed for gross alpha, and strontium, phosphorus and iron as required. Gross alpha determinations are made using a 2 pi gas flow proportional counter. Sr-89 and 90, P-32 and Fe-55 values are obtained by chemical separation and subsequent analysis using 2 pi gas flow proportional counters.

#### Batch Releases

The processing of batch type releases (from Containment Purge and Waste Gas Decay Tanks) is analogous to that for continuous releases, except that the release is not commenced until grab samples have been obtained and analyzed.

#### Liquid Effluents

The radionuclides listed below are considered when evaluating liquid effluents:

H-3	Sr91 Unit 1 only	Cs-134
Cr-51 Unit 1 only	Mo-99	Cs-136 Unit 1 only
Mn-54	Tc-99m Unit 1 only	Cs-137
Fe-59	Ru-103 Unit 1 only	Ba-140
Co-58	Ru-106 Unit 1 only	La-140
Co-60	I-131	Ce-141
Zn-65	I-132	Ce-144 Unit 2 only
Sr-89	I-133	
Sr-90	I-135	

Batch Releases - Representative pre-release grab samples are obtained and analyzed per Table 5-1 or 5-2. Isotopic analyses are performed using the computerized pulse height analysis system previously described. Aliquots of each pre-release sample proportional to the waste volume released are composited in accordance with requirements in Table 5-1 or 5-2. Strontium, Phosphorus and Iron determinations are made by performing a chemical separation and counting the isotope thus separated using a 2 pi gas flow proportional counter. Gross beta and gross alpha determinations are made using 2 pi gas flow proportional counters. Tritium concentrations are determined by using liquid scintillation techniques. Dissolved gases are determined employing grab sampling techniques and then counting on the pulse height analyzer system.

#### Continuous Releases

Continuous Releases (from the Steam Generator Blowdown) are analogous to that of the batch releases except that they are to be analyzed on a weekly composite basis per Table 5-1 or 5-2.



UNIT #1

5. Batch Releases

		Quarter 3	Quarter 4
a.	<u>Liquid</u>		
1.	Number of batch releases:	115	138
2.	Total time period for batch releases:	144616 min.	10221 min.
3.	Maximum time period for a batch release:	11491 min.	10269 min.
4.	Average time period for a batch release:	1258 min.	509 min.
5.	Minimum time period for a batch release:	44 min.	50 min.
6.	Average stream flow during periods of release of effluent into a flowing stream:	11,500 cfs* 11,500 cfs*	
b.	<u>Gaseous</u>	Quarter 3	Quarter 4
1.	Number of batch releases:	5	8
2.	Total time period for batch releases:	4042 min.	3379 min.
3.	Maximum time period for a batch release:	1140 min.	720 min.
4.	Average time period for a batch release:	2184 min.	422 min.
5.	Minimum time period for a batch release:	675 min.	183 min.

6. Abnormal Release

- a. Liquid
1. Number of releases: None
  2. Total activity released: N/A

NOTE 1: See Table 7 for listing of Liquid Batch releases that did not meet specified detection limits.

- b. Gaseous
1. Number of releases: None
  2. Total activity released: N/A

\* Annual Average River Flow Rate.

UNIT #2

5. Batch Releases

a. <u>Liquid</u>		Quarter 3	Quarter 4
1.	Number of batch releases:	184	135
2.	Total time period for batch releases:	174457 min.	161443 min.
3.	Maximum time period for a batch release:	10330 min.	11513 min.
4.	Average time period for a batch release:	948 min.	1196 min.
5.	Minimum time period for a batch release:	38 min.	68 min.
6.	Average stream flow during periods of release of effluent into a flowing stream:	11,500 cfs*	11,500 cfs*
b. <u>Gaseous</u>		Quarter 3	Quarter 4
1.	Number of batch releases:	9	4
2.	Total time period for batch releases:	4107 min.	1409 min.
3.	Maximum time period for a batch release:	720 min.	420 min.
4.	Average time period for a batch release:	456 min.	352 min.
5.	Minimum time period for a batch	221 min.	302 min.

6. Abnormal Release

- a. Liquid
1. Number of releases: None
  2. Total activity released: N/A

NOTE 1: See Table 7 for listing of Liquid Batch releases that did not meet specified detection limits.

- b. Gaseous
1. Number of releases: None
  2. Total activity released: N/A

\*Annual Average River Flow Rate.



7. Estimate of Total Error

a. Liquid

1. The maximum error associated with volume and flow measurements, based upon plant calibration practice is estimated to be  $\pm 10\%$ .
2. The average error associated with counting is estimated to be less than  $\pm 15\%$ .

b. Gaseous

1. The maximum errors associated with monitor readings, sample flow, vent flow, sample collection, monitor calibration and laboratory procedure are collectively estimated to be:

<u>Fission and Activation Gases</u>	<u>Iodine</u>	<u>Particulates</u>	<u>Tritium</u>
75%	60%	50%	45%

2. The average error associated with counting is estimated to be:

<u>Fission and Activation Gases</u>	<u>Iodine</u>	<u>Particulates</u>	<u>Tritium</u>
6%	18%	19%	12%

c. Solid Radwaste

The error involved in determining the contents of solid radwaste shipments is estimated to be less than  $\pm 15\%$ .

UNIT #1

8. Solid Waste

See Table 3

9. Radiological Impact On Man

a. Water Related Exposure Pathways

<u>3rd Quarter</u>	<u>4th Quarter</u>
Total Body = $2.3\text{E-}02$ mrem	$4.5\text{E-}02$ mrem
Bone = $1.0\text{E-}02$ mrem	$3.1\text{E-}02$ mrem
Liver = $2.7\text{E-}02$ mrem	$5.9\text{E-}02$ mrem
Thyroid = $1.9\text{E-}01$ mrem	$7.8\text{E-}03$ mrem
Kidney = $1.3\text{E-}02$ mrem	$2.5\text{E-}02$ mrem
Lungs = $7.3\text{E-}03$ mrem	$1.3\text{E-}02$ mrem
GI Tract = $3.2\text{E-}01$ mrem	$9.3\text{E-}02$ mrem

b. Gaseous Related Exposure Pathways

<u>3rd Quarter</u>	<u>4th Quarter</u>
Total Body = $3.2\text{E-}04$ mrem	$6.5\text{E-}04$ mrem
Skin = $4.7\text{E-}04$ mrem	$1.3\text{E-}03$ mrem

c. Particulate and Iodine

<u>3rd Quarter</u>	<u>4th Quarter</u>
Organ Dose = $3.7\text{E-}06$ mrem	$6.2\text{E-}07$ mrem

UNIT #2

8. Solid Waste

See Table 3

9. Radiological Impact On Man

a. Water Related Exposure Pathways

<u>3rd Quarter</u>	<u>4th Quarter</u>
Total Body = $3.9\text{E-}02$ mrem	$8.1\text{E-}03$ mrem
Bone = $8.3\text{E-}02$ mrem	$8.8\text{E-}02$ mrem
Liver = $2.7\text{E-}02$ mrem	$1.3\text{E-}02$ mrem
Thyroid = $9.5\text{E-}03$ mrem	$3.4\text{E-}03$ mrem
Kidney = $1.2\text{E-}02$ mrem	$3.5\text{E-}03$ mrem
Lungs = $1.0\text{E-}02$ mrem	$1.4\text{E-}02$ mrem
GI Tract = $1.1\text{E-}01$ mrem	$2.3\text{E-}02$ mrem

b. Gaseous Related Exposure Pathways

<u>3rd Quarter</u>	<u>4th Quarter</u>
Total Body = $1.3\text{E-}04$ mrem	$1.9\text{E-}03$ mrem
Skin = $6.1\text{E-}05$ mrem	$3.5\text{E-}03$ mrem

c. Particulate and Iodine

<u>3rd Quarter</u>	<u>4th Quarter</u>
Organ Dose = $8.1\text{E-}04$ mrem	$9.7\text{E-}03$ mrem

10. Meteorological Data

See Tables 4A and 8, "Cumulative Joint Frequency Distribution".

Continuous Release Mode:

3rd Quarter, 1981

4th Quarter, 1981

Annual, 1981

Batch Release Mode (Units 1 and 2):

3rd Quarter, 1981

4th Quarter, 1981

11. Liquid Release "Principal Gamma Emitter" Evaluation

Detectable limits for activity analyses are based upon the technical feasibility and on the potential significance in the environment of the quantities released. In practice, when an isotope's MDC could not be met due to other nuclides being present in much greater concentrations, computations were made to determine if the isotope(s) of interest were actually "Principal Gamma Emitters" by the following definition:

"Principal Gamma Emitters" - Those gamma emitters which when quantified represent greater than 1% of the total activity or total dose commitment of the effluent release in question.

12. Annual Radiation Dose Assessment

a. Water Related Exposure Pathways

1981

Total Body = 1.9E-01 mrem

Bone = 2.7E-01 mrem

Liver = 2.2E-01 mrem

Thyroid = 2.2E-01 mrem

Kidney = 8.7E-02 mrem

Lungs = 5.6E-02 mrem

GI Tract = 5.6E-01 mrem

b. Gaseous Related Exposure Pathways

1981

Total Body = 1.3E-01 mrem

Skin = 8.4E-02 mrem

c. Particulate and Iodine

1981

Organ dose =  $2.7\text{E-}02$  mrem

- Note: The meteorological conditions concurrent with the time of release of radioactive materials in gaseous effluents (as determined by sampling frequency and measurement outlined in Tables 5-1, 5-2, 6-1, and 6-2) have been used for the gaseous pathway doses. The assessment of radiation doses has been performed in accordance with the OFFSITE DOSE CALCULATION MANUAL (ODCM).

# 12.d. Maximum Real Exposure

The maximum real exposure is an assessment of radiation doses to the likely most exposed member of the public from reactor releases and other nearby uranium fuel cycle sources (including doses from all primary effluent pathways except liquid pathways which are limited to the Chattahoochee River and including direct radiation) for the previous 12 consecutive months to show conformance with 40 CFR 190.

The likely most exposed member of the public from reactor releases is assumed to be the resident of a farm adjacent to the plant site in sectors SW, and WSW.

## Dose Contributions to Sectors

1981

Sector	DG gamma	Z tech
N	0.00	0.00
NE	0.01	0.01
ENE	0.00	0.00
E	0.01	0.01
ESE	0.01	0.01
SE	0.00	0.00
SSE	0.00	0.00
S	0.00	0.00
SSW	0.00	0.00
SW	0.00	0.00
WSW	0.00	0.00
W	0.00	0.00
WNW	0.00	0.00
NW	0.00	0.00

Sector	DD beta	Z tech
N	0.00	0.00
NE	0.00	0.00
ENE	0.00	0.00
E	0.00	0.00
ESE	0.00	0.00
SE	0.00	0.00
SSE	0.00	0.00
S	0.00	0.00
SSW	0.00	0.00
SW	0.00	0.00
WSW	0.00	0.00
W	0.00	0.00
WNW	0.00	0.00
NW	0.00	0.00

Sector	DD tau	Z tech
N	0.00	0.00
NE	0.00	0.00
ENE	0.00	0.00
E	0.00	0.00
ESE	0.00	0.00
SE	0.00	0.00
SSE	0.00	0.00
S	0.00	0.00
SSW	0.00	0.00
SW	0.00	0.00
WSW	0.00	0.00
W	0.00	0.00
WNW	0.00	0.00
NW	0.00	0.00

12.d. Maximum Real Exposure (continued)

The tabulation of doses to sectors, calculated at the site boundary, indicates the total yearly dose in each sector as well as the percent of the Technical Specification limit which that dose represents. The dose or dose commitment to any member of the public, due to releases of radioactivity and radiation, from uranium fuel cycle sources are limited to less than or equal to 25 mrem to the total body or an organ (except the thyroid, which is limited to less than or equal to 75 mrem) over consecutive quarters. This specification is provided to meet the dose limitations of 40 CFR 190.

Since the Farley Nuclear Plant is the only uranium fuel cycle source within a radius of greater than 50 miles, the tabulation of doses to sectors is intended to demonstrate that the dose to any member of the public will be less than the dose in the highest sector and that the dose to the likely most exposed member of the public is less than that in sectors SW and WSW.

12.e. Direct Radiation

Direct radiation was assessed using thermal luminescent dosimetry. Dosimeters containing five LiF TLD chips each were placed at the residence of the most likely exposed member of the public. These chips were collected and read quarterly and annually. The assessment is made by comparing the annual dose rate with control station dose rates and preoperational background dose rates for the same location.

No direct radiation dose levels above the normal variation in natural background were found for the period January 1, 1981 to December 31, 1981.

TABLE 1A-1Q3

GASEOUS EFFLUENTS--SUMMATION OF ALL RELEASES  
Farley Unit 1 - 3rd Quarter, 1981

	UNITS	QTR 3	Est Error
A. Fission & activation gases:			
1. Total release	Ci	1.99E 01	2.16E-01
2. Average Release rate for period	uCi/sec	2.51E 00	
3. % of Technical specification limit	%	3.11E-05*	
		8.47E-05**	
B. Iodines			
1. Total iodine-131	Ci	2.41E-03	1.04E-04
2. Average Release rate for period	uCi/sec	3.03E-04	
3. % of Technical specification limit	%	9.28E-07***	
C. Particulates			
1. Particulates with $T_{1/2} > 8$ days	Ci	2.00E-04	3.34E-05
2. Average Release rate for period	uCi/sec	2.51E-05	
3. % of Technical specification limit	%	1.91E-06***	
4. Gross alpha radioactivity	Ci	0.00E 00	
D. Tritium			
1. Total release	Ci	1.48E 01	7.72E-02
2. Average Release rate for period	uCi/sec	1.87E 00	
3. % of Technical specification limit	%	1.73E-07***	

\*: Whole body limit (<500 mrem/yr)

\*\*: Extrem. limit (<3000 mrem/yr)

\*\*\*: % of 0.3 mrem/yr for all 19 isotopes



TABLE 1A-1Q4

GASEOUS EFFLUENTS--SUMMATION OF ALL RELEASES  
Farley Unit 1 - 4th Quarter, 1981

	UNITS	QTR 4	Est Error
A. Fission & activation gases:			
1. Total release	Ci	3.23E 01	6.82E-01
2. Average Release rate for period	uCi/sec	4.16E 00	
3. % of Technical specification limit	%	4.41E-05*	
		1.17E-04**	
B. Iodines			
1. Total iodine-131	Ci	6.82E-07	1.37E-07
2. Average Release rate for period	uCi/sec	8.77E-08	
3. % of Technical specification limit	%	2.75E-10***	
C. Particulates			
1. Particulates with T <sub>1/2</sub> > 8 days	Ci	4.72E-05	1.36E-05
2. Average Release rate for period	uCi/sec	6.07E-06	
3. % of Technical specification limit	%	1.14E-05***	
4. Gross alpha radioactivity	Ci	0.00E 00	
D. Tritium			
1. Total release	Ci	2.35E 01	1.93E-01
2. Average Release rate for period	uCi/sec	3.02E 00	
3. % of Technical specification limit	%	2.80E-07***	

\*: Whole body limit (<500 mrem/yr)

\*\*: Extrem. limit (<3000 mrem/yr)

\*\*\*: % of 6.3 mrem/yr for all 19 isotopes

TABLE 1A-2Q3

GASEOUS EFFLUENTS--SUMMATION OF ALL RELEASES  
Farley Unit 2 - 3rd Quarter, 1981

	UNITS	QTR 3	Est Error
<hr/>			
A. Fission & activation gases:			
1. Total release	Ci	1.96E 00	4.83E-03
2. Average Release rate for period	uCi/sec	2.46E-01	
3. % of Technical specification limit	%	2.72E-06*	
		6.67E-06**	
B. Iodines			
1. Total iodine-131	Ci	1.71E-05	1.44E-05
2. Average Release rate for period	uCi/sec	2.16E-06	
3. % of Technical specification limit	%	3.95E-09***	
C. Particulates			
1. Particulates with T <sub>1/2</sub> > 8 days	Ci	9.91E 00	1.31E 00
2. Average Release rate for period	uCi/sec	1.25E 00	
3. % of Technical specification limit	%	2.73E-01***	
4. Gross alpha radioactivity	Ci	0.00E 00	
D. Tritium			
1. Total release	Ci	6.43E 00	2.00E-01
2. Average Release rate for period	uCi/sec	8.09E-01	
3. % of Technical specification limit	%	9.19E-08***	

\*: Whole body limit (<500 mrem/yr)

\*\*: Extrem. limit (<3000 mrem/yr)

\*\*\*: % of 6.3 mrem/yr for all 19 isotopes

TABLE 1A-2Q4

GASEOUS EFFLUENTS--SUMMATION OF ALL RELEASES  
Farley Unit 2 - 4th Quarter, 1981

	UNITS	QTR 4	Est Error
A. Fission & activation gases:			
1. Total release	Ci	6.40E-01	1.59E-01
2. Average Release rate for period	uCi/sec	8.05E-02	
3. % of Technical specification limit	%	8.90E-07*	
		2.15E-06**	
B. Iodines			
1. Total iodine-131	Ci	0.00E 00	0.00E 00
2. Average Release rate for period	uCi/sec	0.00E 00	
3. % of Technical specification limit	%	0.00E 00***	
C. Particulates			
1. Particulates with T1/2 > 8 days	Ci	1.50E 02	8.78E-01
2. Average Release rate for period	uCi/sec	1.89E 01	
3. % of Technical specification limit	%	5.17E-02***	
4. Gross alpha radioactivity	Ci	0.00E 00	
D. Tritium			
1. Total release	Ci	1.16E 02	8.48E-01
2. Average Release rate for period	uCi/sec	1.40E 01	
3. % of Technical specification limit	%	1.35E-06***	

\*: Whole body limit (<500 mrem/yr)

\*\*: Extrem. limit (<3000 mrem/yr)

\*\*\*: % of 6.3 mrem/yr for all 19 isotopes

TABLE 1B-2Q3

GASEOUS EFFLUENTS--ELEVATED RELEASE  
Farley Unit 2 - 3rd Quarter, 1981

Nuclides Released	Unit	CONTINUOUS Mode QTR# 3	BATCH Mode QTR# 3
1. Fission gases			
Ar-41	Ci	3.36E-05	1.14E-04
Xe-137	Ci	0.00E+00	0.00E+00
Kr-90	Ci	0.00E+00	0.00E+00
Xe-135M	Ci	0.00E+00	0.00E+00
Kr-85	Ci	0.00E+00	4.23E-03
Xe-138	Ci	0.00E+00	0.00E+00
Kr-87	Ci	0.00E+00	0.00E+00
Kr-85M	Ci	0.00E+00	1.29E-03
Xe-134M	Ci	1.04E-05	1.40E-03
Xe-134	Ci	0.00E+00	2.66E-02
Kr-89	Ci	0.00E+00	0.00E+00
Kr-88	Ci	0.00E+00	0.00E+00
Xe-131M	Ci	1.44E-04	0.00E+00
Xe-133	Ci	3.09E-05	1.57E+00
Total for period	Ci	3.59E-04	1.61E+00
2. Iodines			
I-133	Ci	2.96E-03	1.93E-09
I-131	Ci	1.79E-06	6.13E-09
Total for period	Ci	2.96E-03	5.05E-09
3. Particulates			
Sb-124	Ci	1.53E-07	1.62E-10
Co-60	Ci	7.80E-01	1.90E-09
Ni-63	Ci	8.27E-08	3.4E-11
Fe-59	Ci	4.11E-08	0.00E+00
Na-24	Ci	3.76E-08	3.6E-11
Cs-137	Ci	3.39E-08	0.00E+00
Co-57	Ci	4.07E-08	1.1E-10
Co-60	Ci	6.80E-08	9.9E-11
Co-58	Ci	3.22E-08	0.00E+00
Co-57	Ci	4.8E-06	6.7E-11
Co-58	Ci	1.3E-07	4.8E-10
Co-59	Ci	4.7E-05	6.6E-10
Co-60	Ci	4.9E-06	1.1E-09
Co-61	Ci	1.0E-05	4.0E-10
Co-62	Ci	3.00E-08	7.6E-11
Co-64	Ci	0.00E+00	0.00E+00
Co-65	Ci	0.00E+00	0.00E+00
Co-66	Ci	0.00E+00	0.00E+00
Total for period	Ci	7.82E-01	5.27E-09

TABLE 1B-204

GASEOUS EFFLUENTS--ELEVATED RELEASE  
Farley Unit 2 - 4th Quarter, 1981

Nuclides Released	Unit	CONTINUOUS Mode QTR# 4	BATCH Mode QTR# 4
<b>1. Fission gases</b>			
Ar-41	Ci	2.76E-05	0.00E+00
Xe-137	Ci	0.00E+00	0.00E+00
Kr-90	Ci	0.00E+00	0.00E+00
Xe-135M	Ci	0.00E+00	0.00E+00
Kr-85M	Ci	0.00E+00	1.23E-03
Xe-138	Ci	0.00E+00	0.00E+00
Kr-87	Ci	0.00E+00	0.00E+00
Kr-85M	Ci	0.00E+00	0.00E+00
Xe-135M	Ci	7.14E-07	2.59E-04
Xe-135M	Ci	0.00E+00	0.00E+00
Kr-89	Ci	0.00E+00	0.00E+00
Kr-88	Ci	0.00E+00	0.00E+00
Xe-131M	Ci	7.38E-08	0.00E+00
Xe-133	Ci	1.72E-04	2.04E-01
Total for period	Ci	2.00E-04	3.08E-01
<b>2. Iodines</b>			
I-133	Ci	0.00E+00	0.00E+00
I-131	Ci	0.00E+00	0.00E+00
Total for period	Ci	0.00E+00	0.00E+00
<b>3. Particulates</b>			
Sb-124	Ci	0.00E+00	0.00E+00
Co-60	Ci	1.45E-05	0.00E+00
Fe-59	Ci	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00
Na-24	Ci	0.00E+00	0.00E+00
Pb-210	Ci	0.00E+00	0.00E+00
Po-210	Ci	0.00E+00	0.00E+00
Ra-226	Ci	0.00E+00	0.00E+00
Th-230	Ci	0.00E+00	0.00E+00
U-234	Ci	0.00E+00	0.00E+00
U-238	Ci	0.00E+00	0.00E+00
V-50	Ci	0.00E+00	0.00E+00
Zn-65	Ci	0.00E+00	0.00E+00
Zn-70	Ci	0.00E+00	0.00E+00
Zn-71	Ci	0.00E+00	0.00E+00
Zn-72	Ci	0.00E+00	0.00E+00
Zn-73	Ci	0.00E+00	0.00E+00
Zn-74	Ci	0.00E+00	0.00E+00
Zn-75	Ci	0.00E+00	0.00E+00
Zn-76	Ci	0.00E+00	0.00E+00
Zn-77	Ci	0.00E+00	0.00E+00
Zn-78	Ci	0.00E+00	0.00E+00
Zn-79	Ci	0.00E+00	0.00E+00
Zn-80	Ci	0.00E+00	0.00E+00
Zn-81	Ci	0.00E+00	0.00E+00
Zn-82	Ci	0.00E+00	0.00E+00
Zn-83	Ci	0.00E+00	0.00E+00
Zn-84	Ci	0.00E+00	0.00E+00
Zn-86	Ci	0.00E+00	0.00E+00
Zn-88	Ci	0.00E+00	0.00E+00
Zn-90	Ci	0.00E+00	0.00E+00
Total for period	Ci	2.81E-05	0.00E+00

TABLE 1C-1Q3

GASEOUS EFFLUENTS--GROUND LEVEL RELEASE  
Farley Unit 1 - 3rd Quarter, 1981

Nuclides Released	Unit	CONTINUOUS Mode QTR# 3	BATCH Mode QTR# 3
1. Fission gases			
Ar-41	CC1	3.72E-05	4.42E-04
Xe-137	CC1	0.00E+00	3.36E-03
Kr-90	CC1	0.00E+00	0.00E+00
Xe-135M	CC1	2.51E-11	0.00E+00
Kr-85	CC1	6.48E-07	3.80E-02
Xe-138	CC1	1.77E-11	4.63E-06
Kr-87	CC1	1.04E-06	1.49E-05
Kr-85M	CC1	0.00E+00	6.63E-04
Xe-135	CC1	1.02E-05	1.43E-02
Xe-135M	CC1	2.11E-05	3.25E-02
Kr-89	CC1	0.00E+00	0.00E+00
Kr-88	CC1	1.95E-06	3.41E-04
Xe-134m	CC1	4.56E-08	3.11E-03
Xe-133	CC1	7.56E-05	6.66E+00
Total for period	CC1	1.48E-04	3.75E+00
2. Iodines			
I-133	CC1	1.41E-08	0.00E+00
I-131	CC1	2.72E-06	0.00E+00
Total for period	CC1	2.73E-06	0.00E+00
3. Particulates			
Sb-124	CC1	0.00E+00	0.00E+00
Co-60	CC1	3.34E-09	0.00E+00
Ni-63	CC1	2.76E-08	0.00E+00
Fe-59	CC1	0.00E+00	0.00E+00
Mn-54	CC1	0.00E+00	0.00E+00
Cs-137	CC1	0.00E+00	0.00E+00
Co-58	CC1	9.38E-09	0.00E+00
Ni-62	CC1	0.00E+00	0.00E+00
Cs-134	CC1	1.76E-09	0.00E+00
W-187	CC1	7.74E-10	0.00E+00
W-186	CC1	0.00E+00	0.00E+00
Co-57	CC1	1.14E-08	0.00E+00
Co-56	CC1	1.93E-09	0.00E+00
Co-55	CC1	0.00E+00	0.00E+00
Co-54	CC1	0.00E+00	0.00E+00
Co-53	CC1	0.00E+00	0.00E+00
Co-52	CC1	0.00E+00	0.00E+00
Co-51	CC1	0.00E+00	0.00E+00
Co-50	CC1	0.00E+00	0.00E+00
Total for period	CC1	5.62E-08	0.00E+00

GASEOUS EFFLUENTS--GROUND LEVEL RELEASE  
Farley Unit 1 - 4th Quarter, 1981

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TABLE 1C-2Q3

GASEOUS EFFLUENTS--GROUND LEVEL RELEASE  
Farley Unit 2 - 3rd Quarter, 1981

Nuclides Released	Unit	CONTINUOUS Mode QTR# 3	BATCH Mode QTR# 3
1. Fission gases			
Ar-41	Ci	1.72E-05	2.26E-05
Xe-137	Ci	1.79E-06	0.00E+00
Kr-90	Ci	1.52E-12	0.00E+00
Xe-135M	Ci	2.84E-08	0.00E+00
Kr-85	Ci	6.06E-06	3.35E-04
Xe-138	Ci	8.09E-08	0.00E+00
Kr-87	Ci	4.85E-08	0.00E+00
Kr-85M	Ci	1.93E-07	2.26E-04
Xe-135	Ci	3.10E-06	7.77E-04
Xe-135M	Ci	3.66E-07	2.29E-02
Kr-89	Ci	3.77E-08	0.00E+00
Kr-88	Ci	6.31E-08	0.00E+00
Xe-131M	Ci	1.86E-05	2.26E-03
Xe-133	Ci	1.10E-04	1.11E-01
Total for period	Ci	1.66E-04	6.50E-01
2. Iodines			
I-133	Ci	4.87E-04	5.32E-10
I-131	Ci	1.53E-05	6.16E-10
Total for period	Ci	5.02E-04	9.98E-10
3. Particulates			
Sb-124	Ci	4.66E-12	7.19E-11
Co-60	Ci	1.54E-01	9.66E-10
Ni-63	Ci	3.36E-11	1.20E-11
Fe-59	Ci	0.00E+00	0.00E+00
Mn-54	Ci	6.99E-13	6.43E-12
Cs-136	Ci	0.00E+00	0.00E+00
Co-58	Ci	2.44E-12	6.66E-11
Ni-63	Ci	5.03E-12	0.00E+00
Co-57	Ci	4.39E-09	3.00E-12
Co-58	Ci	6.30E-07	1.11E-11
Na-24	Ci	6.00E-11	4.04E-11
Na-22	Ci	4.80E-04	9.91E-11
Co-57	Ci	2.93E-06	3.33E-10
Co-58	Ci	0.00E+00	7.77E-11
Co-59	Ci	0.00E+00	1.11E-11
Co-60	Ci	0.00E+00	0.00E+00
Co-61	Ci	0.00E+00	0.00E+00
Total for period	Ci	1.55E-01	1.04E-09



GASEOUS EFFLUENTS--GROUND LEVEL RELEASE  
Farley Unit 2 - 4th Quarter, 1981

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TABLE 2A-1

LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES  
Farley Unit 1 - 2nd Half, 1981

	Unit	Quarter 3, 81	Quarter 4, 81
A. Fission and activation products			
1. Total release	Ci	4.42E 01	1.00E 02
2. Average diluted concentration During period Note (1)	uCi/ml	3.74E-07	2.21E-05
3. Percent of applicable limit During period Note (1)	%	1.08E-01	3.64E-03
B. Tritium			
1. Total release	Ci	4.41E 01	1.00E 02
2. Average diluted concentration During period Note (1)	uCi/ml	3.73E-07	2.21E-05
3. Percent of applicable limit During period Note (1)	%	2.71E-02	7.36E-01
C. Dissolved and entrained gases			
1. Total release	Ci	2.36E-02	3.70E-03
2. Average diluted concentration During period Note (1)	uCi/ml	5.67E-10	3.13E-10
3. Percent of applicable limit During period Note (1)	%	1.42E-03	2.04E-03
D. Gross alpha radioactivity			
1. Total release	Ci	0.00E 00	0.00E 00
E. Volume of waste released (prior to dilution)	liters	5.08E 07	2.71E 06
F. Volume of dilution water used During period Note (1)	liters	5.05E 10	4.52E 09

## NOTE:

(1) During period of discharge

TABLE 2A-2

LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES  
Farley Unit 2 - 2nd Half, 1981

	Unit	Quarter 3, 81	Quarter 4, 81
A. Fission and activation products			
1. Total release	Ci	1.44E 02	1.06E 02
2. Average diluted concentration			
During period Note (1)	uCi/ml	7.05E-06	5.35E-06
3. Percent of applicable limit			
During period Note (1)	%	9.66E-03	4.18E-04
B. Tritium			
1. Total release	Ci	1.44E 02	1.06E 02
2. Average diluted concentration			
During period Note (1)	uCi/ml	7.05E-06	5.35E-06
3. Percent of applicable limit			
During period Note (1)	%	2.35E-01	1.78E-01
C. Dissolved and entrained gases			
1. Total release	Ci	3.64E-02	5.05E-03
2. Average diluted concentration			
During period Note (1)	uCi/ml	1.78E-09	2.55E-10
3. Percent of applicable limit			
During period Note (1)	%	4.45E-03	6.37E-04
D. Gross alpha radioactivity			
1. Total release	Ci	0.00E 00	0.00E 00
E. Volume of waste released	liters	5.06E 07	5.26E 07
(prior to dilution)			
F. Volume of dilution water used			
During period Note (1)	liters	2.04E 10	1.98E 10

## NOTE:

(1) During period of discharge

TABLE 2B-1B

LIQUID EFFLUENTS-BATCH  
Farley Unit 1 - 2nd Half, 1981

LIQUID EFFLUENTS-CONTINUOUS July 81 THROUGH Dec. 81					
Nuclides released	Unit	Quarter 3, 81 Measured	81 MDC*	Quarter 4, 81 Measured	81 MDC*
Sr-89	Ci	0.00E 00		0.00E 00	
Sr-90	Ci	0.00E 00		0.00E 00	
H3	Ci	3.30E-01		2.34E-02	
P-32	Ci	0.00E 00		0.00E 00	
Fe-55	Ci	0.00E 00		0.00E 00	
Co-57	Ci	1.41E-04		0.00E 00	
Ce-144	Ci	0.00E 00		0.00E 00	
Tc-99M	Ci	0.00E 00		0.00E 00	
Ce-141	Ci	0.00E 00		0.00E 00	
Np-239	Ci	0.00E 00		0.00E 00	
Cr-51	Ci	0.00E 00		0.00E 00	
I-131	Ci	1.51E-02		0.00E 00	
Ru-103	Ci	0.00E 00		0.00E 00	
I-133	Ci	3.21E-03		0.00E 00	
Ba-140	Ci	0.00E 00		0.00E 00	
As-76	Ci	0.00E 00		0.00E 00	
Cs-134	Ci	7.54E-06		0.00E 00	
Ru-106	Ci	0.00E 00		0.00E 00	
Cs-137	Ci	1.71E-05		0.00E 00	
Mo-99	Ci	0.00E 00		0.00E 00	
Zr-95	Ci	0.00E 00		0.00E 00	
Nb-95	Ci	0.00E 00		0.00E 00	
I-132	Ci	0.00E 00		0.00E 00	
Co-58	Ci	0.00E 00		0.00E 00	
Cs-136	Ci	0.00E 00		0.00E 00	
Mn-54	Ci	0.00E 00		2.63E-06	
Ag-110M	Ci	0.00E 00		0.00E 00	
Sr-91	Ci	0.00E 00		0.00E 00	
Zn-65	Ci	0.00E 00		0.00E 00	
I-135	Ci	5.57E-05		0.00E 00	
Fe-59	Ci	0.00E 00		0.00E 00	
Co-60	Ci	5.93E-05		4.70E-06	
Cu-64	Ci	7.29E-03	<4.87E-02	0.00E 00	<2.14E-03
Na-24	Ci	0.00E 00		0.00E 00	
La-140	Ci	0.00E 00		0.00E 00	
Totals	Ci	3.68E-01	<4.87E-02	2.34E-02	<2.14E-03
Xe-133	Ci	1.21E-02		0.00E 00	

\* MDC's are those MDC's > detection requirement

TABLE 1B-1Q3

GASEOUS EFFLUENTS--ELEVATED RELEASE  
Farley Unit 1 - 3rd Quarter, 1981

Nuclides Released	Unit	CONTINUOUS Mode QTR# 3	BATCH Mode QTR# 3
1. Fission gases			
Ar-41	Ci	7.86E-03	5.39E-03
Xe-137	Ci	0.00E+00	1.31E-03
Kr-90	Ci	0.00E+00	0.00E+00
Xe-135M	Ci	0.00E+00	0.00E+00
Kr-88	Ci	3.10E-06	1.36E-00
Xe-138	Ci	0.00E+00	1.81E-04
Kr-87M	Ci	4.36E-03	9.03E-04
Xe-135M	Ci	0.00E+00	5.99E-02
Xe-135	Ci	3.15E-02	5.85E-01
Xe-136M	Ci	9.96E-06	1.64E-01
Kr-89	Ci	0.00E+00	0.00E+00
Kr-88	Ci	1.89E-09	1.50E-02
Xe-134M	Ci	1.69E-05	1.91E-01
Xe-133	Ci	7.09E-02	1.31E+01
Total for period	Ci	1.03E-01	1.51E+01
2. Iodines			
I-133	Ci	6.59E-03	0.00E+00
I-131	Ci	2.41E-03	3.30E-08
Total for period	Ci	8.99E-03	3.30E-08
3. Particulates			
Sb-124	Ci	0.00E+00	0.00E+00
Co-60	Ci	5.53E-06	1.32E-10
Cr-51	Ci	0.00E+00	0.00E+00
Fe-59	Ci	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00
Na-24	Ci	0.00E+00	0.00E+00
Os-196	Ci	0.00E+00	0.00E+00
Co-60	Ci	3.83E-06	6.53E-10
Co-57	Ci	0.00E+00	0.00E+00
Co-58	Ci	3.27E-06	0.00E+00
Co-59	Ci	3.37E-06	0.00E+00
Co-60	Ci	0.00E+00	0.00E+00
Co-61	Ci	6.58E-03	0.00E+00
Co-62	Ci	1.63E-04	1.65E-08
Co-63	Ci	7.90E-06	0.00E+00
Co-64	Ci	0.00E+00	0.00E+00
Co-65	Ci	1.09E-05	1.33E-11
Co-66	Ci	0.00E+00	1.33E-11
Total for period	Ci	5.78E-03	1.74E-08

TABLE 1B-1Q4

GASEOUS EFFLUENTS--ELEVATED RELEASE  
Farley Unit 1 - 4th Quarter, 1981

Nuclides Released	Unit	CONTINUOUS	BATCH
		Mode QTR# 4	Mode QTR# 4
-----			
1. Fission gases			
Ar-41	CI	1.01E-04	1.60E-02
Xe-137	CI	0.00E-00	0.12E-03
Kr-90	CI	1.39E-08	0.00E-00
Xe-135M	CI	0.00E-00	0.00E-00
Kr-85	CI	7.52E-07	1.00E-00
Xe-138	CI	0.00E-00	12.00E-03
Kr-87	CI	0.00E-00	0.00E-00
Kr-85M	CI	1.65E-09	3.61E-03
Xe-135	CI	1.15E-05	17.00E-02
Xe-135M	CI	3.12E-07	9.34E-02
Kr-89	CI	0.00E-00	0.00E-00
Kr-88	CI	0.00E-00	0.00E-00
Xe-134M	CI	1.39E-07	2.37E-01
Xe-136	CI	2.27E-04	1.31E-01
Total for period	CI	3.41E-04	1.59E-01
2. Iodines			
I-133	CI	2.47E-04	0.00E-00
I-131	CI	6.70E-07	4.58E-10
Total for period	CI	2.47E-04	4.58E-10
3. Particulates			
Sb-124	CI	0.00E-00	0.00E-00
Co-60	CI	3.66E-05	2.05E-10
Fe-59	CI	0.00E-00	0.00E-00
Fe-55	CI	0.00E-00	0.00E-00
Kr-85	CI	1.27E-06	0.00E-00
Cs-137	CI	0.00E-00	0.00E-00
Cs-134	CI	3.56E-06	9.34E-10
Co-60	CI	0.00E-00	0.00E-00
Na-24	CI	0.00E-00	0.00E-00
Cs-137	CI	0.00E-00	0.00E-00
Cs-134	CI	0.00E-00	0.00E-00
Na-24	CI	0.00E-00	0.00E-00
Fe-55	CI	2.47E-04	0.00E-00
Fe-59	CI	0.00E-00	3.23E-10
Co-60	CI	0.00E-00	0.00E-00
Cs-137	CI	0.00E-00	0.00E-00
Na-24	CI	0.00E-00	0.00E-00
Fe-55	CI	0.00E-00	6.64E-11
Co-60	CI	0.00E-00	6.64E-11
Total for period	CI	2.93E-04	1.62E-09

TABLE 2B-1C

LIQUID EFFLUENTS-CONTINUOUS  
Farley Unit 1 - 2nd Half, 1981

LIQUID EFFLUENTS-WMT BATCHES July 81 THROUGH Dec. 81					
Nuclides released	Unit	Quarter 3, Measured	81 MDC*	Quarter 4, Measured	81 MDC*
Sr-89	Cl	0.00E 00		0.00E 00	
Sr-90	Cl	0.00E 00		0.00E 00	
H3	Cl	4.40E 01		1.00E 02	
P-32	Cl	0.00E 00		0.00E 00	
Fe-55	Cl	0.00E 00		0.00E 00	
Co-57	Cl	4.62E-06		2.30E-06	
Ce-144	Cl	0.00E 00		0.00E 00	
Tc-99M	Cl	0.00E 00		0.00E 00	
Ce-141	Cl	0.00E 00		0.00E 00	
Np-239	Cl	0.00E 00		0.00E 00	
Cr-51	Cl	4.75E-05		9.05E-04	
I-131	Cl	1.29E-04		1.68E-06	
Ru-103	Cl	0.00E 00		0.00E 00	
I-133	Cl	4.56E-06		0.00E 00	
Ba-140	Cl	0.00E 00		0.00E 00	
As-76	Cl	0.00E 00		0.00E 00	
Cs-134	Cl	3.70E-05		7.77E-05	
Ru-106	Cl	2.08E-04		1.36E-06	
Cs-137	Cl	7.21E-05		1.62E-04	
Mo-99	Cl	0.00E 00		0.00E 00	
Zr-95	Cl	1.80E-06		1.66E-05	
Nb-95	Cl	2.63E-04		1.54E-04	
I-132	Cl	0.00E 00		0.00E 00	
Co-58	Cl	5.75E-04		2.63E-03	
Cs-136	Cl	5.31E-05		9.78E-06	
Mn-54	Cl	2.26E-04		3.41E-04	
Ag-110M	Cl	1.21E-03		3.78E-04	
Sr-91	Cl	0.00E 00		0.00E 00	
Zn-65	Cl	0.00E 00		1.78E-06	
I-135	Cl	6.15E-08		0.00E 00	
Fe-59	Cl	1.88E-04		5.93E-05	
Co-60	Cl	3.38E-03		2.79E-03	
Cu-64	Cl	0.00E 00	<3.46E-02	0.00E 00	<4.99E-03
Na-24	Cl	0.00E 00		2.58E-07	
La-140	Cl	9.25E-05		1.28E-06	
Totals	Cl	4.40E 01	<3.46E-02	1.00E 02	<4.99E-03
Xe-133	Cl	1.65E-02		3.70E-03	
Xe-135	Cl	1.43E-05		0.00E 00	

\*MDC's are those MDC's > detection requirement

TABLE 2B-2B

LIQUID EFFLUENTS-BATCH  
Farley Unit 2 - 2nd Half, 1981

LIQUID EFFLUENTS-CONTINUOUS July 81 THROUGH Dec. 81					
Nuclides released	Unit	Quarter 3, 81 Measured	MDC*	Quarter 4, 81 Measured	MDC*
Sr-89	Cl	0.00E 00		0.00E 00	
Sr-90	Cl	0.00E 00		0.00E 00	
H3	Cl	5.86E-02		1.13E-01	
P-32	Cl	0.00E 00	<6.66e-04	0.00E 00	<1.04e-03
Fe-55	Cl	0.00E 00	<4.93e-03	0.00E 00	<4.31e-04
Co-57	Cl	0.00E 00		0.00E 00	
Ce-144	Cl	0.00E 00		0.00E 00	
Tc-99M	Cl	0.00E 00		0.00E 00	
Ce-141	Cl	0.00E 00		0.00E 00	
Np-239	Cl	0.00E 00		0.00E 00	
Cr-51	Cl	0.00E 00		0.00E 00	
I-131	Cl	2.09E-04		0.00E 00	
Ru-103	Cl	0.00E 00		0.00E 00	
I-133	Cl	0.00E 00		0.00E 00	
Ba-140	Cl	0.00E 00		0.00E 00	
As-76	Cl	0.00E 00		0.00E 00	
Cs-134	Cl	2.42E-05		0.00E 00	
Ru-106	Cl	0.00E 00		0.00E 00	
Cs-137	Cl	6.36E-05		0.00E 00	
Mo-99	Cl	0.00E 00		0.00E 00	
Zr-95	Cl	0.00E 00		0.00E 00	
Nb-95	Cl	1.46E-04		0.00E 00	
I-132	Cl	0.00E 00		0.00E 00	
Co-58	Cl	1.67E-04		0.00E 00	
Cs-136	Cl	0.00E 00		0.00E 00	
Mn-54	Cl	1.20E-04		0.00E 00	
Ag-110M	Cl	6.12E-04		0.00E 00	
Sr-91	Cl	0.00E 00		0.00E 00	
Zn-65	Cl	0.00E 00		0.00E 00	
I-135	Cl	0.00E 00		0.00E 00	
Fe-59	Cl	1.34E-04		0.00E 00	
Co-60	Cl	1.34E-03		0.00E 00	
Cu-64	Cl	0.00E 00	<2.16e-02	0.00E 00	<5.34e-02
Na-24	Cl	7.61E-03		0.00E 00	
La-140	Cl	5.42E-06		0.00E 00	
Totals	Cl	6.91E-02	<2.23e-02	1.13E-01	<5.44e-02
Xe-133	Cl	2.04E-05		0.00E 00	

\*MDC's are those MDC's > detection requirement



TABLE 2B-2C

LIQUID EFFLUENTS-CONTINUOUS  
Farley Unit 2 - 2nd Half, 1981

LIQUID EFFLUENTS-WMT BATCHES July 81 THROUGH Dec. 81					
Nuclides released	Unit	Quarter 3, Measured	SI MDC*	Quarter 4, Measured	SI MDC*
Sr-89	Cl	0.00E 00		0.00E 00	
Sr-90	Cl	0.00E 00		0.00E 00	
H3	Cl	1.44E 02		1.06E 02	
P-32	Cl	0.00E 00	<9.96e-04	6.29E-04	<5.52e-04
Fe-55	Cl	0.00E 00	<1.50e-02	0.00E 00	<7.24e-03
Ca-57	Cl	3.59E-06		0.00E 00	
Ca-144	Cl	0.00E 00		0.00E 00	
Tc-99M	Cl	1.57E-05		0.00E 00	
Co-141	Cl	1.00E 03		0.00E 00	
Np-239	Cl	1.12E-04		0.00E 00	
Cr-51	Cl	8.09E-05		1.00E-04	
I-131	Cl	1.22E-04		1.10E-05	
Ru-103	Cl	0.00E 00		1.65E-05	
I-133	Cl	8.91E-06		0.00E 00	
Ba-140	Cl	0.00E 00		1.85E-06	
As-76	Cl	0.00E 00		0.00E 00	
Cs-134	Cl	4.88E-05		0.00E 00	
Ru-106	Cl	7.73E-05		0.00E 00	
Cs-137	Cl	2.42E-05		8.75E-06	
Mo-99	Cl	5.87E-06		0.00E 00	
Zr-95	Cl	2.74E-05		0.00E 00	
Nb-95	Cl	3.24E-04		4.48E-05	
I-132	Cl	1.22E-05		0.00E 00	
Co-58	Cl	1.98E-03		1.04E-03	
Cs-136	Cl	3.04E-05		4.79E-06	
Mn-54	Cl	2.83E-04		5.81E-05	
Ag-110M	Cl	1.38E-03		2.07E-04	
Sr-91	Cl	0.00E 00		0.00E 00	
Zn-65	Cl	9.11E-07		0.00E 00	
I-135	Cl	1.31E-06		0.00E 00	
Fe-59	Cl	1.53E-04		1.24E-05	
Cu-60	Cl	2.58E-03		7.51E-04	
Cu-64	Cl	6.27E-06	<3.51e-02	5.54E-05	<9.71e-02
Na-24	Cl	4.29E-04		1.39E-07	
La-140	Cl	4.96E-05		5.43E-06	
Totals	Cl	1.44E 02	<3.61e-02	1.06E 02	<9.76e-02
Xe-133	Cl	3.64E-02		5.05E-03	
Xe-135	Cl	2.96E-06		5.88E-06	

\*MDC's are those MDC's detection requirement

TABLE 3 (con't)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS  
Farley Nuclear Plant - 2nd Half, 1981

## 3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
13	Chem-Nuclear Transport(11) Hittman Transport(2)	Chem-Nuclear Systems, Incorporated Barnwell, South Carolina

4. Type Of Container (1a)	Type of Container (1b)
LSA, 170 ft <sup>3</sup> cylindrical containers	DOT17H (55 gal drums), 128 ft <sup>3</sup> wooden boxes

5. Solidification Agent (1a)	Solidification Agent (1b)
cement	N/A

## B. IRRADIATED FUEL SHIPMENTS (Disposition)

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

TABLE 3

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS  
Farley Nuclear Plant - 2nd Half, 1981

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

1. Type of Waste	UNIT	6-MONTH
a. Spent resins, filter sludges, evaporator bottoms, etc.	$m^3$ Ci	1.64 E 01 1.15 E 02
b. Dry compressible waste, contaminated equip, etc.	$m^3$ Ci	1.89 E 02 2.47 E 00
c. Irradiated components, control rods, etc.	$m^3$ Ci	None None
d. Other (describe)	$m^3$ Ci	None None
2. Estimate of major nuclide composition	%	Ci
a. Cs134	2.20 E 00	2.49 E 00
Co58	1.69 E 01	1.95 E 01
Co60	7.21 E 01	8.29 E 01
Cs137	4.00 E-01	5.08 E-01
Mn54	7.90 E 00	9.07 E 00
Cr51	5.00 E-01	5.24 E-01
b. Co58	7.00 E 00	1.73 E-01
Co60	8.06 E 01	2.00 E 00
Cs134	5.40 E 00	1.34 E-01
Cs137	7.00 E 00	1.73 E-01

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-81 ) 9-30-81

STABILITY CLASS: A

ELEVATION: 10.0m

Wind Speed (mph) at 10.0m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	8	2	0	0	0	0	10
NNE	2	4	0	0	0	0	6
NE	18	63	1	0	0	0	82
ENE	10	12	0	0	0	0	22
E	3	2	0	0	0	0	5
ESE	6	11	1	0	0	0	18
SE	2	16	3	0	0	0	21
SSE	1	2	0	0	0	0	3
S	0	3	1	0	0	0	4
SSW	30	55	39	0	0	0	124
SW	2	2	0	0	0	0	4
WSW	9	1	0	0	0	0	10
W	8	22	0	0	0	0	30
WNW	2	2	2	0	0	0	6
NW	5	8	1	0	0	0	14
NNW	20	16	2	0	0	0	38
VARIABLE	472	449	41	1	0	0	963
	126	221	50	0	0	0	397

Total

Periods of calm(hours): 69

35

Hours of missing data: 0

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-81 ) 9-30-81

STABILITY CLASS: A

ELEVATION: 45.7m

Wind Speed (mph) at 45.7m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	4	5	1	0	0	0	10
NNE	0	3	0	0	0	0	3
NE	8	5	1	0	0	0	14
ENE	6	11	0	0	0	0	17
E	1	0	0	0	0	0	1
ESE	0	1	0	0	0	0	1
SE	1	10	0	0	0	0	11
SSE	1	14	0	0	0	0	15
S	1	4	0	0	0	0	5
SSW	5	0	1	0	0	0	6
SW	2	1	0	0	0	0	3
WSW	9	0	0	0	0	0	9
W	2	1	0	0	0	0	3
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	2	10	6	0	0	0	18
VARIABLE	56	93	16	0	0	0	165
	42	65	9	0	0	0	116

Total

Periods of calm(hours): 1148

Hours of missing data: 0

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-81 ) 9-30-81

STABILITY CLASS: B

ELEVATION: 10.0m

Wind Speed (mph) at 10.0m level

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

Total  
Periods of calm(hours): 6  
Hours of missing data: 0

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-81 ) 9-30-81

STABILITY CLASS: B

ELEVATION: 45.7m

## Wind Speed (mph) at 45.7m level

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

Total

Periods of calm(hours): 26

Hours of missing data: 0

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-81 ) 9-30-81

STABILITY CLASS: C

ELEVATION: 10.0m

## Wind Speed (mph) at 10.0m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	2	1	0	0	0	0	3
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	1	0	0	0	0	0	1
VARIABLE	17	4	1	0	0	0	22
	3	1	0	0	0	0	4

Total

Periods of calm(hours): 5

Hours of missing data: 0



TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-81 ) 9-30-81

STABILITY CLASS: C

ELEVATION: 45.7m

## Wind Speed (mph) at 45.7m level

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

Total

40

Periods of calm(hours): 24

Hours of missing data: 0

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 7 -1-81 ) 9-30-81  
STABILITY CLASS: D  
ELEVATION: 10.0m

## Wind Speed (mph) at 10.0m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	4	0	0	0	0	0	4
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	2	0	0	0	0	0	2
E	4	0	0	0	0	0	4
ESE	1	0	0	0	0	0	1
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	1	1	1	0	0	0	3
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	4	1	0	0	0	0	5
WNW	1	0	0	0	0	0	1
NW	1	0	0	0	0	0	1
NNW	4	0	0	0	0	0	4
VARIABLE	51	10	0	0	0	0	61
	22	2	1	0	0	0	25

Total  
Periods of calm(hours): 23  
Hours of missing data: 0

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 7 -1-81 ) 9-30-81  
STABILITY CLASS: D  
ELEVATION: 45.7m

## Wind Speed (mph) at 45.7m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	1	0	0	0	0	0	1
ENE	1	2	0	0	0	0	3
E	3	0	0	0	0	0	3
ESE	0	1	0	0	0	0	1
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	2	0	0	0	0	0	2
WSW	0	0	0	0	0	0	0
W	1	0	0	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	2	6	1	0	0	0	9
VARIABLE	2	7	0	0	0	0	9
	10	9	1	0	0	0	20

Total  
Periods of calm(hours): 30  
Hours of missing data: 0

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 7 -1-81 ) 9-30-81  
STABILITY CLASS: E  
ELEVATION: 10.0m

Wind Speed (mph) at 10.0m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	3	0	0	0	0	0	3
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	3	0	0	0	0	0	3
ESE	0	0	0	0	0	0	0
SE	0	2	0	0	0	0	2
SSE	1	1	0	0	0	0	2
S	1	5	0	0	0	0	6
SSW	3	4	0	0	0	0	7
SW	0	0	0	0	0	0	0
WSW	2	0	0	0	0	0	2
W	10	0	0	0	0	0	10
WNW	2	0	0	0	0	0	2
NW	4	0	0	0	0	0	4
NNW	2	0	0	0	0	0	2
VARIABLE	92	18	1	1	0	0	112
	31	12	0	0	0	0	43

Total  
Periods of calm(hours): 53  
Hours of missing data: 0

43

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-81 } 9-30-81

STABILITY CLASS: E

ELEVATION: 45.7m

## Wind Speed (mph) at 45.7m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	1	0	0	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	4	0	0	0	0	0	4
ENE	5	1	0	0	0	0	6
E	1	0	0	0	0	0	1
ESE	0	6	0	0	0	0	6
SE	2	0	0	0	0	0	2
SSE	0	0	0	0	0	0	0
S	0	0	2	0	0	0	2
SSW	2	0	2	0	0	0	4
SW	1	4	0	0	0	0	5
WSW	0	0	2	0	0	0	2
W	0	1	0	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	5	2	0	0	0	7
VARIABLE	6	15	4	0	0	0	25
	16	17	8	0	0	0	41

Total

Periods of calm(hours): 142

Hours of missing data: 0

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-81 ) 9-30-81

STABILITY CLASS: F

ELEVATION: 10.0m

## Wind Speed (mph) at 10.0m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
	---	---	---	---	---	---	---
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	8	0	0	0	0	0	8
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	2	0	0	0	0	2
SSE	0	0	0	0	0	0	0
S	0	1	0	0	0	0	1
SSW	5	4	0	0	0	0	9
SW	0	0	0	0	0	0	0
WSW	2	0	0	0	0	0	2
W	26	1	0	0	0	0	27
WNW	4	1	0	0	0	0	5
NW	5	1	0	0	0	0	6
NNW	17	0	0	0	0	0	17
VARIABLE	105	8	1	0	0	0	114
	67	10	0	0	0	0	77

Total

Periods of calm(hours): 101

45

Hours of missing data: 0

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 7 -1-81 ) 9-30-81  
STABILITY CLASS: F  
ELEVATION: 45.7m

Wind Speed (mph) at 45.7m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	1	1	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	4	0	0	0	0	4
ENE	2	10	0	0	0	0	12
E	3	0	0	0	0	0	3
ESE	1	5	0	0	0	0	6
SE	4	4	0	0	0	0	8
SSE	0	0	0	0	0	0	0
S	0	2	0	0	0	0	2
SSW	3	2	1	0	0	0	6
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	2	10	0	0	0	0	12
WNW	0	1	0	0	0	0	1
NW	2	0	0	0	0	0	2
NNW	1	34	4	0	0	0	39
VARIABLE	1	23	3	0	0	0	30
	19	73	5	0	0	0	97

Total  
Periods of calm(hours): 165  
Hours of missing data: 0

TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-81 ) 9-30-81

STABILITY CLASS: G

ELEVATION: 10.0m

## Wind Speed (mph) at 10.0m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	2	0	0	0	0	0	2
WNW	1	0	0	0	0	0	1
NW	5	0	0	0	0	0	5
NNW	21	1	0	0	0	0	22
VARIABLE	30	0	0	0	0	0	30
	29	1	0	0	0	0	30

Total

47

Periods of calm(hours): 49

Hours of missing data: 0



TABLE 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 3rd Quarter, 1981

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-81 ) 9-30-81

STABILITY CLASS: G

ELEVATION: 45.7m

Wind Speed (mph) at 45.7m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	2	2	0	0	0	0	4
NNE	0	0	0	0	0	0	0
NE	1	1	0	0	0	0	2
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	1	3	0	0	0	0	4
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	8	37	0	0	0	0	45
VARIABLE	3	9	1	0	0	0	13
	12	43	0	0	0	0	55

Total

48

Periods of calm(hours): 41

Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 10 -1-81 > 12-31-81  
STABILITY CLASS: A  
ELEVATION: 10.0m

Wind Speed (mph) at 10.0m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	4	4	1	0	0	0	9
NNE	2	2	0	0	0	0	4
NE	14	74	26	0	0	0	114
ENE	5	14	0	0	0	0	19
E	3	2	0	0	0	0	5
ESE	0	4	1	0	0	0	5
SE	2	35	22	5	0	0	64
SSE	1	4	2	1	0	0	8
S	0	3	1	0	0	0	4
SSW	2	25	32	7	0	0	66
SW	1	7	1	1	0	0	10
WSW	5	15	3	0	0	0	23
W	14	25	10	0	0	0	49
WNW	3	9	13	0	0	0	25
NW	8	21	6	0	0	0	35
NNW	52	116	22	1	0	0	191
VARIABLE	207	409	147	7	0	0	772
	116	360	140	15	0	0	631

Total  
Periods of calm(hours): 22  
Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-81 &gt; 12-31-81

STABILITY CLASS: A

ELEVATION: 45.7m

## Wind Speed (mph) at 45.7m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL -----
N	3	8	1	0	0	0	12
NNE	1	3	1	0	0	0	5
NE	5	64	36	4	0	0	109
ENE	5	49	48	1	0	0	103
E	0	12	8	2	0	0	22
ESE	0	13	6	0	0	0	19
SE	3	24	24	11	1	0	63
SSE	1	1	2	0	0	0	4
S	0	11	1	0	0	0	12
SSW	0	12	25	5	1	0	43
SW	1	7	3	7	0	0	18
WSW	0	6	2	7	0	0	15
W	1	37	36	13	0	0	87
WNW	2	7	11	3	0	0	23
NW	0	16	2	0	0	0	18
NNW	8	79	60	13	1	0	161
VARIABLE	103	350	173	27	0	0	653
	30	349	266	66	3	0	714

Total

Periods of calm(hours): 58

50

Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981  
HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-81 ) 12-31-81

STABILITY CLASS: B

ELEVATION: 10.0m

Wind Speed (mph) at 10.0m level

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

Total

51

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: B  
ELEVATION: 45.7m

Wind Speed (mph) at 45.7m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	1	0	0	0	2
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	1	0	0	0	1
SSW	0	0	2	0	0	0	2
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	3	2	0	0	0	5
VARIABLE	1	0	3	0	0	0	4
	0	4	12	0	0	0	16

52

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-81 &gt; 12-31-81

STABILITY CLASS: C

ELEVATION: 10.0m

## Wind Speed (mph) at 10.0m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	1	0	0	0	0	0	1
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	1	0	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	1	0	0	0	0	0	1
NNW	1	2	0	0	0	0	3
VARIABLE	8	5	1	0	0	0	14
	3	4	0	0	0	0	7

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-81 ) 12-31-81

STABILITY CLASS: C

ELEVATION: 45.7m

## Wind Speed (mph) at 45.7m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	2	0	0	0	0	2
ENE	0	2	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	1	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	1	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	2	3	0	0	0	5
VARIABLE	2	5	3	0	0	0	10
	0	7	4	0	0	0	11

Total

54

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-81 ) 12-31-81

STABILITY CLASS: E

ELEVATION: 10.0m

## Wind Speed (mph) at 10.0m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	4	1	0	0	0	0	5
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	0	4	1	0	0	0	5
SSE	1	0	0	0	0	0	1
S	0	0	0	0	0	0	0
SSW	3	2	1	0	0	0	6
SW	2	0	0	0	0	0	2
WSW	0	0	0	0	0	0	0
W	4	5	0	0	0	0	9
WNW	1	0	0	0	0	0	1
NW	1	0	0	0	0	0	1
NNW	7	5	0	0	0	0	12
VARIABLE	38	20	1	0	0	0	59
	23	18	2	0	0	0	43

Total

57

Periods of calm(hours): 72

Hours of missing data: 0



TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 10 -1-81 } 12-31-81  
STABILITY CLASS: E  
ELEVATION: 45.7m

Wind Speed (mph) at 45.7m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	0	2	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	7	1	0	0	0	8
ENE	0	6	1	0	0	0	7
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	4	2	0	0	0	6
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	1	3	0	0	0	4
SW	1	0	0	1	0	0	2
WSW	0	0	0	0	0	0	0
W	1	1	3	0	0	0	5
WNW	0	1	0	0	0	0	1
NW	0	1	0	0	0	0	1
NNW	2	10	14	0	0	0	26
VARIABLE	6	24	15	0	0	0	45
	4	33	24	1	0	0	62

58

Total  
Periods of calm(hours): 67  
Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-81 } 12-31-81

STABILITY CLASS: F

ELEVATION: 10.0m

## Wind Speed (mph) at 10.0m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	2	0	0	0	0	0	2
NNE	1	0	0	0	0	0	1
NE	5	0	0	0	0	0	5
ENE	4	0	0	0	0	0	4
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	4	5	0	0	0	0	9
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	13	8	1	0	0	0	22
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	10	12	0	0	0	0	22
WNW	1	0	1	0	0	0	2
NW	0	0	0	0	0	0	0
NNW	45	3	0	0	0	0	48
VARIABLE	103	20	0	0	0	0	123
	85	28	2	0	0	0	115

Total  
Periods of calm(hours): 41  
Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: F  
ELEVATION: 45.7m

Wind Speed (mph) at 45.7m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	1	1	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	20	2	0	0	0	22
ENE	1	34	3	0	0	0	38
E	0	0	0	0	0	0	0
ESE	2	2	0	0	0	0	4
SE	0	10	1	0	0	0	11
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	6	14	0	0	0	20
SW	0	0	0	1	0	0	1
WSW	0	0	0	0	0	0	0
W	2	13	16	0	0	0	31
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	1	23	25	1	0	0	50
VARIABLE	10	64	12	2	0	0	88
	7	109	61	2	0	0	179

Total  
Periods of calm(hours): 12  
Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: G  
ELEVATION: 10.0m

Wind Speed (mph) at 10.0m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	2	0	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	2	0	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	3	1	0	0	0	0	4
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	7	0	0	0	0	0	7
WNW	1	0	1	0	0	0	2
NW	4	0	0	0	0	0	4
NNW	32	1	0	0	0	0	33
VARIABLE	39	0	0	0	0	0	39
	51	2	1	0	0	0	54

Total  
Periods of calm(hours): 131  
Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: G  
ELEVATION: 45.7m

Wind Speed (mph) at 45.7m level

Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	1	33	10	1	0	0	45
ENE	1	9	1	0	0	0	11
E	0	0	0	0	0	0	0
ESE	5	5	4	0	0	0	14
SE	3	12	0	0	0	0	15
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	3	5	2	0	0	0	10
SW	0	1	0	0	0	0	1
WSW	0	0	0	0	0	0	0
W	0	4	2	0	0	0	6
WNW	0	0	0	0	0	0	0
NW	0	1	0	0	0	0	1
NNW	4	29	7	0	0	0	40
VARIABLE	10	37	0	0	0	0	47
	17	99	26	1	0	0	143

Total  
Periods of calm(hours): 34  
Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 } 9-30-81  
STABILITY CLASS: A  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	1
NNW	1	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	1	0	0	0	0	0	1

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 3 9-30-81

STABILITY CLASS: A

ELEVATION: 45.7m

Wind Speed (mph) at 45.7m level							
Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
	---	---	---	---	---	---	---
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	1	0	0	0	0	1
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 3 9-30-81

STABILITY CLASS: B

ELEVATION: 10.0m

## Wind Speed (mph) at 10.0m level

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

Total

Periods of calm(hours): 0

Hours of missing data: 0



TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 3 9-30-81  
STABILITY CLASS: B  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 } 9-30-81  
STABILITY CLASS: C  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 ) 9-30-81  
STABILITY CLASS: C  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 ) 9-30-81  
STABILITY CLASS: D  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	1	2	0	0	0	3
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	2	1	0	0	0	3
VARIABLE	0	0	1	0	0	0	1
	0	3	3	0	0	0	6

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 3 9-30-81

STABILITY CLASS: D

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	1	0	0	0	0	1
NW	0	2	1	1	0	0	4
NNW	0	0	0	1	0	0	1
VARIABLE	0	0	1	0	0	0	1
	0	3	1	2	0	0	6

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-81 &gt; 12-31-81

STABILITY CLASS: D

ELEVATION: 10.0m

## Wind Speed (mph) at 10.0m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	1	2	0	0	0	0	3
ENE	2	0	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	2	2	0	0	0	0	4
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	1	4	0	0	0	0	5
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	1	3	0	0	0	0	4
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	4	2	0	0	0	0	6
VARIABLE	20	16	0	0	0	0	36
	11	13	0	0	0	0	24

Total

55

Periods of calm(hours): 5

Hours of missing data: 0

TABLE 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-81 &gt; 12-31-81

STABILITY CLASS: D

ELEVATION: 45.7m

## Wind Speed (mph) at 45.7m level

Wind Direction	1-3 ---	4-7 ---	8-12 ---	13-18 ---	19-24 ---	>24 ---	TOTAL ---
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	2	0	0	0	3
ENE	0	5	2	0	0	0	7
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	0	2	0	0	0	0	2
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	1	4	0	0	0	5
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	3	5	0	0	0	8
WNW	0	0	1	0	0	0	1
NW	0	0	0	0	0	0	0
NNW	1	3	4	0	0	0	8
VARIABLE	4	17	4	0	0	0	25
	1	16	13	0	0	0	35

56

Total

Periods of calm(hours): 5

Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 } 9-30-81  
STABILITY CLASS: F  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	1	0	0	0	0	0	1
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	1	1	0	0	0	0	2
VARIABLE	0	0	0	0	0	0	0
	3	2	0	0	0	0	5

Total  
Periods of calm(hours): 1  
Hours of missing data: 0



TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 3 9-30-81

STABILITY CLASS: E

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	0	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	1	0	0	0	0	1
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	1	0	0	0	1
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	1	0	0	0	1
	2	2	1	0	0	0	5

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 ) 9-30-81

STABILITY CLASS: F

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	2	0	0	0	0	0	2
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	1	0	0	0	0	1
	2	0	0	0	0	0	2

Total

Periods of calm(hours): 1

Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 } 9-30-81

STABILITY CLASS: F

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	1	0	0	0	1
WSW	0	1	0	0	0	0	1
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	1	0	0	0	1
	0	2	1	0	0	0	3

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 3 9-30-81

STABILITY CLASS: G

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	1	0	0	0	0	0	1
ENE	2	0	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	1	0	0	0	0	0	1
SSW	1	0	0	0	0	0	1
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	1	0	0	0	0	0	1
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	12	0	0	0	0	0	12
	6	0	0	0	0	0	6

Total

Periods of calm(hours): 6

Hours of missing data: 0

TABLE 4A-1BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 ) 9-30-81  
STABILITY CLASS: G  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	2	0	0	0	0	2
WSW	0	2	0	0	0	0	2
W	1	0	0	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	1	0	0	0	0	0	1
NNW	1	3	0	0	0	0	4
VARIABLE	2	5	6	0	0	0	13
	3	8	0	0	0	0	11

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 ) 12-31-81

STABILITY CLASS: A

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	3	12	3	0	0	0	18
ENE	0	1	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	1	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	1	3	0	0	0	4
SW	0	0	0	0	0	0	0
WSW	1	0	1	0	0	0	2
W	0	5	1	0	0	0	6
WNW	0	2	0	0	0	0	2
NW	0	3	0	0	0	0	3
NNW	8	8	0	0	0	0	16
VARIABLE	31	46	6	0	0	0	83
	12	34	8	0	0	0	54

Total

Periods of calm(hours): 4

Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 3 12-31-81

STABILITY CLASS: A

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	4	0	0	0	0	4
NNE	0	0	0	0	0	0	0
NE	1	8	1	0	0	0	10
ENE	0	6	1	0	0	0	7
E	0	1	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	1	0	2	0	0	0	3
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	1	0	0	0	0	1
SW	0	0	1	0	0	0	1
WSW	0	0	0	1	0	0	1
W	1	4	0	0	0	0	5
WNW	1	1	2	0	0	0	4
NW	0	1	0	0	0	0	1
NNW	0	1	1	0	0	0	2
VARIABLE	10	56	17	0	0	0	83
	4	27	8	1	0	0	40

Total

Periods of calm(hours): 18

Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: B  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	1	0	0	0	1
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	2	0	0	0	2
	0	0	1	0	0	0	1

Total

Periods of calm(hours): 0

Hours of missing data: 0



TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 ) 12-31-81

STABILITY CLASS: B

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	2	0	0	2
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	1	0	0	1
	0	0	0	2	0	0	2

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 &gt; 12-31-81

STABILITY CLASS: C

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	1	0	0	0	0	0	1
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 > 12-31-81  
STABILITY CLASS: C  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	1	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	1	0	0	0	0	1

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 } 12-31-81  
STABILITY CLASS: D  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	1	2	0	0	0	3
NNE	0	0	0	0	0	0	0
NE	2	0	0	0	0	0	2
ENE	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	1	0	0	1
WSW	0	0	0	0	1	3	4
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	2	2	0	0	0	4
VARIABLE	7	2	1	0	3	0	13
	3	3	4	1	1	3	15

Total

Periods of calm(hours): 1

Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 } 12-31-81

STABILITY CLASS: D

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	3	0	0	0	0	3
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	1	0	1
SSW	0	0	1	0	2	4	7
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	1	0	0	0	1
WNW	0	1	0	0	0	0	1
NW	0	2	1	1	0	0	4
NNW	0	2	1	1	0	0	4
VARIABLE	1	3	1	0	0	1	6
	0	9	4	2	3	4	22

Total

Periods of calm(hours): 1

Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: E  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	1	1	0	0	0	0	2
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	1	1	0	0	0	0	2
VARIABLE	10	6	2	0	0	0	18
	3	3	0	0	0	0	6

Total  
Periods of calm(hours): 1  
Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 } 12-31-81

STABILITY CLASS: E

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	0	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	2	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	2	0	0	0	2
SSW	0	1	0	0	0	0	1
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	1	0	0	1
WNW	0	0	0	0	0	0	0
NW	0	0	1	0	0	0	1
NNW	0	0	0	0	0	0	0
VARIABLE	3	5	6	0	0	0	14
	2	4	3	1	0	0	10

Total

Periods of calm(hours): 1

Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: F  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	1	0	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	2	0	0	0	0	0	2
W	2	0	0	0	0	0	2
WNW	1	0	0	0	0	0	1
NW	3	1	0	0	0	0	4
NNW	9	0	0	0	0	0	9
VARIABLE	25	2	0	0	0	0	27
	18	1	0	0	0	0	19

Total

Periods of calm(hours): 4

Hours of missing data: 0



TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 } 12-31-81  
STABILITY CLASS: F  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	2	0	0	0	0	2
ENE	0	5	0	0	0	0	5
E	0	0	0	0	0	0	0
ESE	1	0	0	0	0	0	1
SE	0	4	0	0	0	0	4
SSE	0	0	0	0	0	0	0
S	0	1	0	0	0	0	1
SSW	0	0	0	0	0	0	0
SW	0	0	1	0	0	0	1
WSW	0	1	0	0	0	0	1
W	0	0	1	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	19	0	0	0	0	19
VARIABLE	4	8	2	0	0	0	14
	1	32	2	0	0	0	35

Total  
Periods of cal. (hours): 1  
Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 > 12-31-81  
STABILITY CLASS: G  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	1	0	0	0	0	0	1
ENE	2	0	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	1	0	0	0	0	0	1
SSW	1	0	0	0	0	0	1
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	1	0	0	0	0	0	1
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	15	1	0	0	0	0	16
	6	0	0	0	0	0	6

Total  
Periods of calm(hours): 7  
Hours of missing data: 0

TABLE 4A-1BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 1 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 } 12-31-81  
STABILITY CLASS: G  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	2	0	0	0	0	2
WSW	0	2	0	0	0	0	2
W	1	0	0	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	1	0	0	0	0	0	1
NNW	1	5	0	0	0	0	6
VARIABLE	2	8	8	0	0	0	18
	3	10	0	0	0	0	13

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 ) 9-30-81  
STABILITY CLASS: A  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	1	1	0	0	0	0	2
E	0	1	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	1	14	1	0	0	0	16
	1	3	0	0	0	0	4

Total  
Periods of calm(hours): 1  
Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 } 9-30-81

STABILITY CLASS: A

ELEVATION: 45.7m

Wind Speed (mph) at 45.7m level							
Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	5	4	0	0	0	9
ENE	0	4	1	0	0	0	5
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	2	3	0	0	0	5
	0	10	5	0	0	0	15

Total

Periods of calm(hours): 1

Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 1 9-30-81  
STABILITY CLASS: B  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 } 9-30-81  
STABILITY CLASS: B  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 } 9-30-81  
STABILITY CLASS: C  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	1	0	0	0	0	0	1
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 0

Hours of missing data: 0



TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 } 9-30-81

STABILITY CLASS: C

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	1	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	1	0	0	0	0	1

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 } 9-30-81  
STABILITY CLASS: D  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	1	0	0	0	0	0	1
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 3 9-30-81  
STABILITY CLASS: D  
ELEVATION: 45.7m

-----							
Wind Speed (mph) at 45.7m level							
Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
-----	-----	-----	-----	-----	-----	-----	-----
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	1	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
-----							
	0	1	0	0	0	0	1

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 ) 9-30-81  
STABILITY CLASS: E  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 } 9-30-81

STABILITY CLASS: E

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 } 9-30-81  
STABILITY CLASS: F  
ELEVATION: 10.0m

-----  
Wind Speed (mph) at 10.0m level

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

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 ) 9-30-81  
STABILITY CLASS: F  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 7 -1-81 } 9-30-81  
STABILITY CLASS: G  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total  
Periods of calm(hours): 0  
Hours of missing data: 0



TABLE 4A-2BQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 3rd Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 7 -1-81 3 9-30-81

STABILITY CLASS: G

ELEVATION: 45.7m

Wind Speed (mph) at 45.7m level							
Wind Direction	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 ) 12-31-81

STABILITY CLASS: A

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	1	1	0	0	0	0	2
E	0	1	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	4	0	2	0	0	0	6
SW	0	0	0	0	0	0	0
WSW	1	0	0	0	0	0	1
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	10	23	2	0	0	0	35
	6	3	2	0	0	0	11

Total

Periods of calm(hours): 10

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: A  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	1	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	2	7	4	0	0	0	13
ENE	0	6	1	0	0	0	7
E	0	0	0	0	0	0	0
ESE	1	0	0	0	0	0	1
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	4	2	3	0	0	0	9
	4	14	5	0	0	0	23

Total  
Periods of calm(hours): 24  
Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 3 12-31-81  
STABILITY CLASS: B  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	17-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total  
Periods of calm(hours) : 0  
Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 ) 12-31-81

STABILITY CLASS: B

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: C  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	1	0	0	0	0	0	1
	0	0	0	0	0	0	0

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 ) 12-31-81

STABILITY CLASS: C

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	1	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	1	0	0	0	0	1

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 } 12-31-81

STABILITY CLASS: D

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	1	0	0	0	0	0	1
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 3

Hours of missing data: 0



TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 } 12-31-81

STABILITY CLASS: D

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	1	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	1	0	0	0	0	1

Total

Periods of calm(hours): 3

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 ) 12-31-81

STABILITY CLASS: E

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 2

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 3 12-31-81

STABILITY CLASS: E

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 2

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 } 12-31-81  
STABILITY CLASS: F  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	1
NNW	1	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	1	0	0	0	0	0	1

Total  
Periods of calm(hours): 3  
Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: F  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total  
Periods of calm(hours): 4  
Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-81 &gt; 12-31-81

STABILITY CLASS: G

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Unit 2 - 4th Quarter, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH  
PERIOD OF RECORD: 10 -1-81 ) 12-31-81  
STABILITY CLASS: G  
ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Total  
Periods of calm(hours): 0  
Hours of missing data: 0

TABLE 4B

## CLASSIFICATION OF ATMOSPHERIC STABILITY

Stability Classification	Pasquill Categories	$\sigma_{\theta}$ <sup>a</sup> (degrees)	Temperature change with height (°C/100m)
Extremely unstable	A	25.0	<-1.9
Moderately unstable	B	20.0	-1.9 to -1.7
Slightly unstable	C	15.0	-1.7 to -1.5
Neutral	D	10.0	-1.5 to -0.5
Slightly stable	E	5.0	-0.5 to 1.5
Moderately stable	F	2.5	1.5 to 4.0
Extremely stable	G	1.7	>4.0

<sup>a</sup> Standard deviation of horizontal wind direction fluctuation over a period of 15 minutes to 1 hour. The values shown are average for each stability classification.



TABLE 5-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM  
FARLEY NUCLEAR PLANT - UNIT 1

Liquid Source <sup>f</sup>	Sampling Frequency	Type of Activity Analysis	Detectable Concentrations ( $\mu$ Ci/ml) <sup>a</sup>
A. Waste Monitor Tank Releases	Each Batch	Principal Gamma Emitters	$5 \times 10^{-7b}$
	One Batch/Month	Dissolved Gases	$10^{-5}$
	Weekly Composite <sup>e</sup>	Ba-La-140, I-131	$10^{-6}$
	Monthly Composite <sup>c</sup>	H-3	$10^{-5}$
		Gross Alpha	$10^{-7}$
		Gross Beta	$5 \times 10^{-7}$
	Quarterly Composite <sup>c</sup>	Sr-89, Sr-90	$5 \times 10^{-8}$
B. Steam Generator Blowdown <sup>d</sup>	Weekly Composite	Principal Gamma Emitters	$5 \times 10^{-7b}$
		Ba-La-140, I-131	$10^{-6}$
	One sample/month	Dissolved Gases	$10^{-5}$
	Monthly Composite	H-3	$10^{-5}$
		Gross alpha	$10^{-7}$
		Gross Beta	$5 \times 10^{-7}$
	Quarterly Composite	Sr-89, Sr-90	$5 \times 10^{-8}$
C. Turbine Building Sump <sup>d</sup>	Each Batch	Principal Gamma Emitters	$5 \times 10^{-7b}$

<sup>a</sup>The detectability limits for activity analysis are based on the technical feasibility and on the potential significance in the environment of the quantities released. For some nuclides, lower detection limits may be readily achievable, and when nuclides are measured below the stated limits, they should also be reported.

<sup>b</sup>For certain mixtures of gamma emitters, it may not be possible to measure radionuclides in concentrations near their sensitivity limits when other nuclides are present in the sample in much greater concentrations. Under these circumstances, it will be more appropriate to calculate the concentrations of such radionuclides using measured ratios with those radionuclides which are routinely identified and measured.

<sup>c</sup>A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged.

<sup>d</sup>Sampled and analyzed only in the event of primary to secondary leakage and then only if to be discharged to the environs.

<sup>e</sup>If the required sensitivity ( $10^{-6}$ ) can be obtained with the gamma scan on each batch, the weekly composite will not be required.

A batch release is the discharge of liquid waste of a discrete volume. A continuous release is the discharge of liquid waste of a nondiscrete volume: a nondiscrete volume has an uninterrupted discharge flow during the continuous release.

TABLE 5-2

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM  
FARLEY NUCLEAR PLANT - UNIT 2

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Minimum Detectable Concentration (MDC) <sup>a</sup> , g	
			Type of Activity Analysis	( $\mu\text{Ci/ml}$ ) <sup>a</sup> , g
A. Batch Waste Release Tanks <sup>c</sup>	P Each Batch	P Each Batch	Principal Gamma Emitters <sup>e</sup>	$5 \times 10^{-7}$
			I-131	$1 \times 10^{-6}$
	P One Batch/M	M	Dissolved and Entrained Gases (Gamma emitters)	$1 \times 10^{-5}$
	P Each Batch	M Composite <sup>b</sup>	H-3	$1 \times 10^{-5}$
			Gross Alpha	$1 \times 10^{-7}$
			P-32	$1 \times 10^{-6}$
	P Each Batch	Q Composite <sup>b</sup>	Sr-89, Sr-90	$5 \times 10^{-8}$
			Fe-55	$1 \times 10^{-6}$
B. Continuous Releases <sup>d, f</sup>  1. Steam Generator Blowdown	D Grab Sample	W Composite <sup>b</sup>	Principal Gamma Emitters <sup>e</sup>	$5 \times 10^{-7}$
			I-131	$1 \times 10^{-6}$
	M Grab Sample	M	Dissolved and Entrained Gases (Gamma Emitters)	$1 \times 10^{-5}$
	D Grab Sample	M Composite <sup>b</sup>	H-3	$1 \times 10^{-5}$
			Gross Alpha	$1 \times 10^{-7}$
			P-32	$1 \times 10^{-6}$
	D Grab Sample	Q Composite <sup>b</sup>	Sr-89, Sr-90	$5 \times 10^{-8}$
			Fe-55	$1 \times 10^{-6}$
	P Grab Sample	W Composite <sup>b</sup>	Principle Gamma Emitters <sup>e</sup>	$5 \times 10^{-7}$
			H-3	$1 \times 10^{-5}$
2. Turbine Building Sump				

TABLE 5-2 (Continued)

TABLE NOTATION

- a. The MDC is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$MDC = \frac{4.66 s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

MDC is the "a priori" lower limit of detection as defined above (as microcurie per unit mass or volume),

$s_b$  is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

$2.22 \times 10^6$  is the number of transformations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

$\lambda$  is the radioactive decay constant for the particular radionuclide, and

$\Delta t$  is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples).

The value of  $s_b$  used in the calculation of the MDC for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. Typical values of E, V, Y, and  $\Delta t$  shall be used in the calculation.

TABLE 5-2 (Continued)

TABLE NOTATION

- b. A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.
- c. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analyses, each batch shall be isolated, and then thoroughly mixed, by a method described in the ODCM, to assure representative sampling.
- d. A continuous release is the discharge of liquid wastes of a nondiscrete volume; e.g., from a volume of system that has an input flow during the effluent release.
- e. The principal gamma emitters for which the MDC specification applies exclusively are the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported.
- f. Sampling will be performed only if the effluent will be discharged to the environment.
- g. Deviation from the MDC requirements of Table 4.11-1 shall be reported per Specification 6.9.1.8 in lieu of any other report.

TABLE 6-1

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM  
FARLEY NUCLEAR PLANT - UNIT 1

Gaseous Source <sup>e</sup>	Sampling Frequency	Types of Activity Analysis	Detectable Concentrations ( $\mu$ Ci/ml) <sup>a</sup>
A. Waste Gas Decay Tank Releases	* Tank to be released	Principal Gamma Emitters	$10^{-4}$
		H-3	$10^{-6}$
B. Containment Purge Releases	Each Purge <sup>c</sup> or Weekly for Continuous Purge	Principal Gamma Emitters	$10^{-4}$
		H-3	$10^{-6}$
C. Condenser Steam Jet Air Ejector	Monthly (Gas Samples) <sup>c</sup>	Principal Gamma Emitters <sup>b</sup>	$10^{-4}$
		H-3	$10^{-6}$
D. Environmental Release Points (Plant Vent Stack)	Monthly (Gas Samples) <sup>c</sup>	Principal Gamma Emitters <sup>b</sup>	$10^{-4}$
		H-3	$10^{-6}$
	Weekly (Charcoal Sample) <sup>d</sup>	I-131	$10^{-12}$
		I-133	$10^{-10}$
	Weekly (Particulates) <sup>d</sup>	Principal Gamma Emitters (Ba-La-140, I-131 and others)	$10^{-11}$
	Monthly Composite (Particulates)	Gross alpha	$10^{-11}$
	Quarterly Composite (Particulates)	Sr-89, Sr-90	$10^{-11}$

<sup>a</sup>The above detectability limits for activity analysis are based on technical feasibility and on the potential significance in the environment of the quantities released. For some nuclides, lower detection limits may be readily achievable, and when nuclides are measured below the stated limits, they should also be reported.

<sup>b</sup>For certain mixtures of gamma emitters, it may not be possible to measure radionuclides at levels near their sensitivity limits when other nuclides are present in the sample at much higher levels. Under these circumstances, it will be more appropriate to calculate the levels of such radionuclides using measured ratios with those radionuclides which are measurable.

<sup>c</sup>Analyses shall also be performed following each refueling, startup, or similar operational occurrence which could alter the mixture of radionuclides.

<sup>d</sup>Analyses shall also be performed daily for a week following each refueling, startup or similar operational occurrence which could lead to significant increase or decrease in radioiodine releases.

<sup>e</sup>A batch release is the discharge of gaseous waste of a discrete volume. A continuous release is the discharge of gaseous waste of a nondiscrete volume; a nondiscrete volume has an uninterrupted discharge flow during the continuous release.

TABLE 6-2

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM  
FARLEY NUCLEAR PLANT - UNIT 2

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Minimum Detectable Concentration (MDC) ( $\mu\text{Ci/ml}$ ) <sup>a,h</sup>
A. Waste Gas Storage Tank	<sup>P</sup> Each Tank Grab Sample	<sup>P</sup> Each Tank	Principal Gamma Emitters <sup>g,j</sup>	$1 \times 10^{-4}$
B. Containment Purge	<sup>P</sup> Each Purge <sup>b</sup> Grab Sample	<sup>P</sup> Each Purge <sup>b</sup>	Principal Gamma Emitters <sup>g,j</sup>	$1 \times 10^{-4}$
			H-3	$1 \times 10^{-6}$
C. Condenser Steam Jet Air Ejector Plant Vent Stack	<sup>M</sup> <sup>b,c,e</sup> Grab Sample	<sup>M</sup> <sup>b</sup>	Principal Gamma Emitters <sup>g,j</sup>	$1 \times 10^{-4}$
			H-3	$1 \times 10^{-6}$
D. Plant Vent Stack, Containment Purge	Continuous <sup>f</sup> Charcoal	<sup>W</sup> <sup>d</sup> Charcoal Sample	I-131	$1 \times 10^{-12}$
			I-133	$1 \times 10^{-10}$
	Continuous <sup>f</sup>	<sup>W</sup> <sup>d</sup> Particulate Sample	Principal Gamma Emitters <sup>g</sup> (I-131, Others)	$1 \times 10^{-11}$
	Continuous <sup>f</sup>	<sup>M</sup> Composite <sup>i</sup> Particulate Sample	Gross Alpha	$1 \times 10^{-11}$
	Continuous <sup>f</sup>	<sup>Q</sup> Composite <sup>i</sup> Particulate Sample	Sr-89, Sr-90	$1 \times 10^{-11}$
	Continuous <sup>f</sup>	Noble Gas Monitor	Noble Gases Gross Beta & Gamma	$1 \times 10^{-6}$



TABLE 6-2 (Continued)

TABLE NOTATION

- a. The MDC is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$\text{MDC} = \frac{4.66 s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

MDC is the "a priori" lower limit of detection as defined above (as microcurie per unit mass or volume),

$s_b$  is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

$2.22 \times 10^6$  is the number of transformations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

$\lambda$  is the radioactive decay constant for the particular radionuclide, and

$\Delta t$  is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples).

The value of  $s_b$  used in the calculation of the MDC for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. Typical values of E, V, Y, and  $\Delta t$  shall be used in the calculation.

TABLE 6-2 (Continued)

TABLE NOTATION

- b. Analyses shall also be performed following shutdown from >15% RATED THERMAL POWER, startup to >15% RATED THERMAL POWER or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.
- c. Tritium grab samples shall be taken from the plant vent stack at least once per 24 hours when the refueling canal is flooded.
- d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once per 24 hours for at least 2 days following each shutdown from >15% RATED THERMAL POWER, startup to >15% RATED THERMAL POWER or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding MDC may be increased by a factor of 10.
- e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.
- f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.
- g. The principal gamma emitters for which the MDC specification applies exclusively are the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measureable and identifiable, together with the above nuclides, shall also be identified and reported.
- h. Deviations from MDC requirements of Table 4.11-2 shall be reported per Specification 6.9.1.8 in lieu of any other report.
- i. A composite particulate sample is one in which the quantity of air sampled is proportional to the quantity of air discharged. Either a specimen which is representative of the air discharged may be accumulated and analyzed or the individual samples may be analyzed and weighted in proportion to their respective volume discharged.
- j. The principal gamma emitters for which the MDC specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135 and Xe-138 for gaseous emissions. This does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported.



TABLE 7

LIQUID DISCHARGES NOT MEETING SPECIFIED DETECTION LIMITS  
Farley Unit 1 - 2nd Half, 1981

<u>Batch#</u>	<u>Date</u>	<u>Count Time Sec.</u>	<u>Volume Discharged Gallons</u>	<u>Dilution Water Gallons</u>	<u>Total Isotopic Activity (1)</u>	<u>Isotope of Interest</u>	<u>MDC Measured</u>	<u>% of Total Isotopic Activity</u>	<u>% of Total Dose</u>
N/A*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*No liquid discharges made that did not meet specified detection limits.

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1-1-81 to 12-31-81

STABILITY CLASS: A

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	8	5	1	0	0	0	14
NNE	6	2	0	0	0	0	8
NE	17	78	27	0	0	0	122
ENE	7	15	0	0	0	0	22
E	4	4	0	0	0	0	8
ESE	1	4	1	0	0	0	6
SE	2	35	22	5	0	0	64
SSE	1	4	2	1	0	0	8
S	0	3	1	0	0	0	4
SSW	2	25	31	7	0	0	65
SW	1	7	1	1	0	0	10
WSW	6	15	3	0	0	0	24
W	14	27	10	0	0	0	51
WNW	7	12	13	0	0	0	32
W	13	23	6	0	0	0	42
NNW	55	118	22	1	0	0	196
VARIABLE	207	409	146	9	0	0	771
	144	377	140	15	0	0	676

Total

Periods of calm(hours): 167

Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-81 ) 12-31-81

STABILITY CLASS: A

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	3	7	1	0	0	0	11
NNE	1	3	1	0	0	0	5
NE	7	68	37	4	0	0	116
ENE	7	58	50	1	0	0	116
E	7	15	9	2	0	0	33
ESE	1	15	6	0	0	0	22
SE	9	26	24	11	1	0	71
SSE	2	1	2	0	0	0	5
S	0	11	1	0	0	0	12
SSW	0	12	25	5	1	0	43
SW	1	7	3	7	0	0	18
WSW	0	6	1	7	0	0	14
W	1	38	36	13	0	0	88
WNW	2	7	11	3	0	0	23
NW	0	18	2	0	0	0	20
NNW	9	79	60	13	1	0	162
VARIABLE	103	350	172	27	0	0	652
	50	371	267	66	3	0	757

Total

Periods of calm(hours): 1303

Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-81 3 12-31-81

STABILITY CLASS: B

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	0	0	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	1	0	0	0	0	1
SSE	0	0	1	0	0	0	1
S	0	0	0	0	0	0	0
SSW	0	1	0	0	0	0	1
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	1	0	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	1	1	0	0	0	0	2
VARIABLE	3	7	3	0	0	0	13
	2	4	1	0	0	0	7

Total  
Periods of calm(hours): 6  
Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-81 } 12-31-81

STABILITY CLASS: B

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	1	0	0	0	2
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	1	0	0	0	1
SSW	0	0	2	0	0	0	2
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	6	0	0	0	6
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	3	2	0	0	0	5
VARIABLE	1	0	3	0	0	0	4
	0	4	12	0	0	0	16

Total  
Periods of calm(hours): 26  
Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant ~ Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-81 3 12-31-81

STABILITY CLASS: C

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	1	0	0	0	0	0	1
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	1	0	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	1	0	0	0	0	0	1
NNW	1	2	0	0	0	0	3
VARIABLE	6	5	1	0	0	0	14
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	3	4	0	0	0	0	7

Total  
Periods of calm(hours): 6  
Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-81 ) 12-31-81

STABILITY CLASS: C

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	2	0	0	0	0	2
ENE	0	2	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	1	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	1	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	2	3	0	0	0	5
VARIABLE	2	5	3	0	0	0	10
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	0	7	4	0	0	0	11

Total

Periods of calm(hours): 26

Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-81 &gt; 12-31-81

STABILITY CLASS: D

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	1	2	0	0	0	0	3
ENE	2	0	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	2	2	0	0	0	0	4
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	1	4	0	0	0	0	5
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	1	3	0	0	0	0	4
WNW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
NW	4	2	0	0	0	0	6
VARIABLE	20	16	0	0	0	0	36
	11	13	0	0	0	0	24

Total  
Periods of calm(hours): 33  
Hours of missing data: 0



TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1-1-81 to 12-31-81

STABILITY CLASS: D

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	2	0	0	0	3
ENE	0	5	2	0	0	0	7
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	0	2	0	0	0	0	2
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	1	4	0	0	0	5
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	3	5	0	0	0	8
WNW	0	0	1	0	0	0	1
NW	0	0	0	0	0	0	0
NNW	1	3	4	0	0	0	8
VARIABLE	4	17	4	0	0	0	25
	1	16	18	0	0	0	35

Total  
Periods of calm(hours): 87  
Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS  
PERIOD OF RECORD: 1-1-81 to 12-31-81  
STABILITY CLASS: E  
ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	6	1	0	0	0	0	7
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	0	4	1	0	0	0	5
SSE	1	0	0	0	0	0	1
S	0	0	0	0	0	0	0
SSW	3	2	1	0	0	0	6
SW	2	0	0	0	0	0	2
WSW	0	0	0	0	0	0	0
W	4	5	0	0	0	0	9
WNW	1	0	0	0	0	0	1
NW	1	0	0	0	0	0	1
NNW	7	5	0	0	0	0	12
VARIABLE	38	20	1	0	0	0	59
	25	18	2	0	0	0	45

Total  
Periods of calm(hours): 75  
Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-81 ) 12-31-81

STABILITY CLASS: E

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	2	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	7	1	0	0	0	8
ENE	0	6	1	0	0	0	7
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	2	4	2	0	0	0	8
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	1	3	0	0	0	4
SW	1	0	0	1	0	0	2
WSW	0	0	0	0	0	0	0
W	1	1	3	0	0	0	5
WNW	0	1	0	0	0	0	1
NW	0	1	0	0	0	0	1
NNW	2	10	14	0	0	0	26
VARIABLE	6	24	15	0	0	0	45
	6	33	24	1	0	0	64

Total

Periods of calm(hours): 158

Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-81 ) 12-31-81

STABILITY CLASS: F

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	5	0	0	0	0	0	5
NNE	4	0	0	0	0	0	4
NE	7	0	0	0	0	0	7
ENE	4	0	0	0	0	0	4
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	4	5	0	0	0	0	9
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	13	8	1	0	0	0	22
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	10	12	0	0	0	0	22
WNW	1	0	1	0	0	0	2
NW	0	0	0	0	0	0	0
NNW	45	3	0	0	0	0	48
VARIABLE	103	20	0	0	0	0	123
	93	28	2	0	0	0	123

Total

Periods of calm(hours): 160

Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-81 ) 12-31-81

STABILITY CLASS: F

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	1	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	20	2	0	0	0	22
ENE	1	40	3	0	0	0	44
E	0	0	0	0	0	0	0
ESE	2	2	0	0	0	0	4
SE	0	12	1	0	0	0	13
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	6	14	0	0	0	20
SW	0	0	0	1	0	0	1
WSW	0	0	0	0	0	0	0
W	2	13	16	0	0	0	31
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	1	23	25	1	0	0	50
VARIABLE	10	64	12	2	0	0	88
	7	117	61	2	0	0	187

Total

Periods of calm(hours): 189

Hours of missing data: 0

140

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1-1-81 to 12-31-81

STABILITY CLASS: G

ELEVATION: 10.0m

Wind Direction	Wind Speed (mph) at 10.0m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	0	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	2	0	0	0	0	0	2
ENE	2	0	0	0	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	3	1	0	0	0	0	4
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	7	0	0	0	0	0	7
WNW	1	0	1	0	0	0	2
NW	4	0	0	0	0	0	4
NNW	35	2	0	0	0	0	37
VARIABLE	39	0	0	0	0	0	39
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	56	3	1	0	0	0	60

Total

Periods of calm(hours): 214

Hours of missing data: 0

TABLE 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION  
Farley Nuclear Plant - Annual, 1981

## HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-81 ) 12-31-81

STABILITY CLASS: G

ELEVATION: 45.7m

Wind Direction	Wind Speed (mph) at 45.7m level						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	1	33	10	1	0	0	45
ENE	2	11	1	0	0	0	14
E	0	0	0	0	0	0	0
ESE	5	6	4	0	0	0	15
SE	3	14	0	0	0	0	17
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	3	5	2	0	0	0	10
SW	0	1	0	0	0	0	1
WSW	0	0	0	0	0	0	0
W	0	4	2	0	0	0	6
WNW	0	0	0	0	0	0	0
NW	0	1	0	0	0	0	1
NNW	4	29	7	0	0	0	40
VARIABLE	10	37	0	0	0	0	47
	18	104	26	1	0	0	149

Total  
Periods of calm(hours): 32  
Hours of missing data: 0