

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, 1982 THROUGH DECEMBER 31, 1982

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RETROFIT

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INTRODUCTION

This Semi-annual radioactive release report, for the period July 1, to December 31, 1982 is submitted in accordance with Appendix A of License Nos. NPF-2 and NPF-8. Appendix A will hereinafter be referred to as the Standard Technical Specifications or STS.

A single submittal is made for both units which combines those sections that are common. Separate tables of releases and release totals are included where separate processing systems exist.

This report includes an annual summary of hourly meteorological data collected over the past year and an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the Farley Nuclear Plant site over the same period. Additionally Section 12.d with associated dose contributions to sectors comprises 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 primary effluent pathways and direct radiation). All assessments of radiation doses are performed in accordance with the OFFSITE DOSE CALCULATION MANUAL (ODCM).

SUPPLEMENTARY INFORMATION FOR EFFLUENT AND WASTE DISPOSAL

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

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

and

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

where the terms are defined in the ODCM.

b. Iodines and Particulates

The release rate limits 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

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

where the terms are defined in 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 E-5 uCi/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 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 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	Xe-131m
Kr-85m	Xe-133m
Kr-85	Xe-133
Kr-87	Xe-135m
Kr-88	Xe-135
Kr-89	Xe-137
Kr-90	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:

$$CF_i = A_i / m, \text{ where}$$

CF_i = isotopic calibration factor for isotope i .

A_i = concentration of isotope in the grab sample, in uCi/ml.

m = net monitor reading associated with the effluent stream.

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 isotopic distributions do not change significantly during major operational occurrences, the frequency of grab sampling is increased to satisfy the requirements of 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:

Mn-54	I-131
Fe-59	I-133
Co-58	Cs-134
Co-60	Cs-137
Zn-65	Ce-141
Sr-89	Ce-144
Sr-90	Other nuclides with half-
Mo-99	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. 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 as required. Gross alpha determinations are made using a 2 pi gas flow proportional counter. Sr-89 and 90 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 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	Ru-103m
Cr-51	Ru-106
Mn-54	I-131
Fe-59	I-132
Co-58	I-133
Co-60	I-135
Zn-65	Cs-134
Sr-89	Cs-136
Sr-90	Cs-137
Sr-91	Ba-140
Mo-99	La-140
Tc-99m	Ce-141
	Ce-144

Batch Releases: Representative pre-release grab samples are obtained and analyzed per Table 5. 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. Strontium 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.

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.

UNIT # 1

5. Batch Release

a. Liquid	Quarter 3	Quarter 4
1. Number of batch releases:	114	166
2. Total time period for releases:	8695 min.	13408 min.
3. Maximum time period for a release:	113 min.	255 min.
4. Average time period for a release:	76 min.	81 min.
5. Minimum time period for a release:	40 min.	47 min.
6. Average stream flow during periods of release of effluent into a flowing stream:	*1.15E4 cfs	*1.15E4 cfs
b. Gaseous	Quarter 3	Quarter 4
1. Number of releases:	0	0
2. Total time period for releases:	0	0
3. Maximum time period for a release:	0	0
4. Average time period for a release:	0	0
5. Minimum time period for a release:	0	0

6. Abnormal Releases

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 Release

a. Liquid	Quarter 3	Quarter 4
1. Number of batch releases:	86	106
2. Total time period for releases:	16325 min.	12193 min.
3. Maximum time period for a release:	280 min.	260 min.
4. Average time period for a release:	190 min.	115 min.
5. Minimum time period for a release:	73 min.	54 min.
6. Average stream flow during periods of release of effluent into a flowing stream:	*1.15E4 cfs	*1.15E4 cfs

b. Gaseous	Quarter 3	Quarter 4
1. Number of releases:	0	7
2. Total time period for releases:	0	4020 min.
3. Maximum time period for a release:	0	84 min.
4. Average time period for a release:	0	60 min.
5. Minimum time period for a release:	0	42 min.

6. Abnormal Releases

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 + or - 10%.
2. The average error associated with counting is estimated to be less than + or - 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:

Fission and Activation Gases	Iodines	Particulates	Tritium
75%	60%	50%	45%

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

Fission and Activation Gases	Iodines	Particulates	Tritium
6%	18%	19%	12%

c. Solid Radwaste

The error involved in determining the contents of solid radwaste shipments is estimated to be less than + or - 15%.

UNIT # 1

8. Solid Waste

See Table 3

9. Radiological Impact On Man

a. Water Related Exposure Pathways

3rd Quarter	4th Quarter
Total Body = $3.3\text{E-}02$ mrem	$5.8\text{E-}02$ mrem
Bone = $2.7\text{E-}02$ mrem	$5.2\text{E-}02$ mrem
Liver = $4.6\text{E-}02$ mrem	$8.3\text{E-}02$ mrem
Thyroid = $8.1\text{E-}03$ mrem	$1.7\text{E-}02$ mrem
Kidney = $1.9\text{E-}02$ mrem	$2.9\text{E-}02$ mrem
Lungs = $9.5\text{E-}03$ mrem	$1.1\text{E-}02$ mrem
GI Tract = $8.9\text{E-}03$ mrem	$1.5\text{E-}02$ mrem

b. Gaseous Related Exposure Pathways

3rd Quarter	4th Quarter
Total Body = $1.5\text{E-}03$ mrem	$9.5\text{E-}03$ mrem
Skin = $4.5\text{E-}03$ mrem	$2.7\text{E-}02$ mrem

c. Particulate and Iodine

3rd Quarter	4th Quarter
Organ Dose = $5.5\text{E-}01$ mrem	$1.9\text{E-}01$ mrem

UNIT # 2

8. Solid Waste

See Table 3

9. Radiological Impact On Man

a. Water Related Exposure Pathways

3rd Quarter	4th Quarter
Total Body = $2.2\text{E-}02$ mrem	$3.5\text{E-}02$ mrem
Bone = $1.7\text{E-}02$ mrem	$2.9\text{E-}02$ mrem
Liver = $3.0\text{E-}02$ mrem	$4.8\text{E-}02$ mrem
Thyroid = $6.3\text{E-}03$ mrem	$4.4\text{E-}03$ mrem
Kidney = $1.2\text{E-}02$ mrem	$1.7\text{E-}02$ mrem
Lungs = $8.5\text{E-}03$ mrem	$7.3\text{E-}03$ mrem
GI Tract = $6.5\text{E-}03$ mrem	$5.7\text{E-}03$ mrem

b. Gaseous Related Exposure Pathways

3rd Quarter	4th Quarter
Total Body = $4.8\text{E-}02$ mrem	$3.6\text{E-}01$ mrem
Skin = $6.4\text{E-}02$ mrem	$5.6\text{E-}01$ mrem

c. Particulate and Iodine

3rd Quarter	4th Quarter
Organ Dose = $2.3\text{E-}03$ mrem	$2.7\text{E-}03$ mrem

10. Meteorological Data

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

Continuous Release Mode:

3rd Quarter, 1982
4th Quarter, 1982
Annual, 1982

Batch Release Mode (Units 1 and 2):

3rd Quarter, 1982
4th Quarter, 1982

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 dose commitment of the effluent release in question.

12. Annual Radiation Dose Assessment

a. Water Related Exposure Pathways

1982

Total Body = 5.4E-01 mrem
Bone = 9.1E-01 mrem
Liver = 7.4E-01 mrem
Thyroid = 5.2E-02 mrem
Kidney = 2.5E-01 mrem
Lungs = 1.5E-01 mrem
GI Tract = 2.6E-01 mrem

b. Gaseous Related Exposure Pathways

1982

Total Body = 5.3E-01 mrem
Skin = 1.48E00 mrem

c. Particulate and Iodine 1982

Organ dose = $7.4E-01$ 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 and 6 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).

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 limited to the Chattahooche 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 WSW, and SW.

The tabulation of doses to sectors, calculated at the site boundary, indicates the total yearly dose in each sector 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 WSW and SW.

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 likely most 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 for the same location.

No direct radiation dose levels above the normal variation in natural background were found for the period January 1, 1982 to December 31, 1982.

Dose Contributions to Sectors

ANNUAL

Sector	D0gamma (mrad)	%tech
N :	1.62E-03+-2.38E-04	0.01
NNE:	2.36E-02+-2.72E-03	0.16
NE:	1.88E-03+-2.11E-04	0.01
ENE:	1.90E-03+-2.23E-04	0.01
E :	1.37E-02+-3.53E-03	0.09
ESE:	2.18E-02+-1.69E-02	0.15
SE:	4.89E-03+-7.12E-04	0.03
SSE:	3.00E-02+-1.92E-02	0.20
S :	8.29E-03+-4.49E-03	0.06
SSW:	2.35E-02+-6.87E-03	0.16
SW:	5.40E-02+-4.77E-02	0.36
WSW:	1.09E-01+-4.09E-02	0.73
W :	3.99E-02+-1.79E-02	0.27
WNW:	5.25E-02+-1.70E-02	0.35
NW:	6.56E-02+-1.62E-02	0.44
NNW:	3.72E-03+-3.28E-04	0.02

Sector	D0beta (mrad)	%tech
N :	9.95E-03+-3.25E-03	0.07
NNE:	1.87E-02+-1.18E-02	0.12
NE:	5.13E-03+-7.67E-04	0.03
ENE:	5.44E-03+-1.18E-03	0.04
E :	1.71E-02+-7.21E-03	0.11
ESE:	3.67E-02+-6.12E-02	0.24
SE:	9.12E-03+-1.35E-03	0.06
SSE:	4.48E-02+-4.68E-02	0.30
S :	8.53E-03+-1.56E-02	0.06
SSW:	1.93E-02+-1.52E-02	0.13
SW:	9.10E-02+-1.04E-01	0.61
WSW:	1.63E-01+-1.25E-01	1.08
W :	6.50E-02+-7.43E-02	0.43
WNW:	9.23E-02+-1.02E-01	0.62
NW:	8.28E-02+-4.65E-02	0.55
NNW:	1.27E-02+-2.46E-03	0.08

Sector	D0tau (mrad)	%tech
N :	7.58E-05+-4.08E-06	0.00
NNE:	2.30E-04+-1.21E-05	0.00
NE:	7.05E-05+-5.24E-06	0.00
ENE:	5.35E-05+-1.45E-06	0.00
E :	1.85E-04+-1.22E-05	0.00
ESE:	9.56E-05+-1.93E-06	0.00
SE:	6.97E-05+-4.33E-06	0.00
SSE:	8.60E-05+-2.34E-06	0.00
S :	1.07E-04+-2.37E-06	0.00
SSW:	5.79E-04+-2.80E-05	0.00
SW:	1.79E-03+-7.97E-05	0.01
WSW:	1.79E-03+-9.07E-05	0.01
W :	1.24E-03+-8.00E-05	0.01
WNW:	1.23E-04+-1.85E-06	0.00
NW:	8.08E-05+-1.61E-06	0.00
NNW:	1.04E-04+-7.56E-06	0.00

TABLE 1A-1Q3

GASEOUS EFFLUENTS--SUMMATION OF ALL RELEASES

Farley Unit 1 - 3rd Quarter, 1982

	UNITS -----	QTR 3 -----	Est Error -----
A. Fission & activation gases:			
1. Total release	Ci	2.61E 04	2.64E 03
2. Average Release rate	uCi/sec	3.29E 03	
3. % of Technical specification	%	3.05E-01*	
	%	7.42E-01**	
B. Iodines			
1. Total iodine-131	Ci	2.99E-02	1.86E-04
2. Average Release rate	uCi/sec	3.76E-03	
3. % of Technical specification	%	1.15E-05***	
C. Particulates			
1. Particulates with T1/2>8 days	Ci	5.43E-04	1.86E-05
2. Average Release rate	uCi/sec	6.83E-05	
3. % of Technical specification	%	3.02E-06***	
4. Gross alpha radioactivity	Ci	0.00E 00	
D. Tritium			
1. Total release	Ci	4.82E 01	2.16E-01
2. Average Release rate	uCi/sec	6.06E 00	
3. % of Technical specification	%	5.61E-07***	

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

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

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

TABLE 1A-1Q4

GASEOUS EFFLUENTS--SUMMATION OF ALL RELEASES

Farley Unit 1 - 4th Quarter, 1982

	UNITS	QTR 4	Est Error
	----	-----	-----
A. Fission & activation gases:			
1. Total release	Ci	1.16E 04	4.47E 01
2. Average Release rate	uCi/sec	1.46E 03	
3. % of Technical specification	%	5.10E-02*	
	%	1.04E-01**	
B. Iodines			
1. Total iodine-131	Ci	4.84E-02	2.76E-04
2. Average Release rate	uCi/sec	6.08E-03	
3. % of Technical specification	%	1.85E-05***	
C. Particulates			
1. Particulates with T1/2>8 days	Ci	1.01E-03	5.27E-05
2. Average Release rate	uCi/sec	1.27E-04	
3. % of Technical specification	%	7.92E-07***	
4. Gross alpha radioactivity	Ci	0.00E 00	
D. Tritium			
1. Total release	Ci	3.65E 01	1.59E-01
2. Average Release rate	uCi/sec	4.59E 00	
3. % of Technical specification	%	4.26E-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, 1982

	UNITS	QTR 3	Est Error
	-----	-----	-----
A. Fission & activation gases:			
1. Total release	Ci	1.22E 02	6.96E 03
2. Average Release rate	uCi/sec	1.54E 01	
3. % of Technical specification	%	3.80E-03*	
	%	6.97E-03**	
B. Iodines			
1. Total iodine-131	Ci	1.30E-05	1.58E-06
2. Average Release rate	uCi/sec	1.64E-06	
3. % of Technical specification	%	4.99E-09***	
C. Particulates			
1. Particulates with T1/2>8 days	Ci	9.00E-07	3.93E-07
2. Average Release rate	uCi/sec	1.13E-07	
3. % of Technical specification	%	8.34E-08***	
4. Gross alpha radioactivity	Ci	0.00E 00	
D. Tritium			
1. Total release	Ci	3.22E 01	1.68E-01
2. Average Release rate	uCi/sec	4.04E 00	
3. % of Technical specification	%	3.75E-07***	

*: 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, 1982

	UNITS	QTR 4	Est Error
	----	-----	-----
A. Fission & activation gases:			
1. Total release	Ci	3.26E 03	1.76E 02
2. Average Release rate	uCi/sec	4.10E 02	
3. % of Technical specification	%	5.94E-03*	
	%	1.37E-02**	
B. Iodines			
1. Total iodine-131	Ci	6.04E-06	1.56E-06
2. Average Release rate	uCi/sec	7.60E-07	
3. % of Technical specification	%	8.03E-09***	
C. Particulates			
1. Particulates with T1/2>8 days	Ci	1.84E-06	5.00E-07
2. Average Release rate	uCi/sec	2.32E-07	
3. % of Technical specification	%	9.91E-08***	
4. Gross alpha radioactivity	Ci	0.00E 00	
D. Tritium			
1. Total release	Ci	1.91E 01	1.67E-01
2. Average Release rate	uCi/sec	2.40E 00	
3. % of Technical specification	%	2.22E-07***	

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

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

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

TABLE 1B-1Q3

GASEOUS EFFLUENTS--ELEVATED RELEASE

Farley Unit 1 - 3rd Quarter, 1982

Nuclides Released	Unit	CONTINUOUS Mode QTR# 3	BATCH Mode QTR# 3
-----	----	-----	-----
1. Fission gases			
Ar-41	Ci	7.19E-03	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-85	Ci	3.10E 00	0.00E 00
Xe-138	Ci	0.00E 00	0.00E 00
Kr-87	Ci	4.36E 03	0.00E 00
Kr-85M	Ci	0.00E 00	0.00E 00
Xe-135	Ci	2.14E 04	0.00E 00
Xe-133M	Ci	5.96E 00	0.00E 00
Kr-89	Ci	0.00E 00	0.00E 00
Kr-88	Ci	1.89E-03	0.00E 00
Xe-131M	Ci	1.69E 01	0.00E 00
Xe-133	Ci	2.54E 02	0.00E 00
Total for period	Ci	2.60E 04	0.00E 00
2. Iodines			
I-133	Ci	5.40E-02	0.00E 00
I-131	Ci	2.14E-02	0.00E 00
Total for period	Ci	7.54E-02	0.00E 00
3. Particulates			
Sb-124	Ci	0.00E 00	0.00E 00
Co-60	Ci	8.72E-06	0.00E 00
Zn-65	Ci	0.00E 00	0.00E 00
Fe-59	Ci	1.21E-06	0.00E 00
Mn-54	Ci	1.75E-07	0.00E 00
Cs-136	Ci	0.00E 00	0.00E 00
Co-58	Ci	0.00E 00	0.00E 00
Zr-95	Ci	2.11E-08	0.00E 00
Cs-137	Ci	2.53E-07	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00
Ba-140	Ci	0.00E 00	0.00E 00
I-133	Ci	5.00E-02	0.00E 00
I-131	Ci	4.49E-04	0.00E 00
Cr-51	Ci	7.72E-08	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Sr-89	Ci	1.69E-07	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
Total for period	Ci	5.04E-02	0.00E 00

TABLE 1B-1Q4

GASEOUS EFFLUENTS--ELEVATED RELEASE

Farley Unit 1 - 4th Quarter, 1982

Nuclides Released	Unit	CONTINUOUS Mode QTR# 4	BATCH Mode QTR# 4
-----	----	-----	-----
1. Fission gases			
Ar-41	Ci	1.30E-05	0.00E 00
Xe-137	Ci	0.00E 00	0.00E 00
Kr-90	Ci	1.59E-02	0.00E 00
Xe-135M	Ci	1.23E-02	0.00E 00
Kr-85	Ci	7.52E-01	0.00E 00
Xe-138	Ci	2.30E-02	0.00E 00
Kr-87	Ci	3.21E-02	0.00E 00
Kr-85M	Ci	7.55E-02	0.00E 00
Xe-135	Ci	9.46E 02	0.00E 00
Xe-133M	Ci	4.12E-01	0.00E 00
Kr-89	Ci	0.00E 00	0.00E 00
Kr-88	Ci	8.45E-02	0.00E 00
Xe-131M	Ci	1.89E-01	0.00E 00
Xe-133	Ci	3.10E 03	0.00E 00
Total for period	Ci	4.05E 03	0.00E 00
2. Iodines			
I-133	Ci	6.05E-02	0.00E 00
I-131	Ci	2.75E-02	0.00E 00
Total for period	Ci	8.80E-02	0.00E 00
3. Particulates			
Sb-124	Ci	1.16E-03	0.00E 00
Co-60	Ci	0.00E 00	0.00E 00
Zn-65	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
Cs-136	Ci	0.00E 00	0.00E 00
Co-58	Ci	7.29E-06	0.00E 00
Zr-95	Ci	0.00E 00	0.00E 00
Cs-137	Ci	6.04E-08	0.00E 00
Cs-134	Ci	7.43E-07	0.00E 00
Ba-140	Ci	0.00E 00	0.00E 00
I-133	Ci	5.45E-02	0.00E 00
I-131	Ci	7.15E-04	0.00E 00
Cr-51	Ci	2.88E-05	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Sr-89	Ci	0.00E 00	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
Total for period	Ci	5.53E-02	0.00E 00

TABLE 1B-2Q3

GASEOUS EFFLUENTS--ELEVATED RELEASE

Farley Unit 2 - 3rd Quarter, 1982

Nuclides Released	Unit	CONTINUOUS	BATCH
		Mode QTR# 3	Mode QTR# 3

1. Fission gases			
Ar-41	Ci	1.09E-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-85	Ci	3.10E 00	0.00E 00
Xe-138	Ci	0.00E 00	0.00E 00
Kr-87	Ci	4.36E 00	0.00E 00
Kr-85M	Ci	0.00E 00	0.00E 00
Xe-135	Ci	2.17E 01	0.00E 00
Xe-133M	Ci	5.96E 00	0.00E 00
Kr-89	Ci	0.00E 00	0.00E 00
Kr-88	Ci	1.89E-03	0.00E 00
Xe-131M	Ci	1.69E-02	0.00E 00
Xe-133	Ci	7.23E 01	0.00E 00
Total for period	Ci	1.07E 02	0.00E 00
2. Iodines			
I-133	Ci	1.50E-03	0.00E 00
I-131	Ci	1.30E-05	0.00E 00
Total for period	Ci	1.51E-03	0.00E 00
3. Particulates			
Sb-124	Ci	0.00E 00	0.00E 00
Co-60	Ci	2.53E-07	0.00E 00
Zn-65	Ci	0.00E 00	0.00E 00
Fe-59	Ci	0.00E 00	0.00E 00
Mn-54	Ci	2.50E-07	0.00E 00
Cs-136	Ci	0.00E 00	0.00E 00
Co-58	Ci	0.00E 00	0.00E 00
Zr-95	Ci	3.65E-08	0.00E 00
Cs-137	Ci	0.00E 00	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00
Ba-140	Ci	0.00E 00	0.00E 00
I-133	Ci	1.50E-03	0.00E 00
I-131	Ci	0.00E 00	0.00E 00
Cr-51	Ci	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Sr-89	Ci	1.67E-07	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
Total for period	Ci	1.50E-03	0.00E 00

TABLE 1B-2Q4

GASEOUS EFFLUENTS--ELEVATED RELEASE

Farley Unit 2 - 4th Quarter, 1982

Nuclides Released	Unit	CONTINUOUS Mode QTR# 4	BATCH Mode QTR# 4

1. Fission gases			
Ar-41	Ci	2.50E-03	4.25E-04
Xe-137	Ci	0.00E 00	3.12E-03
Kr-90	Ci	1.59E-02	0.00E 00
Xe-135M	Ci	0.00E 00	0.00E 00
Kr-85	Ci	7.52E-01	1.30E 00
Xe-138	Ci	0.00E 00	2.55E-03
Kr-87	Ci	0.00E 00	0.00E 00
Kr-85M	Ci	1.65E-03	3.61E-03
Xe-135	Ci	1.75E 02	7.23E-02
Xe-133M	Ci	1.51E-02	9.34E-02
Kr-89	Ci	0.00E 00	0.00E 00
Kr-88	Ci	0.00E 00	0.00E 00
Xe-131M	Ci	1.89E-01	1.77E-01
Xe-133	Ci	2.99E 03	1.16E 01
Total for period	Ci	3.17E 03	1.32E 01
2. Iodines			
I-133	Ci	8.33E-06	0.00E 00
I-131	Ci	3.38E-06	3.14E-08
Total for period	Ci	1.17E-05	3.14E-08
3. Particulates			
Sb-124	Ci	0.00E 00	0.00E 00
Co-60	Ci	1.32E-07	0.00E 00
Zn-65	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
Cs-136	Ci	0.00E 00	0.00E 00
Co-58	Ci	1.13E-06	2.62E-09
Zr-95	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
Ba-140	Ci	0.00E 00	0.00E 00
I-133	Ci	8.33E-06	0.00E 00
I-131	Ci	5.20E-07	1.57E-08
Cr-51	Ci	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Sr-89	Ci	0.00E 00	6.19E-11
Sr-90	Ci	0.00E 00	6.19E-11
Total for period	Ci	1.01E-05	1.85E-08

TABLE 1C-1Q3

GASEOUS EFFLUENTS--GROUND RELEASE

Farley Unit 1 - 3rd Quarter, 1982

Nuclides Released	Unit	CONTINUOUS	BATCH
		Mode QTR# 3	Mode QTR# 3

1. Fission gases			
Ar-41	Ci	3.38E-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	3.97E-01	0.00E 00
Kr-85	Ci	1.52E-02	0.00E 00
Xe-138	Ci	4.12E-01	0.00E 00
Kr-87	Ci	6.32E-01	0.00E 00
Kr-85M	Ci	7.90E-01	0.00E 00
Xe-135	Ci	3.38E 00	0.00E 00
Xe-133M	Ci	2.16E 01	0.00E 00
Kr-89	Ci	0.00E 00	0.00E 00
Kr-88	Ci	1.03E 00	0.00E 00
Xe-131M	Ci	4.56E-02	0.00E 00
Xe-133	Ci	6.08E 01	0.00E 00
Total for period	Ci	8.91E 01	0.00E 00
2. Iodines			
I-133	Ci	1.02E-02	0.00E 00
I-131	Ci	8.44E-03	0.00E 00
Total for period	Ci	1.86E-02	0.00E 00
3. Particulates			
Sb-124	Ci	0.00E 00	0.00E 00
Co-60	Ci	3.12E-09	0.00E 00
Zn-65	Ci	0.00E 00	0.00E 00
Fe-59	Ci	0.00E 00	0.00E 00
Mn-54	Ci	4.41E-09	0.00E 00
Cs-136	Ci	0.00E 00	0.00E 00
Co-58	Ci	0.00E 00	0.00E 00
Zr-95	Ci	2.77E-11	0.00E 00
Cs-137	Ci	2.24E-11	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00
Ba-140	Ci	0.00E 00	0.00E 00
I-133	Ci	9.56E-03	0.00E 00
I-131	Ci	8.33E-05	0.00E 00
Cr-51	Ci	3.56E-07	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Sr-89	Ci	7.95E-09	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
Total for period	Ci	9.65E-03	0.00E 00

TABLE 1C-1Q4

GASEOUS EFFLUENTS--GROUND RELEASE

Farley Unit 1 - 4th Quarter, 1982

Nuclides Released	Unit	CONTINUOUS	BATCH
		Mode QTR# 4	Mode QTR# 4

1. Fission gases			
Ar-41	Ci	1.90E-05	0.00E 00
Xe-137	Ci	0.00E 00	0.00E 00
Kr-90	Ci	2.56E-01	0.00E 00
Xe-135M	Ci	3.63E-04	0.00E 00
Kr-85	Ci	1.52E 01	0.00E 00
Xe-138	Ci	2.55E 01	0.00E 00
Kr-87	Ci	3.95E 01	0.00E 00
Kr-85M	Ci	1.72E 02	0.00E 00
Xe-135	Ci	1.61E 03	0.00E 00
Xe-133M	Ci	1.07E 01	0.00E 00
Kr-89	Ci	0.00E 00	0.00E 00
Kr-88	Ci	1.77E 02	0.00E 00
Xe-131M	Ci	4.40E-03	0.00E 00
Xe-133	Ci	5.49E 03	0.00E 00
Total for period	Ci	7.53E 03	0.00E 00
2. Iodines			
I-133	Ci	2.10E-02	0.00E 00
I-131	Ci	2.09E-02	0.00E 00
Total for period	Ci	4.18E-02	0.00E 00
3. Particulates			
Sb-124	Ci	5.80E-08	0.00E 00
Co-60	Ci	1.63E-08	0.00E 00
Zn-65	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
Cs-136	Ci	0.00E 00	0.00E 00
Co-58	Ci	1.75E-07	0.00E 00
Zr-95	Ci	0.00E 00	0.00E 00
Cs-137	Ci	1.14E-08	0.00E 00
Cs-134	Ci	9.49E-09	0.00E 00
Ba-140	Ci	0.00E 00	0.00E 00
I-133	Ci	1.85E-02	0.00E 00
I-131	Ci	2.57E-04	0.00E 00
Cr-51	Ci	3.12E-07	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Sr-89	Ci	0.00E 00	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
Total for period	Ci	1.87E-02	0.00E 00

TABLE 1C-2Q3

GASEOUS EFFLUENTS--GROUND RELEASE

Farley Unit 2 - 3rd Quarter, 1982

Nuclides Released	Unit	CONTINUOUS	BATCH
		Mode QTR# 3	Mode QTR# 3

1. Fission gases			
Ar-41	Ci	9.88E-06	0.00E 00
Xe-137	Ci	0.00E 00	0.00E 00
Kr-90	Ci	0.00E 00	0.00E 00
Xe-135M	Ci	2.51E-05	0.00E 00
Kr-85	Ci	6.48E-01	0.00E 00
Xe-138	Ci	1.77E-05	0.00E 00
Kr-87	Ci	1.04E 00	0.00E 00
Kr-85M	Ci	0.00E 00	0.00E 00
Xe-135	Ci	1.11E 01	0.00E 00
Xe-133M	Ci	2.11E-02	0.00E 00
Kr-89	Ci	0.00E 00	0.00E 00
Kr-88	Ci	1.95E 00	0.00E 00
Xe-131M	Ci	4.56E-02	0.00E 00
Xe-133	Ci	7.87E-02	0.00E 00
Total for period	Ci	1.49E 01	0.00E 00
2. Iodines			
I-133	Ci	1.65E-06	0.00E 00
I-131	Ci	3.70E-08	0.00E 00
Total for period	Ci	1.68E-06	0.00E 00
3. Particulates			
Sb-124	Ci	0.00E 00	0.00E 00
Co-60	Ci	3.14E-10	0.00E 00
Zn-65	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
Cs-136	Ci	0.00E 00	0.00E 00
Co-58	Ci	0.00E 00	0.00E 00
Zr-95	Ci	4.54E-11	0.00E 00
Cs-137	Ci	1.13E-07	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00
Ba-140	Ci	0.00E 00	0.00E 00
I-133	Ci	1.64E-06	0.00E 00
I-131	Ci	0.00E 00	0.00E 00
Cr-51	Ci	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Sr-89	Ci	8.01E-08	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
Total for period	Ci	1.84E-06	0.00E 00

TABLE 1C-2Q4

GASEOUS EFFLUENTS--GROUND RELEASE

Farley Unit 2 - 4th Quarter, 1982

Nuclides Released	Unit	CONTINUOUS	BATCH
		Mode QTR# 4	Mode QTR# 4

1. Fission gases			
Ar-41	Ci	3.00E-05	0.00E 00
Xe-137	Ci	0.00E 00	4.79E-05
Kr-90	Ci	2.56E-01	0.00E 00
Xe-135M	Ci	0.00E 00	0.00E 00
Kr-85	Ci	1.35E-02	1.84E 00
Xe-138	Ci	0.00E 00	0.00E 00
Kr-87	Ci	1.95E-02	0.00E 00
Kr-85M	Ci	0.00E 00	9.38E-03
Xe-135	Ci	2.74E 00	1.79E-01
Xe-133M	Ci	9.12E-02	2.11E-01
Kr-89	Ci	0.00E 00	0.00E 00
Kr-88	Ci	3.52E-02	0.00E 00
Xe-131M	Ci	4.40E-03	8.51E-01
Xe-133	Ci	4.05E 01	3.70E 01
Total for period	Ci	4.37E 01	4.00E 01
2. Iodines			
I-133	Ci	2.81E 00	0.00E 00
I-131	Ci	2.63E-06	1.93E-09
Total for period	Ci	2.81E 00	1.93E-09
3. Particulates			
Sb-124	Ci	0.00E 00	0.00E 00
Co-60	Ci	0.00E 00	0.00E 00
Zn-65	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
Cs-136	Ci	0.00E 00	0.00E 00
Co-58	Ci	3.95E-08	8.50E-11
Zr-95	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
Ba-140	Ci	0.00E 00	0.00E 00
I-133	Ci	2.52E-06	0.00E 00
I-131	Ci	0.00E 00	9.60E-10
Cr-51	Ci	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Sr-89	Ci	0.00E 00	4.04E-12
Sr-90	Ci	0.00E 00	4.04E-12
Total for period	Ci	2.56E-06	1.05E-09

TABLE 2A-1

LIQUID EFFLUENTS--SUMMATION OF ALL RELEASES
Farley Unit 1 - 2nd Half, 1982

	UNIT	Qrtr 3, 82	Qrtr 4, 82
A. Fission and Activation Products			
1. Total release	Ci	1.00E 02	1.32E 02
2. Average diluted concentration			
During Period Note (1)	uCi/ml	1.02E-04	9.44E-05
3. Percent of applicable limit			
During Period Note (1)	%	9.93E-02	2.05E-01
B. Tritium			
1. Total release	Ci	9.85E 01	1.28E 02
2. Average diluted concentration			
During Period Note (1)	uCi/ml	1.00E-04	9.17E-05
3. Percent of applicable limit			
During Period Note (1)	%	3.34E 00	3.06E 00
C. Dissolved and Entrained Gases			
1. Total release	Ci	1.63E 00	3.79E 00
2. Average diluted concentration			
During Period Note (1)	uCi/ml	1.66E-06	2.72E-06
3. Percent of applicable limit			
During Period Note (1)	%	4.16E 00	6.81E 00
D. Gross Alpha Radioactivity			
1. Total release	Ci	0.00E 00	3.86E-06
E. Volume of Waste Water Note(2)			
1. WMT	liters	1.55E 06	3.38E 06
2. SGBD and Turbine Bldg Sumps	liters	7.19E 07	8.96E 07
3. Liquid Radioactive Effluent			
TOTAL Note(3)	liters	1.55E 06	3.38E 06
F. Volume of Dilution Water			
During Quarter	liters	1.32E 10	1.14E 10

NOTE:

- (1) During period of discharge
 (2) Prior to dilution
 (3) Steam Generator Blowdown and Turbine Building Sump releases are excluded from Total Liquid Radioactive Effluent in accordance with 10 CFR 20, Appendix B, Note 5.

TABLE 2A-2

LIQUID EFFLUENTS--SUMMATION OF ALL RELEASES
Farley Unit 2 - 2nd Half, 1982

	UNIT	Qrtr 3, 82	Qrtr 4, 82
A. Fission and Activation Products			
1. Total release	Ci	1.08E 02	1.07E 02
2. Average diluted concentration			
During Period Note (1)	uCi/ml	4.98E-05	5.92E-05
3. Percent of applicable limit			
During Period Note (1)	%	4.68E-02	1.26E-01
B. Tritium			
1. Total release	Ci	1.05E 02	1.05E 02
2. Average diluted concentration			
During Period Note (1)	uCi/ml	4.88E-05	5.79E-05
3. Percent of applicable limit			
During Period Note (1)	%	1.68E 00	1.93E 00
C. Dissolved and Entrained Gases			
1. Total release	Ci	2.10E 00	2.06E 00
2. Average diluted concentration			
During Period Note (1)	uCi/ml	9.65E-07	1.19E-06
3. Percent of applicable limit			
During Period Note (1)	%	4.82E 00	5.98E 00
D. Gross Alpha Radioactivity			
1. Total release	Ci	0.00E 00	0.00E 00
E. Volume of Waste Water Note (2)			
1. WMT	liters	1.28E 06	1.56E 06
2. Total	liters	1.49E 08	1.43E 08
3. Liquid Radioactive Effluent			
TOTAL Note (3)	liters	1.28E 06	1.56E 06
F. Volume of Dilution Water			
During Quarter	liters	1.77E 10	9.71E 09

NOTE:

- (1) During period of discharge
(2) Prior to dilution
(3) Steam Generator Blowdown and Turbine Building Sump releases are excluded from Total Liquid Radioactive Effluent in accordance with 10 CFR 20, Appendix B, Note 5.

TABLE 2B-1B

LIQUID EFFLUENTS--BATCH
Farley Unit 1 - 2nd Half, 1982

Nuclides Released	Unit	Qrtr 3, 1982 Note (1)	Qrtr 4, 1982 Note (1)
Sr-89	Ci	2.32E-05	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
H-3	Ci	9.84E 01	1.27E 02
Fe-55	Ci	1.24E-04	2.83E-05
Co-57	Ci	1.04E-06	0.00E 00
Ce-144	Ci	6.38E-05	3.04E-03
Tc-99M	Ci	7.97E-06	2.16E-04
Ce-141	Ci	< 2.51E-04	< 4.49E-04
Np-239	Ci	9.69E-05	3.82E-03
Cr-51	Ci	0.00E 00	2.11E-04
I-131	Ci	2.46E-04	5.05E-04
Ru-103	Ci	0.00E 00	6.09E-05
I-133	Ci	4.78E-05	1.86E-04
Ba-140	Ci	5.93E-06	3.29E-06
As-76	Ci	1.07E-06	0.00E 00
Cs-134	Ci	6.10E-05	7.05E-04
Cs-137	Ci	2.87E-04	2.04E-03
Mo-99	Ci	7.05E-06	3.35E-06
Zr-95	Ci	4.48E-07	1.65E-04
Nb-95	Ci	6.93E-06	1.40E-04
I-132	Ci	0.00E 00	3.20E-05
Co-58	Ci	9.76E-05	7.09E-04
Cs-136	Ci	4.81E-05	4.93E-05
Mn-54	Ci	3.00E-05	8.89E-05
Ag-110M	Ci	3.83E-05	4.33E-05
Sr-91	Ci	0.00E 00	1.22E-06
Zn-65	Ci	< 1.89E-04	< 3.03E-04
I-135	Ci	1.05E-06	4.66E-06
Fe-59	Ci	< 1.52E-04	1.74E-06
Co-60	Ci	1.28E-03	1.72E-03
Na-24	Ci	0.00E 00	1.31E-05
La-140	Ci	4.16E-04	7.26E-04
Zr-97	Ci	1.92E-07	3.00E-04
Xe-133	Ci	1.63E 00	3.72E 00
Xe-135	Ci	5.53E-03	6.14E-02
TOTALS	Ci	1.00E 02	1.31E 02

NOTE:

(1) < indicates an MDC value for the corresponding radionuclide and does not contribute to total activity.

TABLE 2B-1C

LIQUID EFFLUENTS--CONTINUOUS
Farley Unit 1 - 2nd Half, 1982

Nuclides Released	Unit	Qrtr 3, 1982 Note (1)	Qrtr 4, 1982 Note (1)
Sr-89	Ci	0.00E 00	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
H-3	Ci	1.02E-01	7.14E-01
Fe-55	Ci	3.37E-03	0.00E 00
Ce-144	Ci	< 9.23E-03	< 1.14E-02
Ce-141	Ci	< 1.91E-03	< 2.72E-03
Ru-103	Ci	0.00E 00	1.96E-04
Cs-134	Ci	< 1.18E-03	< 1.40E-03
Cs-137	Ci	1.47E-03	< 1.66E-03
Mo-99	Ci	< 9.08E-03	< 1.08E-02
I-132	Ci	0.00E 00	1.01E-04
Co-58	Ci	< 1.20E-03	< 1.68E-03
Cs-136	Ci	0.00E 00	3.16E-05
Mn-54	Ci	< 1.25E-03	7.81E-05
Zn-65	Ci	< 3.02E-03	< 3.44E-03
Fe-59	Ci	< 3.72E-03	< 4.29E-03
Co-60	Ci	< 2.03E-03	< 2.32E-03
Xe-133	Ci	6.91E-04	5.62E-03
Xe-135	Ci	0.00E 00	1.14E-04
TOTALS	Ci	1.06E-01	7.20E-01

NOTE:

- (1) < indicates an MDC value for the corresponding radionuclide
 (2) Although Steam Generator Blowdown and Turbine Building Sump releases were excluded from total liquid radioactive effluent in accordance with 10 CFR 20, Appendix B, Note 5, curie amounts and doses from these releases were measured and are reported here in accordance with Table 4.11-1, Footnote E of Joseph M. Farley Nuclear Plant Unit Number 1 Technical Specification (Appendix A of License No. NPF-2).

TABLE 2B-2B

LIQUID EFFLUENTS--BATCH
Farley Unit 2 - 2nd Half, 1982

Nuclides Released	Unit	Qrtr 3, 1982 Note (1)	Qrtr 4, 1982 Note (1)
Sr-89	Ci	0.00E 00	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
H-3	Ci	1.05E 02	9.62E 01
Fe-55	Ci	1.07E-04	1.43E-05
Ce-144	Ci	2.38E-04	1.77E-03
Tc-99M	Ci	0.00E 00	9.66E-05
Ce-141	Ci	< 1.28E-04	< 3.13E-04
Np-239	Ci	1.90E-05	1.33E-03
Cr-51	Ci	0.00E 00	6.68E-05
I-131	Ci	2.55E-04	4.93E-04
Ru-103	Ci	0.00E 00	3.16E-05
I-133	Ci	5.52E-05	6.62E-05
Ba-140	Ci	0.00E 00	2.27E-06
As-76	Ci	1.48E-06	0.00E 00
Cs-134	Ci	6.08E-05	6.94E-04
Ru-106	Ci	0.00E 00	7.46E-07
Cs-137	Ci	2.13E-04	1.59E-03
Mo-99	Ci	< 2.67E-04	< 3.89E-04
Zr-95	Ci	0.00E 00	6.64E-05
Nb-95	Ci	7.11E-06	5.02E-05
I-132	Ci	1.01E-06	1.88E-05
Co-58	Ci	1.10E-03	3.23E-03
Cs-136	Ci	2.99E-06	9.49E-07
Mn-54	Ci	1.10E-04	2.46E-04
Ag-110M	Ci	1.93E-05	1.08E-05
Zn-65	Ci	2.02E-06	< 1.30E-04
I-135	Ci	1.13E-06	3.48E-06
Fe-59	Ci	1.79E-06	3.68E-06
Co-60	Ci	6.88E-04	3.28E-04
Na-24	Ci	3.51E-06	6.68E-06
La-140	Ci	1.98E-04	2.88E-04
Ni-65	Ci	0.00E 00	3.45E-06
Zr-97	Ci	0.00E 00	1.01E-04
Xe-133	Ci	2.09E 00	1.97E 00
Xe-135	Ci	1.06E-02	6.88E-02
TOTALS	Ci	1.08E 02	9.83E 01

NOTE:

(1) < indicates an MDC value for the corresponding radionuclide and does not contribute to total activity.

TABLE 2B-2C

LIQUID EFFLUENTS--CONTINUOUS
Farley Unit 2 - 2nd Half, 1982

Nuclides Released	Unit	Qrtr 3, 1982 Note (1)	Qrtr 4, 1982 Note (1)
Sr-89	Ci	0.00E 00	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
H-3	Ci	2.27E-01	8.46E 00
Fe-55	Ci	0.00E 00	0.00E 00
Ce-144	Ci	< 6.89E-03	< 1.78E-02
Ce-141	Ci	< 1.45E-03	< 4.19E-03
I-131	Ci	5.29E-05	0.00E 00
I-133	Ci	0.00E 00	7.35E-05
Cs-134	Ci	< 7.31E-04	< 2.03E-03
Cs-137	Ci	7.56E-05	< 2.51E-03
Mo-99	Ci	< 5.47E-03	< 1.79E-02
Co-58	Ci	< 8.92E-04	< 3.01E-03
Mn-54	Ci	< 8.61E-04	5.64E-04
Zn-65	Ci	< 2.12E-03	< 4.70E-03
Fe-59	Ci	< 2.41E-03	< 7.13E-03
Co-60	Ci	3.90E-05	< 3.52E-03
Xe-133	Ci	0.00E 00	2.11E-02
Xe-135	Ci	0.00E 00	4.14E-04
TOTALS	Ci	2.27E-01	8.48E 00

NOTE:

- (1) < indicates an MDC value for the corresponding radionuclide and does not contribute to total activity.
- (2) Although Steam Generator Blowdown and Turbine Building Sump releases were excluded from total liquid radioactive effluent in accordance with 10 CFR 20, Appendix B, Note 5, curie amounts and doses from these releases were measured and are reported here in accordance with Table 4.11-1, Footnote E of Joseph M. Farley Nuclear Plant Unit Number 2 Technical Specifications (Appendix A of License No. NPF-8).

TABLE 3

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1982)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

1. Type of Waste	UNITS	PERIOD 6-MONTHS
a. Spent resins, filter sludges, evaporator bottoms, etc.	³ m Ci	9.627E 00 3.230E 00
b. Dry compressible waste, contaminated equipment, etc.	³ m Ci	1.340E 02 6.020E 01
c. Irradiated components, control rods, etc.	³ m Ci	None None
d. Other (described)	³ m Ci	None None

2. Estimate of major nuclide composition

ISOTOPES % Ci			ISOTOPES % Ci		
a. Nb-95	5.9E-01	1.917E-02	Ba-140	1.6E 00	5.325E-02
I-131	1.2E 01	4.147E-01	Na-24	1.4E-01	4.400E-03
Cs-134	7.2E 00	2.334E-01	Co-57	1.6E 00	5.325E-02
Co-60	4.3E 01	1.403E 00	La-140	2.2E 00	7.092E-02
Cs-137	1.2E 01	3.940E-01	Co-58	1.3E 01	4.039E-01
Mn-54	5.5E 00	1.789E-01			
b. Cr-51	1.2E 01	7.259E 00	Mn-54	3.2E 00	1.932E 00
I-131	6.6E 00	3.957E 00	Fe-59	5.6E-01	3.360E-01
Cs-134	6.2E 00	3.957E 00	Co-60	3.3E 01	2.001E 01
Cs-137	1.6E 00	9.708E-01	La-140	1.9E-01	1.120E-01
Zr-95	1.6E 00	9.335E-01	Nb-95	2.4E-01	1.415E-01
Co-58	4.0E 01	2.418E 00			

TABLE 3 (con't)

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1982)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

3. Solid Waste Disposition

- | | |
|---------------------------|--|
| a. Number of Shipments | 12 |
| b. Mode of Transportation | Chem-Nuclear Transport (10)
Hittman Transport (2) |
| c. Destination | Chem-Nuclear Systems, Inc.
Barnwell, South Carolina |

4. Type of Containers

- | | |
|-----------|---|
| a. (1a) | 170 cf. steel liners (dewatered
resin & charcoal media)
120 cf. High Integrity Containers
(Spent filters)
55 cf. High Integrity Containers
(Spent filters) |
| b. (1b) | 55 gallon steel drum
112 cf. wooden boxes |

5. Solidification Agents

- | | |
|-----------|---|
| a. (1a) | No solidifications during this
report period. All items (spent
resin and charcoal) that are
catagorized item 1a were shipped
dewatered. |
| b. (1b) | N/A |

B. IRRADIATED FUEL SHIPMENTS (Disposition)

- | | |
|---------------------------|------|
| 1. Number of Shipments | None |
| 2. Mode of Transportation | N/A |
| 3. Destination | N/A |

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-82 } 9-30-82

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	10	10	0	1	0	24
NNE	3	1	1	0	0	0	5
NE	41	87	18	0	0	0	146
ENE	14	51	2	0	0	0	67
E	1	2	0	0	0	0	3
ESE	1	8	3	1	0	0	13
SE	1	2	2	0	0	0	5
SSE	7	3	2	0	0	0	12
S	1	5	2	0	0	0	8
SSW	9	101	31	2	0	0	143
SW	3	20	0	0	0	0	23
WSW	2	4	0	0	0	0	6
W	9	21	6	0	0	0	36
WNW	1	3	0	0	0	0	4
NW	6	5	1	0	0	0	12
NNW	19	22	1	0	0	0	42
VARIABLE	264	319	73	10	0	0	566
Total	121	345	79	3	1	0	549

Periods of calm(hours): 156

Hours of missing data: 0

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION
 Farley Nuclear Plant - 3rd Quarter, 1982
 HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 7 -1-82 } 9-30-82
 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	13	5	1	0	0	1	20
NNE	4	7	0	0	0	1	12
NE	31	83	5	0	0	0	119
ENE	14	41	0	0	0	0	55
E	5	8	0	0	0	0	13
ESE	2	4	0	0	0	0	6
SE	5	9	7	0	0	0	21
SSE	4	1	0	0	0	0	5
S	1	4	0	0	0	0	5
SSW	29	73	18	1	0	0	121
SW	7	25	1	0	0	0	33
WSW	3	5	1	0	0	0	9
W	16	17	1	0	0	0	34
WNW	4	1	0	0	0	0	5
NW	2	8	0	0	0	0	10
NNW	47	36	2	0	0	0	35
VARIABLE	441	296	34	0	0	0	771
Total	187	327	36	1	0	2	553

Periods of calm(hours): 47
 Hours of missing data: 0

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-82 } 9-30-82

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	1	3	0	0	0	4
NNE	0	0	0	0	0	0	0
NE	1	4	0	0	0	0	5
ENE	0	2	0	0	0	0	2
E	0	1	0	0	0	0	1
ESE	0	1	0	0	0	0	1
SE	0	0	0	0	0	0	0
SSE	2	0	0	0	0	0	2
S	0	0	0	0	0	0	0
SSW	0	3	1	0	0	0	4
SW	0	2	0	0	0	0	2
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	2	0	0	0	0	2
VARIABLE	7	14	2	0	0	0	23
Total	3	17	4	0	0	0	24

Periods of calm(hours): 11

Hours of missing data: 0 36

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-82 } 9-30-82

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	4	0	0	0	0	4
NE	1	3	0	0	0	0	4
ENE	0	1	0	0	0	0	1
E	1	0	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	1	0	0	0	0	0	1
SSE	0	1	0	0	0	0	1
S	0	0	0	0	0	0	0
SSW	0	1	1	0	0	0	2
SW	0	3	0	0	0	0	3
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	2	0	0	0	0	4
VARIABLE	23	7	0	0	0	0	30
Total	6	15	1	0	0	0	22

Periods of calm(hours): 6

Hours of missing data: 0 37

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-82 } 9-30-82

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	1	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	2	5	0	0	0	0	7
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	2	0	0	0	0	0	2
S	0	1	0	0	0	0	1
SSW	1	3	0	0	0	0	4
SW	0	1	0	0	0	0	1
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	0	0	0	0	0	0
VARIABLE	9	10	2	0	0	0	21
Total	5	14	1	0	0	0	20

Periods of calm(hours): 6

Hours of missing data: 0 38

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-82 } 9-30-82

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	2	3	0	0	0	0	5
ENE	1	1	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	1	0	0	0	0	0	1
S	1	0	0	0	0	0	1
SSW	3	1	0	0	0	0	4
SW	0	1	0	0	0	0	1
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	20	6	1	0	0	0	27
Total	9	6	0	0	0	0	15

Periods of calm(hours): 5

Hours of missing data: 0

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION
 Farley Nuclear Plant - 3rd Quarter, 1982
 HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 7 -1-82 } 9-30-82
 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	1	0	0	0	0	1
NE	4	10	0	0	0	0	14
ENE	1	5	0	0	0	0	6
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	0	0	0	0	0	0	0
SSE	1	0	0	0	0	0	1
S	0	0	0	0	0	0	0
SSW	4	10	2	0	0	0	16
SW	0	1	0	0	0	0	1
WSW	0	0	0	0	0	0	0
W	1	2	1	0	0	0	4
WNW	1	0	0	0	0	0	1
NW	0	2	0	0	0	0	2
NNW	1	5	0	0	0	0	6
VARIABLE	26	27	7	3	0	0	63
Total	13	37	3	0	0	0	53

Periods of calm(hours): 21
 Hours of missing data: 0

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 7 -1-82 } 9-30-82
 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	2	0	0	0	0	0	2
NNE	1	0	0	0	0	0	1
NE	5	4	1	0	0	0	10
ENE	1	3	0	0	0	0	4
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	1	0	0	0	0	0	1
SSW	4	3	0	0	0	0	7
SW	0	1	0	0	0	0	1
WSW	0	0	0	0	0	0	0
W	1	2	0	0	0	0	3
WNW	0	2	0	0	0	0	2
NW	1	0	0	0	0	0	1
NNW	4	0	0	0	0	0	4
VARIABLE	61	15	5	0	0	0	81
Total	21	15	1	0	0	0	37

Periods of calm(hours): 19
 Hours of missing data: 0 41

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-82 } 9-30-82

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	2	11	0	0	0	0	13
ENE	0	2	0	0	0	0	2
E	0	4	0	0	0	0	4
ESE	0	0	0	0	0	0	0
SE	0	1	1	0	0	0	2
SSE	0	0	0	0	0	0	0
S	0	2	1	0	0	0	3
SSW	2	13	2	0	0	0	17
SW	0	0	0	0	0	0	0
WSW	1	0	0	0	0	0	1
W	0	7	0	0	0	0	7
WNW	0	2	0	0	0	0	2
NW	0	0	0	0	0	0	0
NNW	9	15	0	0	0	1	25
VARIABLE	30	50	10	0	0	0	90
Total	14	59	4	0	0	1	78

Periods of calm(hours): 35

Hours of missing data: 0

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-82 } 9-30-82

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	2	0	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	3	1	0	0	0	0	4
ENE	1	4	0	0	0	0	5
E	0	0	0	0	0	0	0
ESE	0	2	0	0	0	0	2
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	2	3	0	0	0	0	5
SW	0	0	0	0	0	0	0
WSW	2	0	0	0	0	0	2
W	8	1	0	0	0	0	9
WNW	1	2	0	0	0	0	3
NW	1	1	0	0	0	0	2
NNW	12	1	0	0	0	0	13
VARIABLE	95	18	2	0	0	0	115
Total	32	15	0	0	0	0	47

Periods of calm(hours): 42

Hours of missing data: 0

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 7 -1-82 } 9-30-82
 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	3	7	0	0	0	0	10
NNE	0	2	0	0	0	0	2
NE	10	26	2	0	0	0	38
ENE	2	14	0	0	0	0	16
E	0	1	0	0	0	0	1
ESE	0	2	0	0	0	0	2
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	5	19	0	0	0	0	24
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	3	31	6	0	0	0	40
WNW	0	2	0	0	0	0	2
NW	1	3	0	0	0	0	4
NNW	1	52	2	0	0	0	55
VARIABLE	28	59	5	0	0	0	92
Total	25	160	10	0	0	0	195

Periods of calm(hours): 45
 Hours of missing data: 0 44

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-82 } 9-30-82

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	8	0	0	0	0	0	8
NNE	0	0	0	0	0	0	0
NE	1	1	0	0	0	0	2
ENE	6	1	0	0	0	0	7
E	1	0	0	0	0	0	1
ESE	1	0	0	0	0	0	1
SE	3	1	0	0	0	0	4
SSE	1	1	0	0	0	0	2
S	0	0	0	0	0	0	0
SSW	12	0	0	0	0	0	12
SW	3	0	0	0	0	0	3
WSW	3	0	0	0	0	0	3
W	22	2	0	0	0	0	24
WNW	3	1	0	0	0	0	4
NW	11	0	0	0	0	0	11
NNW	44	1	0	0	0	0	45
VARIABLE	117	7	0	0	0	0	124
Total	119	8	0	0	0	0	127

Periods of calm(hours): 81

Hours of missing data: 0

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 7 -1-82 } 9-30-82
 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	2	6	0	0	0	0	8
ENE	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	2	1	0	0	0	3
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	4	0	0	0	0	4
WNW	1	0	0	0	0	0	1
NW	0	0	0	0	0	0	0
NNW	0	15	3	0	0	0	18
VARIABLE	4	7	0	0	0	0	11
Total	4	27	4	0	0	0	35

Periods of calm(hours): 13
 Hours of missing data: 0

Table 4A-CQ3

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 3rd Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 7 -1-82 } 9-30-82

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	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0
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	1	0	0	0	0	0	1
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	4	0	0	0	0	0	4
WNW	0	0	0	0	0	0	0
NW	1	0	0	0	0	0	1
NNW	7	0	0	0	0	0	7
VARIABLE	18	0	0	0	0	0	18
Total	14	1	0	0	0	0	15

Periods of calm(hours): 26

Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 10 -1-82 } 12-31-82
 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	6	2	0	0	0	11
NNE	1	5	0	0	0	0	6
NE	8	60	8	1	0	0	77
ENE	3	13	1	0	0	0	17
E	5	2	4	0	0	0	11
ESE	0	3	4	0	0	0	7
SE	1	6	20	6	0	0	33
SSE	0	1	0	1	0	0	2
S	0	0	1	0	0	0	1
SSW	3	11	7	0	0	0	21
SW	0	1	1	1	1	2	6
WSW	1	0	0	2	2	2	7
W	7	1	13	1	0	0	22
WNW	2	2	2	0	0	0	6
NW	1	1	0	0	0	0	2
NNW	20	21	12	2	0	0	55
VARIABLE	88	142	63	8	0	0	301
Total	55	133	75	14	3	4	284

Periods of calm(hours): 152

Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 10 -1-82 } 12-31-82
 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	10	48	15	0	0	0	73
NNE	0	3	0	0	0	0	3
NE	2	3	0	0	0	0	5
ENE	13	4	0	0	0	0	17
E	2	5	1	0	0	0	8
ESE	0	3	4	0	0	0	7
SE	1	6	14	3	0	0	24
SSE	0	5	1	2	0	0	8
S	1	1	1	0	1	1	5
SSW	3	8	16	2	1	0	30
SW	0	0	1	1	1	1	4
WSW	0	2	1	2	0	0	5
W	6	54	10	0	0	0	70
WNW	2	3	4	0	0	0	9
NW	2	0	0	0	0	0	2
NNW	23	55	3	0	0	0	81
VARIABLE	109	220	44	2	0	0	375
Total	65	200	71	10	3	2	351

Periods of calm(hours): 11
 Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 10 -1-82 } 12-31-82
 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	1	0	0	0	0	1
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	0	0	0	0	0
NNW	0	1	0	0	0	0	1
VARIABLE	1	5	2	0	0	0	8
Total	0	4	0	0	0	0	4

Periods of calm(hours): 7

Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	2	0	0	0	0	0	2
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	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	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	6	3	2	0	0	0	11
Total	5	2	0	0	0	0	7

Periods of calm(hours): 1

Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 10 -1-82 } 12-31-82
 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	2	0	0	0	0	2
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	1	0	0	0	0	1
SE	0	0	1	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	1	0	0	0	0	1
VARIABLE	0	2	2	0	0	0	4
Total	1	5	1	0	0	0	7

Periods of calm(hours): 5
 Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	1	0	0	0	0	0	1
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	0	0	0	0	0	0	0
W	2	3	0	0	0	0	5
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	4	3	1	0	0	0	8
Total	4	4	0	0	0	0	8

Periods of calm(hours): 0

Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	3	0	0	0	0	3
ENE	1	1	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	1	1	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	1	0	0	0	0	1
VARIABLE	8	9	3	0	0	0	20
Total	1	7	1	0	0	0	9

Periods of calm(hours): 18

Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1932

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	2	2	0	0	0	0	4
NNE	1	0	0	0	0	0	1
NE	1	0	0	0	0	0	1
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	1	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	1	1	0	0	0	0	2
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	1	1	1	0	0	0	3
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	3	1	0	0	0	0	4
VARIABLE	19	8	1	0	0	0	28
Total	10	6	1	0	0	0	17

Periods of calm(hours): 2

Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	6	1	0	0	0	9
NNE	1	4	0	0	0	0	5
NE	8	20	3	0	0	0	31
ENE	4	22	5	3	0	0	34
E	0	7	10	0	1	0	18
ESE	0	3	13	3	0	0	19
SE	0	9	50	23	0	0	82
SSE	0	0	2	1	0	0	3
S	0	0	1	0	0	0	1
SSW	2	2	10	5	0	0	19
SW	0	0	2	0	0	0	2
WSW	2	0	0	0	0	0	2
W	4	7	5	7	2	0	25
WNW	4	3	6	0	0	0	13
NW	0	4	7	0	0	0	11
NNW	7	59	14	0	0	0	80
VARIABLE	34	124	65	21	0	0	244
Total	34	146	129	42	3	0	354

Periods of calm(hours): 45

Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 10 -1-82 } 12-31-82
 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	4	6	0	0	0	0	10
NNE	0	0	0	0	0	0	0
NE	2	8	3	0	0	0	13
ENE	9	11	6	0	0	0	26
E	4	8	7	1	0	0	20
ESE	2	6	3	0	0	0	11
SE	3	28	59	15	0	0	105
SSE	0	0	0	0	0	0	0
S	0	0	1	0	0	0	1
SSW	4	7	6	4	0	0	21
SW	0	1	0	0	0	0	1
WSW	2	0	0	0	0	0	2
W	22	19	2	0	0	0	43
WNW	3	4	1	0	0	0	8
NW	3	1	6	0	0	0	10
NNW	29	30	9	0	0	0	68
VARIABLE	100	141	42	4	0	0	287
Total	87	129	103	20	0	0	339

Periods of calm(hours): 17
 Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 10 -1-82 } 12-31-82
 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	9	0	0	0	0	10
NNE	1	1	0	0	0	0	2
NE	6	45	4	0	0	0	55
ENE	7	21	3	0	0	0	31
E	0	1	1	0	0	0	2
ESE	0	0	0	0	0	0	0
SE	0	5	5	0	0	0	10
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	1	6	4	0	0	0	11
SW	5	0	0	0	0	0	5
WSW	2	0	0	0	0	0	2
W	9	19	9	0	0	0	37
WNW	0	0	0	0	0	0	0
NW	0	2	1	0	0	0	3
NNW	5	32	12	0	0	0	49
VARIABLE	34	91	24	0	0	0	149
Total	37	141	39	0	0	0	217

Periods of calm(hours): 72
 Hours of missing data: 0 58

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	16	1	0	0	0	0	17
NNE	2	0	0	0	0	0	2
NE	5	1	0	0	0	0	6
ENE	11	0	0	0	0	0	11
E	3	1	0	0	0	0	4
ESE	2	1	0	0	0	0	3
SE	2	7	2	0	0	0	11
SSE	0	0	0	0	0	0	0
S	1	0	0	0	0	0	1
SSW	13	9	0	0	0	0	22
SW	1	1	0	0	0	0	2
WSW	3	0	0	0	0	0	3
W	41	7	1	0	0	0	49
WNW	1	0	0	0	0	0	1
NW	6	1	0	0	0	0	7
NNW	45	21	0	0	0	0	66
VARIABLE	146	35	0	0	0	0	181
Total	157	50	3	0	0	0	210

Periods of calm(hours): 47

Hours of missing data: 0 59

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	2	0	0	0	0	2
NNE	0	2	0	0	0	0	2
NE	2	78	24	0	0	0	104
ENE	3	8	1	0	0	0	12
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	3	6	1	0	0	0	10
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	6	1	0	0	0	9
WNW	1	0	0	0	0	0	1
NW	1	0	0	0	0	0	1
NNW	4	35	9	0	0	0	48
VARIABLE	26	44	9	0	0	0	79
Total	16	138	36	0	0	0	190

Periods of calm(hours): 39

Hours of missing data: 0

Table 4A-CQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 10 -1-82 } 12-31-82
 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	4	1	0	0	0	0	5
NNE	1	0	0	0	0	0	1
NE	1	1	0	0	0	0	2
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	0	1	1	0	0	0	2
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	2	0	0	0	0	0	2
SW	1	0	0	0	0	0	1
WSW	0	0	0	0	0	0	0
W	37	0	0	0	0	0	37
WNW	1	1	0	0	0	0	2
NW	0	1	0	0	0	0	1
NNW	33	24	0	0	0	0	57
VARIABLE	99	18	1	0	0	0	118
Total	84	29	1	0	0	0	114

Periods of calm(hours): 76 61
 Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	1	3	1	0	0	5
ENE	0	5	1	0	0	0	6
E	0	0	2	0	0	0	2
ESE	0	0	0	0	0	0	0
SE	0	1	1	0	0	0	2
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	2	0	0	0	2
SW	0	0	0	1	0	0	1
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	1	5	0	0	0	0	6
Total	0	7	9	2	0	0	18

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

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	3	1	0	0	0	0	4
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	2	1	0	0	3
SSE	0	0	1	1	0	0	2
S	0	0	0	0	0	0	0
SSW	0	0	0	0	0	0	0
SW	0	0	1	1	0	0	2
WSW	0	0	0	2	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	1	0	0	0	0	1
VARIABLE	4	5	1	0	0	0	10
Total	3	2	4	5	0	0	14

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

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82) 12-31-82

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
Total	0	0	0	0	0	0	0

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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
Total	0	0	0	0	0	0	0

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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
Total	0	0	0	0	0	0	0

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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
Total	0	0	0	0	0	0	0

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	1	1	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	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
Total	1	2	0	0	0	0	3

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	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	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	2	0	0	0	0	0	2
Total	1	0	0	0	0	0	1

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

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	1	0	0	0	0	1
ENE	0	1	0	0	0	0	1
E	0	0	1	0	0	0	1
ESE	0	0	4	1	0	0	5
SE	0	1	0	5	0	0	6
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	2	0	0	0	0	0	2
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	1	0	1	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	2	5	11	2	0	0	20
Total	2	4	5	7	0	0	18

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH
 PERIOD OF RECORD: 10 -1-82 } 12-31-82
 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	3	0	0	0	0	3
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	6	4	0	0	10
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	2	0	0	0	0	0	2
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	1	0	0	0	0	0	1
VARIABLE	4	14	3	0	0	0	21
Total	3	3	7	4	0	0	17

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

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH
 PERIOD OF RECORD: 10 -1-82 } 12-31-82
 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	4	1	0	0	0	5
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	2	0	0	0	0	2
VARIABLE	2	5	1	0	0	0	8
Total	0	7	1	0	0	0	8

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

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	1	0	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	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	3	0	0	0	0	0	3
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	2	0	0	0	0	0	2
VARIABLE	10	0	0	0	0	0	10
Total	7	0	0	0	0	0	7

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

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	6	2	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	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	4	0	0	0	0	4

Total	0	6	2	0	0	0	8

Periods of calm(hours): 0

Hours of missing data: 0

TABLE 4A-2BQ4

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Unit 2 - 4th Quarter, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: BATCH

PERIOD OF RECORD: 10 -1-82 } 12-31-82

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	4	0	0	0	0	0	4
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	2	0	0	0	0	0	2
VARIABLE	2	0	0	0	0	0	2
Total	6	0	0	0	0	0	6

Periods of calm(hours): 4

Hours of missing data: 0

TABLE 4B

CLASSIFICATION OF ATMOSPHERIC STABILITY

Stability Classification	Pasquill Categories	σ_{θ}^2 (degrees)	Temperature change with height ($^{\circ}$ 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

a 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

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM
FARLEY NUCLEAR PLANT - UNIT 1 & 2

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Minimum Detectable Concentration (MDC)(uCi/ml)
A. Batch Waste Release Tanks c	Each Batch P	Each Batch P	Principal Gamma Emitters e	5E-07
			I-131	1E-06
	One Batch/M	M	Dissolved & Entrained Gases (Gamma Emitters)	1E-05
	Each Batch P	M b Composite	H-3	1E-05
			Gross Alpha	1E-07
	Each Batch P	Q b Composite	Sr-89, Sr-90	5E-08
			Fe-55	1E-06
B. Continuous Releases d,f	Grab Sample D	Q b Composite	Principal Gamma Emitters e	5E-07
			I-131	1E-06
1. Steam Generator Blowdown	Grab Sample M	M	Dissolved & Entrained Gases (Gamma Emitters)	1E-05
	Grab Sample D	M b Composite	H-3	1E-05
			Gross Alpha	1E-07
	Grab Sample D	Q b Composite	Sr-89, Sr-90	5E-08
			Fe-55	1E-06
2. Turbine Building Sump	Grab Sample P	W b Composite	Principle Gamma Emitters e	5E-07
			H-3	1E-05

TABLE 5 (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):

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

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 mass or volume),

2.22×10^6 is the number of transformations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt 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 Δt shall be used in the calculation.

TABLE 5 (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

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM
FARLEY NUCLEAR PLANT - UNITS 1 & 2

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Minimum Detectable Concentration (MDC)(uCi/ml)
A. Waste Gas Storage Tank	Each Tank Grab Sample P	Each Tank P	Principle Gamma Emitters g, j	1E-04
B. Containment Purge	Each Purge Grab P, b Sample	Each Purge P, b	Principle Gamma Emitters g, j	1E-04
			H-3	1E-06
C. Condenser Steam Jet Air Ejector Plant Vent Stack	M-b, c, e Grab Sample	b M	Principle Gamma Emitters g, j	1E-04
			H-3	1E-06
D. Plant Vent Stack Containment Purge	Continuous Charcoal f	Charcoal Sample d W	I-131	1E-12
			I-133	1E-10
	Continuous f	Particulate Sample d W	Principle Gamma Emitters g (I-131, Others)	1E-11
	Continuous f	W i Composite Particulate Sample	Gross Alpha	1E-11
	Continuous f	Q i Composite Particulate Sample	Sr-89, Sr-90	1E-11
	Continuous f	Noble Gas Monitor	Noble Gases Gross Beta & Gamma	1E-06

TABLE 6 (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):

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

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 mass or volume),

2.22×10^6 is the number of transformations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt 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 Δt shall be used in the calculation.

TABLE 6 (Continued)

TABLE NOTATION

- b. Analyses shall also be performed following shutdown from $>$ or $=$ 15% RATED THERMAL POWER, startup to $>$ or $=$ 15% RATED THERMAL POWER a THERMAL POWER change exceeding 15% 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 $>$ or $=$ 15% RATED THERMAL POWER, startup to $>$ or $=$ 15% RATED THERMAL POWER or THERMAL POWER change exceeding 15% 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 principle 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 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 Units 1 & 2 - 2nd half, 1982

Batch #	N/A*
Date	N/A
Count Time in Seconds	N/A
Volume Discharged in Gallons	N/A
Dilution Water in Gallons	N/A
Total Isotopic Activity (uCi/ml)	N/A
Isotope of Interest	N/A
MDC Measured	N/A
% of Total Isotopic Activity	N/A
% of Total Dose	N/A

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

Table 3-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 1 -1-82 } 12-31-82
 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	6	2	0	0	0	11
NNE	1	5	0	0	0	0	6
NE	8	60	8	1	0	0	77
ENE	3	13	1	0	0	0	17
E	5	2	4	0	0	0	11
ESE	0	3	4	0	0	0	7
SE	1	6	20	6	0	0	33
SSE	0	1	0	1	0	0	2
S	0	0	1	0	0	0	1
SSW	3	11	7	0	0	0	21
SW	0	1	1	1	1	2	6
WSW	1	0	0	2	2	2	7
W	7	1	13	1	0	0	22
WNW	2	2	2	0	0	0	6
NW	1	1	0	0	0	0	2
NNW	20	21	12	2	0	0	55
VARIABLE	88	142	63	3	0	0	301
Total	55	133	75	14	3	4	284

Periods of calm(hours): 672

Hours of missing data: 0

Table 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-82 } 12-31-82

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	10	48	15	0	0	0	73
NNE	0	3	0	0	0	0	3
NE	2	3	0	0	0	0	5
ENE	13	4	0	0	0	0	17
E	2	5	1	0	0	0	8
ESE	0	3	4	0	0	0	7
SE	1	6	14	3	0	0	24
SSE	0	5	1	2	0	0	8
S	1	1	1	0	1	1	5
SSW	3	8	16	2	1	0	30
SW	0	0	1	1	1	1	4
WSW	0	2	1	2	0	0	5
W	6	54	10	0	0	0	70
WNW	2	3	4	0	0	0	9
NW	2	0	0	0	0	0	2
NNW	23	55	3	0	0	0	81
VARIABLE	109	220	44	2	0	0	375
Total	65	200	71	10	3	2	351

Periods of calm(hours): 124

Hours of missing data: 0 85

Table 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 1-1-82 } 12-31-82
 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	1	0	0	0	0	1
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	0	0	0	0	0
NNW	0	1	0	0	0	0	1
VARIABLE	1	5	2	0	0	0	8
Total	0	4	0	0	0	0	4

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

Table 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-82 } 12-31-82

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	2	0	0	0	0	0	2
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	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	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	6	3	2	0	0	0	11
Total	5	2	0	0	0	0	7

Periods of calm(hours): 11

Hours of missing data: 0

Table 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-82 } 12-31-82

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	2	0	0	0	0	2
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	1	0	0	0	0	1
SE	0	0	1	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	1	0	0	0	0	1
VARIABLE	0	2	2	0	0	0	4
Total	1	5	1	0	0	0	7

Periods of calm(hours): 18

Hours of missing data: 0

Table 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-82 } 12-31-82

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	1	0	0	0	0	0	1
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	0	0	0	0	0	0	0
W	2	3	0	0	0	0	5
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	4	3	1	0	0	0	8
Total	4	4	0	0	0	0	8

Periods of calm(hours): 9

Hours of missing data: 0 89

Table 8-CA

CUMLATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 1 -1-82 } 12-31-82
 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	3	0	0	0	0	3
ENE	1	1	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	1	1	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	1	0	0	0	0	1
VARIABLE	3	9	3	0	0	0	20
Total	1	7	1	0	0	0	9

Periods of calm(hours): 69
 Hours of missing data: 0 90

Table 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-82 } 12-31-82

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	2	2	0	0	0	0	4
NNE	1	0	0	0	0	0	1
NE	1	0	0	0	0	0	1
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	1	0	0	0	0	1
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	1	1	0	0	0	0	2
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	1	1	1	0	0	0	3
WNW	0	0	0	0	0	0	0
NW	0	0	0	0	0	0	0
NNW	3	1	0	0	0	0	4
VARIABLE	19	8	1	0	0	0	28
Total	10	6	1	0	0	0	17

Periods of calm(hours): 41

Hours of missing data: 0

Table 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-82 } 12-31-82

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	6	1	0	0	0	9
NNE	1	4	0	0	0	0	5
NE	8	20	3	0	0	0	31
ENE	4	22	5	3	0	0	34
E	0	7	10	0	1	0	18
ESE	0	3	13	3	0	0	19
SE	0	9	50	23	0	0	82
SSE	0	0	2	1	0	0	3
S	0	0	1	0	0	0	1
SSW	2	2	10	5	0	0	19
SW	0	0	2	0	0	0	2
WSW	2	0	0	0	0	0	2
W	4	7	5	7	2	0	25
WNW	4	3	6	0	0	0	13
NW	0	4	7	0	0	0	11
NNW	7	59	14	0	0	0	80
VARIABLE	34	124	65	21	0	0	244
Total	34	146	129	42	3	0	354

Periods of calm(hours): 152

Hours of missing data: 0

Table 3-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1-1-82 } 12-31-82

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	4	6	0	0	0	0	10
NNE	0	0	0	0	0	0	0
NE	2	8	3	0	0	0	13
ENE	9	11	6	0	0	0	26
E	4	8	7	1	0	0	20
ESE	2	6	3	0	0	0	11
SE	3	28	59	15	0	0	105
SSE	0	0	0	0	0	0	0
S	0	0	1	0	0	0	1
SSW	4	7	6	4	0	0	21
SW	0	1	0	0	0	0	1
WSW	2	0	0	0	0	0	2
W	22	19	2	0	0	0	43
WNW	3	4	1	0	0	0	8
NW	3	1	6	0	0	0	10
NNW	29	30	9	0	0	0	68
VARIABLE	100	141	42	4	0	0	287
Total	87	129	103	20	0	0	339

Periods of calm(hours): 134

Hours of missing data: 0 93

Table 3-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 1 -1-82 } 12-31-82
 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	9	0	0	0	0	10
NNE	1	1	0	0	0	0	2
NE	6	45	4	0	0	0	55
ENE	7	21	3	0	0	0	31
E	0	1	1	0	0	0	2
ESE	0	0	0	0	0	0	0
SE	0	5	5	0	0	0	10
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	1	6	4	0	0	0	11
SW	5	0	0	0	0	0	5
WSW	2	0	0	0	0	0	2
W	9	19	9	0	0	0	37
WNW	0	0	0	0	0	0	0
NW	0	2	1	0	0	0	3
NNW	5	32	12	0	0	0	49
VARIABLE	34	91	24	0	0	0	149
Total	37	141	39	0	0	0	217

Periods of calm(hours): 181
 Hours of missing data: 0

Table 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS
 PERIOD OF RECORD: 1 -1-82 } 12-31-82
 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	16	1	0	0	0	0	17
NNE	2	0	0	0	0	0	2
NE	5	1	0	0	0	0	6
ENE	11	0	0	0	0	0	11
E	3	1	0	0	0	0	4
ESE	2	1	0	0	0	0	3
SE	2	7	2	0	0	0	11
SSE	0	0	0	0	0	0	0
S	1	0	0	0	0	0	1
SSW	13	9	0	0	0	0	22
SW	1	1	0	0	0	0	2
WSW	8	0	0	0	0	0	8
W	41	7	1	0	0	0	49
WNW	1	0	0	0	0	0	1
NW	6	1	0	0	0	0	7
NNW	45	21	0	0	0	0	66
VARIABLE	146	35	0	0	0	0	181
Total	157	50	3	0	0	0	210

Periods of calm(hours): 327

Hours of missing data: 0 95

Table 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1-1-82 } 12-31-82

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	2	0	0	0	0	2
NNE	0	2	0	0	0	0	2
NE	2	78	24	0	0	0	104
ENE	3	8	1	0	0	0	12
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	3	6	1	0	0	0	10
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	6	1	0	0	0	9
WNW	1	0	0	0	0	0	1
NW	1	0	0	0	0	0	1
NNW	4	35	9	0	0	0	48
VARIABLE	26	44	9	0	0	0	79
Total	16	138	36	0	0	0	190

Periods of calm(hours): 131

Hours of missing data: 0

Table 8-CA

CUMULATIVE JOINT FREQUENCY DISTRIBUTION

Farley Nuclear Plant - Annual, 1982

HOURS AT EACH WIND SPEED AND DIRECTION

RELEASE MODE: CONTINUOUS

PERIOD OF RECORD: 1 -1-82 } 12-31-82

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	4	1	0	0	0	0	5
NNE	1	0	0	0	0	0	1
NE	1	1	0	0	0	0	2
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	0	1	1	0	0	0	2
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	2	0	0	0	0	0	2
SW	1	0	0	0	0	0	1
WSW	0	0	0	0	0	0	0
W	37	0	0	0	0	0	37
WNW	1	1	0	0	0	0	2
NW	0	1	0	0	0	0	1
NNW	33	24	0	0	0	0	57
VARIABLE	99	18	1	0	0	0	118
Total	84	29	1	0	0	0	114

Periods of calm(hours): 267

Hours of missing data: 0 97

Alabama Power Company
600 North 18th Street
Post Office Box 2641
Birmingham, Alabama 35291
Telephone 205 250-1000

F. L. CLAYTON, JR.
Senior Vice President

Alabama Power
the southern electric system

February 28, 1983

Docket Nos. 50-348/D
50-364

Mr. James P. O'Reilly
Regional Administrator
U. S. Nuclear Regulatory Commission
Suite 3100
101 Marietta Street, N.W.
Atlanta, GA 30303

Re: Joseph M. Farley Nuclear Plant
Radioactive Effluent Release Report

Dear Mr. O'Reilly:

The Joseph M. Farley Nuclear Plant Semi-Annual Radioactive Effluent Release Report for the second half of 1982 is herewith submitted in accordance with the Unit 1 and Unit 2 Technical Specifications, Section 6.9.1.8.

If you have any questions, please advise.

Yours very truly,

F. L. Clayton, Jr.
F. L. Clayton, Jr.

FLCJr:WMJ:cl
Attachment

xc: Director
Office of Nuclear Reactor Regulation
Director
Office of Inspection and Enforcement
Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. W. H. Bradford
Mr. E. A. Reeves

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Mr. James P. O'Reilly Page 2
U. S. Nuclear Regulatory Commission

February 28, 1983

bc: Mr. R. P. McDonald
Mr. H. O. Thrash
Mr. O. D. Kingsley, Jr.
Mr. W. G. Hairston, III
Mr. N. M. Horsley
Dr. W. M. Jackson
Mr. Aubrey Godwin
 State of Alabama Radiological Health
 Department of Public Health
Mr. J. C. Hardeman
 State of Georgia, Environmental Protection Division
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Mr. K. W. McCracken