

RIVER BEND STATION, UNIT 1
SEMIANNUAL RADIOACTIVE
EFFLUENT RELEASE REPORT

REPORT PERIOD: OCTOBER 31, 1985 THROUGH DECEMBER 31, 1985

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SEMIANNUAL RADIOACTIVE EFFLUENT
RELEASE REPORT

FACILITY: River Bend Station, Unit 1
LICENSEE: Gulf States Utilities
REPORT PERIOD: October 31, 1985 through December 31, 1985

I. INTRODUCTION

This Semiannual Radioactive Effluent Release Report for the period of October 31, 1985 (date of initial criticality) to December 31, 1985, is submitted in accordance with Technical Specification 6.9.1.8 of Appendix A to River Bend Station (RBS) License Number NPF-47.

II. SUPPLEMENTAL INFORMATION

A. Regulatory Limits

1. 10CFR20 Limits

a. Fission and Activation Gases

In accordance with Technical Specification 3.11.2.1, the dose rate due to noble gases released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY shall be limited to less than or equal to 500 mrems/yr to the total body and less than or equal to 3000 mrems/yr to the skin:

DR_{TB} = Dose rate to the total body in mrems/yr

$$= 3.15 \times 10^7 \sum_{i=1}^n K_i \overline{(X/Q)} Q_i \leq 500 \text{ mrems/yr}$$

and

DR_{skin} = Dose rate to the skin in mrems/yr

$$= 3.15 \times 10^7 \sum_{i=1}^n (L_i + 1.1M_i) \overline{(X/Q)} Q_i \leq 3000 \text{ mrems/yr}$$

(above terms defined in RBS ODCM).

b. Radioiodines and Particulates

In accordance with Technical Specification 3.11.2.1, the dose rate due to iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY shall be limited to less than or equal to 1500 mrems/yr to any organ:

$DR_{I\&8DP\tau}$ = Dose rate to the organ τ for the age group of interest from iodines, tritium, and 8 day particulates via the inhalation pathway in mrems/yr

$$= \sum_{i=1}^n P_i \overline{(X/Q)}_D Q_i \leq 1500 \text{ mrems/yr}$$

(above terms defined in RBS ODCM)

c. Liquid Effluents

In accordance with Technical Specification 3.11.1.1, the concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS shall be limited to the concentrations specified in 10CFR20, Appendix B, Table II, Column 2 for radionuclides other than dissolved and entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2×10^{-4} microcuries/ml total activity.

2. 10CFR50, Appendix I Limits

a. Fission and Activation Gases

In accordance with Technical Specification 3.11.2.2, the air dose due to noble gases released in gaseous effluents to areas at or beyond the SITE BOUNDARY shall be limited to:

$D_{\text{Gamma-Air}}$ = The gamma air dose from radioactive noble gases in mrad

$$= \sum_{i=1}^n M_i (\overline{X/Q}) Q_i \leq 5 \text{ mrad/qtr}$$
$$\leq 10 \text{ mrad/yr}$$

$D_{\text{Beta-Air}}$ = Beta air dose from radioactive noble gases in mrad

$$= \sum_{i=1}^n N_i (\overline{X/Q}) Q_i \leq 10 \text{ mrad/qtr}$$
$$\leq 20 \text{ mrad/yr}$$

(above terms defined in RBS ODCM)

b. Radioiodines and Particulates

In accordance with Technical Specification 3.11.2.3, the dose to a MEMBER OF THE PUBLIC from iodine-131, iodine-133, and all radionuclides in particulate form with half-lives greater than 8 days, in gaseous effluents releases to areas at and beyond the SITE BOUNDARY shall be limited to:

$D_{\text{I\&8DP}\tau}$ = Dose in mrem to the organ (τ) of a specified age group from radioiodines, tritium, and 8 day particulates via the pathway of interest

$$= 3.17 \times 10^{-8} \sum_{i=1}^n R_{it} \overline{(X/Q)_D} Q_i$$

and/or

$$= 3.17 \times 10^{-8} \sum_{i=1}^n R_{it} \overline{(D/Q)} Q_i$$

and

D_τ = Dose in mrem to the organ (τ) of a specified age group from radiiodines, tritium, and 8 day particulates from all pathways

$$= \sum_{z=1}^n D_{I\&8DP\tau} \leq 7.5 \text{ mrem/qtr}$$

$$\leq 15 \text{ mrem/yr}$$

(above terms defined RBS ODCM)

c. Liquid Effluents

In accordance with Technical Specification 3.11.1.2, the dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released to UNRESTRICTED AREAS shall be limited to:

$D_{TOTAL\tau}$ = Total dose commitment to the organ (τ) due to all releases during the desired time interval in mrem

where: $D_{TOTAL\tau} = \sum_{i=1}^n (D_{\tau a})_i$

and $D_{\tau a} = \sum_{i=1}^n D_{it} = \sum_{i=1}^n \frac{A_{it} \Delta t_1 Q_{i1}}{(DF)_1 D_w}$

and	D_{TOTAL}	\leq	1.5 mrems/qtr
	Total Body		
		\leq	3 mrems/yr
	D_{TOTAL}	\leq	5 mrems/qtr
	ANY ORGAN		
		\leq	10 mrems/yr

(above terms defined in RBS ODCM)

3. 40CFR190 Limits

In accordance with Technical Specification 3.11.4, the annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to:

\leq 25 mrems to the total body or any organ (except the thyroid)

\leq 75 mrems to the thyroid

4. Miscellaneous Limits

a. Ventilation Exhaust Treatment System

In accordance with Technical Specification 3.11.2.5, the VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses, due to gaseous effluent releases to areas at and beyond the SITE BOUNDARY would exceed 0.3 mrem to any organ in a 31 day period.

b. Liquid Radwaste Treatment System

In accordance with Technical Specification 3.11.1.3, the liquid radwaste treatment system shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the projected doses, due to the liquid effluent, to UNRESTRICTED AREAS would exceed 0.06 mrem to the total body or 0.2 mrem to any organ in a 31 day period.

B. Maximum Permissible Concentrations

1. Gaseous Releases

The RBS Radiological Effluents Technical Specifications (RETS) for gaseous releases are based on the dose rate restrictions of 10CFR20, rather than the Maximum Permissible Concentrations (MPC) listed in 10CFR20 Appendix B, Table II, Column 1.

2. Liquid Releases

The Maximum Permissible Concentration of radioactive materials in liquid effluents is limited by 10CFR20, Appendix B, Table II, Column 2. The MPC chosen is the most conservative value (i.e., the lowest) of either the soluble or insoluble MPC for each radionuclide.

C. Average Energy

Not applicable to RBS RETS

D. Measurements and Approximations of Total Radioactivity

1. Gaseous Effluents

a. Fission and Activation Gases

Periodic grab samples are obtained from the Main Plant Exhaust Duct, Fuel Building Exhaust Vent and Radwaste Building Exhaust Vent. These samples are analyzed utilizing high resolution germanium detectors coupled to computerized pulse height analyzers. The sampling and analysis frequencies are described in Table 1. Sampling and analysis of these effluent streams provide noble gas radionuclide relative abundances which can then be applied to the noble gas gross activity and gross activity release rate to obtain nuclide specific activities and release rates. The noble gas gross activity released within a specific time period is determined by integrating the stack monitor release rate over the considered time period. A calibration factor of 1.0 has been utilized for this report period due to the infrequent detection of noble gas radionuclides in the effluent stream. If no activity was detected in the stack sample, the nuclide relative abundances of the last sample which indicated the presence of activity was utilized to obtain nuclide specific activities.

b. Particulates and Iodines

Particulates and iodines are continuously sampled from each of the three release points utilizing a particulate filter and charcoal cartridge in line with a sample pump

(stack monitor pump). These filters and charcoal cartridges are removed and analyzed in accordance with the frequencies specified in Table 1. Analysis is performed to identify and quantify radionuclides utilizing high resolution germanium detectors coupled to computerized pulse height analyzers. Given the nuclide specific activity concentrations, process flow rate, and time which the sample covered; the nuclide specific activity released to the environment can be obtained. Due to the continuous sampling process, it is assumed that the radioactive material is released to the environment at a constant rate within the sampling period. Sr-89 and Sr-90 are quantitatively analyzed by counting the digested filter precipitate with a gas flow proportional counter. Gross alpha analysis is performed using a zinc sulfide scintillation counter.

c. Tritium

Tritium grab samples are obtained from the three release points at the specified frequencies listed in Table 1 utilizing an acetone/water ice bath condensation collection method. The collected sample is then analyzed utilizing a Liquid Scintillation Counter. Given the tritium concentration, process flow rate, and time period for which the sample is obtained, the tritium activity released to the environment can be determined. Due to the frequency of sampling, it is assumed that the tritium is released to the environment at a constant rate within the time period for which the sample is obtained.

2. Liquid Effluents

Representative grab samples are obtained from the appropriate sample recovery tank and analyzed prior to release of the tank in accordance with the frequencies listed in Table 2. Analysis for gamma emitting nuclides (including dissolved and entrained noble gases) is performed utilizing a high resolution germanium detector coupled to a computerized pulse height analyzer. Tritium concentration is determined utilizing a Liquid Scintillation Counter. Sr-89 and Sr-90 are quantitatively analyzed by counting the precipitate with a gas flow proportional counter. Fe-55 is counted with a Liquid Scintillation Counter after digestion of the iron. Gross alpha analysis is performed using a zinc sulfide scintillation counter.

Given the nuclide specific activity concentration and total volume of the tank that was released, the activity of each nuclide released to the environment can be determined.

E. Batch Releases

1. Liquid

3rd Quarter 1985

Not applicable

4th Quarter 1985

- a. Number of batch releases : 39
- b. Total time period for batch releases : 205.94 hr
- c. Maximum time period for batch releases : 6.25 hr
- d. Average time period for batch releases : 5.28 hr
- e. Minimum time period for a batch release : 3.50 hr
- f. Average stream flow during periods of
release of effluent into a flowing stream : 950,000 ft³/sec

2. Gaseous

Primary Containment/Drywell purges are considered gaseous batch releases. Purges are directed through the Main Plant Exhaust Duct prior to release to the environment and are therefore monitored by the Main Plant Exhaust Duct stack monitor. For purposes of this report, a purge is in effect only when purge inlet valves *AOV-128 and *AOV-166, and purge outlet valves *AOV-165 and *AOV-123 are open. Containment venting (i.e., for pressure reduction) is not considered a release due to the short time duration of each venting period and limited motive force of the release. Due to logistical considerations, all releases through the Main Plant Exhaust Duct for the duration of the purge are considered as part of the batch.

3rd Quarter 1985

Not applicable

4th Quarter 1985

- a. Number of batch releases : 12
- b. Total time period for batch releases : 103.54 hr
- c. Maximum time period for a batch release : 79.65 hr
- d. Average time period for batch releases : 8.63 hr
- e. Minimum time period for a batch releases : 0.07 hr

F. Abnormal Releases

1. Liquid

3rd Quarter 1985

Not applicable

4th Quarter 1985

- a. Number of releases : 0
- b. Total activity released : 0 curies

2. Gaseous

3rd Quarter 1985

Not applicable

4th Quarter 1985

- a. Number of releases : 0
- b. Total activity released : 0 curies

G. Estimate of Total Error

1. Liquid

The maximum error associated with sample collection, laboratory analysis, and discharge volume are collectively estimated to be:

Fission and Activation Products :	+ 14.2%
Tritium :	+ 14.2%
Dissolved and Entrained Noble Gases :	+ 14.2%
Gross Alpha Radioactivity :	+ 14.2%

2. Gaseous

The maximum errors (not including sample line loss) associated with sample flow, process flow, sample collection, monitor accuracy and laboratory analysis are collectively estimated to be:

Fission and Activation Gases :	+ 37.0%
Iodines :	+ 18.6%
Particulates :	+ 18.6%
Tritium :	+ 18.2%

3. Determination of Total Error

The total error (i.e., collective error due to sample collection, laboratory analysis, sample flow, process flow, monitor accuracy, etc.) is calculated using the following equation:

$$E_T = \sqrt{(E_1)^2 + (E_2)^2 + \dots + (E_n)^2}$$

where:

$$E_T = \text{total error}$$

$E_1, E_2 \dots E_n =$ individual errors due to sample collection, laboratory analysis, sample flow, process flow, monitor accuracy, etc.

III. GASEOUS EFFLUENTS SUMMARY INFORMATION

Refer to Tables 3, 4 and 5 for Summation of All Releases and Nuclides Released, respectively. It should be noted that an entry of "0.00E+00" Ci or uCi/sec in this section does not indicate the absence of a radionuclide; but, rather, indicates that the concentration of the particular radionuclide was below the Lower Limit of Detection (LLD) as listed in Table 1.

IV. LIQUID EFFLUENTS SUMMARY INFORMATION

Refer to Table 6 for Summation of All Releases and Nuclides Released. It should be noted that an entry of "0.00E+00" Ci or uCi/ml in this section does not indicate the absence of a radionuclide; but, rather, indicates that the concentration of the particular radionuclide was below the Lower Limit of Detection (LLD) as listed in Table 2.

V. SOLID WASTE

Refer to Table 7

VI. RADIOLOGICAL IMPACT ON MAN

Doses to maximally-exposed individuals offsite and populations were calculated using measured effluent and meteorological data. These doses may be found in Tables 8 through 12.

The dose to a MEMBER OF THE PUBLIC from uranium fuel cycle sources was also determined to demonstrate compliance with 40CFR190. The dose from liquid pathways (3.3E-07 mrems for the total body and critical organ) and radioiodine, 8 day particulates, and tritium gaseous pathways (8.0E-05 mrems for the total body and critical organ) were considered to be negligible compared to the total body and skin doses from noble gas radionuclides (2.0E-01 mrems and 3.9E-01 mrems, respectively). It was conservatively assumed that the thyroid received 2.0E-01 mrems from noble gas cloud shine. No direct radiation from the station was detected offsite for the time period under consideration. Only one TLD location indicated a dose (0.3 mrems) above the control locations two sigma value. A TLD location in the same sector closer to the site indicated a dose less than the mean control location two sigma value. The 0.3 mrems value would therefore be considered an anomaly.

In addition, doses were calculated for a maximally-exposed MEMBER OF THE PUBLIC inside the SITE BOUNDARY. Parameters and assumptions utilized to make this determination can be found in Table 15. The results of the calculations can be found in Table 14. The maximally-exposed MEMBER OF THE PUBLIC on site for the period 10/31/85 through 12/31/85 was the private driver who delivers an employee to work and returns later that day to pick him/her up. It should be noted that liquid effluents pathways dose was not considered since these individuals would not engage in activities that would allow exposure to these pathways. Reliable on site TLD data was available for the months of November and December. This data indicated the absence of direct radiation on site.

It should be noted that population doses and average individual dose from liquid effluents were not calculated due to the minimal dose from liquid effluents to the maximally exposed individual offsite (3.3E-07 to the total body and critical organ).

In order to provide a more realistic assessment of doses due to gaseous effluents, when possible, the gross noble gas activity released from the Main Plant Exhaust Duct was fractionated based on the relative abundances of noble gas nuclides found in offgas post-treatment samples, rather than assign the total gross activity to Xe-138 as indicated by stack samples. The noble gas activities used to determine offsite and onsite doses are as follows:

<u>NUCLIDE</u>	<u>CONTINUOUS (uCi)</u>	<u>BATCH (uCi)</u>
Kr-85m	6.1557E+06	0.0000E+00
Kr-85	0.0000E+00	1.2878E+03
Kr-87	2.8239E+07	5.2095E+06
Kr-88	2.6391E+07	4.2576E+06
Xe-135m	2.6308E+05	0.0000E+00
Xe-135	1.2624E+07	2.3424E+06
Xe-137	4.9784E+06	0.0000E+00
Xe-138	2.0553E+08	4.3066E+07

VII. METEOROLOGICAL DATA

See Tables 17 and 18 for cumulative joint frequency distributions for continuous releases and meteorological data for batch releases, respectively.

VIII. RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION OPERABILITY

All channels described in Table 3.3.7.10-1 of Technical Specification 3.3.7.10 were, if inoperable at any time in the period 8/29/85 (date of low power license) through 12/31/85, restored to operable status within the required time. Reporting of these inoperable channels in this report is, therefore, not required.

IX. RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION OPERABILITY

All channels described in Table 3.3.7.11-1 of Technical Specification 3.3.7.11 were, if inoperable at any time in the period 8/29/85 through 12/31/85, restored to operable status within the required time. Reporting of these inoperable channels in this report is, therefore, not required.

X. LIQUID HOLD UP TANKS

The quantity of radioactive material contained in any unprotected outdoor tank was less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases for the reporting period 10/31/85 through 12/31/85.

XI. RADIOLOGICAL ENVIRONMENTAL MONITORING

There were no changes in sampling locations for the Radiological Environmental Monitoring Program (REMP) during the reporting period 10/31/85 through 12/31/85. Milk samples were obtained during the period as specified in RBS Technical Specifications and ODCM. Some broadleaf vegetation samples were not available, specifically from one indicator location in November and from the control location in December. Unavailability of these vegetation samples resulted from personnel error and limited crop production due to winter conditions, rather than any inherent problems at the sampling locations. Thus, there was no need to alter the locations. With no change in sampling locations, there need be no substantive revisions to Table 4.1 (REMP Sampling Locations) or Figures 1 and 5 of the RBS ODCM.

XII. LAND USE CENSUS

The Land Use Census did not identify any location(s) that would yield a calculated dose or dose commitment greater than the values calculated in Technical Specification 4.11.2.3 for the reporting period 10/31/85 through 12/31/85.

XIII. OFFSITE DOSE CALCULATION MANUAL (ODCM)

No changes were made to the RBS ODCM, Revision 3 for the period 8/29/85 through 12/31/85.

XIV. MAJOR CHANGES TO RADIOACTIVE LIQUID, GASEOUS, AND SOLID WASTE TREATMENT SYSTEMS

No licensee-initiated major changes to the radioactive waste systems (liquid, gaseous, and solid) were initiated in the period 8/29/85 to 12/31/85.

XV. PROCESS CONTROL PROGRAM (PCP)

The following changes were made to the PCP procedure (RSW-0204) for the period 8/29/85 through 12/31/85:

1. Changed to: 2.7 SOP-0108, Liquid Redwaste Processing
- 2.10 SD-OP-020, Operating Procedure for CNSI Portable Cement Solidification Unit No. 21 (PSU-C-21)
- 2.11 SD-OP-003.518, Process Control Program for CNSI Cement Solidification Units

Reason: To be consistent with procedure body.

2. Changed to: 5.2.2.4 Sufficient lead time shall be allotted prior to waste solidification to allow adequate sampling, required testing, and verification of solidification.

Reason: To clarify intent of statement

3. Changed to: 5.3.1 Waste Samples shall be analyzed for pH by the vendor...

Reason: To relieve the requirement of analysis for total suspended solids and conductivity in all cases. These parameters will be determined on an as needed basis.

4. Other changes were made to eliminate typographical errors and correct the address of references.

The above listed changes do not reduce the overall conformance of the solidified waste product to existing criteria for solid wastes. These changes have been reviewed and approved in accordance with Technical Specification 6.5.2. No other changes were made to the PCP during the period.

TABLE 1

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (uCi/ml)
A. Main Plant Exhaust Duct	M Grab Sample	M	Principal Gamma Emitters	1×10^{-4}
			H-3	1×10^{-6}
B. Fuel Building Ventilation Exhaust Duct	M Grab Sample	M	Principal Gamma Emitters	1×10^{-4}
			H-3	1×10^{-6}
C. Radwaste Building Ventilation Exhaust Duct	M Grab Sample	M	Principal Gamma Emitters	1×10^{-4}
D. All Release Types as listed in A,B, C above.	Continuous	W Charcoal Sample	I-131	1×10^{-12}
			I-133	1×10^{-10}
	Continuous	W Particulate Sample	Principal Gamma Emitters (I-131, Others)	1×10^{-11}
	Continuous	M Composite Particulate Sample	Gross Alpha	1×10^{-11}
	Continuous	Q Composite Particulate Sample	SR-89, SR-90	1×10^{-11}

W = At least once per 7 days
M = At least once per 31 days
Q = At least once per 92 days

TABLE 2

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (uCi/ml)
A. Batch Waste Release (Liquid Radwaste Recovery Sample Tanks)	P Each Batch	P Each Batch	Principal Gamma Emitters; except for Ce-144	5×10^{-7} 5×10^{-6}
			I-131	1×10^{-6}
	P One Batch/M	M	Dissolved and Entrained Gases (Gamma Emitters)	1×10^{-5}
	P Each Batch	M Composite	H-3	1×10^{-5}
			Gross Alpha	1×10^{-7}
P Each Batch	Q Composite	Sr-89, Sr-90	5×10^{-8}	
		Fe-55	1×10^{-6}	

P = Prior to each radioactive release
 M = At least once per 31 days
 Q = At least once per 92 days

TABLE 3

Effluent and Waste Disposal Semi-Annual Report 1985 Year
 Gaseous Effluents - Summation of All Releases 3/4 Quarters

	Unit	Quarter 3	Quarter 4	Est. Total Error, %
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A. Noble Gases

1. Total release	Ci	N/A	3.39E+02	3.70E+01
2. Average release rate for period	uCi/sec	N/A	6.17E+01	
3. Percent of technical specification limit (1)	%	N/A	6.30E+00	

B. Iodines

1. Total I-131 and I-133	I-131	N/A	0.00E+00	1.86E+01
	I-133	N/A	0.00E+00	1.86E+01
2. Average release rate for period	I-131 uCi sec	N/A	0.00E+00	
	I-133	N/A	0.00E+00	
3. I-131 + I-133 contribu- tion percent of techni- cal specification limit	%	N/A	0.00E+00	

C. Particulates

1. Particulates with half- lives of > 8 days	Ci	N/A	0.00E+00	1.86E+01
2. Average release rate for period	uCi/sec	N/A	0.00E+00	
3. Percent of technical specification limit	%	N/A	0.00E+00	
4. Gross alpha radioactivity	Ci	N/A	1.90E-11	

	Unit	Quarter 3	Quarter 4	Est. Total Error, %
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D. Tritium

1. Total release	Ci	N/A	1.69E-01	1.82E+01
2. Average release rate for period	uCi/sec	N/A	3.07E-02	
3. Percent of technical specification limit (2)	%	N/A	1.07E-03	

- (1) Gamma airdose limit of 5 mrads/qtr (T.S.3.11.2.2.a).
- (2) Organ dose limit (from radioiodines, 8 day particulates, and tritium) of 7.5 mrems/qtr (T.S.3.11.2.3.a).

TABLE 4

Effluent and Waste Disposal Semi-Annual Report 1985 Year
 Gaseous Effluents - Conditionally Elevated Releases 3/4 Quarters

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4

1. Fission Gases

Argon-41	Ci	N/A	0.00E+00	N/A	0.00E+00
Krypton-85m	Ci	N/A	0.00E+00 ⁽¹⁾	N/A	0.00E+00
Krypton-85	Ci	N/A	0.00E+00	N/A	1.29E-3
Krypton-87	Ci	N/A	0.00E+00 ⁽¹⁾	N/A	0.00E+00 ⁽¹⁾
Krypton-88	Ci	N/A	0.00E+00 ⁽¹⁾	N/A	0.00E+00 ⁽¹⁾
Xenon-133m	Ci	N/A	0.00E+00	N/A	0.00E+00
Xenon-133	Ci	N/A	0.00E+00	N/A	0.00E+00
Xenon-135m	Ci	N/A	0.00E+00 ⁽¹⁾	N/A	0.00E+00
Xenon-135	Ci	N/A	0.00E+00 ⁽¹⁾	N/A	0.00E+00 ⁽¹⁾
Xenon-137	Ci	N/A	0.00E+00 ⁽¹⁾	N/A	0.00E+00
Xenon-138	Ci	N/A	2.84E+02	N/A	5.49E+01
unidentified	Ci	N/A	N/A	N/A	N/A
Total for period	Ci	N/A	2.84E+02	N/A	5.49E+01

2. Gaseous Iodines

Iodine-131	Ci	N/A	0.00E+00	N/A	0.00E+00
Iodine-132	Ci	N/A	0.00E+00	N/A	0.00E+00
Iodine-133	Ci	N/A	0.00E+00	N/A	0.00E+00
Iodine-134	Ci	N/A	0.00E+00	N/A	0.00E+00
Iodine-135	Ci	N/A	0.00E+00	N/A	0.00E+00

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4

3. Particulates

Strontium-89	Ci	N/A	(2)	N/A	(2)
Strontium-90	Ci	N/A	(2)	N/A	(2)
Cesium-134	Ci	N/A	0.00E+00	N/A	0.00E+00
Cesium-137	Ci	N/A	0.00E+00	N/A	0.00E+00
Barium-lanthanum-140	Ci	N/A	0.00E+00	N/A	0.00E+00
Cobalt-58	Ci	N/A	0.00E+00	N/A	0.00E+00
Cobalt-60	Ci	N/A	0.00E+00	N/A	0.00E+00
Chromium-51	Ci	N/A	0.00E+00	N/A	0.00E+00
Zirconium-niobium-95	Ci	N/A	0.00E+00	N/A	0.00E+00
Zinc-65	Ci	N/A	0.00E+00	N/A	0.00E+00
Iron-59	Ci	N/A	0.00E+00	N/A	0.00E+00
Manganese-54	Ci	N/A	0.00E+00	N/A	0.00E+00
Iodine-131	Ci	N/A	0.00E+00	N/A	0.00E+00
Cerium-141	Ci	N/A	0.00E+00	N/A	0.00E+00
Cerium-144	Ci	N/A	0.00E+00	N/A	0.00E+00
Cobalt-57	Ci	N/A	0.00E+00	N/A	0.00E+00
Silver-110m	Ci	N/A	0.00E+00	N/A	0.00E+00
Molybdenum-99	Ci	N/A	0.00E+00	N/A	0.00E+00
unidentified	Ci	N/A	N/A	N/A	N/A
Total for period	Ci	N/A	0.00E+00	N/A	0.00E+00

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4

4.0 Tritium

Hydrogen-3	Ci	N/A	1.52E-01	N/A	1.10E-02
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- (1) Present but not quantifiable in stack samples (less than LLD).
- (2) Not available for submission at this time, supplemental report to follow.

Main Plant Exhaust Duct is considered a conditionally elevated release point.

TABLE 5

Effluent and Waste Disposal Semi-Annual Report 1985 Year
 Gaseous Effluents - Ground Level Releases 3/4 Quarters

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4

1. Fission Gases

Argon-41	Ci	N/A	0.00E+00	N/A	0.00E+00
Krypton-85m	Ci	N/A	0.00E+00	N/A	0.00E+00
Krypton-85	Ci	N/A	0.00E+00	N/A	0.00E+00
Krypton-87	Ci	N/A	0.00E+00	N/A	0.00E+00
Krypton-88	Ci	N/A	0.00E+00	N/A	0.00E+00
Xenon-133m	Ci	N/A	0.00E+00	N/A	0.00E+00
Xenon-133	Ci	N/A	0.00E+00	N/A	0.00E+00
Xenon-135m	Ci	N/A	0.00E+00	N/A	0.00E+00
Xenon-135	Ci	N/A	0.00E+00	N/A	0.00E+00
Xenon-137	Ci	N/A	0.00E+00	N/A	0.00E+00
Xenon-138	Ci	N/A	0.00E+00	N/A	0.00E+00
unidentified	Ci	N/A	N/A	N/A	N/A
Total for period	Ci	N/A	0.00E+00	N/A	0.00E+00

2. Gaseous Iodines

Iodine-131	Ci	N/A	0.00E+00	N/A	0.00E+00
Iodine-132	Ci	N/A	0.00E+00	N/A	0.00E+00
Iodine-133	Ci	N/A	0.00E+00	N/A	0.00E+00
Iodine-134	Ci	N/A	0.00E+00	N/A	0.00E+00
Iodine-135	Ci	N/A	0.00E+00	N/A	0.00E+00

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4

3. Particulates

Strontium-89	Ci	N/A	(1)	N/A	(1)
Strontium-90	Ci	N/A	(1)	N/A	(1)
Cesium-134	Ci	N/A	0.00E+00	N/A	0.00E+00
Cesium-137	Ci	N/A	0.00E+00	N/A	0.00E+00
Barium-lanthanum-140	Ci	N/A	0.00E+00	N/A	0.00E+00
Cobalt-58	Ci	N/A	0.00E+00	N/A	0.00E+00
Cobalt-60	Ci	N/A	0.00E+00	N/A	0.00E+00
Chromium-51	Ci	N/A	0.00E+00	N/A	0.00E+00
Zirconium-niobium-95	Ci	N/A	0.00E+00	N/A	0.00E+00
Zinc-65	Ci	N/A	0.00E+00	N/A	0.00E+00
Iron-59	Ci	N/A	0.00E+00	N/A	0.00E+00
Manganese-54	Ci	N/A	0.00E+00	N/A	0.00E+00
Iodine-131	Ci	N/A	0.00E+00	N/A	0.00E+00
Cerium-141	Ci	N/A	0.00E+00	N/A	0.00E+00
Cerium-144	Ci	N/A	0.00E+00	N/A	0.00E+00
Cobalt-57	Ci	N/A	0.00E+00	N/A	0.00E+00
Silver-110m	Ci	N/A	0.00E+00	N/A	0.00E+00
Molybdenum-99	Ci	N/A	0.00E+00	N/A	0.00E+00
unidentified	Ci	N/A	N/A	N/A	N/A
Total for period	Ci	N/A	0.00E+00	N/A	0.00E+00

Nuclides Released	Unit 1	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4

4.0 Tritium

Hydrogen-3	Ci	N/A	5.38E-03	N/A	0.00E+00
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(1) Not available for submission at this time, supplemental report to follow.

Fuel Building Exhaust Vent and Radwaste Building Exhaust Vent are considered ground level release points.

TABLE 6

Effluent and Waste Disposal Semi-Annual Report 1985 Year
Liquid Effluents - Summation of All Releases

	Unit	Quarter 3	Quarter 4	Est. Total Error, %
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A. Fission and activation products

1. Total release (not including tritium, gases, alpha)	Ci	N/A	0.00E+00	1.42E+01
2. Average diluted concentration during period	uCi/ml	N/A	0.00E+00	
3. Percent of applicable limit	%	N/A	0.00E+00	

B. Tritium

1. Total release	Ci	N/A	1.27E-02	1.42E+01
2. Average diluted concentration during period	uCi/ml	N/A	6.48E-08	
3. Percent of applicable limit	%	N/A	2.16E-03	

C. Dissolved and entrained gases

1. Total release	Ci	N/A	0.00E+00	1.42E+01
2. Average diluted concentration during period	uCi/ml	N/A	0.00E+00	
3. Percent of applicable limit	%	N/A	0.00E+00	

	Unit	Quarter 3	Quarter 4	Est. Total Error, %
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D. Gross alpha radioactivity

1. Total release	Ci	N/A	1.69E-04	1.42E+01
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E. Volume of waste released (prior to dilution)	liters	N/A	2.26E+06	8.73E-01
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F. Volume of dilution water used during period	liters	N/A	1.95E+08	5.70E-01
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Effluent and Waste Disposal Semi-Annual Report 1985 Year
 G. Liquid Effluents 3/4 Quarters

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4
Hydrogen-3	Ci	N/A	N/A	N/A	1.27E-02
Strontium-89	Ci	N/A	N/A	N/A	(1)
Strontium-90	Ci	N/A	N/A	N/A	(1)
Cesium-134	Ci	N/A	N/A	N/A	0.00E+00
Cesium-137	Ci	N/A	N/A	N/A	0.00E+00
Iodine-131	Ci	N/A	N/A	N/A	0.00E+00
Iodine-132	Ci	N/A	N/A	N/A	0.00E+00
Iodine-133	Ci	N/A	N/A	N/A	0.00E+00
Iodine-134	Ci	N/A	N/A	N/A	0.00E+00
Iodine-135	Ci	N/A	N/A	N/A	0.00E+00
Cobalt-58	Ci	N/A	N/A	N/A	0.00E+00
Cobalt-60	Ci	N/A	N/A	N/A	0.00E+00
Iron-55	Ci	N/A	N/A	N/A	(1)
Iron-59	Ci	N/A	N/A	N/A	0.00E+00
Zinc-65	Ci	N/A	N/A	N/A	0.00E+00
Manganese-54	Ci	N/A	N/A	N/A	0.00E+00
Chromium-51	Ci	N/A	N/A	N/A	0.00E+00
Zirconium-niobium-95	Ci	N/A	N/A	N/A	0.00E+00
Molybdenum-99	Ci	N/A	N/A	N/A	0.00E+00
Technicium-99m	Ci	N/A	N/A	N/A	0.00E+00
Barium-lanthanum-140	Ci	N/A	N/A	N/A	0.00E+00
Cerium-141	Ci	N/A	N/A	N/A	0.00E+00
Cerium-144	Ci	N/A	N/A	N/A	0.00E+00
Total for period	Ci	N/A	N/A	N/A	1.27E-02

H. Dissolved and Entrained Gases

Nuclides Released	Unit 1	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4
Argon 41	Ci	N/A	N/A	N/A	0.00E+00
Krypton-85m	Ci	N/A	N/A	N/A	0.00E+00
Krypton-85	Ci	N/A	N/A	N/A	0.00E+00
Krypton-87	Ci	N/A	N/A	N/A	0.00E+00
Krypton-88	Ci	N/A	N/A	N/A	0.00E+00
Xenon-133m	Ci	N/A	N/A	N/A	0.00E+00
Xenon-133	Ci	N/A	N/A	N/A	0.00E+00
Xenon-135m	Ci	N/A	N/A	N/A	0.00E+00
Xenon-135	Ci	N/A	N/A	N/A	0.00E+00
Xenon-137	Ci	N/A	N/A	N/A	0.00E+00
Xenon-138	Ci	N/A	N/A	N/A	0.00E+00
unidentified	Ci	N/A	N/A	N/A	N/A
Total for period	Ci	N/A	N/A	N/A	0.00E+00

(1) Not available at this time, supplemental report to follow.

TABLE 7

Effluent and Waste Disposal Semiannual Report 1985 YearSolid Waste and Irradiated Fuel Shipments
Reporting Period 10/31/85 to 12/31/85 Qtr 3/4

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

1. Type of waste	Unit	6-month Period	Waste Class	Est. Total Error, %
a. Spent resins, filter sludges evaporator bottoms, etc.	m ³	2.08E+01 (1)	A	2.24E+01
	Ci	2.75E-02		
b. Dry compressible waste, contaminated equip, etc.	m ³	0.00E+00	N/A	0.00E+00
	Ci	0.00E+00		
c. Irradiated components, control rods, etc.	m ³	0.00E+00	N/A	0.00E+00
	Ci	0.00E+00		
d. Other (None)	m ³	0.00E+00	N/A	0.00E+00
	Ci	0.00E+00		

(1) Determined by measurement and correlation factors.

2.

TYPE OF WASTE	Spent Resins, filter sludges, evaporator bottoms, etc.	Dry compressible waste, contaminated equip, etc.	Irradiated Components control rods, etc.	Other (None)
Principle Radionuclides (Identify and % Abundance)	Co-60 1.50E+00 Ni-63 3.00E-02 C-14 7.40E-01 H-3 2.90E+01 Cr-51 4.91E+01 Mn-54 7.60E-01 Co-58 1.55E+01 Fe-59 1.95E+00 Zr-95 7.70E-01 Mo-99 4.15E-04 I-131 1.62E-02 Te-132 4.08E-04 La-140 1.43E-03 Np-239 5.71E-04 Nb-95 3.90E-01 Ba-140 1.27E-02 Sb-124 4.15E-02 W-187 6.15E-04 Zn-65 1.30E-01	N/A	N/A	N/A
Above Determined by: A. measurement B. estimation C. measurement and correlation	C	N/A	N/A	N/A
TYPE OF CONTAINER	Strong, Tight Liners	N/A	N/A	N/A
SOLIDIFICATION AGENT OR ABSORBANT	N-24 (cement)	N/A	N/A	N/A

3. SOLID WASTE DISPOSITION

Number of Shipments
3

Mode of Transportation
Exclusive Use

Destination
CNSI, Barnwell,
South Carolina

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments
0

Mode of Transportation
N/A

Destination
N/A

TABLE 8

SEMIANNUAL MAXIMUM INDIVIDUAL DOSE (GASEOUS)
 RELEASES OCCURRING 10/31/85 TO 12/31/85
 DOSE DUE TO RELEASE OF NOBLE GAS

	<u>Critical Sector</u>	<u>Whole Body Dose (mrem)</u>			<u>Critical Dose</u>
		<u>Critical Distance</u>	<u>Critical Age</u>	<u>Critical Organ</u>	
Third Quarter	NA	NA	NA	NA	NA
Fourth Quarter	NW	1260m	NA	Whole Body	2.0 E-01
Semiannual Total	NW	1260m	NA	Whole Body	2.0 E-01

	<u>Critical Sector</u>	<u>Skin Dose (mrem)</u>			<u>Critical Dose</u>
		<u>Critical Distance</u>	<u>Critical Age</u>	<u>Critical Organ</u>	
Third Quarter	NA	NA	NA	NA	NA
Fourth Quarter	NW	1260m	NA	Skin	3.9 E-01
Semiannual Total	NW	1260m	NA	Skin	3.9 E-01

TABLE 9

SEMIANNUAL MAXIMUM INDIVIDUAL DOSE (GASEOUS)
 RELEASES OCCURRING 10/31/85 TO 12/31/85
 DOSE DUE TO RELEASE OF H3, C14,
 RADIOIODINES AND PARTICULATES

	<u>Critical Sector</u>	<u>Whole Body Dose (mrem)</u>			<u>Critical Dose</u>
		<u>Critical Distance</u>	<u>Critical Age</u>	<u>Critical Organ</u>	
Third Quarter	NA	NA	NA	NA	NA
Fourth Quarter	NW	1260m	Child	*	8.0 E-05
Semiannual Total	NW	1260m	Child	*	8.0 E-05

	<u>Critical Sector</u>	<u>Significant Organ Dose (mrem)</u>			<u>Critical Dose</u>
		<u>Critical Distance</u>	<u>Critical Age</u>	<u>Critical Organ</u>	
Third Quarter	NA	NA	NA	NA	NA
Fourth Quarter	NW	1260m	Child	*	8.0 E-05
Semiannual Total	NW	1260m	Child	*	8.0 E-05

*Tritium is the only non-noble gas gaseous release. All organs (except skin and bone) are equally critical.

TABLE 10

SEMIANNUAL POPULATION DOSE (GASEOUS)
 RELEASES OCCURRING 10/31/85 TO 12/31/85
 DOSE DUE TO RELEASE OF NOBLE GAS

	Total Integrated Population Dose (Manrem)	Average Dose to Individuals in Population (mrem)
	Whole Body	Whole Body
Third Quarter	NA	NA
Fourth Quarter	5.8 E-01	5.0 E-04
Semiannual Total	5.8 E-01	5.0 E-04

TABLE 11

SEMIANNUAL POPULATION DOSE (GASEOUS)
 RELEASES OCCURRING 10/31/85 TO 12/31/85
 DOSE DUE TO RELEASE OF H3, C14,
 RADIOIODINES AND PARTICULATES*

	Total Integrated Population Dose (Manrem) <hr/>	Average Dose to Individuals in Population (mrem) <hr/>
	Whole Body	Whole Body
Third Quarter	NA	NA
Fourth Quarter	1.9 E-04	1.6 E-07
Semiannual Total	1.9 E-04	1.6 E-07

*Tritium was the only non-noble gas release.

TABLE 12

SEMIANNUAL MAXIMUM INDIVIDUAL DOSE (LIQUID)
RELEASES OCCURRING 10/31/85 TO 12/31/85

Critical Receptor: Edge of Initial Mixing Zone

	Whole Body Dose (mrem)		Significant Organ Dose (mrem)		
	<u>Critical Age</u>	<u>Critical Dose</u>	<u>Critical Age</u>	<u>Critical Organ</u>	<u>Critical Dose</u>
Third Quarter	NA	NA	NA	NA	NA
Fourth Quarter	Adult	3.3 E-07	Adult	*	3.3 E-07
Semiannual Total	Adult	3.3 E-07	Adult	*	3.3 E-07

*Since tritium is the only reported radionuclide in the liquid releases, all organs are equally critical.

TABLE 13

RBS RADIOLOGICAL EFFLUENTS TECHNICAL SPECIFICATIONS
(RETS) LIMITS COMPARISON

PERIOD: 10/31/85 through 12/31/85 (Quarter 4)

Activity	RETS No.	Limit	Dose	% of Limit
Noble Gases	3.11.2.2.a	5 mrad/qtr γ	3.15E-01 mrad	6.30E+00
		10 mrad/qtr β	1.73E-01 mrad	1.73E+00
	3.11.2.2.b	10 mrad/yr γ	3.15E-01 mrad	3.15E+00
		20 mrad/yr β	1.73E-01 mrad	8.65E-01
Particulates Iodine Tritium	3.11.2.3.a	7.5 mrem/qtr	8.0E-05 mrem	1.07E-03
	3.11.2.3.b	15 mrem/yr	8.0E-05 mrem	5.33E-04
Liquids	3.11.1.2.a	1.5 mrem/qtr TOTAL BODY	3.3E-07 mrem	2.20E-05
		5 mrem/qtr ORGAN	3.3E-07 mrem	6.60E-06
	3.11.1.2.b	3 mrem/yr TOTAL BODY	3.3E-07 mrem	1.10E-05
		10 mrem/yr ORGAN	3.3E-07 mrem	3.30E-06
Uranium Fuel Cycle Sources	3.11.4 (40CFR190)	25 mrem/yr TOTAL BODY	2.0E-01 mrem	8.00E-01
		25 mrem/yr ANY ORGAN	3.9E-01 mrem	1.56E+00
		75 mrem/yr THYROID	2.0E-01 mrem	2.27E-01

TABLE 14

SEMIANNUAL DOSES TO MEMBERS OF THE PUBLIC ON SITE
 RELEASES OCCURRING 10/31/85 TO 12/31/85
 DOSES DUE TO RELEASE OF NOBLE GASES AND H3

Member of the Public	Receptor Location	Critical Age Group	Critical Organ	Critical Organ Dose (mrem)	Whole Body Dose (mrem)	Skin Dose (mrem)
Private Drivers	North Parking Lot at 275m N	Adult and teen equally	All equally except bone	1.4 E-06	1.4 E-02	2.7 E-02
Visitors to Energy Center	Training Center at 1771m N	Adult and teen equally	All equally except bone	(1)	(1)	(1)
Police Officer Directing Traffic	Rt. 61 and N. Access Rd. at 1771m N	Adult and teen equally	All equally except bone	3.7 E-07	3.9 E-03	7.6 E-03
Employee Candidate	Personnel Office at 1771m N	Adult and teen equally	All equally except bone	(1)	(1)	(1)
Employee Candidate	Services Bldg at 113m ENE	Adult and teen equally	All equally except bone	1.6 E-07	2.2 E-03	4.2 E-03
People Entering Site Without Consent	Alligator Bayou at 2500m SW	Adult and teen equally	All equally except bone	2.4 E-08	2.4 E-04	4.7 E-04
Casual Visitor	Main Admin Bldg at 500m WNW	Adult and teen equally	All equally except bone	1.1 E-06	1.2 E-02	2.3 E-02
Tour Group in Bus	North Parking Lot at 275m	Adult and teen equally	All equally except bone	(1)	(1)	(1)

(1) Not calculated due to short duration of time spent in area resulting in insignificant dose

TABLE 15

ASSUMPTIONS/PARAMETERS FOR DOSES TO
MEMBER OF THE PUBLIC INSIDE SITE BOUNDARY

MEMBER OF THE PUBLIC	LOCATION	DISTANCE (1) (m)	SECTOR	DURATION (hr/year)
Private Drivers	North Parking Lot	275	N	125(4)
Visitors to Energy Center	Training Center	1771	N	1.5
Police Officer Directing Traffic	Intersection of Rt. 61 and North Access Road	1771	N	650(5)
Employee (2) Candidate	Personnel Office (across from Training Center)	1771	N	2
Employee (2) Candidate	Services Building	115(3)	ENE	5
People Entering Site Without Consent	Alligator Bayou	2500	SW	40

MEMBER OF THE PUBLIC	LOCATION	DISTANCE (1) (m)	SECTOR	DURATION (hr/year)
Casual Visitor	Main Admin. Building	500	WNW	75(6)
Tour Group in Bus	North Parking Lot	275	N	1

- (1) Approximate distance from Main Plant Vent Exhaust to LOCATION.
- (2) The employee candidate is expected to spend 2 hours in the Personnel Office for initial interviews and 5 hours in the Services Building for interviews with prospective supervisors/co-workers.
- (3) Midpoint of building
- (4) Individual assumed to be on site 0.25 hr in the morning and 0.25 hr in the evening, 5 days per week, 50 weeks per year (0.5 hr/day x 5 days/week x 50 weeks/year = 125 hours).
- (5) Individual assumed to be on site 2.5 hr per day, 5 days per week, 52 weeks/year (2.5 hr/day x 5 days/week x 52 weeks/year = 650 hours).
- (6) Individual assumed to be on site 0.5 hr per day.
- (7) Liquid pathways dose is not considered due to nature of activities that individuals are engaged in.

TABLE 16

RBS RADIOLOGICAL EFFLUENTS TECHNICAL
SPECIFICATIONS (RETS) LIMITS COMPARISON
FOR MEMBERS OF THE PUBLIC ON SITE
PERIOD: 10/31/85 through 12/31/85 (Quarter 4)

Activity	RETS No.	Limit	Dose (1)	% of Limit
Particulates	3.11.2.3.a	7.5 mrem/qtr	1.4 E-06	1.87 E-05
Iodine				
Tritium	3.11.2.3.b	15 mrem/yr	1.4 E-06	9.33 E-06
Liquids	3.11.1.2.a	1.5 mrem/qtr TOTAL BODY 5 mrem/qtr ORGAN	(2) (2)	(2) (2)
	3.11.1.2.b	3 mrem/yr TOTAL BODY 10 mrem/yr ORGAN	(2) (2)	(2) (2)
Uranium Fuel Cycle Sources	3.11.4 (40CFR190)	25 mrem/yr TOTAL BODY 25 mrem/yr ANY ORGAN 75 mrem/yr THYROID	1.4 E-02 2.7 E-02 (3) 1.4 E-02	5.60 E-02 1.08 E-01 1.87 E-02

- (1) Private Drivers received highest doses.
- (2) Liquid pathways dose not considered due to nature of activities individuals are engaged in.
- (3) Skin

TABLE 17
METEOROLOGICAL DATA - JOINT FREQUENCY TABLES

RIVER BEND STATION

METEOROLOGICAL DATA RECOVERY
 FROM 10/31/85/0100 TO 12/31/85/2400

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>
Wind Speed 30 Feet	98.8
Wind Direction 30 Feet	98.8
Wind Speed 150 Feet	98.8
Wind Direction 150 Feet	98.8
Delta Temperature (150-30)	98.8
Temperature 30 Feet	98.8
Precipitation	100
Joint Wind Speed 30 Feet, Wind Direction 30 Feet, Wind Speed 150 Feet, Wind Direction 150, and Delta Temperature	98.8

Total Number of Hours for the period: 1488

Number of Missing Hours: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 30 FOOT ELEVATION
 STABILITY CLASSES POOLED

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	37	116	30	0	0	0	183
NNE	42	47	3	0	0	0	92
NE	64	32	2	0	0	0	98
ENE	116	14	3	0	0	0	133
E	67	5	0	0	0	0	72
ESE	94	33	0	0	0	0	127
SE	89	77	4	0	0	0	170
SSE	18	65	31	0	0	0	114
S	17	54	29	0	0	0	100
SSW	6	17	5	0	0	0	28
SW	9	7	1	0	0	0	17
WSW	9	11	0	0	0	0	20
W	15	10	0	0	0	0	25
WNW	19	14	3	0	0	0	36
NW	37	36	25	0	0	0	98
NNW	30	70	30	0	0	0	130
Totals:	669	608	166	0	0	0	1443

Number of Calm Hours: 27

Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 30 FOOT ELEVATION
 STABILITY CLASS=A

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
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	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	1	0	0	0	1
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	2	0	0	0	2
Totals:	0	2	5	0	0	0	7

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 30 FOOT ELEVATION
 STABILITY CLASS=B

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	0	3	7	0	0	0	10
NNE	0	0	1	0	0	0	1
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	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	1	0	0	0	1
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	2	1	0	0	0	3
NNW	0	2	7	0	0	0	9
Totals:	0	10	17	0	0	0	27

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 30 FOOT ELEVATION
 STABILITY CLASS=C

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	1	2	7	0	0	0	10
NNE	0	4	0	0	0	0	4
NE	0	2	0	0	0	0	2
ENE	0	1	0	0	0	0	1
E	0	1	0	0	0	0	1
ESE	0	3	0	0	0	0	3
SE	0	4	0	0	0	0	4
SSE	0	1	0	0	0	0	1
S	0	0	2	0	0	0	2
SSW	0	0	0	0	0	0	0
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	2	0	0	0	2
NNW	0	4	4	0	0	0	8
Totals:	1	24	15	0	0	0	40

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 30 FOOT ELEVATION
 STABILITY CLASS=D

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	9	73	10	0	0	0	92
NNE	11	26	2	0	0	0	39
NE	13	25	2	0	0	0	40
ENE	10	7	3	0	0	0	20
E	8	3	0	0	0	0	11
ESE	10	16	0	0	0	0	26
SE	9	30	3	0	0	0	41
SSE	5	34	23	0	0	0	62
S	3	22	25	0	0	0	50
SSW	1	9	5	0	0	0	15
SW	3	3	1	0	0	0	7
WSW	1	11	0	0	0	0	12
W	4	9	0	0	0	0	13
WNW	2	9	3	0	0	0	14
NW	6	28	21	0	0	0	55
NNW	4	49	14	0	0	0	67
Totals:	98	354	112	0	0	0	564

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 30 FOOT ELEVATION
 STABILITY CLASS=E

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	10	35	4	0	0	0	49
NNE	12	15	0	0	0	0	27
NE	12	4	0	0	0	0	16
ENE	22	4	0	0	0	0	26
E	25	1	0	0	0	0	26
ESE	60	11	0	0	0	0	71
SE	61	42	1	0	0	0	104
SSE	7	30	8	0	0	0	45
S	11	32	0	0	0	0	43
SSW	5	8	0	0	0	0	13
SW	4	3	0	0	0	0	7
WSW	7	0	0	0	0	0	7
W	8	0	0	0	0	0	8
WNW	4	5	0	0	0	0	9
NW	6	4	1	0	0	0	11
NNW	8	15	3	0	0	0	26
Totals:	262	209	17	0	0	0	488

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 30 FOOT ELEVATION
 STABILITY CLASS=F

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	9	2	0	0	0	0	11
NNE	4	2	0	0	0	0	6
NE	15	1	0	0	0	0	16
ENE	10	2	0	0	0	0	12
E	10	0	0	0	0	0	10
ESE	15	0	0	0	0	0	15
SE	19	0	0	0	0	0	19
SSE	4	0	0	0	0	0	4
S	3	0	0	0	0	0	3
SSW	0	0	0	0	0	0	0
SW	1	0	0	0	0	0	1
WSW	1	0	0	0	0	0	1
W	2	0	0	0	0	0	2
WNW	4	0	0	0	0	0	4
NW	3	2	0	0	0	0	5
NNW	6	0	0	0	0	0	6
Totals:	106	9	0	0	0	0	115

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 30 FOOT ELEVATION
 STABILITY CLASS=G

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	8	0	0	0	0	0	8
NNE	15	0	0	0	0	0	15
NE	24	0	0	0	0	0	24
ENE	74	0	0	0	0	0	74
E	24	0	0	0	0	0	24
ESE	9	0	0	0	0	0	9
SE	1	0	0	0	0	0	1
SSE	2	0	0	0	0	0	2
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	1	0	0	0	0	0	1
WNW	9	0	0	0	0	0	9
NW	22	0	0	0	0	0	22
NNW	12	0	0	0	0	0	12
Totals:	202	0	0	0	0	0	202

Number of Calm Hours: 27

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 150 FOOT ELEVATION
 STABILITY CLASSES POOLED

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	7	78	85	6	0	0	176
NNE	8	53	24	0	0	0	85
NE	4	65	29	3	0	0	101
ENE	5	43	22	3	0	0	73
E	4	55	19	0	0	0	78
ESE	5	85	95	7	0	0	192
SE	10	64	73	1	0	0	148
SSE	3	42	70	7	0	0	122
S	2	43	40	1	0	0	86
SSW	3	16	15	0	0	0	34
SW	2	5	4	0	0	0	11
WSW	2	27	0	0	0	0	29
W	1	27	6	0	0	0	34
WNW	5	28	17	0	0	0	50
NW	2	32	51	6	0	0	91
NNW	3	44	85	27	0	0	159
Totals:	66	707	635	61	0	0	1469

Number of Calm Hours: 1

Total Number of missing hours of all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 150 FOOT ELEVATION
 STABILITY CLASS=A

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	0	0	2	1	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	1	0	0	0	1
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	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	2	0	0	2
Totals:	0	0	4	3	0	0	7

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 150 FOOT ELEVATION
 STABILITY CLASS=B

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	0	0	9	0	0	0	9
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	3	0	0	0	3
SE	0	0	0	0	0	0	0
SSE	0	0	1	0	0	0	1
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	3	1	0	0	4
NNW	0	0	4	6	0	0	10
Totals:	0	0	20	7	0	0	27

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 150 FOOT ELEVATION
 STABILITY CLASS=C

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	0	1	5	1	0	0	7
NNE	0	0	4	0	0	0	4
NE	0	1	1	0	0	0	2
ENE	0	0	1	0	0	0	1
E	0	0	1	0	0	0	1
ESE	0	0	6	0	0	0	6
SE	0	0	2	0	0	0	2
SSE	0	0	0	0	0	0	0
S	0	0	2	0	0	0	2
SSW	0	0	0	0	0	0	0
SW	0	1	0	0	0	0	1
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	2	1	0	0	3
NNW	0	1	5	4	0	0	10
Totals:	0	4	30	6	0	0	40

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 150 FOOT ELEVATION
 STABILITY CLASS=D

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	2	42	34	3	0	0	81
NNE	2	28	7	0	0	0	37
NE	1	26	9	3	0	0	39
ENE	2	10	5	3	0	0	20
E	4	12	1	0	0	0	17
ESE	2	14	22	4	0	0	42
SE	6	11	17	1	0	0	35
SSE	1	16	39	7	0	0	63
S	2	12	23	1	0	0	38
SSW	1	1	10	0	0	0	12
SW	1	2	2	0	0	0	5
WSW	1	10	0	0	0	0	11
W	1	12	4	0	0	0	17
WNW	0	10	8	0	0	0	18
NW	1	10	38	4	0	0	53
NNW	1	23	41	11	0	0	76
Totals:	28	239	260	37	0	0	564

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 150 FOOT ELEVATION
 STABILITY CLASS=E

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	3	17	27	1	0	0	48
NNE	1	8	9	0	0	0	18
NE	0	11	8	0	0	0	19
ENE	1	16	3	0	0	0	20
E	0	19	9	0	0	0	28
ESE	0	55	54	3	0	0	112
SE	3	34	42	0	0	0	79
SSE	1	14	30	0	0	0	45
S	0	20	12	0	0	0	32
SSW	1	12	5	0	0	0	18
SW	0	1	2	0	0	0	3
WSW	0	12	0	0	0	0	12
W	0	6	1	0	0	0	7
WNW	0	4	4	0	0	0	8
NW	0	5	3	0	0	0	8
NNW	0	7	20	4	0	0	31
Totals:	10	241	229	8	0	0	488

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 150 FOOT ELEVATION
 STABILITY CLASS=F

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	0	4	5	0	0	0	9
NNE	0	8	3	0	0	0	11
NE	0	5	6	0	0	0	11
ENE	0	4	8	0	0	0	12
E	0	9	4	0	0	0	13
ESE	0	7	7	0	0	0	14
SE	0	6	11	0	0	0	17
SSE	0	5	0	0	0	0	5
S	0	6	1	0	0	0	7
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	1	0	0	0	0	1
W	0	2	0	0	0	0	2
WNW	1	2	1	0	0	0	4
NW	0	2	2	0	0	0	4
NNW	0	2	3	0	0	0	5
Totals:	1	63	51	0	0	0	115

Number of Calm Hours: 0

Total Number of Missing Hours for all Stability Classes: 18

RIVER BEND STATION

JOINT FREQUENCY TABLE
 FROM 10/31/85 0100 TO 12/31/85 2400
 150 FOOT ELEVATION
 STABILITY CLASS=G

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	Total
N	2	14	3	0	0	0	19
NNE	5	9	1	0	0	0	15
NE	3	22	5	0	0	0	30
ENE	2	13	5	0	0	0	20
E	0	15	4	0	0	0	19
ESE	3	9	2	0	0	0	14
SE	1	13	1	0	0	0	15
SSE	1	7	0	0	0	0	8
S	0	5	1	0	0	0	6
SSW	1	3	0	0	0	0	4
SW	1	1	0	0	0	0	2
WSW	1	4	0	0	0	0	5
W	0	7	0	0	0	0	7
WNW	4	12	4	0	0	0	20
NW	1	15	3	0	0	0	19
NNW	2	11	12	0	0	0	25
Totals:	27	160	41	0	0	0	229

Number of Calm Hours: 1

Total Number of Missing Hours for all Stability Classes: 18

TABLE 18
METEOROLOGICAL DATA FOR CONTAINMENT
PURGE BATCH RELEASES

RIVER BEND STATION
 METEOROLOGICAL DATA FOR CONTAINMENT PURGE
 BATCH RELEASES
 PERIOD OF REPORT: 10/31/85 0100 TO 12/31/85 2400

PERIOD OF BATCH RELEASE	HOUR	STABILITY CLASS	WS 30	WD 30	WS 150	WD 150
11/24/85 1703- 1752	1800	E	2.4	SE	7.0	ESE
12/6/85 1650- 1750	1700 1800	E G	3.9 1.5	NNE NNE	6.1 6.4	N NNE
12/8/85 0110- 12/1./85 0849	DATA DISPLAYED IN JOINT FREQUENCY TABLE FORMAT					
12/18/85 0750- 1200	0800 0900 1000 1100 1200	E E E D D	2.3 2.7 3.3 2.6 3.0	NE ENE NE ENE ENE	6.2 6.5 5.3 3.6 3.9	NE ENE ENE ENE ENE
12/18/85 1420- 1820	1500 1600 1700 1800 1900	D D D E E	4.2 5.9 7.4 6.2 7.4	WNW NW NNW NNW N	5.4 8.5 12.0 11.0 12.2	WNW NW NNW NNW N
12/19/85 1330- 1620	1400 1500 1600 1700	D D D E	3.2 2.7 3.8 2.3	ENE SSE SSW S	3.5 3.0 4.2 3.0	ENE SE S SSE
12/20/85 0008- 0012	0100	G	1.0	ENE	5.8	NW
12/20/85 0208- 0258	0300	G	0.7	NNE	5.3	WSW
12/22/85 2113- 12/23/85 0110	2200 2300 2400 0100 0200	E E E E E	4.3 3.8 3.0 2.6 3.0	SSW S S SSW SSW	7.2 6.7 6.2 5.6 6.2	SSW SSW S SSW SSW

PERIOD OF BATCH RELEASE	HOUR	STABILITY CLASS	WS 30	WD 30	WS 150	WD 150
12/24/85 0824- 1337	0900	F	2.6	WNW	6.8	NW
	1000	D	6.1	NNW	9.1	NNW
	1100	D	7.2	N	10.2	NNW
	1200	C	9.5	N	13.3	NNW
	1300	B	8.4	NNW	12.6	NNW
	1400	D	8.2	NW	11.4	NW
12/25/85 0224- 0258	0300	E	4.6	N	7.9	N
12/25/85 1345- 1403	1400	B	10.4	NW	14.4	NW
	1500	C	9.6	NW	12.8	NW

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 30 FOOT ELEVATION
 STABILITY CLASSES POOLED

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	11	0	0	0	0	0	11
E	14	0	0	0	0	0	14
ESE	11	8	0	0	0	0	19
SE	4	12	1	0	0	0	17
SSE	1	1	0	0	0	0	2
S	0	2	1	0	0	0	3
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	0	0	0	0	0	0
Totals:	42	24	2	0	0	0	68

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 30 FOOT ELEVATION
 STABILITY CLASS=A

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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

Totals: 0 0 0 0 0 0 0

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 30 FOOT ELEVATION
 STABILITY CLASS=B

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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

Totals: 0 0 0 0 0 0 0

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 30 FOOT ELEVATION
 STABILITY CLASS=C

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	1	0	0	0	0	1
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
Totals:	0	2	0	0	0	0	2

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 30 FOOT ELEVATION
 STABILITY CLASS=D

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	1	0	0	0	0	0	1
ESE	0	4	0	0	0	0	4
SE	1	7	1	0	0	0	9
SSE	1	1	0	0	0	0	2
S	0	2	1	0	0	0	3
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	0	0	0	0	0	0
Totals:	3	15	2	0	0	0	20

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 30 FOOT ELEVATION
 STABILITY CLASS=E

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	10	0	0	0	0	0	10
ESE	8	3	0	0	0	0	11
SE	2	4	0	0	0	0	6
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
Totals:	20	7	0	0	0	0	27

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 30 FOOT ELEVATION
 STABILITY CLASS=F

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	2	0	0	0	0	0	2
E	2	0	0	0	0	0	2
ESE	2	0	0	0	0	0	2
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	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
Totals:	7	0	0	0	0	0	7

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 30 FOOT ELEVATION
 STABILITY CLASS=G

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	9	0	0	0	0	0	9
E	1	0	0	0	0	0	1
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

Totals: 12 0 0 0 0 0 0 12

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 150 FOOT ELEVATION
 STABILITY CLASSES POOLED

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	1	0	0	0	1
E	0	9	7	0	0	0	16
ESE	0	10	18	7	0	0	35
SE	2	3	5	1	0	0	11
SSE	0	2	0	0	0	0	2
S	0	1	1	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	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
Totals:	2	26	32	8	0	0	68

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 150 FOOT ELEVATION
 STABILITY CLASS=A

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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

Totals: 0 0 0 0 0 0 0

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 150 FOOT ELEVATION
 STABILITY CLASS=B

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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

Totals: 0 0 0 0 0 0 0

Number of Calm Hours: 0

Total hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 150 FOOT ELEVATION
 STABILITY CLASS=C

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	2	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	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
Totals:	0	0	2	0	0	0	2

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 150 FOOT ELEVATION
 STABILITY CLASS=D

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	1	0	0	0	0	1
ESE	0	1	7	4	0	0	12
SE	1	0	0	1	0	0	2
SSE	0	2	0	0	0	0	2
S	0	1	1	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	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
Totals:	1	6	8	5	0	0	20

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 150 FOOT ELEVATION
 STABILITY CLASS=E

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	4	1	0	0	0	5
ESE	0	6	9	3	0	0	18
SE	1	1	2	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	0	0	0	0	0	0	0

Totals: 1 11 12 3 0 0 27

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 150 FOOT ELEVATION
 STABILITY CLASS=F

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	1	3	0	0	0	4
ESE	0	1	0	0	0	0	1
SE	0	0	2	0	0	0	2
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
Totals:	0	2	5	0	0	0	7

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

RIVER BEND STATION

JOINT FREQUENCY TABLE FOR CONTAINMENT PURGE
 FROM 12/8/85 0110 TO 12/11/85 0849
 150 FOOT ELEVATION
 STABILITY CLASS=G

Wind Speed (MPH)

Wind Direction	1-3	4-7	8-12	13-18	19-24	25+	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	1	0	0	0	1
E	0	3	3	0	0	0	6
ESE	0	2	0	0	0	0	2
SE	0	2	1	0	0	0	3
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
Totals:	0	7	5	0	0	0	12

Number of Calm Hours: 0

Total Hours of Release: 81

Number of Missing Hours for Release Period: 13

TABLE 19
ATMOSPHERIC DISPERSION FACTORS
(X/Q factors)

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM CONTAINMENT BUILDING AT PROPERTY BOUNDARY RECEPTORS
 X/Q VALUES (SEC/CUB. METER)

Receptor Sector__	Distance		X/Q (Sec/Cub. Meter)
	(Miles)_____	(Meters)	
N	0.70	1122	0.145E-05
NNE	0.58	930	0.704E-06
NE	0.58	930	0.364E-06
ENE	0.65	1038	0.802E-06
E	0.70	1128	0.108E-05
ESE	0.67	1080	0.262E-05
SE	0.82	1320	0.165E-05
SSE	1.06	1698	0.150E-05
S	1.07	1722	0.153E-05
SSW	2.19	3528	0.221E-06
SW	1.94	3120	0.427E-06
WSW	1.06	1698	0.831E-06
W	1.26	2028	0.597E-06
WNW	0.96	1548	0.228E-05
NW	0.78	1260	0.302E-05
NNW	0.74	1194	0.213E-05

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 BATCH RELEASE FROM CONTAINMENT BUILDING AT PROPERTY BOUNDARY RECEPTORS
 X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance		X/Q (Sec/Cub. Meter)
	(Miles)	(Meters)	
N	0.70	1122	0.515E-06
NNE	0.58	930	0.804E-06
NE	0.58	930	0
ENE	0.65	1038	0.129E-05
E	0.70	1128	0.365E-06
ESE	0.67	1080	0.105E-05
SE	0.82	1320	0.221E-05
SSE	1.06	1698	0.696E-06
S	1.07	1722	0.210E-06
SSW	2.19	3528	0.554E-07
SW	1.94	3120	0
WSW	1.06	1698	0.493E-06
W	1.26	2028	0.172E-05
WNW	0.96	1548	0.482E-05
NW	0.78	1260	0.407E-05
NNW	0.74	1194	0.387E-06

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM RADWASTE BUILDING AT PROPERTY BOUNDARY RECEPTORS
 X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance		X/Q (Sec/Cub. Meter)
	(Miles)	(Meters)	
N	0.71	1146	0.126E-04
NNE	0.60	960	0.488E-05
NE	0.60	960	0.394E-05
ENE	0.65	1050	0.464E-05
E	0.72	1158	0.779E-05
ESE	0.68	1090	0.128E-04
SE	0.82	1320	0.150E-04
SSE	1.04	1680	0.778E-05
S	1.06	1710	0.930E-05
SSW	2.18	3504	0.160E-05
SW	1.95	3132	0.320E-05
WSW	1.03	1656	0.279E-04
W	1.24	1992	0.983E-05
WNW	1.10	1770	0.157E-04
NW	0.79	1272	0.305E-04
NNW	0.77	1244	0.910E-05

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM FUEL BUILDING AT PROPERTY BOUNDARY RECEPTORS
 X/Q VALUES (SEC/CUB. METEP)

Receptor Sector	Distance		X/Q (Sec/Cub. Meter)
	(Miles)	(Meters)	
N	0.68	1098	0.148E-04
NNE	0.57	924	0.565E-05
NE	0.57	924	0.459E-05
ENE	0.63	1020	0.537E-05
E	0.72	1152	0.899E-05
ESE	0.68	1098	0.149E-04
SE	0.83	1338	0.167E-04
SSE	1.05	1692	0.846E-05
S	1.06	1710	0.102E-04
SSW	2.15	3456	0.175E-05
SW	1.86	3000	0.376E-05
WSW	0.97	1566	0.362E-04
W	1.18	1902	0.121E-04
WNW	0.91	1470	0.269E-04
NW	0.77	1242	0.360E-04
NNW	0.73	1176	0.112E-04

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM CONTAINMENT BUILDING AT SPECIAL RADIOLOGICAL
 PATHWAY RECEPTORS X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance		X/Q (Sec/Cub. Meter)
	(Miles)	(Meters)	
N	0.99	1600	0.803E-06
NNE	0.93	1500	0.369E-06
NE	0.93	1500	0.168E-06
ENE	0.99	1600	0.384E-06
E	0.75	1200	0.993E-06
ESE	0.87	1400	0.152E-05
SE	2.61	4200	0.171E-06
SSE	2.61	4200	0.279E-06
S	1.12	1800	0.140E-05
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.78	1260	0.302E-05
NNW	0.93	1500	0.139E-05
N	1.12	1800	0.668E-06
NNE	1.12	1800	0.287E-06
NF	1.24	2000	0.951E-07
ENE	0.93	1500	0.433E-06
E	1.49	2400	0.242E-06
ESE	2.05	3300	0.256E-06
SE	*	*	*
SSE	2.67	4300	0.265E-06
S	1.12	1800	0.140E-05
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.78	1260	0.302E-05
NNW	1.93	3100	0.396E-06

*Receptor not within 5000 meters of site center

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM CONTAINMENT BUILDING AT SPECIAL RADIOLOGICAL
 PATHWAY RECEPTORS X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance		X/Q (Sec/Cub. Meter)
	(Miles)	(Meters)	
N	0.87	1400	0.102E-05
NNE	*	*	*
NE	*	*	*
ENE	*	*	*
E	*	*	*
ESE	*	*	*
SE	*	*	*
SSE	*	*	*
S	*	*	*
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.99	1600	0.189E-05
NNW	0.81	1300	0.181E-05
N	0.99	1600	0.803E-06
NNE	1.12	1800	0.287E-06
NE	0.81	1300	0.225E-06
ENE	0.68	1100	0.747E-06
E	0.75	1200	0.993E-06
ESE	0.68	1100	0.255E-05
SE	*	*	*
SSE	2.49	4000	0.309E-06
S	1.18	1900	0.127E-05
SSW	*	*	*
SW	*	*	*
WSW	2.55	4100	0.171E-06
W	*	*	*
WNW	*	*	*
NW	0.78	1260	0.302E-05
NNW	1.80	2900	0.444E-06

*Receptor not within 5000 meters of site center

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 BATCH RELEASE FROM CONTAINMENT BUILDING AT SPECIAL RADIOLOGICAL
 PATHWAY RECEPTORS X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance		X/Q (Sec/Cub. Meter)
	(Miles)	(Meters)	
N	0.99	1600	0.368E-06
NNE	0.93	1500	0.503E-06
NE	0.93	1500	0
ENE	0.99	1600	0.474E-06
E	0.75	1200	0.345E-06
ESE	0.87	1400	0.745E-06
SE	2.61	4200	0.227E-06
SSE	2.61	4200	0.134E-06
S	1.12	1800	0.196E-06
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.78	1260	0.407E-05
NNW	0.93	1500	0.318E-06
N	1.12	1800	0.346E-05
NNE	1.12	1800	0.418E-06
NE	1.24	2000	0
ENE	0.93	1500	0.559E-06
E	1.49	2400	0.117E-06
ESE	2.05	3300	0.189E-06
SE	*	*	*
SSE	2.67	4300	0.127E-06
S	1.12	1800	0.196E-06
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.78	1260	0.407E-05
NNW	1.93	3100	0.137E-06

*Receptor not within 5000 meters of site center

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 BATCH RELEASE FROM CONTAINMENT BUILDING AT SPECIAL RADIOLOGICAL
 PATHWAY RECEPTORS X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance		X/Q (Sec/Cub. Meter)
	(Miles)	(Meters)	
N	0.87	1400	0.428E-06
NNE	*	*	*
NE	*	*	*
ENE	*	*	*
E	*	*	*
ESE	*	*	*
SE	*	*	*
SSE	*	*	*
S	*	*	*
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.99	1600	0.243E-05
NNW	0.81	1300	0.362E-06
N	0.99	1600	0.368E-06
NNE	1.12	1800	0.418E-06
NE	0.81	1300	0
ENE	0.68	1100	0.116E-05
E	0.75	1200	0.345E-06
ESE	0.68	1100	0.103E-05
SE	*	*	*
SSE	2.49	4000	0.151E-06
S	1.18	1900	0.179E-06
SSW	*	*	*
SW	*	*	*
WSW	2.55	4100	0.149E-06
W	*	*	*
WNW	*	*	*
NW	0.78	1260	0.407E-05
NNW	1.80	2900	0.152E-06

*Receptor not within 5000 meters of site center

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM RADWASTE BUILDING AT SPECIAL RADIOLOGICAL
 PATHWAY RECEPTORS X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance		X/Q (Sec/Cub. Meter)
	(Miles)	(Meters)	
N	0.99	1600	0.591E-05
NNE	0.93	1500	0.202E-05
NE	0.93	1500	0.164E-05
ENE	0.99	1600	0.192E-05
E	0.75	1200	0.742E-05
ESE	0.87	1400	0.794E-05
SE	2.61	4200	0.130E-05
SSE	2.61	4200	0.112E-05
S	1.12	1800	0.827E-05
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.79	1272	0.305E-04
NNW	0.93	1500	0.579E-05
N	1.12	1800	0.450E-05
NNE	1.12	1800	0.132E-05
NE	1.24	2000	0.853E-06
ENE	0.93	1500	0.223E-05
E	1.49	2400	0.156E-05
ESE	2.05	3300	0.127E-05
SE	*	*	*
SSE	2.67	4300	0.107E-05
S	1.12	1800	0.827E-05
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.79	1272	0.305E-04
NNW	1.93	3100	0.113E-05

*Receptor not within 5000 meters of site center

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM RADWASTE BUILDING AT SPECIAL RADIOLOGICAL
 PATHWAY RECEPTORS X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance		X/Q (Sec/Cub. Meter)
	(Miles)	(Meters)	
N	0.87	1400	0.810E-05
NNE	*	*	*
NE	*	*	*
ENE	*	*	*
E	*	*	*
ESE	*	*	*
SE	*	*	*
SSE	*	*	*
S	*	*	*
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.99	1600	0.178E-04
NNW	0.81	1300	0.817E-05
N	0.99	1600	0.591E-05
NNE	1.12	1800	0.132E-05
NE	0.81	1300	0.231E-05
ENE	0.68	1100	0.431E-05
E	0.75	1200	0.742E-05
ESE	0.68	1100	0.127E-04
SE	*	*	*
SSE	2.49	4000	0.124E-05
S	1.18	1900	0.732E-05
SSW	*	*	*
SW	*	*	*
WSW	2.55	4100	0.432E-05
W	*	*	*
WNW	*	*	*
NW	0.79	1272	0.305E-04
NNW	1.80	2900	0.130E-05

*Receptor not within 5000 meters of site center

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM FUEL BUILDING AT SPECIAL RADIOLOGICAL
 PATHWAY RECEPTORS X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance		X/Q (Sec/Cub. Meter)
	(Miles)	(Meters)	
N	0.99	1600	0.641E-05
NNE	0.93	1500	0.220E-05
NE	0.93	1500	0.181E-05
ENE	0.99	1600	0.208E-05
E	0.75	1200	0.847E-05
ESE	0.87	1400	0.911E-05
SE	2.61	4200	0.138E-05
SSE	2.61	4200	0.118E-05
S	1.12	1800	0.900E-05
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.77	1242	0.360E-04
NNW	0.93	1500	0.623E-05
N	1.12	1800	0.485E-05
NNE	1.12	1800	0.143E-05
NE	1.24	2000	0.924E-06
ENE	0.93	1500	0.243E-05
E	1.49	2400	0.169E-05
ESE	2.05	3300	0.137E-05
SE	*	*	*
SSE	2.56	4300	0.113E-05
S	1.12	1800	0.900E-05
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.77	1242	0.360E-04
NNW	1.93	3100	0.118E-05

*Receptor not within 5000 meters of site center

**RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
CONTINUOUS RELEASE FROM FUEL BUILDING AT SPECIAL RADIOLOGICAL
PATHWAY RECEPTORS X/Q VALUES (SEC/CUB. METER)**

<u>Receptor Sector</u>	<u>Distance</u>		<u>X/Q (Sec/Cub. Meter)</u>
	<u>(Miles)</u>	<u>(Meters)</u>	
N	0.87	1400	0.885E-05
NNE	*	*	*
NE	*	*	*
ENE	*	*	*
E	*	*	*
ESE	*	*	*
SE	*	*	*
SSE	*	*	*
S	*	*	*
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	0.99	1600	0.195E-04
NNW	0.81	1300	0.888E-05
N	0.99	1600	0.641E-05
NNE	1.12	1800	0.143E-05
NE	0.81	1300	0.256E-05
ENE	0.68	1100	0.480E-05
E	0.75	1200	0.847E-05
ESE	0.68	1100	0.149E-04
SE	*	*	*
SSE	2.49	4000	0.131E-05
S	1.18	1900	0.794E-05
SSW	*	*	*
SW	*	*	*
WSW	2.55	4100	0.464E-05
W	*	*	*
WNW	*	*	*
NW	0.77	1242	0.360E-04
NNW	1.80	2900	0.137E-05

*Receptor not within 5000 meters of site center

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM CONTAINMENT BUILDING AT POPULATION RECEPTORS
 X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance in Miles				
	<u>0.500</u>	<u>1.500</u>	<u>2.500</u>	<u>3.500</u>	<u>4.500</u>
N	0.209E-05	0.416E-06	0.193E-06	0.122E-06	0.834E-07
NNE	0.790E-06	0.174E-06	0.814E-07	0.506E-07	0.352E-07
NE	0.428E-06	0.664E-07	0.295E-07	0.165E-07	0.119E-07
ENE	0.114E-05	0.207E-06	0.876E-07	0.488E-07	0.325E-07
E	0.179E-05	0.239E-06	0.960E-07	0.522E-07	0.373E-07
ESE	0.424E-05	0.456E-06	0.176E-06	0.103E-06	0.728E-07
SE	0.348E-05	0.467E-06	0.177E-06	0.991E-07	0.663E-07
SSE	0.585E-05	0.735E-06	0.293E-06	0.171E-06	0.114E-06
S	0.567E-05	0.814E-06	0.316E-06	0.193E-06	0.129E-06
SSW	0.308E-05	0.445E-06	0.173E-06	0.106E-06	0.725E-07
SW	0.595E-05	0.678E-06	0.267E-06	0.161E-06	0.109E-06
WSW	0.347E-05	0.410E-06	0.169E-06	0.104E-06	0.718E-07
W	0.345E-05	0.429E-06	0.177E-06	0.109E-06	0.754E-07
WNW	0.634E-05	0.939E-06	0.376E-06	0.281E-06	0.182E-06
NW	0.553E-05	0.859E-06	0.368E-06	0.229E-06	0.163E-06
NNW	0.318E-05	0.611E-06	0.242E-06	0.162E-06	0.108E-06

Receptor Sector	Distance in Miles				
	<u>7.500</u>	<u>15.00</u>	<u>25.00</u>	<u>35.00</u>	<u>45.00</u>
N	0.451E-07	0.176E-07	0.915E-08	0.596E-08	0.433E-08
NNE	0.212E-07	0.852E-08	0.451E-08	0.297E-08	0.217E-08
NE	0.732E-08	0.356E-08	0.191E-08	0.127E-08	0.937E-09
ENE	0.241E-07	0.111E-07	0.609E-08	0.411E-08	0.302E-08
E	0.217E-07	0.102E-07	0.592E-08	0.393E-08	0.290E-08
ESE	0.386E-07	0.178E-07	0.892E-08	0.622E-08	0.475E-08
SE	0.314E-07	0.135E-07	0.754E-08	0.515E-08	0.388E-08
SSE	0.532E-07	0.224E-07	0.123E-07	0.834E-08	0.623E-08
S	0.662E-07	0.263E-07	0.144E-07	0.970E-08	0.721E-08
SSW	0.357E-07	0.156E-07	0.869E-08	0.592E-08	0.444E-08
SW	0.532E-07	0.234E-07	0.132E-07	0.908E-08	0.686E-08
WSW	0.359E-07	0.160E-07	0.908E-08	0.624E-08	0.471E-08
W	0.376E-07	0.166E-07	0.933E-08	0.637E-08	0.478E-08
WNW	0.739E-07	0.312E-07	0.170E-07	0.114E-07	0.841E-08
NW	0.807E-07	0.420E-07	0.225E-07	0.101E-07	0.749E-08
NNW	0.529E-07	0.309E-07	0.164E-07	0.160E-07	0.441E-08

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 BATCH RELEASE FROM CONTAINMENT BUILDING AT POPULATION RECEPTORS
 X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance in Miles				
	0.500	1.500	2.500	3.500	4.500
N	0.572E-06	0.231E-06	0.112E-06	0.676E-07	0.440E-07
NNE	0.850E-06	0.266E-06	0.125E-06	0.741E-07	0.487E-07
NE	0	0	0	0	0
ENE	0.200E-05	0.176E-06	0.668E-07	0.389E-07	0.261E-07
E	0.535E-06	0.116E-06	0.498E-07	0.283E-07	0.193E-07
ESE	0.138E-05	0.330E-06	0.131E-06	0.738E-07	0.519E-07
SE	0.405E-05	0.652E-06	0.235E-06	0.128E-06	0.832E-07
SSE	0.205E-05	0.365E-06	0.143E-06	0.796E-07	0.513E-07
S	0.625E-06	0.122E-06	0.483E-07	0.299E-07	0.201E-07
SSW	0.129E-05	0.114E-06	0.419E-07	0.247E-07	0.166E-07
SW	0	0	0	0	0
WSW	0.157E-05	0.300E-06	0.148E-06	0.944E-07	0.652E-07
W	0.109E-04	0.121E-05	0.470E-06	0.286E-06	0.196E-06
WNW	0.131E-04	0.194E-05	0.751E-06	0.537E-06	0.345E-06
NW	0.814E-05	0.150E-05	0.434E-06	0.269E-06	0.193E-06
NNW	0.327E-06	0.198E-06	0.881E-07	0.605E-07	0.392E-07

Receptor Sector	Distance in Miles				
	7.500	15.00	25.00	35.00	45.00
N	0.196E-07	0.702E-08	0.344E-08	0.215E-08	0.152E-08
NNE	0.221E-07	0.822E-08	0.461E-08	0.266E-08	0.190E-08
NE	0	0	0	0	0
ENE	0.238E-07	0.120E-07	0.691E-08	0.475E-08	0.356E-08
E	0.100E-07	0.400E-08	0.210E-08	0.136E-08	0.980E-09
ESE	0.238E-07	0.917E-08	0.457E-08	0.296E-08	0.214E-08
SE	0.372E-07	0.147E-07	0.771E-08	0.507E-08	0.371E-08
SSE	0.220E-07	0.809E-08	0.400E-08	0.252E-08	0.178E-08
S	0.947E-08	0.387E-08	0.206E-08	0.135E-08	0.987E-09
SSW	0.836E-08	0.399E-08	0.240E-08	0.171E-08	0.133E-08
SW	0	0	0	0	0
WSW	0.315E-07	0.129E-07	0.682E-08	0.448E-08	0.328E-08
W	0.989E-07	0.450E-07	0.258E-07	0.178E-07	0.135E-07
WNW	0.139E-06	0.571E-07	0.307E-07	0.204E-07	0.150E-07
NW	0.967E-07	0.482E-07	0.257E-07	0.121E-07	0.899E-08
NNW	0.179E-07	0.680E-08	0.337E-08	0.213E-08	0.138E-08

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM RADWASTE BUILDING AT POPULATION RECEPTORS
 X/Q VALUES (SEC/CUB. METER)

Receptor Sector__	Distance in Miles				
	<u>0.500</u>	<u>1.500</u>	<u>2.500</u>	<u>3.500</u>	<u>4.500</u>
N	0.219E-04	0.233E-05	0.803E-06	0.418E-06	0.264E-06
NNE	0.650E-05	0.687E-06	0.236E-06	0.123E-06	0.776E-07
NE	0.527E-05	0.564E-06	0.196E-06	0.102E-06	0.650E-07
ENE	0.710E-05	0.757E-06	0.261E-06	0.136E-06	0.860E-07
E	0.139E-04	0.154E-05	0.543E-06	0.287E-06	0.184E-06
ESE	0.213E-04	0.240E-05	0.861E-06	0.459E-06	0.296E-06
SE	0.355E-04	0.395E-05	0.141E-05	0.748E-06	0.480E-06
SSE	0.321E-04	0.349E-05	0.122E-05	0.643E-06	0.410E-06
S	0.402E-04	0.431E-05	0.149E-05	0.782E-06	0.497E-06
SSW	0.318E-04	0.347E-05	0.122E-05	0.642E-06	0.410E-06
SW	0.491E-04	0.549E-05	0.195E-05	0.103E-05	0.664E-06
WSW	0.109E-03	0.124E-04	0.448E-05	0.240E-05	0.155E-05
W	0.578E-04	0.651E-05	0.232E-05	0.124E-05	0.794E-06
WNW	0.722E-04	0.797E-05	0.281E-05	0.149E-05	0.951E-06
NW	0.651E-04	0.708E-05	0.246E-05	0.129E-05	0.822E-06
NNW	0.186E-04	0.194E-05	0.661E-06	0.342E-06	0.215E-06

Receptor Sector__	Distance in Miles				
	<u>7.500</u>	<u>15.00</u>	<u>25.00</u>	<u>35.00</u>	<u>45.00</u>
N	0.113E-06	0.439E-07	0.234E-07	0.154E-07	0.113E-07
NNE	0.331E-07	0.129E-07	0.686E-08	0.454E-08	0.334E-08
NE	0.280E-07	0.110E-07	0.593E-08	0.395E-08	0.292E-08
ENE	0.369E-07	0.144E-07	0.764E-08	0.505E-08	0.371E-08
E	0.807E-07	0.322E-07	0.176E-07	0.118E-07	0.875E-08
ESE	0.131E-06	0.532E-07	0.293E-07	0.198E-07	0.148E-07
SE	0.213E-06	0.855E-07	0.469E-07	0.316E-07	0.235E-07
SSE	0.179E-06	0.708E-07	0.383E-07	0.256E-07	0.190E-07
S	0.215E-06	0.843E-07	0.452E-07	0.300E-07	0.221E-07
SSW	0.179E-06	0.710E-07	0.385E-07	0.258E-07	0.191E-07
SW	0.294E-06	0.118E-06	0.641E-07	0.429E-07	0.318E-07
WSW	0.659E-06	0.283E-06	0.157E-06	0.106E-06	0.796E-07
W	0.352E-06	0.142E-06	0.779E-07	0.524E-07	0.390E-07
WNW	0.417E-06	0.167E-06	0.907E-07	0.608E-07	0.451E-07
NW	0.356E-06	0.140E-06	0.752E-07	0.500E-07	0.368E-07
NNW	0.910E-07	0.349E-07	0.183E-07	0.120E-07	0.878E-08

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
CONTINUOUS RELEASE FROM FUEL BUILDING AT POPULATION RECEPTORS
X/Q VALUES (SEC/CUB. METER)

Receptor Sector	Distance in Miles				
	<u>0.500</u>	<u>1.500</u>	<u>2.500</u>	<u>3.500</u>	<u>4.500</u>
N	0.236E-04	0.248E-05	0.837E-06	0.432E-06	0.272E-06
NNE	0.694E-05	0.731E-06	0.247E-06	0.127E-06	0.799E-07
NE	0.562E-05	0.605E-06	0.206E-06	0.107E-06	0.672E-07
ENE	0.765E-05	0.805E-06	0.272E-06	0.141E-06	0.855E-07
E	0.150E-04	0.167E-05	0.576E-06	0.301E-06	0.191E-06
ESE	0.229E-04	0.264E-05	0.920E-06	0.484E-06	0.309E-06
SE	0.308E-04	0.433E-05	0.150E-05	0.787E-06	0.501E-06
SSE	0.344E-04	0.377E-05	0.129E-05	0.672E-06	0.425E-06
S	0.433E-04	0.462E-05	0.157E-05	0.813E-06	0.513E-06
SSW	0.341E-04	0.376E-05	0.129E-05	0.671E-06	0.425E-06
SW	0.534E-04	0.598E-05	0.207E-05	0.108E-05	0.690E-06
WSW	0.117E-03	0.138E-04	0.482E-05	0.254E-05	0.163E-05
W	0.625E-04	0.712E-05	0.247E-05	0.130E-05	0.828E-06
WNW	0.778E-04	0.865E-05	0.298E-05	0.156E-05	0.988E-06
NW	0.707E-04	0.757E-05	0.258E-05	0.134E-05	0.848E-06
NNW	0.200E-04	0.205E-05	0.686E-06	0.352E-06	0.220E-06

Receptor Sector	Distance in Miles				
	<u>7.500</u>	<u>15.00</u>	<u>25.00</u>	<u>35.00</u>	<u>45.00</u>
N	0.115E-06	0.446E-07	0.237E-07	0.156E-07	0.115E-07
NNE	0.338E-07	0.131E-07	0.696E-08	0.460E-08	0.338E-08
NE	0.287E-07	0.112E-07	0.603E-08	0.401E-08	0.296E-08
ENE	0.377E-07	0.146E-07	0.775E-08	0.511E-08	0.375E-08
E	0.831E-07	0.329E-07	0.179E-07	0.120E-07	0.889E-08
ESE	0.136E-06	0.545E-07	0.299E-07	0.202E-07	0.150E-07
SE	0.219E-06	0.875E-07	0.478E-07	0.322E-07	0.239E-07
SSE	0.184E-06	0.723E-07	0.390E-07	0.260E-07	0.192E-07
S	0.220E-06	0.858E-07	0.459E-07	0.304E-07	0.224E-07
SSW	0.184E-06	0.725E-07	0.392E-07	0.262E-07	0.194E-07
SW	0.302E-06	0.120E-06	0.652E-07	0.436E-07	0.323E-07
WSW	0.719E-06	0.290E-06	0.160E-06	0.109E-06	0.811E-07
W	0.363E-06	0.145E-06	0.794E-07	0.533E-07	0.396E-07
WNW	0.429E-06	0.170E-06	0.923E-07	0.618E-07	0.458E-07
NW	0.364E-06	0.143E-06	0.763E-07	0.506E-07	0.373E-07
NNW	0.927E-07	0.354E-07	0.186E-07	0.122E-07	0.887E-08

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM CONTAINMENT AT RECEPTORS WITHIN SITE BOUNDARY
 X/Q VALUES (SEC/CUB. METER)

<u>Receptor Sector</u>	<u>Distance</u>		<u>X/Q</u>
	<u>(Feet)</u>	<u>(Meters)</u>	<u>(Sec/Cub. Meter)</u>
N	902	275	0.124E-04
N	5809	1771	0.641E-06
SW	8200	2500	0.690E-06
WNW	1640	500	0.132E-04
ENE	377	115	0.353E-04

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 BATCH RELEASE FROM CONTAINMENT BUILDING AT RECEPTORS WITHIN SITE BOUNDARY
 X/Q VALUES (SEC/CUB. METER)

<u>Receptor Sector</u>	<u>Distance</u>		<u>X/Q</u>
	<u>(Feet)</u>	<u>(Meters)</u>	<u>(Sec/Cub. Meter)</u>
N	902	275	0.302E-05
N	5809	1771	0.301E-06
SW	8200	2500	0
WNW	1640	500	0.263E-04
ENE	377	115	0.654E-04

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM FUEL BUILDING AT RECEPTORS WITHIN SITE BOUNDARY
 X/Q VALUES (SEC/CUB. METER)

<u>Receptor Sector</u>	<u>Distance</u>		<u>X/Q</u>
	<u>(Feet)</u>	<u>(Meters)</u>	<u>(Sec/Cub. Meter)</u>
N	820	250	0.156E-03
N	5740	1750	0.519E-05
SW	8200	2500	0.554E-05
WNW	1558	475	0.182E-03
ENE	410	125	0.352E-03

RIVER BEND STATION FOURTH QUARTER (OCTOBER 31, 1985 - DECEMBER 31, 1985)
 CONTINUOUS RELEASE FROM RADWASTE BUILDING AT RECEPTORS WITHIN SITE BOUNDARY
 X/Q VALUES (SEC/CUB. METER)

<u>Receptor Sector</u>	<u>Distance</u>		<u>X/Q (Sec/Cub. Meter)</u>
	<u>(Feet)</u>	<u>(Meters)</u>	
N	1033	315	0.991E-04
N	5953	1815	0.441E-05
SW	8200	2500	0.510E-05
WNW	1574	480	0.171E-03
ENE	492	150	0.119E-03

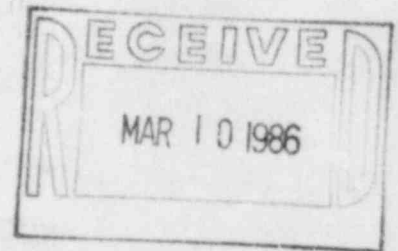


GULF STATES UTILITIES COMPANY

RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
AREA CODE 504 635-6094 346-8651

February 28, 1986
RBG-23278
File Nos. G9.5, G9.25.1.5

Mr. Robert D. Martin, Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011



Dear Mr. Martin:

River Bend Station - Unit 1
Docket No. 50-458

Enclosed is the Semiannual Radioactive Effluent Release Report for the period of October 31, 1985 (date of initial criticality) to December 31, 1985. This report is submitted in accordance with Technical Specification 6.9.1.8 of Appendix A to River Bend Station (RBS) License Number NPF-47.

Sincerely,

J. E. Booker
Manager-Engineering,
Nuclear Fuels & Licensing
River Bend Nuclear Group

^{JEP DAS}
JEB/JEP/DAS/je

Enclosures

86-258

JE 31
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