Entergy

Entergy Operations, Inc.
River Bend Station
5485 U.S. Highway 61N
St. Francisville, LA 70775
Tel 225 381 4157

David N. Lorfing
Manager-Licensing

April 30, 2009

U.S. Nuclear Regulatory Commission
Document Control Desk
11555 Rockville Pike
Rockville, MD 20852-2738

Subject: Radioactive Effluent Release Report for 2008
River Bend Station - Unit 1
License No. NPF-47
Docket No. 50-458

File Nos.: G9.5, G9.25.1.5

RBG-46911
RBF1-09-0064

Dear Sir or Madam,

Enclosed is the River Bend Station (RBS) Annual Radioactive Effluent Release Report for the period January 1, 2008, through December 31, 2008. This report is submitted in accordance with the RBS Technical Specifications, Section 5.6.3.

Should you have any questions regarding the enclosed information, please contact Mr. David Lorfing at (225) 381-4157.

Sincerely,

David N. Lorfing

DNL/wjf
enclosure

IE48
NRR

cc: U.S. Nuclear Regulatory Commission (w/o Enclosure)
Region IV
612 East Lamar Blvd., Suite 400
Arlington, TX 76011-4125

NRC Resident Inspector (w/o Enclosure)
PO Box 1050
St. Francisville, LA 70775

Mr. Alan B. Wang, Project Manager
U.S. Nuclear Regulatory Commission
MS OWFN 8 G14
11555 Rockville Pike
Rockville, MD 20852-2738

2008 ANNUAL EFFLUENT RELEASE REPORT

PREPARED BY: 3359 4-28-09

Victor A. Huffstatler / Senior Environmental Specialist

REVIEWED BY: 0731 4-29-09

Robert W. Heath / Superintendent - Chemistry

REVIEWED BY: 3266 for Brad Houston 4/29/09

Bradford L. Houston / Radiation Protection Manager

APPROVED BY: 4/30/09

Eric W. Olson / General Manager Plant Operations

TABLE OF CONTENTS

		PAGE
I.	INTRODUCTION	4
II.	SUPPLEMENTAL INFORMATION	
	A. Regulatory Limits	4
	B. Effluent Concentration Limits	7
	C. Measurements and Approximations of Total Radioactivity	7
	D. Batch Releases	9
	E. Abnormal Releases	9
	F. Estimate of Total Error	11
III.	GASEOUS EFFLUENT SUMMARY INFORMATION	11
IV.	LIQUID EFFLUENT SUMMARY INFORMATION	12
V.	SOLID WASTE	12
VI.	RADIOLOGICAL IMPACT ON MAN	12
VII.	METEOROLOGICAL DATA	13
VIII.	RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION OPERABILITY	13
IX.	RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION OPERABILITY	13
X.	LIQUID HOLDUP TANKS	13
XI.	RADIOLOGICAL ENVIRONMENTAL MONITORING	13
XII.	LAND USE CENSUS	14
XIII.	OFFSITE DOSE CALCULATION MANUAL (ODCM)	14
XIV.	MAJOR CHANGES TO RADIOACTIVE LIQUID, GASEOUS AND SOLID WASTE TREATMENT SYSTEMS	14
XV.	PROCESS CONTROL PROGRAM (PCP)	15
XVI.	INDUSTRY GROUND WATER PROTECTION INITIATIVE (GPI) - FINAL GUIDANCE DOCUMENT OBJECTIVE ANNUAL REPORTING	15

TABLES

Table 1A	Gaseous Effluent - Summation of All Releases	16
Table 1B	Gaseous Effluent - Ground Level Releases	17
Table 1C	Gaseous Effluent - Ground Level Batch Release	18
Table 1D	Gaseous Effluent – Mixed Mode Continuous Releases	19
Table 1E	Gaseous Effluent – Mixed Mode Batch Releases	20
Table 1F	Radioactive Gaseous Waste Sampling and Analysis Program	21
Table 1G	Gaseous Dose Summary	22
Table 2A	Liquid Effluent - Summation of All Releases	23
Table 2B	Liquid Effluent – Continuous Mode	24
Table 2C	Liquid Effluent – Batch Mode	25
Table 2D	Liquid Batch Information	26
Table 2E	Radioactive Liquid Waste Sampling and Analysis Program	27
Table 2F	Liquid Dose Summary	28
Table 3	Solid Waste and Irradiated Fuel Shipments	29
Table 4	Assumptions/Parameters for Doses to Member of the Public Inside Site Boundary	31
Table 5	Doses to Members of the Public on Site from Gaseous Releases	32
Table 6	Meteorological Data - Joint Frequency Tables	33
Table 7	Atmospheric Dispersion Factors	66
Table 8	Groundwater Initiative Sample Results	67

ATTACHMENTS

Attachment 1	EN-RW-105 Process Control Program Procedure	75

I. INTRODUCTION

This is the annual Radioactive Effluent Release Report for the period of January 1, 2008, through December 31, 2008. This report is submitted in accordance with Technical Specification 5.6.3 of Appendix A to River Bend Station (RBS) License Number NPF-47.

II. SUPPLEMENTAL INFORMATION

A. Regulatory Limits

1. 10CFR50, Appendix I Limits

a. Fission and Activation Gases

In accordance with Technical Requirement (TR) 3.11.2.2, the air dose due to noble gases released in gaseous effluent to areas at and beyond the SITE BOUNDARY shall be limited to:

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

$$= 3.17E\text{-}8 \sum_{i=1}^{n} M_i \overline{(X/Q)} Q_i \quad \begin{array}{l} \leq 5 \text{ mrads/qtr} \\ \leq 10 \text{ mrads/yr} \end{array}$$

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

$$= 3.17E\text{-}8 \sum_{i=1}^{n} N_i \overline{(X/Q)} Q_i \quad \begin{array}{l} \leq 10 \text{ mrads/qtr} \\ \leq 20 \text{ mrads/yr} \end{array}$$

b. Radioiodines (I-131 & I-133) and Particulate

In accordance with Technical Requirement 3.11.2.3, the dose to a MEMBER OF THE PUBLIC from radioiodines (I-131 and I-133), tritium (H-3) and all radionuclides in particulate form with half-lives greater than 8 days, in gaseous effluent releases to areas at and beyond the SITE BOUNDARY shall be limited to:

$D_{I\&8DP\tau}$ = Dose in mrem to the organ (τ) for the age group of interest from radioiodine (I-131, I-133, tritium, and 8 day particulate via the pathway of interest.)

$$= 3.17E\text{-}08 (F_o) \sum_{I=1}^{n} P_{i\tau} (X/Q) Q_i \quad \underline{\text{and}}$$

$$= 3.17E\text{-}08\ (F_o) \sum_{I=1}^{n} R_{i\tau}\ (D/Q)\ Q_i \quad \underline{\text{and}}$$

$$D_\tau = \sum_{z=1}^{n} D_{I\&8DP\tau} \quad \begin{array}{l} \leq 7.5 \text{ mrem/qtr} \\ \leq 15 \text{ mrem/yr} \end{array}$$

(above terms defined in the RBS ODCM)

c. Liquid Effluent

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

$$D_{i\tau} = \frac{A_{i\tau}\ \Delta t\ Q_i}{(DF)\ D_w}$$

and

$$D_{TOTAL\tau} = \sum_{i=1}^{n} D_{i\tau}$$

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

and

D_{TOTAL}	Total Body	$\leq$ 1.5 mrem/qtr $\leq$ 3 mrem/yr
D_{TOTAL}	Any Organ	$\leq$ 5 mrem/qtr $\leq$ 10 mrem/yr

(above terms defined in RBS ODCM)

2. 40CFR190 Limits

In accordance with Technical Requirement 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 mrem to the total body or any organ (except the thyroid)

$\leq$ 75 mrem to the thyroid

3. Miscellaneous Limits

a. Technical Requirement 3.11.2.1 - Fission and Activation Gases

In accordance with Technical Requirement 3.11.2.1, the dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY shall be less than or equal to 500 millirems/year (mrem/yr) to the total body and less than or equal to 3000 mrem/yr to the skin:

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

$$= \sum_{i=1}^{n} K_i \ \overline{(X/Q)} \ \dot{Q}_i \leq 500 \text{ mrem/yr}$$ and

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

$$= \sum_{i=1}^{n} L_i + 1.1M_i \ \overline{(X/Q)} \ \dot{Q}_i \leq 3000 \text{ mrem/yr}$$

(above terms defined in RBS ODCM)

b. Technical Requirement 3.11.2.1 - Radioiodine (I-131 & I-133) and Particulate

In accordance with Technical Requirement 3.11.2.1, the dose rate due to radioiodines, 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 mrem/yr to any organ:

$DR_{I\&8DP\tau}$ = Dose rate to the organ τ for the age pathway group of interest from Radioiodines (I-131 & I-133), tritium, and 8 day particulate via the inhalation pathway in mrem/yr.

$$= \sum_{i=1}^{n} P_i \ \overline{(X/Q)} \ \dot{Q}_i \leq 1500 \text{ mrem/yr}$$

(above terms defined in RBS ODCM)

c. Technical Requirement 3.11.1.1 - Liquid Effluent

In accordance with Technical Requirement 3.11.1.1, the concentration of radioactive material released in liquid effluent to UNRESTRICTED AREAS shall be limited to ten times the concentrations specified in

10CFR20, Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2.0E-04 microcuries/milliliter total concentration.

d. Technical Requirement 3.11.2.5 - Ventilation Exhaust Treatment

In accordance with Technical Requirement 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 and beyond the SITE BOUNDARY would exceed 0.3 mrem to any organ in a 31-day period.

e. Technical Requirement 3.11.1.3 - Liquid Radwaste Treatment System

In accordance with Technical Requirement 3.11.1.3, the liquid radwaste treatment system shall be used to reduce the radioactive materials in liquid waste 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. Effluent Concentration Limits

1. Gaseous Releases

The concentrations of radioactive gaseous releases are based on the dose rate restrictions in RBS Technical Requirements, rather than the Effluent Concentration Limits (ECL) listed in 10CFR20 Appendix B, Table 2, Column 1.

2. Liquid Releases

The Effluent Concentration Limits of radioactive materials in liquid effluent is limited to ten times 10CFR20, Appendix B, Table 2, Column 2.

C. Measurements and Approximations of Total Radioactivity

1. Gaseous Effluent

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 using high purity germanium detectors coupled to computerized pulse height analyzers. The sampling and analysis frequencies are described in Table 1F.

Sampling and analysis of these effluent streams provide noble gas radionuclide relative abundance that 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. If no activity was detected between the stack grab sample and a significant increase in hourly averages was recorded, the nuclide relative abundance of the last sample (or the last similar event), which indicated the presence of activity, was used to obtain nuclide specific activities. Correction factors for the monitors are derived and applied for each sampling period whenever noble gas radionuclides are detected in the effluent stream.

b. Particulate and Radioiodine (I-131 & I-133)

Particulates, Iodine-131 and Iodine-133 are continuously sampled from the three release points using 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 1F. Analysis is performed to identify and quantify radionuclides using high purity germanium detectors coupled to computerized pulse height analyzers. Given the nuclide specific activity concentrations, process flow rate, and duration of the sample, 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. Strontium-89 and Strontium-90 (Sr-89 and Sr-90) are quantitatively analyzed by counting by scintillation techniques (Chrenkov counting). Gross alpha analysis is performed using a zinc sulfide scintillation counter.

c. Tritium

Tritium grab samples are obtained from the three gaseous release points at the specified frequencies listed in Table 1F using an ice bath condensation collection method. The collected sample is then analyzed using 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 Effluent

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 2E. Analysis for gamma emitting nuclides (including dissolved and entrained noble gases) is performed using a high resolution germanium detector coupled to a computerized pulse height analyzer. Tritium concentration is determined using a liquid scintillation counter. Strontium-89 and Strontium-90 are quantitatively analyzed by scintillation techniques (Chrenkov counting). Iron-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.

D. Batch Releases

Liquid Effluents

Batch releases and receiving stream flow from River Bend Station during the reporting period of January 1, 2008, through December 31, 2008 are shown in Table 2D.

The Mississippi River stream flow is obtained by averaging data from the U. S. Army Corp of Engineers website using flow gauge data at Tarbert Landing.

Gaseous Effluents

There were no routine batch releases of gaseous effluents from River Bend Station during the reporting period of January 1, 2008, through December 31, 2008. There was one abnormal gaseous release that was treated as a batch for reporting purposes and the values are reported in Table 1C.

E. Abnormal Releases

Number of abnormal liquid releases: 2
Total Curies Released: The total curies released are included in Table 2C

Number of abnormal gaseous releases: 1
Total Curies Released: The total curies released are included in Table 1C

Abnormal Release Details

Description of event: Leak from Hydrogen Water Chemistry Flame Arrestor
Impact of event: No known effluent impact.
Remediation of event: None
Radioactive contamination content and levels of event: Too small to quantify or indeterminate.
Impact on groundwater, if any: No known impact. None detected from sampling.

Description of event: CWS Blowdown Line break during LWS discharge.
Impact of event: At this time there are no impacts to the effluents program that would cause a change in current methodology. This is not expected to be a continuing pathway for dose considerations. If any positive groundwater samples are ever detected, then additional reviews will be performed and decisions made concerning ODCM changes or any remediation activities.
Remediation of event: The hole near the blowdown line break with standing water was pumped into barrels. The remainder of the water is considered to have made its way to the Mississippi River via Outfall 003 and Grants Bayou.
Radioactive contamination content and levels of event: Only tritium was detected in the water which leaked from the blowdown line. The maximum level detected in Outfall 003 was 28,043 pCi/L. At this time there is no drinking water pathway between the site and the Mississippi River. Isotope quantities are included in the totals of Table 2C. Tritium is no longer detected in Outfall 003.
Impact on groundwater, if any: Groundwater sampling was performed. Additional wells were also used to assist in characterizing any potential groundwater flow from this event. All results for gamma and H-3 were less than MDA. Sampling is performed at least quarterly as part of the site's groundwater initiative.

Description of event: Loss of Turbine Building siding as a result of Hurricane Gustav.
Impact of event: No known impact.
Remediation of event: None. This was a gaseous effluent release.
Radioactive contamination content and levels of event: Isotope quantities are reported in Table 1C. The hourly meteorological data as available is included in Joint Frequency information attached to this report.
Impact on groundwater, if any: No known impact.

F. Estimate of Total Error

1. Liquid

The maximum error associated with sample collection, laboratory analysis, and discharge volume is 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:

Noble Gases	: ± 37.0%
Iodines	: ± 18.6%
Particulate	: ± 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:

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

where:

E_T = total error

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

III. GASEOUS EFFLUENT SUMMARY INFORMATION

Refer to the Table 1 series for "Summation of All Releases and "Nuclides Released," respectively. It should be noted that an entry of "0.00E+00" Curie (Ci) or microcurie/second (uCi/sec) in this section indicates that the concentration of the particular radionuclide was below the Lower Limit of Detection (LLD) as listed in Table 1F. Also, any nuclide not appearing in the tables was < LLD for all four quarters.

IV. LIQUID EFFLUENT SUMMARY INFORMATION

Refer to the Table 2 series 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 indicates that the concentration of the particular radionuclide was below the Lower Limit of Detection (LLD) as listed in Table 2E. Also, any nuclide not appearing in the tables was < LLD for all four quarters.

V. SOLID WASTE

Refer to Table 3, for "Solid Waste and Irradiated Fuel Shipments.

VI. RADIOLOGICAL IMPACT ON MAN (40CFR190)

An assessment (see summary below) was made of radiation doses to the likely most-exposed member of the public from River Bend and other nearby uranium fuel cycle sources (none within five miles). The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to less than or equal to 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem.

Organ	mrem
Total Body	1.22E-01
Skin	1.50E-01
Thyroid	3.15E-01
Other Organ	1.23E-01

In addition, an assessment of doses was made for members of the public due to their activities inside the site boundary. Parameters and assumptions used to make this determination can be found in Table 4. The results of the calculations can be found in Table 5. The maximally exposed member of the public was the lawn service provider. The lawn service provider dose is conservatively calculated to have performed all work at the Generation Support Building during 2008. The employees staying at RBS during the week are conservatively calculated to have stayed at least four days per week for 50 weeks. It should be noted that liquid effluent pathway dose was not considered since these individuals would not engage in activities that would allow exposure to this pathway.

VII. METEOROLOGICAL DATA

See Tables 6 and 7 for the cumulative joint frequency distributions and annual average data for continuous releases. The meteorological recovery for 2008 was 94.8 %.

VIII. RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION OPERABILITY

The minimum number of channels required to be OPERABLE as described in Table 3.3.11.2-1 of Technical Requirement 3.3.11.2 were, if inoperable at any time in the period January 1, 2008, through December 31, 2008, restored to operable status within the required time, except as noted in the following paragraph.

Only one entry into Action E2 occurred. This is documented in LCO 2008-1089 for Flow Rate Measurement Device CWS-FE113 Cooling Tower Blowdown Line. The comments secton of LCO 2008-1089 states "Per TR 3.3.11.2, environmental has been contacted to perform action E.2. This condition exists because of plant outage and no circulating water system is service to validate flow element readings. Channel check will be performed once Circulating water blowdown is started." LCO 2008-1089 was entered on 01/20/2008 at 1944 and exited on 02/25/2008 at 1300.

IX. RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION OPERABILITY

The minimum number of channels required to be OPERABLE as described in Table 3.3.11.3-1 of Technical Requirement 3.3.11.3 were, if inoperable at any time in the period January 1, 2008, through December 31, 2008, restored to operable status within the required time. Reporting of inoperable channels is therefore not required in this report.

X. LIQUID HOLD UP TANKS

The maximum quantity of radioactive material, excluding tritium and dissolved or entrained noble gases, contained in any unprotected outdoor tank during the period of January 1, 2008, through December 31, 2008 was less than or equal to the 10 curie limit as required by Technical Specification 5.5.8.b.

XI. RADIOLOGICAL ENVIRONMENTAL MONITORING

There were no changes to the Radiological Environmental Monitoring Program during the reporting period January 1, 2008, through December 31, 2008.

XII. LAND USE CENSUS

The Land Use Census for 2008 was conducted in accordance with procedure ESP-8-051, as required by Technical Requirements Manual (TRM) (TR 3.12.2).

A garden census is not conducted pursuant to the note in the TRM (TRCO 3.12.2) that allows the sampling of broadleaf vegetation in the highest calculated average ground-level D/Q sector near site boundary in lieu of the garden census.

The milk animal census identified no milk animals within 8 km (5 miles) of River Bend site. This information was verified by the County Agents from West Feliciana, East Feliciana and Pointe Coupee parishes.

No locations were identified in 2008 that would yield a calculated dose or dose commitment greater than those currently calculated in Requirement TSR 3.11.2.3.1.

The County Agents also confirmed that there was no commercial harvesting of crawfish within the five-mile radius downstream of RBS. This is data is collected to further support the possibility of removing invertebrates from the liquid dose conversion factors. This information represents three consecutive land use census periods that show crawfish consumption from the waters immediately affected by RBS does not occur. RBS conservatively uses the invertebrate pathway although not required by NUREG-0133 liquid dose factor methodology for fresh water nuclear power plants.

XIII. OFFSITE DOSE CALCULATION MANUAL (ODCM)

There were no changes to the ODCM in 2008.

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

Engineering performed a review of the eB and IAS database to evaluate non-administrative design changes completed or partially completed during 2008 involving the subject systems (i.e. changes classified as evaluations or nuclear changes). These design changes were then reviewed to determine if there have been any major changes to the subject systems. The review was based on a major change being defined as a modification which affected the method of processing or the effluent from the system. Also, to be a "major change" the change must have affected the USAR.

The Engineering Change (EC) completed during this time period is EC 5000070720 which was a conversion of ER-RB-2003-0476-000. This EC involves bypassing the liquid radwaste backwash tank, LWS-TK7, pump interlocks with LWS-AOV315 to allow clearing the pump discharge line in the event the line becomes plugged with solids. This change did not modify any radioactive waste system major component such that the processing method or effluent was changed. These changes also had no affect on the method of processing solid, liquid or gaseous waste and did not affect the isotopic composition or the quantity of liquid, solid, or

gaseous waste as described in the USAR.

In conclusion, no design changes were completed during the specified time period that constituted a major change to either liquid, solid or gaseous radwaste treatment systems.

XV. PROCESS CONTROL PROGRAM (PCP)

Changes to the PCP in 2008 are summarized as follows:

- The revision to EN-RW-105 "Process Control Program" included a major re-write to provide updates to allow VTY, PLP and IPEC to be included as sites implementing this Process Control Program.
- The following are updates:
  - Waste management practices section replaced dry and liquid waste management
  - Waste stream sampling methods and frequency section added
  - Waste classification section added
  - Quality Control section added
  - Dewatering section added
  - Waste packaging section added

  Miscellaneous section added for special tools/equipment & training requirements.

The procedure EN-RW-105 – Process Control Program and the Process Applicability Determination for River Bend Station have been included in this report as Attachment 1.

XVI. INDUSTRY GROUND WATER PROTECTION INITIATIVE (GPI) – FINAL GUIDANCE DOCUMENT (NEI 07-07) OBJECTIVE ANNUAL REPORTING

Ground water samples for gamma radiation and tritium were taken in support of the GPI. These samples are not part of the REMP program. There were two leaks in 2008. These leaks are detailed above in the abnormal release section. In addition to these two leaks, one other incident occurred on 11/5/2008 while sampling a maintenance pit containing the radioactive waste discharge line. Upon analyzing the samples it was discovered that mud and water in the pit contained Co-60 and tritium. The Co-60 concentration was 194 pCi/kg. The water contained only tritium in a concentration of 2095 pCi/L. This material was placed in drums and transported to Radwaste for disposition. No leakage outside the pit has been identified. As a result of the above incidents additional wells were sampled in 2008 and first quarter 2009 in support of the GPI.

The Minimum Detectable Activity (MDA) in all samples taken in support of the GPI are less than the Lower Limit of Detection as required in Technical Requirement 3.12.1 (Environmental LLDs). The sample results are located in Table 8.

EFFLUENT AND WASTE DISPOSAL REPORT

TABLE 1A

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	1.09E+02	3.00E+01	5.26E+01	1.26E+01	2.04E+02
2. Avg. Release Rate	uCi/sec	1.38E+01	3.81E+00	6.62E+00	1.59E+00	6.45E+00
3. % Applicable Limit	% (1)	8.78E-01	2.46E-01	4.14E-01	1.15E-01	1.65E+00
Iodine-131						
1. Total Release	Ci	2.48E-03	7.41E-04	9.53E-04	9.53E-04	5.13E-03
2. Avg. Release Rate	uCi/sec	3.15E-04	9.42E-05	1.20E-04	1.20E-04	1.62E-04
3. % Applicable Limit	% (2)	1.11E+00	3.21E-01	4.14E-01	4.06E-01	1.13E+00
Particulates Half Life >= 8 days						
1. Total Release	Ci	1.10E-04	5.18E-04	5.48E-04	5.86E-04	1.76E-03
2. Avg. Release Rate	uCi/sec	1.40E-05	6.59E-05	6.89E-05	7.38E-05	5.57E-05
3. % Applicable Limit	% (2)	9.19E-02	7.48E-02	9.04E-02	1.01E-01	1.81E-01
Tritium						
1. Total Release	Ci	4.04E+00	5.00E+00	5.18E+00	3.71E+00	1.79E+01
2. Avg. Release Rate	uCi/sec	5.14E-01	6.36E-01	6.52E-01	4.66E-01	5.67E-01
3. % Applicable Limit	% (2)	2.08E-01	1.17E-01	1.28E-01	1.08E-01	2.79E-01

1) Either the gamma air dose limit of 5 mrads/qtr or beta air dose limit of 10 mrads/qtr (T.R. 3.11.2.2.a), which ever is most limiting.

2) The % of applicable limit is determined by comparing the dose contribution to the critical organ limits of TRM 3.11.2.3

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 1B
GASEOUS EFFLUENTS - GROUND RELEASES - CONTINUOUS MODE

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
XE-133	Ci	8.52E-01	9.23E-02	8.11E-02	7.21E-02	1.10E+00
XE-133M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-135	Ci	3.04E+00	8.86E-01	8.25E-01	6.24E-01	5.38E+00
XE-135M	Ci	3.25E-01	5.02E-01	4.41E-01	3.92E-01	1.66E+00
Totals for Period...	Ci	4.22E+00	1.48E+00	1.35E+00	1.09E+00	8.13E+00
Iodines						
I-131	Ci	5.94E-05	6.08E-06	3.52E-06	0.00E+00	6.91E-05
I-133	Ci	4.75E-04	0.00E+00	3.43E-06	0.00E+00	4.78E-04
Totals for Period...	Ci	5.34E-04	6.08E-06	6.95E-06	0.00E+00	5.47E-04
Particulates Half Life >= 8 days						
CE-141	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO-57	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO-60	Ci	1.12E-06	0.00E+00	1.31E-05	1.76E-06	1.60E-05
CR-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CS-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FE-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MN-54	Ci	0.00E+00	0.00E+00	4.65E-06	0.00E+00	4.65E-06
NB-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RU-103	Ci	1.70E-05	0.00E+00	0.00E+00	0.00E+00	1.70E-05
RU-106	Ci	5.77E-06	0.00E+00	0.00E+00	0.00E+00	5.77E-06
ZN-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Totals for Period...	Ci	2.39E-05	0.00E+00	1.78E-05	1.76E-06	4.35E-05
Tritium						
H-3	Ci	3.03E+00	1.47E+00	1.63E+00	1.43E+00	7.56E+00
Totals for Period...	Ci	3.03E+00	1.47E+00	1.63E+00	1.43E+00	7.56E+00
Gross Alpha Radioactivity						
** No Nuclide Activities **		.....	.....	.....	.....	.....

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 1C
GASEOUS EFFLUENTS - GROUND RELEASES - BATCH MODE

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
XE-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-135	Ci	0.00E+00	0.00E+00	4.75E-03	0.00E+00	4.75E-03
XE-135M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Totals for Period...	Ci	0.00E+00	0.00E+00	4.75E-03	0.00E+00	4.75E-03
Iodines						
I-131	Ci	0.00E+00	0.00E+00	3.45E-06	0.00E+00	3.45E-06
I-133	Ci	0.00E+00	0.00E+00	6.61E-06	0.00E+00	6.61E-06
Totals for Period...	Ci	0.00E+00	0.00E+00	1.01E-05	0.00E+00	1.01E-05
Particulates Half Life >= 8 days						
BA-140	Ci	0.00E+00	0.00E+00	3.03E-07	0.00E+00	3.03E-07
CO-60	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MN-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SR-89	Ci	0.00E+00	0.00E+00	1.08E-07	0.00E+00	1.08E-07
SR-90	Ci	0.00E+00	0.00E+00	1.15E-09	0.00E+00	1.15E-09
ZN-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Totals for Period...	Ci	0.00E+00	0.00E+00	4.12E-07	0.00E+00	4.12E-07
Tritium						
H-3	Ci	0.00E+00	0.00E+00	2.98E-03	0.00E+00	2.98E-03
Totals for Period...	Ci	0.00E+00	0.00E+00	2.98E-03	0.00E+00	2.98E-03

EFFLUENT AND WASTE DISPOSAL REPORT
TABLE 1D
GASEOUS EFFLUENTS - MIXED MODE RELEASES - CONTINUOUS MODE

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
AR-41	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
KR-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
KR-85M	Ci	4.34E-01	0.00E+00	2.97E-01	0.00E+00	7.31E-01
KR-87	Ci	1.66E+00	0.00E+00	3.82E-01	0.00E+00	2.04E+00
KR-88	Ci	1.16E+00	0.00E+00	6.40E-01	0.00E+00	1.80E+00
XE-131M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-133	Ci	7.77E+00	9.29E-01	1.46E+00	2.74E-02	1.02E+01
XE-133M	Ci	0.00E+00	8.43E-01	0.00E+00	0.00E+00	8.43E-01
XE-135	Ci	4.27E+01	1.14E+01	1.77E+01	1.12E+01	8.30E+01
XE-135M	Ci	3.45E+01	1.53E+01	2.56E+01	2.79E-01	7.57E+01
XE-137	Ci	6.88E+00	0.00E+00	3.02E+00	0.00E+00	9.91E+00
XE-138	Ci	9.39E+00	0.00E+00	2.18E+00	0.00E+00	1.16E+01
		---	---	---	---	---
Totals for Period...	Ci	1.05E+02	2.85E+01	5.13E+01	1.15E+01	1.96E+02
Iodines						
I-131	Ci	2.42E-03	7.35E-04	9.46E-04	9.53E-04	5.05E-03
I-132	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	Ci	4.18E-03	6.30E-03	7.17E-03	8.72E-03	2.64E-02
I-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		---	---	---	---	---
Totals for Period...	Ci	6.60E-03	7.03E-03	8.12E-03	9.68E-03	3.14E-02
Particulates Half Life >= 8 days						
BA-140	Ci	2.15E-05	1.98E-04	2.46E-04	3.43E-04	8.08E-04
CE-139	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CE-141	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO-58	Ci	1.66E-06	0.00E+00	0.00E+00	0.00E+00	1.66E-06
CO-60	Ci	1.58E-05	1.11E-05	0.00E+00	0.00E+00	2.70E-05
CR-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CS-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CS-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FE-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MN-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RU-103	Ci	3.39E-06	0.00E+00	0.00E+00	0.00E+00	3.39E-06
SR-89	Ci	4.39E-05	3.09E-04	2.82E-04	2.42E-04	8.77E-04
SR-90	Ci	0.00E+00	0.00E+00	1.72E-06	0.00E+00	1.71E-06
ZN-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		---	---	---	---	---
Totals for Period...	Ci	8.63E-05	5.18E-04	5.30E-04	5.85E-04	1.72E-03
Tritium						
H-3	Ci	1.01E+00	3.53E+00	3.54E+00	2.28E+00	1.04E+01
		---	---	---	---	---
Totals for Period...	Ci	1.01E+00	3.53E+00	3.54E+00	2.28E+00	1.04E+01
Gross Alpha Radioactivity						
** No Nuclide Activities **		.....	.....	.....	.....	.....

EFFLUENT AND WASTE DISPOSAL REPORT
SUPPLEMENTAL INFORMATION
GASEOUS EFFLUENTS - BATCH MODE
TABLE 1E

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Number of releases		0	0	1	0	1
Total release time	minutes	0.00E+00	0.00E+00	2.84E+04	0.00E+00	2.84E+04
Maximum release time	minutes	0.00E+00	0.00E+00	2.84E+04	0.00E+00	2.84E+04
Average release time	minutes	0.00E+00	0.00E+00	2.84E+04	0.00E+00	2.84E+04
Minimum release time	minutes	0.00E+00	0.00E+00	2.84E+04	0.00E+00	2.84E+04

TABLE 1F

Effluent and Waste Disposal Annual Report 2008 Year

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 H-3	1.00E-04 1.00E-06
B. Fuel Building Ventilation Exhaust Duct	M Grab Sample	M	Principal Gamma Emitters H-3	1.00E-04 1.00E-06
C. Radwaste Building Ventilation Exhaust Duct	M Grab Sample	M	Principal Gamma Emitters	1.00E-04
D. All Release Types as listed in A, B, & C above	Continuous	W Charcoal Sample	I-131 I-133	1.00E-12 1.00E-10
	Continuous	W Particulate Sample	Principal Gamma Emitters (I-131, Others)	1.00E-11
	Continuous	M Composite Particulate Sample	Gross Alpha	1.00E-11
	Continuous	Q Composite Particulate Sample	Sr-89, Sr-90	1.00E-11
	Continuous	Noble Gas Monitor	Noble Gases Gross Beta or Gamma	1.00E-06

W = At least once per 7 days

M = At least once per 31 days

Q = At least once per 92 days

Table 1G

GASEOUS DOSE SUMMARY

Release ID: 1 All Gas Release Points Coefficient Type: Historical

=== I&P DOSE LIMIT ANALYSIS ==========

Period-Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q1 - T.Spec Any Organ	CHILD	THYROID	1.06E-01	7.50E+00	1.41E+00
Q2 - T.Spec Any Organ	CHILD	THYROID	3.84E-02	7.50E+00	5.13E-01
Q3 - T.Spec Any Organ	CHILD	THYROID	4.74E-02	7.50E+00	6.32E-01
Q4 - T.Spec Any Organ	CHILD	THYROID	4.61E-02	7.50E+00	6.14E-01
Yr - T.Spec Any Organ	CHILD	THYROID	2.38E-01	1.50E+01	1.59E+00

=== NOBLE GAS DOSE LIMIT ANALYSIS ==========

Period-Limit	Dose (mrad)	Limit (mrad)	% of Limit
Q1 - T.Spec Gamma	4.39E-02	5.00E+00	8.77E-01
Q2 - T.Spec Gamma	1.23E-02	5.00E+00	2.46E-01
Q3 - T.Spec Gamma	2.07E-02	5.00E+00	4.14E-01
Q4 - T.Spec Gamma	5.75E-03	5.00E+00	1.15E-01
Yr - T.Spec Gamma	8.26E-02	1.00E+01	8.26E-01
Q1 - T.Spec Beta	4.21E-02	1.00E+01	4.21E-01
Q2 - T.Spec Beta	7.89E-03	1.00E+01	7.89E-02
Q3 - T.Spec Beta	1.58E-02	1.00E+01	1.58E-01
Q4 - T.Spec Beta	5.46E-03	1.00E+01	5.46E-02
Yr - T.Spec Beta	7.13E-02	2.00E+01	3.56E-01

EFFLUENT AND WASTE DISPOSAL REPORT

TABLE 2A

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	1.61E-03	4.18E-03	2.65E-03	2.48E-04	8.70E-03
2. Avg. Diluted Conc.	uCi/ml	2.38E-09	2.90E-09	1.87E-09	1.73E-10	1.75E-09
3. % Applicable Limit	% (1)	1.56E-03	1.48E-02	1.09E-02	1.02E-04	2.25E-02
Tritium						
1. Total Release	Ci	1.43E+01	2.57E+01	3.28E+01	4.36E+00	7.72E+01
2. Avg. Diluted Conc.	uCi/ml	2.11E-05	1.78E-05	2.32E-05	3.04E-06	1.55E-05
3. % Applicable Limit	% (1)	3.30E-04	6.07E-04	1.28E-03	2.18E-05	1.73E-03
Dissolved and Entrained Gases						
1. Total Release	Ci	5.77E-04	2.69E-02	3.61E-02	5.74E-03	6.93E-02
2. Avg. Diluted Conc.	uCi/ml	8.51E-10	1.87E-08	2.55E-08	4.00E-09	1.39E-08
3. % Applicable Limit	% (2)	4.26E-04	9.34E-03	1.28E-02	2.01E-03	6.99E-03
Gross Alpha Radioactivity						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Volume of liquid waste	liters	1.11E+06	2.37E+06	3.87E+06	4.87E+05	7.84E+06
Volume of dil. water	liters	6.78E+08	1.44E+09	1.41E+09	1.43E+09	4.96E+09

(1) The most limiting dose compared to the total body and critical organ limits of TRM 3.11.1.2.a.

(2) Technical Requirement 3.11.1.1 limit of 2.00E-04 uCi/ml for dissolved and entrained noble gases in liquid effluent.

EFFLUENT AND WASTE DISPOSAL REPORT

TABLE 2B

LIQUID EFFLUENTS - CONTINUOUS MODE

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
** No Nuclide Activities **		.....	.....	.....	.....	.....
Tritium						
** No Nuclide Activities **		.....	.....	.....	.....	.....
Dissolved and Entrained Gases						
** No Nuclide Activities **		.....	.....	.....	.....	.....
Gross Alpha Radioactivity						
** No Nuclide Activities **		.....	.....	.....	.....	.....

EFFLUENT AND WASTE DISPOSAL REPORT

TABLE 2C

LIQUID EFFLUENTS - BATCH MODE

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
CO-58	Ci	0.00E+00	1.84E-05	0.00E+00	0.00E+00	1.84E-05
CO-60	Ci	5.28E-04	3.27E-03	2.32E-03	2.25E-04	6.35E-03
FE-55	Ci	1.01E-03	0.00E+00	0.00E+00	0.00E+00	1.01E-03
LA-140	Ci	0.00E+00	6.01E-05	0.00E+00	0.00E+00	6.01E-05
MN-54	Ci	7.64E-05	7.50E-04	3.26E-04	2.32E-05	1.18E-03
MO-99	Ci	0.00E+00	5.74E-06	0.00E+00	0.00E+00	5.74E-06
TC-99M	Ci	0.00E+00	6.13E-06	0.00E+00	0.00E+00	6.13E-06
Y-92	Ci	0.00E+00	7.22E-05	0.00E+00	0.00E+00	7.22E-05
Totals for Period...	Ci	1.61E-03	4.18E-03	2.65E-03	2.48E-04	8.70E-03
Tritium						
H-3	Ci	1.43E+01	2.57E+01	3.28E+01	4.36E+00	7.72E+01
Totals for Period...	Ci	1.43E+01	2.57E+01	3.28E+01	4.36E+00	7.72E+01
Dissolved and Entrained Gases						
XE-133	Ci	3.40E-04	1.11E-02	1.38E-02	1.98E-03	2.72E-02
XE-133M	Ci	0.00E+00	9.25E-05	3.16E-04	0.00E+00	4.09E-04
XE-135	Ci	2.38E-04	1.58E-02	2.20E-02	3.76E-03	4.17E-02
Totals for Period...	Ci	5.77E-04	2.69E-02	3.61E-02	5.74E-03	6.93E-02
Gross Alpha Radioactivity						
** No Nuclide Activities **		.....	.....	.....	.....	.....

EFFLUENT AND WASTE DISPOSAL REPORT

SUPPLEMENTAL INFORMATION

LIQUID EFFLUENTS - BATCH MODE

TABLE 2D

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Number of releases		21	44	71	9	145
Total release time	minutes	6.86E+03	1.49E+04	2.42E+04	3.13E+03	4.90E+04
Maximum release time	minutes	3.82E+02	3.89E+02	3.80E+02	3.73E+02	3.89E+02
Average release time	minutes	3.26E+02	3.38E+02	3.41E+02	3.48E+02	3.38E+02
Minimum release time	minutes	2.20E+01	3.11E+02	3.07E+02	3.19E+02	2.20E+01

		QTR 1	QTR 2	QTR 3	QTR 4
Average Mississippi River stream flow during periods of release of effluent into a flowing stream	ft^3/sec	660,044	1,089,198	526,424	297,565

TABLE 2E

Effluent and Waste Disposal Annual Report 2008 Year

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 I-131	5.00E-07 5.00E-06 1.00E-06
	P One Batch/M	M	Dissolved and Entrained Gases (Gamma Emitters)	1.00E-05
	P Each Batch	M Composite	H-3 Gross Alpha	1.00E-05 1.00E-07
	P Each Batch	Q Composite	Sr-89, Sr-90 Fe-55	5.00E-08 1.00E-06

P = Prior to each radioactive release

M = At least once per 31 days

Q = At least once per 92 days

Table 2F

LIQUID DOSE SUMMARY

Report for: 2008

Release ID: 10 All Liquid Release Points

Liquid Receptor

=== SITE DOSE LIMIT ANALYSIS ==========

Period - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 1 - T.Spec Any Organ	ADULT	GILLI	8.31E-05	5.00E+00	1.66E-03
Qtr 2 - T.Spec Any Organ	ADULT	GILLI	7.48E-04	5.00E+00	1.50E-02
Qtr 3 - T.Spec Any Organ	ADULT	GILLI	5.63E-04	5.00E+00	1.13E-02
Qtr 4 - T.Spec Any Organ	ADULT	GILLI	5.43E-06	5.00E+00	1.09E-04
2008 - T.Spec Any Organ	ADULT	GILLI	1.15E-03	1.00E+01	1.15E-02
Qtr 1 - T.Spec Total Body	ADULT	TBODY	1.11E-05	1.50E+00	7.43E-04
Qtr 2 - T.Spec Total Body	ADULT	TBODY	5.69E-05	1.50E+00	3.79E-03
Qtr 3 - T.Spec Total Body	ADULT	TBODY	5.57E-05	1.50E+00	3.71E-03
Qtr 4 - T.Spec Total Body	ADULT	TBODY	6.76E-07	1.50E+00	4.50E-05
2008 - T.Spec Total Body	ADULT	TBODY	1.00E-04	3.00E+00	3.35E-03

TABLE 3
Effluent and Waste Disposal Annual Report 2008 Year
Solid Waste and Irradiated Fuel Shipments
Reporting Period from 01/01/08 to 12/31/08

A. Solid Waste Shipped for Burial or Disposal (Not Irradiated Fuel)

1. Type of Waste	Units	12 Month Period	Waste Class	Estimated Error %
Spent Resins, Filter Sludges, Evaporator Bottoms, Etc.	m3	7.50E+01	A	See Below
	Ci	2.27E+02	A	
	m3	2.69E+00	B	
	Ci	6.01E+01	B	
	m3	2.69E+00	C	
	Ci	4.00E+02	C	
Dry Compressible Wastes, Contaminated Equipment Etc.	m3	1.07E+03	A	See Below
	Ci	3.68E+01	A	
Irradiated Components, Control Rods, Etc.	m3	0.00E+00	C	See Below
	Ci	0.00E+00	C	
Other (Water, EHC, Waste Oil, etc.)	m3	7.87E+01	A	See Below
	Ci	4.84E+01	A	

Note: Volume considered being the total disposal volume of the container.
Radwaste Estimated Error %:
Waste types considered are processed solid waste (i.e. resin, filter media), non-compactible/compactible dry active waste and irradiated hardware.

1. Possible Errors
a. Volume
b. Representative Sampling
c. Instrument/Counting
d. Dose to Curie Calculations

2. Volume Error
Level indication for processed resins can be determined to +/- 0.5 inches. This correlates to approximately 1.0%. Container manufacturer stated design tolerance allows for 1.0% deviation from container dimensions. Volume error is not applicable to dry active waste.

3. Representative Sampling Error
Sampling error for processed resins is based upon obtaining a representative sample from the waste being processed using an iso-lock sampler. Sampling error from dry active waste is based upon obtaining a representative sample from the material being packaged. This error is estimated to be +/- 10% for all waste types, which is consistent with industry standards.

Effluent and Waste Disposal Annual Report 2008 Year
Solid Waste and Irradiated Fuel Shipments
Reporting Period from 01/01/08 to 12/31/08
Table 3 (continued)

4. Instrument/Counting Error
The error caused by sample geometry, counting time, sample activity and instrument background is estimated to be +/- 10%. The error for radiological survey instrumentation is estimated to be +/- 20%. This error is applicable to all waste types.

5. Dose to Curie Calculations Error
The Dose to Curie method used to calculate activity suffers from analytical accuracy in that certain important parameters are neglected. These parameters are geometry of package, measuring instrument characteristics, build-up, internal attenuation effect, and external media attenuation. An activity correction factor is applied to provide adjustment for these factors. This error is applicable to all waste types.

2. Estimates of Major Nuclides by Waste Stream

Resins, Filters, Evaporator Bottoms, Etc. (Min 1%)			Dry Compressible Wastes, Contaminated Equipment, Etc. (Min 1%)			Other Water, EHC, Waste Oil, Etc. (Min 1%)		
Isotope	% Abundance	Curies	Isotope	% Abundance	Curies	Isotope	% Abundance	Curies
Mn-54	1.723	1.19E+01	Mn-54	3.293	1.21E+00	H-3	11.431	5.54E-02
Fe-55	76.822	5.30E+02	Fe-55	85.371	3.14E+01	Mn-54	2.682	1.30E-02
Co-60	13.110	9.04E+01	Co-60	10.290	3.79E+00	Fe-55	71.443	3.46E-01
Zn-65	1.260	8.69E+00				Co-60	12.730	6.17E-02
C-14	1.539	1.06E+01						
Ni-63	1.337	9.22E+00						

Determined by Measurement & Correlation.
Packaged in Strong, Tight Liners.
No Solidification Agent or Absorbent Used
No Control Rods, Etc. were shipped in 2008

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
27	Truck	Energy Solutions (Bear Creek)- Oak Ridge, TN
14	Truck	Studsvik Processing Facility - Erwin, TN
6	Truck	Studsvik Processing Facility - Memphis, TN
3	Truck	Energy Solutions (Gallaher Road)-Oak Ridge, TN
1	Truck	Perma-Fix of Florida - Gainesville, FL

B. Irradiated Fuel Shipments Disposition

Number of Shipments	Mode of Transportation	Destination
0	N/A	N/A

TABLE 4
Effluent and Waste Disposal Annual Report 2008 Year
ASSUMPTIONS/PARAMETERS FOR DOSES TO
A MEMBER OF THE PUBLIC INSIDE SITE BOUNDARY

MEMBER OF THE PUBLIC	LOCATION	DISTANCE(1) METERS	SECTOR	DURATION (HR/YEAR)(2)
People Entering Site Without Consent	Alligator Bayou	2500	SW	40
Lawn Service Provider	General Services Building	115	ENE	360
National Guard	Activity Center	994	WNW	0(3)
Delivery Driver	Main Warehouse	275	N	125
Workers staying onsite	Activity Center Trailer City	994	WNW	2400(4)

(1) The approximate distances from main plant vent exhaust to location.

(2) Liquid pathways dose is not considered due to the nature of activities that individuals are engaged in.

(3) National Guard/State Police are being evaluated, if applicable, for dose while stationed on site as members of the public. The adult age group is the only age group considered in this category. No National Guard in 2008.

(4) Workers began staying at the Activity Center Trailer City beginning April 10, 2007. Some left and some have been permitted to stay long term. During the outage (RF-14), additional workers were on site for about 60 days. The long term indivduals will be the receptors for this pathway. For 2008, this estimate is based on 12 hours per day, 4 days per week for 50 weeks, totaling 2400 hours. The adult age group is the only age group considered for this activity.

TABLE 5

DOSES TO MEMBERS OF THE PUBLIC ON SITE

FROM GASEOUS RELEASES 2008

	Critical Organ Dose Annual (mrem)	Total Body Dose Annual (mrem)	Skin Dose Annual (mrem)	Annual Duration Factor
Alligator Bayou	1.19E-05	7.12E-05	2.47E-04	4.57E-03
Lawn Service Provider	1.85E-02	1.11E-01	3.86E-01	4.11E-02
Workers staying onsite	4.14E-03	8.19E-03	1.95E-02	2.74E-01
Delivery Driver	1.07E-02	1.87E-03	3.70E-02	1.43E-02

Table 6
Effluent and Waste Disposal Annual Report 2008 Year
Meteorological Data - Joint Frequency Tables

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	14	8	10	23	39	59	23	0	0	0	0	0	176
NNE	7	13	10	24	34	35	14	0	0	0	0	0	137
NE	8	16	18	30	26	27	2	0	0	0	0	0	127
ENE	22	28	60	52	25	29	0	0	0	0	0	0	216
E	9	27	40	42	23	13	1	0	0	0	0	0	155
ESE	4	16	27	66	44	10	2	0	0	0	0	0	169
SE	2	6	12	52	64	62	18	0	0	0	0	0	216
SSE	4	2	3	13	29	92	72	20	1	0	0	0	236
S	0	1	6	22	23	47	56	14	0	0	0	0	169
SSW	1	0	5	4	12	30	26	1	0	0	0	0	79
SW	2	1	6	9	3	10	5	0	0	0	0	0	36
WSW	1	2	4	4	8	8	4	0	0	0	0	0	31
W	2	6	3	8	6	9	5	0	0	0	0	0	39
WNW	4	5	5	7	5	16	23	2	0	0	0	0	67
NW	4	5	12	12	17	22	27	2	0	0	0	0	101
NNW	4	6	7	19	27	48	42	2	0	0	0	0	155
TOTAL	88	142	228	387	385	517	320	41	1	0	0	0	2109

NUMBER OF CALMS: 6
NUMBER OF INVALID HOURS: 69
NUMBER OF VALID HOURS: 2115
TOTAL HOURS FOR THE PERIOD: 2184

STABILITY CLASS A

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	1	1	0	0	0	0	0	2
NNE	0	0	0	0	1	3	2	0	0	0	0	0	6
NE	0	0	0	1	2	4	0	0	0	0	0	0	7
ENE	0	0	0	1	1	6	0	0	0	0	0	0	8
E	0	0	0	2	3	7	1	0	0	0	0	0	13
ESE	0	0	0	2	12	6	1	0	0	0	0	0	21
SE	0	0	0	2	5	9	6	0	0	0	0	0	22
SSE	0	0	0	0	0	6	12	3	0	0	0	0	21
S	0	0	0	0	0	1	1	0	0	0	0	0	2
SSW	0	0	0	0	0	0	2	0	0	0	0	0	2
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	1	0	0	0	0	0	1
NW	0	0	0	0	0	0	1	0	0	0	0	0	1
NNW	0	0	0	0	0	0	2	0	0	0	0	0	2
TOTAL	0	0	0	8	24	43	30	3	0	0	0	0	108

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 108
TOTAL HOURS FOR THE PERIOD: 108

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS B

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	2	0	2	3	0	0	0	0	0	7
NNE	0	0	0	1	1	1	0	0	0	0	0	0	3
NE	0	0	0	0	0	0	1	0	0	0	0	0	1
ENE	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	2	2	0	0	0	0	0	0	0	4
ESE	0	0	0	1	2	1	0	0	0	0	0	0	4
SE	0	0	0	0	1	1	3	0	0	0	0	0	5
SSE	0	0	0	0	0	2	7	3	0	0	0	0	12
S	0	0	0	0	0	1	3	1	0	0	0	0	5
SSW	0	0	0	0	0	1	0	0	0	0	0	0	1
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	0	0	0	0	0
NW	0	0	0	0	0	1	4	0	0	0	0	0	5
NNW	0	0	0	0	0	1	1	0	0	0	0	0	2
TOTAL	0	0	0	6	6	11	22	4	0	0	0	0	49

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 49
TOTAL HOURS FOR THE PERIOD: 49

STABILITY CLASS C

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	0	4	0	0	0	0	0	4
NNE	0	0	0	0	0	2	0	0	0	0	0	0	2
NE	0	0	0	0	3	2	0	0	0	0	0	0	5
ENE	0	0	0	0	0	1	0	0	0	0	0	0	1
E	0	0	0	1	2	0	0	0	0	0	0	0	3
ESE	0	0	0	1	5	0	0	0	0	0	0	0	6
SE	0	0	0	0	1	4	0	0	0	0	0	0	5
SSE	0	0	0	0	1	6	4	0	0	0	0	0	11
S	0	0	0	0	1	3	4	1	0	0	0	0	9
SSW	0	0	0	0	0	2	0	0	0	0	0	0	2
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	1	0	0	0	0	0	0	1
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	1	0	0	0	0	0	1
NW	0	0	0	0	0	1	2	0	0	0	0	0	3
NNW	0	0	0	0	0	4	9	0	0	0	0	0	13
TOTAL	0	0	0	2	13	26	24	1	0	0	0	0	66

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 66
TOTAL HOURS FOR THE PERIOD: 66

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS D

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22- .50	.51- .75	.76- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 5.0	5.1- 7.0	7.1- 10.0	10.1- 13.0	13.1- 18.0	>18	TOT.
N	0	0	4	11	20	39	12	0	0	0	0	0	86
NNE	0	1	3	13	19	16	12	0	0	0	0	0	64
NE	0	1	2	11	15	12	1	0	0	0	0	0	42
ENE	0	1	3	10	9	11	0	0	0	0	0	0	34
E	0	2	3	12	13	5	0	0	0	0	0	0	35
ESE	0	0	6	14	9	3	0	0	0	0	0	0	32
SE	0	1	1	11	18	21	5	0	0	0	0	0	57
SSE	0	0	0	4	8	29	38	10	1	0	0	0	90
S	0	0	2	5	9	27	44	8	0	0	0	0	95
SSW	0	0	0	3	7	18	20	1	0	0	0	0	49
SW	0	0	2	3	2	7	5	0	0	0	0	0	19
WSW	0	0	2	2	8	6	4	0	0	0	0	0	22
W	0	0	1	5	5	9	5	0	0	0	0	0	25
WNW	0	1	0	3	4	13	17	2	0	0	0	0	40
NW	0	1	1	4	13	15	19	2	0	0	0	0	55
NNW	0	1	1	10	17	28	24	1	0	0	0	0	82
TOTAL	0	9	31	121	176	259	206	24	1	0	0	0	827

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 827
TOTAL HOURS FOR THE PERIOD: 827

STABILITY CLASS E

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22- .50	.51- .75	.76- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 5.0	5.1- 7.0	7.1- 10.0	10.1- 13.0	13.1- 18.0	>18	TOT.
N	2	0	3	9	19	17	3	0	0	0	0	0	53
NNE	0	1	2	8	13	13	0	0	0	0	0	0	37
NE	0	2	5	10	6	9	0	0	0	0	0	0	32
ENE	1	1	4	19	8	11	0	0	0	0	0	0	44
E	1	4	14	20	3	1	0	0	0	0	0	0	43
ESE	0	4	15	39	16	0	1	0	0	0	0	0	75
SE	1	1	7	33	37	27	4	0	0	0	0	0	110
SSE	0	0	3	7	19	49	11	4	0	0	0	0	93
S	0	1	2	16	13	15	4	4	0	0	0	0	55
SSW	0	0	5	1	5	9	4	0	0	0	0	0	24
SW	0	1	2	3	1	3	0	0	0	0	0	0	10
WSW	0	0	1	2	0	1	0	0	0	0	0	0	4
W	0	3	0	3	1	0	0	0	0	0	0	0	7
WNW	1	2	1	3	1	3	4	0	0	0	0	0	15
NW	0	0	4	7	3	5	1	0	0	0	0	0	20
NNW	0	0	2	9	9	15	6	1	0	0	0	0	42
TOTAL	6	20	70	189	154	178	38	9	0	0	0	0	664

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 664
TOTAL HOURS FOR THE PERIOD: 664

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS F

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	4	1	3	1	0	0	0	0	0	0	0	0	9
NNE	0	3	4	2	0	0	0	0	0	0	0	0	9
NE	0	1	5	8	0	0	0	0	0	0	0	0	14
ENE	3	2	6	13	7	0	0	0	0	0	0	0	31
E	1	1	10	2	0	0	0	0	0	0	0	0	14
ESE	1	6	5	9	0	0	0	0	0	0	0	0	21
SE	0	3	4	6	2	0	0	0	0	0	0	0	15
SSE	2	1	0	1	1	0	0	0	0	0	0	0	5
S	0	0	0	1	0	0	0	0	0	0	0	0	1
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	1	0	2	2	0	0	0	0	0	0	0	0	5
WSW	1	2	0	0	0	0	0	0	0	0	0	0	3
W	2	3	2	0	0	0	0	0	0	0	0	0	7
WNW	1	2	3	1	0	0	0	0	0	0	0	0	7
NW	1	0	3	1	0	0	0	0	0	0	0	0	5
NNW	0	2	4	0	1	0	0	0	0	0	0	0	7
TOTAL	17	27	51	47	11	0	0	0	0	0	0	0	153

NUMBER OF CALMS: 2
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 155
TOTAL HOURS FOR THE PERIOD: 155

STABILITY CLASS G

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	8	7	0	0	0	0	0	0	0	0	0	0	15
NNE	7	8	1	0	0	0	0	0	0	0	0	0	16
NE	8	12	6	0	0	0	0	0	0	0	0	0	26
ENE	18	24	47	9	0	0	0	0	0	0	0	0	98
E	7	20	13	3	0	0	0	0	0	0	0	0	43
ESE	3	6	1	0	0	0	0	0	0	0	0	0	10
SE	1	1	0	0	0	0	0	0	0	0	0	0	2
SSE	2	1	0	1	0	0	0	0	0	0	0	0	4
S	0	0	2	0	0	0	0	0	0	0	0	0	2
SSW	1	0	0	0	0	0	0	0	0	0	0	0	1
SW	1	0	0	1	0	0	0	0	0	0	0	0	2
WSW	0	0	1	0	0	0	0	0	0	0	0	0	1
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	2	0	1	0	0	0	0	0	0	0	0	0	3
NW	3	4	4	0	1	0	0	0	0	0	0	0	12
NNW	4	3	0	0	0	0	0	0	0	0	0	0	7
TOTAL	65	86	76	14	1	0	0	0	0	0	0	0	242

NUMBER OF CALMS: 4
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 246
TOTAL HOURS FOR THE PERIOD: 246

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22- .50	.51- .75	.76- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 5.0	5.1- 7.0	7.1- 10.0	10.1- 13.0	13.1- 18.0	>18	TOT.
N	22	15	19	29	16	24	8	0	0	0	0	0	133
NNE	13	5	14	23	12	3	0	0	0	0	0	0	70
NE	15	8	9	17	8	8	0	0	0	0	0	0	65
ENE	11	10	13	11	5	1	0	0	0	0	0	0	51
E	9	14	5	12	4	1	0	0	0	0	0	0	45
ESE	9	13	11	15	7	2	0	0	0	0	0	0	57
SE	5	14	29	89	49	35	13	0	0	0	0	0	234
SSE	4	12	20	53	53	126	76	3	0	0	0	0	347
S	4	10	18	50	63	94	72	6	0	0	0	0	317
SSW	4	16	10	31	28	30	16	0	0	0	0	0	135
SW	4	8	13	23	22	20	6	0	0	0	0	0	96
WSW	3	7	12	15	23	10	0	0	0	0	0	0	70
W	10	18	13	16	22	19	0	0	0	0	0	0	98
WNW	13	17	17	15	16	26	9	0	0	0	0	0	113
NW	23	38	22	12	23	13	9	0	0	0	0	0	140
NNW	29	25	14	13	20	28	19	0	0	0	0	0	148
TOTAL	178	230	239	424	371	440	228	9	0	0	0	0	2119

NUMBER OF CALMS: 20
NUMBER OF INVALID HOURS: 45
NUMBER OF VALID HOURS: 2139
TOTAL HOURS FOR THE PERIOD: 2184

STABILITY CLASS A

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22- .50	.51- .75	.76- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 5.0	5.1- 7.0	7.1- 10.0	10.1- 13.0	13.1- 18.0	>18	TOT.
N	0	0	0	0	0	0	1	0	0	0	0	0	1
NNE	0	0	0	1	0	0	0	0	0	0	0	0	1
NE	0	0	0	0	0	1	0	0	0	0	0	0	1
ENE	0	0	0	1	2	1	0	0	0	0	0	0	4
E	0	0	0	1	3	0	0	0	0	0	0	0	4
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	1	3	2	1	0	0	0	0	0	7
SSE	0	0	0	0	1	8	8	0	0	0	0	0	17
S	0	0	0	0	1	1	5	1	0	0	0	0	8
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	1	0	0	0	0	0	0	0	0	1
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	1	0	1	2	0	0	0	0	0	4
NW	0	0	0	0	0	2	1	0	0	0	0	0	3
NNW	0	0	0	0	0	0	2	0	0	0	0	0	2
TOTAL	0	0	0	6	10	16	20	1	0	0	0	0	53

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 53
TOTAL HOURS FOR THE PERIOD: 53

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS B

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	0	2	0	0	0	0	0	2
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	1	0	1	0	0	0	0	0	0	2
ENE	0	0	0	2	0	0	0	0	0	0	0	0	2
E	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	0	1	0	2	0	0	0	0	0	3
SSE	0	0	0	2	2	3	6	1	0	0	0	0	14
S	0	0	0	1	0	0	6	0	0	0	0	0	7
SSW	0	0	0	0	0	0	1	0	0	0	0	0	1
SW	0	0	0	0	0	1	0	0	0	0	0	0	1
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	2	3	0	0	0	0	0	5
NW	0	0	0	0	0	0	3	0	0	0	0	0	3
NNW	0	0	0	0	0	1	5	0	0	0	0	0	6
TOTAL	0	0	0	6	3	8	28	1	0	0	0	0	46

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 46
TOTAL HOURS FOR THE PERIOD: 46

STABILITY CLASS C

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	1	0	1	1	0	0	0	0	0	3
NNE	0	0	0	2	2	0	0	0	0	0	0	0	4
NE	0	0	0	2	1	1	0	0	0	0	0	0	4
ENE	0	0	0	0	1	0	0	0	0	0	0	0	1
E	0	0	0	1	1	0	0	0	0	0	0	0	2
ESE	0	0	0	0	0	0	0	0	0	0	0	0	0
SE	0	0	0	1	1	0	2	0	0	0	0	0	4
SSE	0	0	0	0	0	7	3	2	0	0	0	0	12
S	0	0	0	0	2	4	12	0	0	0	0	0	18
SSW	0	0	0	0	0	4	1	0	0	0	0	0	5
SW	0	0	0	0	0	2	0	0	0	0	0	0	2
WSW	0	0	0	0	0	1	0	0	0	0	0	0	1
W	0	0	0	0	0	1	0	0	0	0	0	0	1
WNW	0	0	0	0	0	2	0	0	0	0	0	0	2
NW	0	0	0	0	2	0	1	0	0	0	0	0	3
NNW	0	0	0	0	0	1	2	0	0	0	0	0	3
TOTAL	0	0	0	7	10	24	22	2	0	0	0	0	65

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 65
TOTAL HOURS FOR THE PERIOD: 65

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS D

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	1	1	1	9	9	17	4	0	0	0	0	0	42
NNE	0	0	4	7	7	1	0	0	0	0	0	0	19
NE	0	0	3	5	5	2	0	0	0	0	0	0	15
ENE	0	0	1	6	1	0	0	0	0	0	0	0	8
E	0	0	1	5	0	0	0	0	0	0	0	0	6
ESE	0	0	2	10	4	0	0	0	0	0	0	0	16
SE	1	1	3	25	21	15	7	0	0	0	0	0	73
SSE	0	3	8	22	23	72	45	0	0	0	0	0	173
S	0	0	0	4	24	60	43	5	0	0	0	0	136
SSW	0	3	1	7	15	23	13	0	0	0	0	0	62
SW	0	1	3	12	18	14	6	0	0	0	0	0	54
WSW	0	0	5	12	21	9	0	0	0	0	0	0	47
W	0	1	6	12	20	18	0	0	0	0	0	0	57
WNW	1	1	3	12	13	21	4	0	0	0	0	0	55
NW	0	3	3	2	17	9	4	0	0	0	0	0	38
NNW	0	1	1	5	13	18	9	0	0	0	0	0	47
TOTAL	3	15	45	155	211	279	135	5	0	0	0	0	848

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 848
TOTAL HOURS FOR THE PERIOD: 848

STABILITY CLASS E

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	1	1	4	9	6	6	0	0	0	0	0	0	27
NNE	1	2	7	9	3	2	0	0	0	0	0	0	24
NE	1	1	4	5	2	3	0	0	0	0	0	0	16
ENE	3	5	4	2	1	0	0	0	0	0	0	0	15
E	2	7	2	4	0	1	0	0	0	0	0	0	16
ESE	1	3	5	3	3	1	0	0	0	0	0	0	16
SE	1	8	17	51	22	18	1	0	0	0	0	0	118
SSE	1	2	7	27	25	36	14	0	0	0	0	0	112
S	0	4	12	31	31	28	6	0	0	0	0	0	112
SSW	1	7	9	18	13	3	1	0	0	0	0	0	52
SW	0	5	8	8	4	2	0	0	0	0	0	0	27
WSW	0	1	4	3	2	0	0	0	0	0	0	0	10
W	0	3	2	4	2	0	0	0	0	0	0	0	11
WNW	3	3	7	2	2	0	0	0	0	0	0	0	17
NW	2	5	5	6	3	2	0	0	0	0	0	0	23
NNW	1	4	1	7	7	7	1	0	0	0	0	0	28
TOTAL	18	61	98	189	126	109	23	0	0	0	0	0	624

NUMBER OF CALMS: 1
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 625
TOTAL HOURS FOR THE PERIOD: 625

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS F

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22- .50	.51- .75	.76- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 5.0	5.1- 7.0	7.1- 10.0	10.1- 13.0	13.1- 18.0	>18	TOT.
N	5	3	7	8	1	0	0	0	0	0	0	0	24
NNE	3	3	2	3	0	0	0	0	0	0	0	0	11
NE	6	2	2	4	0	0	0	0	0	0	0	0	14
ENE	2	4	6	0	0	0	0	0	0	0	0	0	12
E	3	3	1	1	0	0	0	0	0	0	0	0	8
ESE	6	8	3	1	0	1	0	0	0	0	0	0	19
SE	2	5	9	11	1	0	0	0	0	0	0	0	28
SSE	1	5	4	2	2	0	0	0	0	0	0	0	14
S	1	5	3	11	3	1	0	0	0	0	0	0	24
SSW	1	5	0	6	0	0	0	0	0	0	0	0	12
SW	1	2	2	2	0	0	0	0	0	0	0	0	7
WSW	1	5	2	0	0	0	0	0	0	0	0	0	8
W	4	7	3	0	0	0	0	0	0	0	0	0	14
WNW	1	3	2	0	1	0	0	0	0	0	0	0	7
NW	3	6	4	4	1	0	0	0	0	0	0	0	18
NNW	9	4	5	1	0	1	0	0	0	0	0	0	20
TOTAL	49	70	55	54	9	3	0	0	0	0	0	0	240

NUMBER OF CALMS: 4
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 244
TOTAL HOURS FOR THE PERIOD: 244

STABILITY CLASS G

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22- .50	.51- .75	.76- 1.0	1.1- 1.5	1.6- 2.0	2.1- 3.0	3.1- 5.0	5.1- 7.0	7.1- 10.0	10.1- 13.0	13.1- 18.0	>18	TOT.
N	15	10	7	2	0	0	0	0	0	0	0	0	34
NNE	9	0	1	1	0	0	0	0	0	0	0	0	11
NE	8	5	0	0	0	0	0	0	0	0	0	0	13
ENE	6	1	2	0	0	0	0	0	0	0	0	0	9
E	4	4	1	0	0	0	0	0	0	0	0	0	9
ESE	2	2	1	1	0	0	0	0	0	0	0	0	6
SE	1	0	0	0	0	0	0	0	0	0	0	0	1
SSE	2	2	1	0	0	0	0	0	0	0	0	0	5
S	3	1	3	3	2	0	0	0	0	0	0	0	12
SSW	2	1	0	0	0	0	0	0	0	0	0	0	3
SW	3	0	0	0	0	1	0	0	0	0	0	0	4
WSW	2	1	1	0	0	0	0	0	0	0	0	0	4
W	6	7	2	0	0	0	0	0	0	0	0	0	15
WNW	8	10	5	0	0	0	0	0	0	0	0	0	23
NW	18	24	10	0	0	0	0	0	0	0	0	0	52
NNW	19	16	7	0	0	0	0	0	0	0	0	0	42
TOTAL	108	84	41	7	2	1	0	0	0	0	0	0	243

NUMBER OF CALMS: 15
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 258
TOTAL HOURS FOR THE PERIOD: 258

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	19	24	19	45	29	25	7	0	0	0	0	0	168
NNE	21	13	25	49	26	29	5	3	0	0	0	0	171
NE	20	24	26	49	33	28	1	1	1	0	0	0	183
ENE	5	21	18	14	13	14	0	0	2	0	0	0	87
E	4	11	8	14	5	3	0	1	0	0	0	0	46
ESE	6	13	13	11	3	5	0	1	0	0	0	0	52
SE	3	10	17	19	15	19	3	3	1	0	0	0	90
SSE	8	7	7	23	15	16	13	9	0	0	0	0	98
S	2	7	9	17	23	25	14	1	0	0	0	0	98
SSW	5	7	9	32	16	29	9	1	0	0	0	0	108
SW	7	6	16	26	23	31	2	0	0	0	0	0	111
WSW	3	13	12	18	19	27	4	0	0	0	0	0	96
W	13	12	15	18	24	28	2	0	0	0	0	0	112
WNW	13	17	15	23	23	37	9	0	0	0	0	0	137
NW	35	33	21	18	18	17	6	0	0	0	0	0	148
NNW	26	41	15	27	16	20	3	0	0	0	0	0	148
TOTAL	190	259	245	403	301	353	78	20	4	0	0	0	1853

NUMBER OF CALMS: 25
NUMBER OF INVALID HOURS: 330
NUMBER OF VALID HOURS: 1878
TOTAL HOURS FOR THE PERIOD: 2208

STABILITY CLASS A

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	2	7	0	0	0	0	0	0	9
NNE	0	0	0	0	2	12	0	0	0	0	0	0	14
NE	0	0	0	0	8	19	0	0	0	0	0	0	27
ENE	0	0	0	1	9	11	0	0	0	0	0	0	21
E	0	0	0	2	5	1	0	0	0	0	0	0	8
ESE	0	0	0	0	1	3	0	0	0	0	0	0	4
SE	0	0	0	0	1	3	0	0	0	0	0	0	4
SSE	0	0	0	0	1	1	1	0	0	0	0	0	3
S	0	0	0	0	0	1	3	0	0	0	0	0	4
SSW	0	0	0	0	0	0	2	0	0	0	0	0	2
SW	0	0	0	0	0	1	0	0	0	0	0	0	1
WSW	0	0	0	0	0	1	0	0	0	0	0	0	1
W	0	0	0	0	0	1	0	0	0	0	0	0	1
WNW	0	0	0	0	0	1	0	0	0	0	0	0	1
NW	0	0	0	0	0	4	0	0	0	0	0	0	4
NNW	0	0	0	0	1	9	1	0	0	0	0	0	11
TOTAL	0	0	0	3	30	75	7	0	0	0	0	0	115

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 115
TOTAL HOURS FOR THE PERIOD: 115

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS B

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	5	1	0	0	0	0	0	6
NNE	0	0	0	1	7	2	2	0	0	0	0	0	12
NE	0	0	0	3	2	1	0	0	0	0	0	0	6
ENE	0	0	1	2	1	1	0	0	0	0	0	0	5
E	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	1	0	0	0	0	0	0	0	1
SE	0	0	1	0	0	0	1	0	0	0	0	0	2
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	4	0	0	0	0	0	4
SSW	0	0	0	0	0	1	1	0	0	0	0	0	2
SW	0	0	0	0	4	2	0	0	0	0	0	0	6
WSW	0	0	0	0	1	2	0	0	0	0	0	0	3
W	0	0	0	0	1	1	0	0	0	0	0	0	2
WNW	0	0	0	0	0	2	2	0	0	0	0	0	4
NW	0	0	0	0	0	1	0	0	0	0	0	0	1
NNW	0	0	0	1	1	1	0	0	0	0	0	0	3
TOTAL	0	0	2	7	18	19	11	0	0	0	0	0	57

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 57
TOTAL HOURS FOR THE PERIOD: 57

STABILITY CLASS C

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	2	1	3	0	0	0	0	0	6
NNE	0	0	0	2	1	4	0	0	0	0	0	0	7
NE	0	0	1	1	3	2	0	0	0	0	0	0	7
ENE	0	0	0	1	1	0	0	0	0	0	0	0	2
E	0	0	0	1	0	0	0	0	0	0	0	0	1
ESE	0	0	0	1	1	0	0	0	0	0	0	0	2
SE	0	0	0	0	0	1	0	0	0	0	0	0	1
SSE	0	0	0	1	0	2	1	0	0	0	0	0	4
S	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	2	0	1	1	0	0	0	0	0	4
SW	0	0	0	0	1	4	0	0	0	0	0	0	5
WSW	0	0	0	0	2	5	1	0	0	0	0	0	8
W	0	0	0	1	2	4	0	0	0	0	0	0	7
WNW	0	0	0	0	1	4	1	0	0	0	0	0	6
NW	0	0	0	0	1	1	1	0	0	0	0	0	3
NNW	0	0	0	0	0	1	1	0	0	0	0	0	2
TOTAL	0	0	1	10	15	30	9	0	0	0	0	0	65

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 65
TOTAL HOURS FOR THE PERIOD: 65

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS D

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	3	2	8	20	11	3	0	0	0	0	0	47
NNE	0	2	3	13	12	5	0	0	0	0	0	0	35
NE	0	2	5	13	11	3	0	0	1	0	0	0	35
ENE	0	2	5	5	2	2	0	0	2	0	0	0	18
E	0	0	5	5	0	1	0	1	0	0	0	0	12
ESE	0	2	3	4	0	1	0	1	0	0	0	0	11
SE	0	0	4	7	7	6	2	1	0	0	0	0	27
SSE	0	1	1	10	6	8	6	3	0	0	0	0	35
S	0	0	2	4	15	22	5	1	0	0	0	0	49
SSW	0	0	3	8	6	24	4	1	0	0	0	0	46
SW	0	1	2	12	14	22	1	0	0	0	0	0	52
WSW	0	0	3	13	16	19	2	0	0	0	0	0	53
W	0	0	2	12	19	22	1	0	0	0	0	0	56
WNW	0	1	2	12	15	24	0	0	0	0	0	0	54
NW	0	1	1	9	13	9	1	0	0	0	0	0	34
NNW	0	2	2	7	10	7	0	0	0	0	0	0	28
TOTAL	0	17	45	142	166	186	25	8	3	0	0	0	592

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 592
TOTAL HOURS FOR THE PERIOD: 592

STABILITY CLASS E

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	3	3	6	10	3	1	0	0	0	0	0	0	26
NNE	5	5	7	21	4	4	3	3	0	0	0	0	52
NE	4	11	17	26	9	3	1	1	0	0	0	0	72
ENE	1	12	7	4	0	0	0	0	0	0	0	0	24
E	0	8	2	6	0	1	0	0	0	0	0	0	17
ESE	2	8	6	6	0	1	0	0	0	0	0	0	23
SE	0	4	8	9	6	8	0	2	1	0	0	0	38
SSE	2	2	4	10	8	5	5	6	0	0	0	0	42
S	0	3	6	9	8	2	2	0	0	0	0	0	30
SSW	0	3	4	19	9	3	1	0	0	0	0	0	39
SW	2	1	7	13	4	2	1	0	0	0	0	0	30
WSW	0	6	8	4	0	0	1	0	0	0	0	0	19
W	2	3	9	5	1	0	1	0	0	0	0	0	21
WNW	2	4	9	10	6	6	6	0	0	0	0	0	43
NW	6	3	8	7	4	1	4	0	0	0	0	0	33
NNW	1	7	1	5	4	2	1	0	0	0	0	0	21
TOTAL	30	83	109	164	66	39	26	12	1	0	0	0	530

NUMBER OF CALMS: 1
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 531
TOTAL HOURS FOR THE PERIOD: 531

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS F

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	4	8	6	19	1	0	0	0	0	0	0	0	38
NNE	3	4	9	11	0	2	0	0	0	0	0	0	29
NE	10	5	3	6	0	0	0	0	0	0	0	0	24
ENE	4	5	3	1	0	0	0	0	0	0	0	0	13
E	2	3	0	0	0	0	0	0	0	0	0	0	5
ESE	2	2	4	0	0	0	0	0	0	0	0	0	8
SE	2	4	4	3	1	1	0	0	0	0	0	0	15
SSE	4	4	2	2	0	0	0	0	0	0	0	0	12
S	2	3	1	4	0	0	0	0	0	0	0	0	10
SSW	1	3	1	3	1	0	0	0	0	0	0	0	9
SW	4	3	5	1	0	0	0	0	0	0	0	0	13
WSW	2	3	0	0	0	0	0	0	0	0	0	0	5
W	4	6	3	0	0	0	0	0	0	0	0	0	13
WNW	3	2	3	1	0	0	0	0	0	0	0	0	9
NW	9	9	8	1	0	1	0	0	0	0	0	0	28
NNW	6	7	1	5	0	0	0	0	0	0	0	0	19
TOTAL	62	71	53	57	3	4	0	0	0	0	0	0	250

NUMBER OF CALMS: 6
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 256
TOTAL HOURS FOR THE PERIOD: 256

STABILITY CLASS G

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	12	10	5	8	1	0	0	0	0	0	0	0	36
NNE	13	2	6	1	0	0	0	0	0	0	0	0	22
NE	6	6	0	0	0	0	0	0	0	0	0	0	12
ENE	0	2	2	0	0	0	0	0	0	0	0	0	4
E	2	0	1	0	0	0	0	0	0	0	0	0	3
ESE	2	1	0	0	0	0	0	0	0	0	0	0	3
SE	1	2	0	0	0	0	0	0	0	0	0	0	3
SSE	2	0	0	0	0	0	0	0	0	0	0	0	2
S	0	1	0	0	0	0	0	0	0	0	0	0	1
SSW	4	1	1	0	0	0	0	0	0	0	0	0	6
SW	1	1	2	0	0	0	0	0	0	0	0	0	4
WSW	1	4	1	1	0	0	0	0	0	0	0	0	7
W	7	3	1	0	1	0	0	0	0	0	0	0	12
WNW	8	10	1	0	1	0	0	0	0	0	0	0	20
NW	20	20	4	1	0	0	0	0	0	0	0	0	45
NNW	19	25	11	9	0	0	0	0	0	0	0	0	64
TOTAL	98	88	35	20	3	0	0	0	0	0	0	0	244

NUMBER OF CALMS: 18
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 262
TOTAL HOURS FOR THE PERIOD: 262

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	20	20	23	38	20	62	38	0	0	0	0	0	221
NNE	42	12	15	42	32	42	19	0	0	0	0	0	204
NE	25	15	17	37	38	37	4	0	0	0	0	0	173
ENE	29	20	17	40	32	27	0	0	0	0	0	0	165
E	18	16	19	20	16	5	0	0	0	0	0	0	94
ESE	8	11	32	34	23	25	1	0	0	0	0	0	134
SE	2	11	22	50	86	84	14	0	0	0	0	0	269
SSE	3	2	11	25	28	47	50	11	0	0	0	0	177
S	1	2	6	10	17	20	17	6	1	0	0	0	80
SSW	1	2	1	15	14	24	7	0	0	0	0	0	64
SW	4	2	6	11	5	15	4	0	0	0	0	0	47
WSW	2	7	4	9	9	15	1	0	0	0	0	0	47
W	3	6	6	10	13	9	3	0	0	0	0	0	50
WNW	8	10	14	18	9	19	9	0	0	0	0	0	87
NW	13	27	26	18	19	34	16	3	0	0	0	0	156
NNW	18	40	22	30	24	36	35	0	0	0	0	0	205
TOTAL	197	203	241	407	385	501	218	20	1	0	0	0	2173

NUMBER OF CALMS: 21
NUMBER OF INVALID HOURS: 14
NUMBER OF VALID HOURS: 2194
TOTAL HOURS FOR THE PERIOD: 2208

STABILITY CLASS A

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	1	1	3	19	14	0	0	0	0	0	38
NNE	0	0	0	0	5	17	9	0	0	0	0	0	31
NE	0	1	0	1	7	13	3	0	0	0	0	0	25
ENE	0	0	0	2	11	13	0	0	0	0	0	0	26
E	0	0	0	2	4	5	0	0	0	0	0	0	11
ESE	0	0	0	6	7	11	0	0	0	0	0	0	24
SE	0	0	0	1	20	39	4	0	0	0	0	0	64
SSE	0	0	0	1	6	15	15	5	0	0	0	0	42
S	0	0	0	1	2	6	4	0	0	0	0	0	13
SSW	0	0	0	0	1	3	3	0	0	0	0	0	7
SW	0	0	0	0	0	4	0	0	0	0	0	0	4
WSW	0	0	0	2	5	7	1	0	0	0	0	0	15
W	0	0	0	0	4	7	3	0	0	0	0	0	14
WNW	0	0	0	0	1	9	4	0	0	0	0	0	14
NW	0	0	0	0	1	10	6	3	0	0	0	0	20
NNW	0	0	0	1	4	8	14	0	0	0	0	0	27
TOTAL	0	1	1	18	81	186	80	8	0	0	0	0	375

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 375
TOTAL HOURS FOR THE PERIOD: 375

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS B

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	1	3	8	3	0	0	0	0	0	15
NNE	0	0	0	4	3	2	3	0	0	0	0	0	12
NE	0	0	1	1	0	1	0	0	0	0	0	0	3
ENE	0	0	2	2	1	0	0	0	0	0	0	0	5
E	0	1	1	1	0	0	0	0	0	0	0	0	3
ESE	0	0	1	3	0	0	0	0	0	0	0	0	4
SE	0	0	0	3	3	2	1	0	0	0	0	0	9
SSE	0	0	0	0	4	4	2	2	0	0	0	0	12
S	0	0	0	1	1	2	1	0	0	0	0	0	5
SSW	0	0	0	1	1	1	0	0	0	0	0	0	3
SW	0	0	0	0	0	1	2	0	0	0	0	0	3
WSW	0	0	0	1	1	5	0	0	0	0	0	0	7
W	0	0	0	0	1	1	0	0	0	0	0	0	2
WNW	0	0	0	1	1	0	1	0	0	0	0	0	3
NW	0	0	1	1	2	2	2	0	0	0	0	0	8
NNW	0	0	0	0	1	4	3	0	0	0	0	0	8
TOTAL	0	1	6	20	22	33	18	2	0	0	0	0	102

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 102
TOTAL HOURS FOR THE PERIOD: 102

STABILITY CLASS C

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	1	3	7	7	0	0	0	0	0	18
NNE	0	0	0	2	5	2	1	0	0	0	0	0	10
NE	0	0	1	1	3	0	0	0	0	0	0	0	5
ENE	0	0	3	3	2	0	0	0	0	0	0	0	8
E	0	0	0	3	0	0	0	0	0	0	0	0	3
ESE	0	0	0	1	0	1	0	0	0	0	0	0	2
SE	0	0	0	1	5	3	0	0	0	0	0	0	9
SSE	0	0	1	2	3	7	3	0	0	0	0	0	16
S	0	0	0	0	1	0	5	1	0	0	0	0	7
SSW	0	0	0	0	3	2	0	0	0	0	0	0	5
SW	0	0	0	1	1	2	0	0	0	0	0	0	4
WSW	0	0	1	1	1	2	0	0	0	0	0	0	5
W	0	0	0	1	2	0	0	0	0	0	0	0	3
WNW	0	0	0	1	1	1	1	0	0	0	0	0	4
NW	0	0	0	2	3	6	1	0	0	0	0	0	12
NNW	0	0	0	3	2	7	3	0	0	0	0	0	15
TOTAL	0	0	6	23	35	40	21	1	0	0	0	0	126

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 126
TOTAL HOURS FOR THE PERIOD: 126

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS D

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	1	1	3	12	8	27	14	0	0	0	0	0	66
NNE	0	1	5	18	16	21	6	0	0	0	0	0	67
NE	1	1	2	5	14	17	1	0	0	0	0	0	41
ENE	0	2	2	8	12	7	0	0	0	0	0	0	31
E	0	3	10	4	9	0	0	0	0	0	0	0	26
ESE	0	2	7	13	13	11	1	0	0	0	0	0	47
SE	0	2	7	20	35	34	9	0	0	0	0	0	107
SSE	1	0	3	6	8	20	30	4	0	0	0	0	72
S	0	0	1	5	12	12	7	5	1	0	0	0	43
SSW	0	0	0	9	8	18	4	0	0	0	0	0	39
SW	0	0	1	8	3	8	2	0	0	0	0	0	22
WSW	0	2	1	5	2	1	0	0	0	0	0	0	11
W	1	0	1	7	6	1	0	0	0	0	0	0	16
WNW	0	0	3	7	4	9	3	0	0	0	0	0	26
NW	0	0	2	9	11	15	7	0	0	0	0	0	44
NNW	0	1	5	7	14	17	15	0	0	0	0	0	59
TOTAL	4	15	53	143	175	218	99	9	1	0	0	0	717

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 717
TOTAL HOURS FOR THE PERIOD: 717

STABILITY CLASS E

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	1	2	6	13	2	1	0	0	0	0	0	0	25
NNE	0	2	3	14	3	0	0	0	0	0	0	0	22
NE	0	0	2	11	11	6	0	0	0	0	0	0	30
ENE	1	1	2	11	3	5	0	0	0	0	0	0	23
E	3	2	0	8	3	0	0	0	0	0	0	0	16
ESE	0	3	13	9	2	2	0	0	0	0	0	0	29
SE	0	5	11	21	22	5	0	0	0	0	0	0	64
SSE	1	1	5	13	6	1	0	0	0	0	0	0	27
S	0	1	3	2	1	0	0	0	0	0	0	0	7
SSW	0	1	1	4	1	0	0	0	0	0	0	0	7
SW	2	2	2	2	1	0	0	0	0	0	0	0	9
WSW	0	4	1	0	0	0	0	0	0	0	0	0	5
W	0	2	2	2	0	0	0	0	0	0	0	0	6
WNW	1	2	3	5	2	0	0	0	0	0	0	0	13
NW	1	3	7	6	1	1	0	0	0	0	0	0	19
NNW	0	0	1	10	3	0	0	0	0	0	0	0	14
TOTAL	10	31	62	131	61	21	0	0	0	0	0	0	316

NUMBER OF CALMS: 2
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 318
TOTAL HOURS FOR THE PERIOD: 318

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS F

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	3	1	3	6	1	0	0	0	0	0	0	0	14
NNE	4	1	5	3	0	0	0	0	0	0	0	0	13
NE	0	1	2	14	3	0	0	0	0	0	0	0	20
ENE	0	4	1	6	3	2	0	0	0	0	0	0	16
E	3	1	4	1	0	0	0	0	0	0	0	0	9
ESE	0	5	8	2	1	0	0	0	0	0	0	0	16
SE	0	2	3	3	1	1	0	0	0	0	0	0	10
SSE	0	0	1	3	1	0	0	0	0	0	0	0	5
S	1	0	2	1	0	0	0	0	0	0	0	0	4
SSW	0	1	0	1	0	0	0	0	0	0	0	0	2
SW	0	0	2	0	0	0	0	0	0	0	0	0	2
WSW	1	0	1	0	0	0	0	0	0	0	0	0	2
W	1	2	0	0	0	0	0	0	0	0	0	0	3
WNW	1	5	4	3	0	0	0	0	0	0	0	0	13
NW	2	4	8	0	1	0	0	0	0	0	0	0	15
NNW	3	6	2	5	0	0	0	0	0	0	0	0	16
TOTAL	19	33	46	48	11	3	0	0	0	0	0	0	160

NUMBER OF CALMS: 1
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 161
TOTAL HOURS FOR THE PERIOD: 161

STABILITY CLASS G

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	15	16	10	4	0	0	0	0	0	0	0	0	45
NNE	38	8	2	1	0	0	0	0	0	0	0	0	49
NE	24	12	9	4	0	0	0	0	0	0	0	0	49
ENE	28	13	7	8	0	0	0	0	0	0	0	0	56
E	12	9	4	1	0	0	0	0	0	0	0	0	26
ESE	8	1	3	0	0	0	0	0	0	0	0	0	12
SE	2	2	1	1	0	0	0	0	0	0	0	0	6
SSE	1	1	1	0	0	0	0	0	0	0	0	0	3
S	0	1	0	0	0	0	0	0	0	0	0	0	1
SSW	1	0	0	0	0	0	0	0	0	0	0	0	1
SW	2	0	1	0	0	0	0	0	0	0	0	0	3
WSW	1	1	0	0	0	0	0	0	0	0	0	0	2
W	1	2	3	0	0	0	0	0	0	0	0	0	6
WNW	6	3	4	1	0	0	0	0	0	0	0	0	14
NW	10	20	8	0	0	0	0	0	0	0	0	0	38
NNW	15	33	14	4	0	0	0	0	0	0	0	0	66
TOTAL	164	122	67	24	0	0	0	0	0	0	0	0	377

NUMBER OF CALMS: 18
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 395
TOTAL HOURS FOR THE PERIOD: 395

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	1	3	9	42	78	12	0	0	0	0	145
NNE	0	1	2	7	9	62	64	10	0	0	0	0	155
NE	0	0	1	2	5	38	62	12	0	0	0	0	120
ENE	0	0	0	2	9	24	69	13	1	0	0	0	118
E	0	0	2	2	11	50	74	19	0	0	0	0	158
ESE	0	0	2	0	7	36	174	43	2	0	0	0	264
SE	0	0	0	2	6	27	87	31	4	0	0	0	157
SSE	0	0	1	3	7	27	147	50	19	1	0	0	255
S	0	1	0	1	6	47	69	42	10	0	0	0	176
SSW	0	0	1	3	3	22	37	24	1	0	0	0	91
SW	0	0	0	5	7	16	15	3	0	0	0	0	46
WSW	0	1	1	5	5	10	12	7	1	0	0	0	42
W	0	0	0	3	9	19	16	7	1	0	0	0	55
WNW	0	2	1	1	3	10	21	24	8	0	0	0	70
NW	0	0	1	3	12	26	34	24	6	0	0	0	106
NNW	0	1	0	5	4	45	71	25	6	0	0	0	157
TOTAL	0	6	13	47	112	501	1030	346	59	1	0	0	2115

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 69
NUMBER OF VALID HOURS: 2115
TOTAL HOURS FOR THE PERIOD: 2184

STABILITY CLASS A

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	0	2	2	0	0	0	0	4
NNE	0	0	0	0	0	0	2	1	0	0	0	0	3
NE	0	0	0	0	0	1	7	1	0	0	0	0	9
ENE	0	0	0	0	0	2	6	1	1	0	0	0	10
E	0	0	0	0	0	3	5	4	0	0	0	0	12
ESE	0	0	0	0	0	6	13	11	1	0	0	0	31
SE	0	0	0	0	0	1	4	6	0	0	0	0	11
SSE	0	0	0	0	0	0	4	14	2	0	0	0	20
S	0	0	0	0	0	0	3	1	0	0	0	0	4
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	0	1	0	0	0	1
NW	0	0	0	0	0	0	0	1	0	0	0	0	1
NNW	0	0	0	0	0	0	0	2	0	0	0	0	2
TOTAL	0	0	0	0	0	13	46	44	5	0	0	0	108

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 108
TOTAL HOURS FOR THE PERIOD: 108

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS B

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	0	2	2	0	0	0	0	4
NNE	0	0	0	0	0	5	1	0	0	0	0	0	6
NE	0	0	0	0	0	0	0	1	0	0	0	0	1
ENE	0	0	0	0	0	1	1	0	0	0	0	0	2
E	0	0	0	0	0	4	1	0	0	0	0	0	5
ESE	0	0	0	0	0	0	1	0	0	0	0	0	1
SE	0	0	0	0	0	1	3	2	0	0	0	0	6
SSE	0	0	0	0	0	0	5	3	2	0	0	0	10
S	0	0	0	0	0	0	3	4	0	0	0	0	7
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	1	1	0	0	0	2
NW	0	0	0	0	0	0	2	2	0	0	0	0	4
NNW	0	0	0	0	0	0	0	0	1	0	0	0	1
TOTAL	0	0	0	0	0	11	19	15	4	0	0	0	49

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 49
TOTAL HOURS FOR THE PERIOD: 49

STABILITY CLASS C

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	0	0	2	0	0	0	0	2
NNE	0	0	0	0	0	0	3	0	0	0	0	0	3
NE	0	0	0	0	0	2	1	1	0	0	0	0	4
ENE	0	0	0	0	0	1	1	0	0	0	0	0	2
E	0	0	0	0	0	3	1	0	0	0	0	0	4
ESE	0	0	0	0	0	2	4	0	0	0	0	0	6
SE	0	0	0	0	0	1	7	0	0	0	0	0	8
SSE	0	0	0	0	0	0	6	2	0	0	0	0	8
S	0	0	0	0	0	1	3	3	1	0	0	0	8
SSW	0	0	0	0	0	0	1	1	0	0	0	0	2
SW	0	0	0	0	0	0	1	0	0	0	0	0	1
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	2	1	0	0	0	3
NW	0	0	0	0	0	0	0	2	0	0	0	0	2
NNW	0	0	0	0	0	0	8	5	0	0	0	0	13
TOTAL	0	0	0	0	0	10	36	18	2	0	0	0	66

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 66
TOTAL HOURS FOR THE PERIOD: 66

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS D

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	1	5	25	43	3	0	0	0	0	77
NNE	0	0	0	3	5	24	25	7	0	0	0	0	64
NE	0	0	1	0	2	15	16	6	0	0	0	0	40
ENE	0	0	0	1	5	10	17	3	0	0	0	0	36
E	0	0	1	1	6	8	15	7	0	0	0	0	38
ESE	0	0	1	0	2	10	32	13	0	0	0	0	58
SE	0	0	0	2	3	10	16	11	2	0	0	0	44
SSE	0	0	0	1	1	7	39	24	11	1	0	0	84
S	0	0	0	0	1	13	31	31	5	0	0	0	81
SSW	0	0	0	1	2	9	22	20	1	0	0	0	55
SW	0	0	0	1	5	4	6	2	0	0	0	0	18
WSW	0	0	0	2	1	6	10	5	1	0	0	0	25
W	0	0	0	0	6	11	10	7	1	0	0	0	35
WNW	0	1	0	0	2	1	10	16	5	0	0	0	35
NW	0	0	0	2	4	12	14	18	6	0	0	0	56
NNW	0	0	0	3	2	29	30	13	4	0	0	0	81
TOTAL	0	1	3	18	52	194	336	186	36	1	0	0	827

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 827
TOTAL HOURS FOR THE PERIOD: 827

STABILITY CLASS E

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	1	0	2	12	26	3	0	0	0	0	44
NNE	0	0	0	0	0	15	29	2	0	0	0	0	46
NE	0	0	0	1	0	9	17	3	0	0	0	0	30
ENE	0	0	0	0	1	3	15	9	0	0	0	0	28
E	0	0	0	1	3	12	28	7	0	0	0	0	51
ESE	0	0	0	0	1	8	89	19	1	0	0	0	118
SE	0	0	0	0	0	5	42	12	2	0	0	0	61
SSE	0	0	1	0	0	9	82	7	4	0	0	0	103
S	0	0	0	0	2	12	28	3	4	0	0	0	49
SSW	0	0	0	0	0	6	13	3	0	0	0	0	22
SW	0	0	0	2	0	5	7	1	0	0	0	0	15
WSW	0	0	0	2	3	3	1	2	0	0	0	0	11
W	0	0	0	1	1	2	0	0	0	0	0	0	4
WNW	0	0	0	0	0	4	9	5	0	0	0	0	18
NW	0	0	0	0	0	5	12	1	0	0	0	0	18
NNW	0	0	0	0	0	10	30	5	1	0	0	0	46
TOTAL	0	0	2	7	13	120	428	82	12	0	0	0	664

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 664
TOTAL HOURS FOR THE PERIOD: 664

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS F

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	2	4	0	0	0	0	0	6
NNE	0	1	0	0	0	9	3	0	0	0	0	0	13
NE	0	0	0	0	2	3	11	0	0	0	0	0	16
ENE	0	0	0	0	1	3	13	0	0	0	0	0	17
E	0	0	0	0	1	8	12	1	0	0	0	0	22
ESE	0	0	0	0	1	3	19	0	0	0	0	0	23
SE	0	0	0	0	1	2	8	0	0	0	0	0	11
SSE	0	0	0	0	1	3	5	0	0	0	0	0	9
S	0	0	0	0	1	3	1	0	0	0	0	0	5
SSW	0	0	0	0	0	1	0	0	0	0	0	0	1
SW	0	0	0	0	0	4	1	0	0	0	0	0	5
WSW	0	0	0	1	0	1	1	0	0	0	0	0	3
W	0	0	0	0	1	3	4	0	0	0	0	0	8
WNW	0	0	0	0	0	0	2	0	0	0	0	0	2
NW	0	0	0	0	1	2	6	0	0	0	0	0	9
NNW	0	0	0	1	0	2	2	0	0	0	0	0	5
TOTAL	0	1	0	2	10	49	92	1	0	0	0	0	155

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 155
TOTAL HOURS FOR THE PERIOD: 155

STABILITY CLASS G

FROM 1/01/08 0:00 TO 3/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	2	2	3	1	0	0	0	0	0	8
NNE	0	0	2	4	4	9	1	0	0	0	0	0	20
NE	0	0	0	1	1	8	10	0	0	0	0	0	20
ENE	0	0	0	1	2	4	16	0	0	0	0	0	23
E	0	0	1	0	1	12	12	0	0	0	0	0	26
ESE	0	0	1	0	3	7	16	0	0	0	0	0	27
SE	0	0	0	0	2	7	7	0	0	0	0	0	16
SSE	0	0	0	2	5	8	6	0	0	0	0	0	21
S	0	1	0	1	2	18	0	0	0	0	0	0	22
SSW	0	0	1	2	1	6	1	0	0	0	0	0	11
SW	0	0	0	2	2	3	0	0	0	0	0	0	7
WSW	0	1	1	0	1	0	0	0	0	0	0	0	3
W	0	0	0	2	1	3	2	0	0	0	0	0	8
WNW	0	1	1	1	1	5	0	0	0	0	0	0	9
NW	0	0	1	1	7	7	0	0	0	0	0	0	16
NNW	0	1	0	1	2	4	1	0	0	0	0	0	9
TOTAL	0	4	8	20	37	104	73	0	0	0	0	0	246

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 246
TOTAL HOURS FOR THE PERIOD: 246

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	1	2	5	2	2	26	33	3	0	0	0	0	74
NNE	1	0	2	9	15	20	13	0	0	0	0	0	60
NE	0	1	1	9	7	17	39	2	0	0	0	0	76
ENE	0	0	2	10	8	23	24	0	1	0	0	0	68
E	0	1	0	12	9	18	9	3	0	0	0	0	52
ESE	1	0	3	9	13	52	98	18	2	0	0	0	196
SE	0	0	2	3	9	67	115	31	3	0	0	0	230
SSE	0	1	5	7	22	75	119	56	0	0	0	0	285
S	0	0	2	13	29	98	163	39	4	0	0	0	348
SSW	1	1	2	14	21	56	62	2	0	0	0	0	159
SW	1	0	1	5	16	44	21	6	0	0	0	0	94
WSW	0	2	3	8	20	49	27	0	0	0	0	0	109
W	1	1	3	4	19	49	26	0	0	0	0	0	103
WNW	0	0	3	6	11	40	24	5	2	0	0	0	91
NW	0	0	1	3	11	36	36	5	2	0	0	0	94
NNW	0	2	3	3	6	19	50	17	0	0	0	0	100
TOTAL	6	11	38	117	218	689	859	187	14	0	0	0	2139

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 45
NUMBER OF VALID HOURS: 2139
TOTAL HOURS FOR THE PERIOD: 2184

STABILITY CLASS A

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	1	0	0	0	0	0	0	1
NNE	0	0	0	0	0	1	0	0	0	0	0	0	1
NE	0	0	0	0	0	0	1	0	0	0	0	0	1
ENE	0	0	0	0	0	2	4	0	0	0	0	0	6
E	0	0	0	0	0	1	1	0	0	0	0	0	2
ESE	0	0	0	0	0	0	4	2	0	0	0	0	6
SE	0	0	0	0	0	0	5	3	0	0	0	0	8
SSE	0	0	0	0	0	1	2	9	0	0	0	0	12
S	0	0	0	0	0	0	3	2	1	0	0	0	6
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	1	0	0	0	0	0	0	0	1
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0	3	1	0	0	0	4
NW	0	0	0	0	0	0	2	1	0	0	0	0	3
NNW	0	0	0	0	0	0	0	2	0	0	0	0	2
TOTAL	0	0	0	0	1	6	22	22	2	0	0	0	53

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 53
TOTAL HOURS FOR THE PERIOD: 53

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS B

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	0	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0	0	0
ENE	0	0	0	0	0	3	1	0	0	0	0	0	4
E	0	0	0	0	0	0	0	0	0	0	0	0	0
ESE	0	0	0	0	1	0	0	0	0	0	0	0	1
SE	0	0	0	0	0	3	2	3	0	0	0	0	8
SSE	0	0	0	0	0	2	0	5	0	0	0	0	7
S	0	0	0	0	0	0	3	5	0	0	0	0	8
SSW	0	0	0	0	0	0	1	0	0	0	0	0	1
SW	0	0	0	0	0	1	0	0	0	0	0	0	1
WSW	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	1	0	0	0	0	0	1
WNW	0	0	0	0	0	0	3	0	1	0	0	0	4
NW	0	0	0	0	0	0	1	1	1	0	0	0	3
NNW	0	0	0	0	0	0	1	6	0	0	0	0	7
TOTAL	0	0	0	0	1	9	13	21	2	0	0	0	46

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 46
TOTAL HOURS FOR THE PERIOD: 46

STABILITY CLASS C

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	1	1	1	0	0	0	0	3
NNE	0	0	0	0	0	1	0	0	0	0	0	0	1
NE	0	0	0	0	0	2	0	0	0	0	0	0	2
ENE	0	0	0	0	1	1	3	0	0	0	0	0	5
E	0	0	0	0	0	2	0	0	0	0	0	0	2
ESE	0	0	0	0	0	1	2	0	0	0	0	0	3
SE	0	0	0	0	0	0	2	1	1	0	0	0	4
SSE	0	0	0	1	0	0	7	4	0	0	0	0	12
S	0	0	0	0	0	1	9	6	0	0	0	0	16
SSW	0	0	0	0	0	2	3	1	0	0	0	0	6
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	3	0	0	0	0	0	3
W	0	0	0	0	0	0	0	0	0	0	0	0	0
WNW	0	0	0	0	0	1	2	0	0	0	0	0	3
NW	0	0	0	0	0	1	1	0	0	0	0	0	2
NNW	0	0	0	0	0	1	0	2	0	0	0	0	3
TOTAL	0	0	0	1	1	14	33	15	1	0	0	0	65

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 65
TOTAL HOURS FOR THE PERIOD: 65

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS D

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	1	0	0	12	11	1	0	0	0	0	25
NNE	0	0	0	4	8	6	4	0	0	0	0	0	22
NE	0	0	0	5	4	5	6	0	0	0	0	0	20
ENE	0	0	1	2	4	6	8	0	0	0	0	0	21
E	0	1	0	4	1	3	0	0	0	0	0	0	9
ESE	1	0	1	4	3	16	20	4	0	0	0	0	49
SE	0	0	1	1	3	20	29	18	2	0	0	0	74
SSE	0	0	1	5	7	33	47	34	0	0	0	0	127
S	0	0	0	3	13	28	71	21	3	0	0	0	139
SSW	0	0	0	5	11	16	35	1	0	0	0	0	68
SW	0	0	1	1	10	14	9	6	0	0	0	0	41
WSW	0	1	1	5	12	28	18	0	0	0	0	0	65
W	0	0	0	1	13	27	22	0	0	0	0	0	63
WNW	0	0	1	2	6	22	11	2	0	0	0	0	44
NW	0	0	1	3	7	10	11	2	1	0	0	0	35
NNW	0	0	3	1	2	10	23	7	0	0	0	0	46
TOTAL	1	2	12	46	104	256	325	96	6	0	0	0	848

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 848
TOTAL HOURS FOR THE PERIOD: 848

STABILITY CLASS E

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	2	1	1	8	13	0	0	0	0	0	25
NNE	0	0	2	2	4	5	2	0	0	0	0	0	15
NE	0	0	1	3	1	5	14	2	0	0	0	0	26
ENE	0	0	0	0	0	3	3	0	1	0	0	0	7
E	0	0	0	2	3	5	7	3	0	0	0	0	20
ESE	0	0	1	1	1	23	50	12	2	0	0	0	90
SE	0	0	1	1	1	23	48	5	0	0	0	0	79
SSE	0	1	0	1	7	21	54	4	0	0	0	0	88
S	0	0	0	4	2	37	64	5	0	0	0	0	112
SSW	0	1	1	2	3	25	17	0	0	0	0	0	49
SW	0	0	0	2	1	10	10	0	0	0	0	0	23
WSW	0	0	1	2	1	13	5	0	0	0	0	0	22
W	0	0	3	1	1	9	1	0	0	0	0	0	15
WNW	0	0	0	2	2	6	3	0	0	0	0	0	13
NW	0	0	0	0	1	8	6	1	0	0	0	0	16
NNW	0	1	0	0	1	6	17	0	0	0	0	0	25
TOTAL	0	3	12	24	30	207	314	32	3	0	0	0	625

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 625
TOTAL HOURS FOR THE PERIOD: 625

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS F

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	2	3	0	0	0	0	0	5
NNE	0	0	0	3	0	3	6	0	0	0	0	0	12
NE	0	1	0	1	1	2	12	0	0	0	0	0	17
ENE	0	0	1	1	1	2	2	0	0	0	0	0	7
E	0	0	0	4	1	3	1	0	0	0	0	0	9
ESE	0	0	1	1	3	8	16	0	0	0	0	0	29
SE	0	0	0	0	3	14	25	1	0	0	0	0	43
SSE	0	0	2	0	3	11	4	0	0	0	0	0	20
S	0	0	0	2	6	21	9	0	0	0	0	0	38
SSW	0	0	0	4	4	6	4	0	0	0	0	0	18
SW	0	0	0	1	1	5	1	0	0	0	0	0	8
WSW	0	0	0	0	2	4	0	0	0	0	0	0	6
W	0	0	0	0	1	4	2	0	0	0	0	0	7
WNW	0	0	1	0	0	1	1	0	0	0	0	0	3
NW	0	0	0	0	1	7	5	0	0	0	0	0	13
NNW	0	1	0	1	2	1	4	0	0	0	0	0	9
TOTAL	0	2	5	18	29	94	95	1	0	0	0	0	244

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 244
TOTAL HOURS FOR THE PERIOD: 244

STABILITY CLASS G

FROM 4/01/08 0:00 TO 6/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	1	2	2	1	1	2	5	0	0	0	0	0	14
NNE	1	0	0	0	3	4	1	0	0	0	0	0	9
NE	0	0	0	0	1	3	6	0	0	0	0	0	10
ENE	0	0	0	7	2	6	3	0	0	0	0	0	18
E	0	0	0	2	4	4	0	0	0	0	0	0	10
ESE	0	0	0	3	5	4	6	0	0	0	0	0	18
SE	0	0	0	1	2	7	4	0	0	0	0	0	14
SSE	0	0	2	0	5	7	5	0	0	0	0	0	19
S	0	0	2	4	8	11	4	0	0	0	0	0	29
SSW	1	0	1	3	3	7	2	0	0	0	0	0	17
SW	1	0	0	1	3	14	1	0	0	0	0	0	20
WSW	0	1	1	1	5	4	1	0	0	0	0	0	13
W	1	1	0	2	4	9	0	0	0	0	0	0	17
WNW	0	0	1	2	3	10	4	0	0	0	0	0	20
NW	0	0	0	0	2	10	10	0	0	0	0	0	22
NNW	0	0	0	1	1	1	5	0	0	0	0	0	8
TOTAL	5	4	9	28	52	103	57	0	0	0	0	0	258

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 258
TOTAL HOURS FOR THE PERIOD: 258

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	1	1	4	8	12	41	70	1	0	0	0	0	138
NNE	0	1	5	11	19	61	69	3	0	0	0	0	169
NE	0	1	3	6	15	57	94	6	2	4	1	0	189
ENE	2	0	3	11	18	39	61	6	2	0	0	1	143
E	0	2	2	20	28	18	13	7	0	0	0	2	92
ESE	0	3	3	9	20	30	40	15	0	0	2	0	122
SE	0	0	8	12	19	31	16	2	4	1	1	0	94
SSE	0	2	2	8	18	22	12	4	9	0	0	0	77
S	1	3	3	15	19	45	25	7	0	0	0	0	118
SSW	0	3	2	12	16	60	29	3	1	0	0	0	126
SW	0	0	2	6	14	50	15	3	0	0	0	0	90
WSW	1	1	3	14	28	56	24	1	1	0	0	0	129
W	0	1	2	11	20	73	42	3	2	0	0	0	154
WNW	0	1	3	4	11	39	36	4	2	0	0	0	100
NW	0	1	3	7	8	38	8	5	0	0	0	0	70
NNW	1	2	3	5	9	24	22	0	0	0	0	0	66
TOTAL	6	22	51	159	274	684	576	70	23	5	4	3	1877

NUMBER OF CALMS: 1
NUMBER OF INVALID HOURS: 330
NUMBER OF VALID HOURS: 1878
TOTAL HOURS FOR THE PERIOD: 2208

STABILITY CLASS A

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	7	2	0	0	0	0	0	9
NNE	0	0	0	0	0	4	11	0	0	0	0	0	15
NE	0	0	0	0	0	7	17	1	0	0	0	0	25
ENE	0	0	0	0	0	1	21	5	0	0	0	0	27
E	0	0	0	0	0	1	6	3	0	0	0	0	10
ESE	0	0	0	0	0	1	1	2	0	0	0	0	4
SE	0	0	0	0	0	1	1	0	0	0	0	0	2
SSE	0	0	0	0	0	0	1	0	0	0	0	0	1
S	0	0	0	0	0	1	3	2	0	0	0	0	6
SSW	0	0	0	0	0	0	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	2	0	0	0	0	0	2
W	0	0	0	0	0	0	1	0	0	0	0	0	1
WNW	0	0	0	0	0	0	2	0	0	0	0	0	2
NW	0	0	0	0	0	2	3	0	0	0	0	0	5
NNW	0	0	0	0	0	0	6	0	0	0	0	0	6
TOTAL	0	0	0	0	0	25	77	13	0	0	0	0	115

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 115
TOTAL HOURS FOR THE PERIOD: 115

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS B

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	4	4	0	0	0	0	0	8
NNE	0	0	0	0	1	3	4	0	0	0	0	0	8
NE	0	0	0	0	0	5	3	0	0	0	0	0	8
ENE	0	0	0	0	0	1	2	0	0	0	0	0	3
E	0	0	0	2	0	1	0	0	0	0	0	0	3
ESE	0	0	0	0	1	0	0	1	0	0	0	0	2
SE	0	0	0	0	0	0	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	3	0	0	0	0	0	3
SSW	0	0	0	0	0	2	2	0	0	0	0	0	4
SW	0	0	0	0	0	3	0	0	0	0	0	0	3
WSW	0	0	0	0	1	1	2	0	0	0	0	0	4
W	0	0	0	0	0	1	3	0	0	0	0	0	4
WNW	0	0	0	0	0	0	3	1	0	0	0	0	4
NW	0	0	0	0	0	0	0	0	0	0	0	0	0
NNW	0	0	0	0	0	2	1	0	0	0	0	0	3
TOTAL	0	0	0	2	3	23	27	2	0	0	0	0	57

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 57
TOTAL HOURS FOR THE PERIOD: 57

STABILITY CLASS C

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	1	5	0	0	0	0	0	6
NNE	0	0	0	1	2	0	5	0	0	0	0	0	8
NE	0	0	0	1	0	1	3	0	0	0	0	0	5
ENE	0	0	0	0	2	1	1	0	0	0	0	0	4
E	0	0	0	1	0	0	1	0	0	0	0	0	2
ESE	0	0	0	0	0	0	1	0	0	0	0	0	1
SE	0	0	0	0	0	0	1	0	0	0	0	0	1
SSE	0	0	0	0	1	0	1	1	0	0	0	0	3
S	0	0	0	0	0	0	0	0	0	0	0	0	0
SSW	0	0	0	1	1	2	1	0	0	0	0	0	5
SW	0	0	0	0	0	0	1	0	0	0	0	0	1
WSW	0	0	0	0	0	5	4	0	0	0	0	0	9
W	0	0	0	0	1	3	6	0	0	0	0	0	10
WNW	0	0	0	0	0	3	3	0	0	0	0	0	6
NW	0	0	0	0	0	1	1	0	0	0	0	0	2
NNW	0	0	0	0	1	0	1	0	0	0	0	0	2
TOTAL	0	0	0	4	8	17	35	1	0	0	0	0	65

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 65
TOTAL HOURS FOR THE PERIOD: 65

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS D

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	1	3	5	12	10	1	0	0	0	0	32
NNE	0	1	1	4	5	16	15	0	0	0	0	0	42
NE	0	0	3	2	5	12	14	0	0	0	1	0	37
ENE	0	0	0	4	4	6	9	1	0	0	0	1	25
E	0	0	0	2	5	1	4	1	0	0	0	2	15
ESE	0	0	1	1	4	5	6	7	0	0	1	0	25
SE	0	0	0	6	4	5	6	1	3	0	0	0	25
SSE	0	0	0	3	5	7	5	1	4	0	0	0	25
S	1	0	2	4	8	18	11	3	0	0	0	0	47
SSW	0	0	0	3	6	15	17	3	1	0	0	0	45
SW	0	0	1	4	7	25	6	1	0	0	0	0	44
WSW	0	0	1	6	14	21	14	1	0	0	0	0	57
W	0	0	1	3	14	37	23	0	0	0	0	0	78
WNW	0	1	0	2	7	20	16	0	0	0	0	0	46
NW	0	0	0	2	6	15	1	0	0	0	0	0	24
NNW	0	0	0	1	5	15	4	0	0	0	0	0	25
TOTAL	1	2	11	50	104	230	161	20	8	0	2	3	592

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 592
TOTAL HOURS FOR THE PERIOD: 592

STABILITY CLASS E

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	1	0	1	1	2	4	9	0	0	0	0	0	18
NNE	0	0	3	3	6	10	13	2	0	0	0	0	37
NE	0	1	0	2	6	14	31	5	2	4	0	0	65
ENE	1	0	2	4	6	17	21	0	1	0	0	0	52
E	0	2	1	8	10	5	1	3	0	0	0	0	30
ESE	0	2	0	3	6	9	20	4	0	0	1	0	45
SE	0	0	2	3	11	12	3	1	1	1	1	0	35
SSE	0	2	0	4	8	7	4	2	5	0	0	0	32
S	0	1	0	5	4	11	8	2	0	0	0	0	31
SSW	0	1	0	2	4	23	9	0	0	0	0	0	39
SW	0	0	0	1	1	11	6	2	0	0	0	0	21
WSW	1	1	0	5	6	15	2	0	1	0	0	0	31
W	0	1	1	1	2	22	7	2	2	0	0	0	38
WNW	0	0	0	0	2	9	10	3	2	0	0	0	26
NW	0	0	1	3	0	8	1	5	0	0	0	0	18
NNW	1	2	2	0	0	1	6	0	0	0	0	0	12
TOTAL	4	13	13	45	74	178	151	31	14	5	2	0	530

NUMBER OF CALMS: 1
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 531
TOTAL HOURS FOR THE PERIOD: 531

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS F

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	1	3	3	2	16	0	0	0	0	0	25
NNE	0	0	0	2	3	12	13	1	0	0	0	0	31
NE	0	0	0	1	2	9	14	0	0	0	0	0	26
ENE	0	0	0	1	5	6	5	0	1	0	0	0	18
E	0	0	1	5	7	6	0	0	0	0	0	0	19
ESE	0	0	0	3	6	11	11	1	0	0	0	0	32
SE	0	0	2	0	3	7	3	0	0	0	0	0	15
SSE	0	0	1	0	2	3	1	0	0	0	0	0	7
S	0	1	1	3	3	11	0	0	0	0	0	0	19
SSW	0	1	1	1	4	9	0	0	0	0	0	0	16
SW	0	0	1	0	1	5	1	0	0	0	0	0	8
WSW	0	0	0	0	1	10	0	0	0	0	0	0	11
W	0	0	0	2	2	4	0	1	0	0	0	0	9
WNW	0	0	1	2	0	4	0	0	0	0	0	0	7
NW	0	0	0	1	2	5	0	0	0	0	0	0	8
NNW	0	0	0	4	1	0	0	0	0	0	0	0	5
TOTAL	0	2	9	28	45	104	64	3	1	0	0	0	256

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 256
TOTAL HOURS FOR THE PERIOD: 256

STABILITY CLASS G

FROM 7/01/08 0:00 TO 9/30/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	1	1	1	2	11	24	0	0	0	0	0	40
NNE	0	0	1	1	2	16	8	0	0	0	0	0	28
NE	0	0	0	0	2	9	12	0	0	0	0	0	23
ENE	1	0	1	2	1	7	2	0	0	0	0	0	14
E	0	0	0	2	6	4	1	0	0	0	0	0	13
ESE	0	1	2	2	3	4	1	0	0	0	0	0	13
SE	0	0	4	3	1	6	2	0	0	0	0	0	16
SSE	0	0	1	1	2	5	0	0	0	0	0	0	9
S	0	1	0	3	4	4	0	0	0	0	0	0	12
SSW	0	1	1	5	1	9	0	0	0	0	0	0	17
SW	0	0	0	1	5	6	1	0	0	0	0	0	13
WSW	0	0	2	3	6	4	0	0	0	0	0	0	15
W	0	0	0	5	1	6	2	0	0	0	0	0	14
WNW	0	0	2	0	2	3	2	0	0	0	0	0	9
NW	0	1	2	1	0	7	2	0	0	0	0	0	13
NNW	0	0	1	0	2	6	4	0	0	0	0	0	13
TOTAL	1	5	18	30	40	107	61	0	0	0	0	0	262

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 262
TOTAL HOURS FOR THE PERIOD: 262

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	1	1	3	11	56	92	18	1	0	0	0	183
NNE	0	1	2	7	21	63	93	16	2	0	0	0	205
NE	1	1	0	7	8	38	81	9	0	0	0	0	145
ENE	0	3	1	9	15	52	79	32	0	0	0	0	191
E	1	1	3	15	17	52	34	16	4	0	0	0	143
ESE	1	1	2	6	8	45	178	53	5	0	0	0	299
SE	1	1	3	4	6	40	96	21	2	0	0	0	174
SSE	0	1	1	1	9	24	44	31	7	0	0	0	118
S	0	0	1	4	11	39	32	9	7	0	0	0	103
SSW	1	0	2	3	7	30	33	2	0	0	0	0	78
SW	0	1	1	6	2	18	20	1	1	0	0	0	50
WSW	1	0	2	4	15	34	11	0	0	0	0	0	67
W	1	0	3	3	4	37	20	2	1	0	0	0	71
WNW	0	2	0	5	12	19	31	10	3	0	0	0	82
NW	0	0	1	8	11	40	58	18	2	0	0	0	138
NNW	1	2	1	6	11	43	65	15	1	0	0	0	145
TOTAL	8	15	24	91	168	630	967	253	36	0	0	0	2192

NUMBER OF CALMS: 2
NUMBER OF INVALID HOURS: 14
NUMBER OF VALID HOURS: 2194
TOTAL HOURS FOR THE PERIOD: 2208

STABILITY CLASS A

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	4	22	3	0	0	0	0	29
NNE	0	0	0	1	2	10	18	6	1	0	0	0	38
NE	0	0	0	0	2	12	18	3	0	0	0	0	35
ENE	0	0	0	0	0	10	12	3	0	0	0	0	25
E	0	0	0	0	1	7	10	0	0	0	0	0	18
ESE	0	0	0	0	0	13	33	12	2	0	0	0	60
SE	0	1	0	0	1	12	19	2	1	0	0	0	36
SSE	0	0	0	0	2	1	8	10	2	0	0	0	23
S	0	0	0	0	1	3	8	1	1	0	0	0	14
SSW	0	0	0	0	2	2	3	1	0	0	0	0	8
SW	0	0	0	0	0	1	1	0	0	0	0	0	2
WSW	0	0	0	0	2	10	4	0	0	0	0	0	16
W	0	0	0	1	0	5	8	2	1	0	0	0	17
WNW	0	0	0	0	0	0	9	3	1	0	0	0	13
NW	0	0	0	0	0	3	10	5	2	0	0	0	20
NNW	0	0	0	0	0	3	15	3	0	0	0	0	21
TOTAL	0	1	0	2	13	96	198	54	11	0	0	0	375

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 375
TOTAL HOURS FOR THE PERIOD: 375

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS B

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	3	5	7	2	0	0	0	0	17
NNE	0	0	0	0	2	4	1	4	0	0	0	0	11
NE	0	0	0	0	1	3	0	0	0	0	0	0	4
ENE	0	0	0	2	3	0	1	0	0	0	0	0	6
E	0	0	0	1	2	2	0	0	0	0	0	0	5
ESE	0	1	0	1	2	1	3	0	0	0	0	0	8
SE	0	0	0	0	1	1	2	0	0	0	0	0	4
SSE	0	0	0	0	0	3	2	3	1	0	0	0	9
S	0	0	0	1	1	3	2	0	0	0	0	0	7
SSW	0	0	0	0	1	0	2	0	0	0	0	0	3
SW	0	0	0	1	0	0	2	0	1	0	0	0	4
WSW	0	0	0	0	0	5	1	0	0	0	0	0	6
W	0	0	0	0	0	3	0	0	0	0	0	0	3
WNW	0	0	0	0	1	1	1	1	1	0	0	0	5
NW	0	0	0	0	0	1	1	2	0	0	0	0	4
NNW	0	0	0	0	1	0	3	2	0	0	0	0	6
TOTAL	0	1	0	6	18	32	28	14	3	0	0	0	102

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 102
TOTAL HOURS FOR THE PERIOD: 102

STABILITY CLASS C

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	1	1	4	8	2	0	0	0	0	16
NNE	0	0	0	0	3	7	4	2	0	0	0	0	16
NE	0	0	0	0	1	1	2	0	0	0	0	0	4
ENE	0	0	0	1	1	2	1	1	0	0	0	0	6
E	0	0	0	3	1	1	0	0	0	0	0	0	5
ESE	0	0	0	0	0	1	5	3	1	0	0	0	10
SE	0	0	0	1	0	3	2	1	0	0	0	0	7
SSE	0	0	0	0	1	2	3	2	0	0	0	0	8
S	0	0	0	0	0	3	1	3	1	0	0	0	8
SSW	0	0	0	0	0	3	2	0	0	0	0	0	5
SW	0	0	0	0	0	2	2	0	0	0	0	0	4
WSW	0	0	0	1	1	1	1	0	0	0	0	0	4
W	0	0	0	0	0	5	0	0	0	0	0	0	5
WNW	0	0	0	0	2	0	2	1	0	0	0	0	5
NW	0	0	0	1	2	4	6	1	0	0	0	0	14
NNW	0	0	0	0	1	5	2	1	0	0	0	0	9
TOTAL	0	0	0	8	14	44	41	17	2	0	0	0	126

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 126
TOTAL HOURS FOR THE PERIOD: 126

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS D

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	2	4	19	22	11	1	0	0	0	59
NNE	0	0	0	4	10	16	46	4	1	0	0	0	81
NE	1	0	0	2	2	4	12	1	0	0	0	0	22
ENE	0	2	0	1	3	9	29	13	0	0	0	0	57
E	0	0	2	2	1	3	6	7	4	0	0	0	25
ESE	0	0	0	1	0	7	60	22	1	0	0	0	91
SE	0	0	1	2	0	10	34	16	1	0	0	0	64
SSE	0	0	0	1	2	8	25	16	4	0	0	0	56
S	0	0	1	1	3	9	16	5	5	0	0	0	40
SSW	0	0	0	1	3	19	22	1	0	0	0	0	46
SW	0	1	0	2	1	6	10	1	0	0	0	0	21
WSW	0	0	0	0	6	9	4	0	0	0	0	0	19
W	1	0	0	0	1	4	3	0	0	0	0	0	9
WNW	0	0	0	0	3	7	12	5	1	0	0	0	28
NW	0	0	1	1	4	7	24	9	0	0	0	0	46
NNW	0	0	1	3	5	15	19	9	1	0	0	0	53
TOTAL	2	3	6	23	48	152	344	120	19	0	0	0	717

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 717
TOTAL HOURS FOR THE PERIOD: 717

STABILITY CLASS E

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	1	5	13	0	0	0	0	0	19
NNE	0	0	1	0	2	13	11	0	0	0	0	0	27
NE	0	0	0	0	0	6	14	1	0	0	0	0	21
ENE	0	0	0	0	2	6	19	11	0	0	0	0	38
E	0	0	0	0	1	3	7	6	0	0	0	0	17
ESE	0	0	1	1	1	8	43	12	0	0	0	0	66
SE	0	0	1	0	0	5	27	2	0	0	0	0	35
SSE	0	1	0	0	3	3	6	0	0	0	0	0	13
S	0	0	0	0	1	6	4	0	0	0	0	0	11
SSW	0	0	1	0	0	2	2	0	0	0	0	0	5
SW	0	0	0	1	0	5	4	0	0	0	0	0	10
WSW	0	0	1	1	1	5	0	0	0	0	0	0	8
W	0	0	1	0	1	2	5	0	0	0	0	0	9
WNW	0	1	0	1	1	3	4	0	0	0	0	0	10
NW	0	0	0	0	1	4	4	1	0	0	0	0	10
NNW	0	0	0	1	1	2	15	0	0	0	0	0	19
TOTAL	0	2	6	5	16	78	178	33	0	0	0	0	318

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 318
TOTAL HOURS FOR THE PERIOD: 318

RIVER BEND STATION
JOINT FREQUENCY TABLE
STABILITY CLASS F

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	0	0	0	0	6	13	0	0	0	0	0	19
NNE	0	0	0	0	0	3	9	0	0	0	0	0	12
NE	0	0	0	1	2	1	13	4	0	0	0	0	21
ENE	0	0	0	1	2	5	4	4	0	0	0	0	16
E	0	0	0	2	2	6	6	2	0	0	0	0	18
ESE	0	0	1	0	0	5	18	2	1	0	0	0	27
SE	0	0	0	0	0	3	3	0	0	0	0	0	6
SSE	0	0	0	0	0	1	0	0	0	0	0	0	1
S	0	0	0	1	2	2	0	0	0	0	0	0	5
SSW	0	0	0	0	0	2	1	0	0	0	0	0	3
SW	0	0	0	0	0	0	0	0	0	0	0	0	0
WSW	0	0	0	0	1	1	0	0	0	0	0	0	2
W	0	0	0	0	0	1	3	0	0	0	0	0	4
WNW	0	1	0	1	1	0	0	0	0	0	0	0	3
NW	0	0	0	0	3	8	4	0	0	0	0	0	15
NNW	0	0	0	0	1	4	4	0	0	0	0	0	9
TOTAL	0	1	1	6	14	48	78	12	1	0	0	0	161

NUMBER OF CALMS: 0
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 161
TOTAL HOURS FOR THE PERIOD: 161

STABILITY CLASS G

FROM 10/01/08 0:00 TO 12/31/08 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND DIR	.22-.50	.51-.75	.76-1.0	1.1-1.5	1.6-2.0	2.1-3.0	3.1-5.0	5.1-7.0	7.1-10.0	10.1-13.0	13.1-18.0	>18	TOT.
N	0	1	1	0	2	13	7	0	0	0	0	0	24
NNE	0	1	1	2	2	10	4	0	0	0	0	0	20
NE	0	1	0	4	0	11	22	0	0	0	0	0	38
ENE	0	1	1	4	4	20	13	0	0	0	0	0	43
E	1	1	1	7	9	30	5	1	0	0	0	0	55
ESE	1	0	0	3	5	10	16	2	0	0	0	0	37
SE	1	0	1	1	4	6	9	0	0	0	0	0	22
SSE	0	0	1	0	1	6	0	0	0	0	0	0	8
S	0	0	0	1	3	13	1	0	0	0	0	0	18
SSW	1	0	1	2	1	2	1	0	0	0	0	0	8
SW	0	0	1	2	1	4	1	0	0	0	0	0	9
WSW	1	0	1	2	4	3	1	0	0	0	0	0	12
W	0	0	2	2	2	17	1	0	0	0	0	0	24
WNW	0	0	0	3	4	8	3	0	0	0	0	0	18
NW	0	0	0	6	1	13	9	0	0	0	0	0	29
NNW	1	2	0	2	2	14	7	0	0	0	0	0	28
TOTAL	6	7	11	41	45	180	100	3	0	0	0	0	393

NUMBER OF CALMS: 2
NUMBER OF INVALID HOURS: 0
NUMBER OF VALID HOURS: 395
TOTAL HOURS FOR THE PERIOD: 395

Table 7

Effluent and Waste Disposal Annual Report 2008 Year
ATMOSPHERIC DISPERSION AND DEPOSITION RATES FOR THE MAXIMUM INDIVIDUAL DOSE CALCULATIONS

Analysis	Location (meters)	Ground Level Releases	Mixed Mode Releases
Gamma air dose (3) and Beta Air Dose	994 m WNW (Containment)	CHI/Q - 421.0	CHI/Q - 33.1
Maximum Receptor (4)	994 m WNW	CHI/Q - 421.0	CHI/Q - 33.1
Resident		D/Q - 50.3	D/Q - 18.0
Garden			
Meat animal			
Immersion			
Milk animal (5)	7,000 m WNW	CHI/Q - 3.58 D/Q - 0.38	CHI/Q - .870 D/Q - .223
Other on-site Receptors	115 m ENE	CHI/Q - 5977.0 D/Q - 529.7	CHI/Q - 407.5 D/Q - 46.9
	275 m N	CHI/Q - 1644.0 D/Q - 345.6	CHI/Q - 169.1 D/Q - 68.4
	2500 SW	CHI/Q - 34.45 D/Q - 3.35	CHI/Q - 4.65 D/Q - 1.40

Notes:
(1) All CHI/Q = 10^{-7} sec/m^3
(2) All D/Q = 10^{-9} m^{-2}
(3) Maximum offsite location (property boundary) with highest CHI/Q (unoccupied).
(4) Maximum hypothetical occupied offsite location with highest CHI/Q and D/Q.
(5) No milk animal within 5 miles radius, hypothetical location in worst sector.

Table 8

GROUND MONITORING WELL SAMPLES (H-3) - RBS

LLD (pCi/l)			3000
LAB ID	LOCATION	DATE	TRITIUM
20080185	EB-1	1/29/2008	< 560
20080190	MW-05	1/29/2008	< 486
20080191	EB-2	1/29/2008	< 560
20080192	MW-08	1/29/2008	< 561
20080193	EB-3	1/29/2008	< 554
20080194	MW-02	1/29/2008	< 559
20080195	MW-02 dup	1/29/2008	< 578
20080196	EB-4	1/29/2008	< 575
20080197	MW-10	1/29/2008	< 565
20080198	EB-5	1/29/2008	< 566
20080199	MW-09	1/29/2008	< 545
20080200	EB-6	1/29/2008	< 566
20080201	MW-07	1/29/2008	< 574
20080202	EB-7	1/29/2008	< 560
20080576	EB-1	5/14/2008	< 568
20080577	MW-08	5/14/2008	< 576
20080578	EB-02	5/14/2008	< 570
20080579	MW-05	5/14/2008	< 599
20080580	EB-3	5/14/2008	< 566
20080581	MW-02	5/14/2008	< 584
20080582	EB-4	5/14/2008	< 576
20080583	MW-10	5/14/2008	< 609
20080584	EB-05	5/14/2008	< 618
20080585	MW-9	5/14/2008	< 588
20080586	EB-06	5/14/2008	< 569
20080587	MW-07	5/14/2008	< 572
20080588	MW-07D	5/14/2008	< 595
20080589	EB-7	5/14/2008	< 566
20080905	EB-01	8/6/2008	< 565
20080906	MW-05	8/6/2008	< 569

Table 8
(continued)
GROUND MONITORING WELL SAMPLES (H-3) - RBS

LLD (pCi/l)			3000
LAB ID	LOCATION	DATE	TRITIUM
20080907	EB-02	8/6/2008	< 581
20080908	MW-08	8/6/2008	< 578
20080909	EB-03	8/6/2008	< 567
20080910	MW-02	8/6/2008	< 577
20080911	MW-02D	8/6/2008	< 581
20080912	EB-04	8/6/2008	< 584
20080913	MW-10	8/6/2008	< 584
20080914	EB-05	8/6/2008	< 567
20080915	MW-09	8/6/2008	< 578
20080916	EB-06	8/6/2008	< 566
20080917	MW-07	8/6/2008	< 565
20080918	EB-07	8/6/2008	< 565
20081324	EB-1	11/19/2008	< 560
20081325	MW-20	11/19/2008	< 568
20081326	EB-2	11/19/2008	< 567
20081327	MW-19	11/19/2008	< 565
20081328	EB-3	11/19/2008	< 566
20081329	MW-03	11/19/2008	< 565
20081330	EB-4	11/19/2008	< 561
20081331	MW-17	11/19/2008	< 563
20081332	MW-17D	11/19/2008	< 562
20081333	EB-5	11/19/2008	< 575
20081334	MW-11	11/19/2008	< 569
20081335	EB-6	11/19/2008	< 564
20081336	MW-15	11/19/2008	< 571
20081337	EB-7	11/19/2008	< 565
20081338	MW-08	11/20/2008	< 562
20081339	EB-8	11/19/2008	< 560
20081340	MW-05	11/19/2008	< 560
20081341	EB-9	11/19/2008	< 563

Table 8
(continued)

GROUND MONITORING WELL SAMPLES (H-3) - RBS

LLD (pCi/l)			3000
LAB ID	LOCATION	DATE	TRITIUM
20081342	MW-02	11/20/2008	< 562
20081343	eb-10	11/20/2008	< 560
20081344	MW-10	11/20/2008	< 577
20081345	EB-11	11/20/2008	< 561
20081346	MW-09	11/20/2008	< 564
20081347	EB-12	11/20/2008	< 559
20081348	MW-07	11/20/2008	< 571
20081349	EB-13	11/20/2008	< 565
20081350	MW-02 D	11/20/2008	< 584

MW – Monitoring Well

EB – Equipment Blank

D – Duplicate

DUP - Duplicat

Table 8
(Continued)
GROUND MONTORING WELL SAMPLES (GAMMA) - RBS

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	LOCATION	DATE	MN-54	C0-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
20080185	EB-1	1/29/2008	< 10.16	< 10.82	< 16.22	< 10.12	< 18.23	< 10.88	< 13.11	< 9.57	< 10.35	< 9.03	< 34.21	< 14.32
20080190	MW-05	1/29/2008	< 12.89	< 9.73	< 17.39	< 10.24	< 18.22	< 11.64	< 12.83	< 9.02	< 11.27	< 10.97	< 36.65	< 14.94
20080191	EB-2	1/29/2008	< 11.45	< 12.22	< 19.68	< 11.24	< 20.01	< 12.73	< 13.43	< 10.39	< 12.08	< 11.86	< 43.57	< 14.61
20080192	MW-08	1/29/2008	< 11.81	< 11.03	< 17.91	< 11.72	< 28.76	< 11.45	< 11.06	< 10.80	< 12.04	< 12.94	< 29.51	< 13.20
20080193	EB-3	1/29/2008	< 9.80	< 8.37	< 17.23	< 8.44	< 24.61	< 9.75	< 17.69	< 9.29	< 10.03	< 8.59	< 33.15	< 11.61
20080194	MW-02	1/29/2008	< 14.85	< 11.97	< 21.27	< 9.95	< 16.76	< 12.64	< 16.54	< 11.15	< 11.90	< 9.74	< 39.49	< 6.46
20080195	MW-02 dup	1/29/2008	< 12.26	< 8.27	< 20.77	< 12.28	< 28.07	< 14.31	< 26.40	< 13.50	< 13.57	< 16.51	< 47.38	< 12.05
20080196	EB-4	1/29/2008	< 8.96	< 6.73	< 19.62	< 11.16	< 24.23	< 10.95	< 13.45	< 10.55	< 10.11	< 11.13	< 36.34	< 13.22
20080197	MW-10	1/29/2008	< 9.70	< 9.28	< 21.42	< 9.43	< 25.96	< 14.55	< 19.94	< 11.37	< 10.93	< 9.80	< 36.10	< 11.23
20080198	EB-5	1/29/2008	< 11.44	< 8.58	< 19.13	< 9.27	< 13.04	< 11.25	< 18.27	< 9.39	< 13.00	< 11.62	< 39.01	< 10.72
20080199	MW-09	1/29/2008	< 5.43	< 11.94	< 26.06	< 11.16	< 23.09	< 13.34	< 22.06	< 11.37	< 12.29	< 10.95	< 46.98	< 12.00
20080200	EB-6	1/29/2008	< 8.43	< 6.26	< 15.44	< 6.12	< 24.32	< 8.76	< 15.85	< 10.64	< 12.87	< 10.61	< 30.48	< 14.62
20080201	MW-07	1/29/2008	< 12.25	< 8.99	< 17.73	< 11.03	< 25.34	< 14.52	< 17.20	< 9.97	< 11.39	< 12.79	< 26.64	< 13.58
20080202	EB-7	1/29/2008	< 8.71	< 10.16	< 23.83	< 10.13	< 21.60	< 8.67	< 14.63	< 9.21	< 7.65	< 11.05	< 29.05	< 13.55
20080576	EB-1	5/14/2008	< 14.36	< 11.87	< 20.94	< 13.41	< 23.19	< 12.46	< 14.26	< 7.68	< 11.53	< 10.19	< 36.75	< 9.99

Table 8
(Continued)

GROUND MONTORING WELL SAMPLES (GAMMA) - RBS

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	LOCATION	DATE	MN-54	C0-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
20080577	MW-08	5/14/2008	< 9.65	< 7.58	< 9.75	< 5.50	< 17.96	< 11.26	< 17.03	< 9.52	< 10.75	< 8.34	< 32.65	< 10.54
20080578	EB-02	5/14/2008	< 9.37	< 6.28	< 14.09	< 7.11	< 15.30	< 10.23	< 14.35	< 7.01	< 9.67	< 8.17	< 30.26	< 6.78
20080579	MW-05	5/14/2008	< 11.73	< 13.09	< 22.06	< 14.56	< 24.77	< 14.68	< 15.75	< 11.18	< 11.49	< 13.44	< 44.61	< 4.03
20080580	EB-3	5/14/2008	< 11.33	< 8.92	< 23.31	< 7.11	< 24.51	< 11.49	< 16.43	< 7.42	< 11.33	< 7.66	< 28.86	< 9.66
20080581	MW-02	5/14/2008	< 10.64	< 10.46	< 18.05	< 10.21	< 20.83	< 11.21	< 21.61	< 13.01	< 14.42	< 10.70	< 37.23	< 14.45
20080582	EB-4	5/14/2008	< 11.83	< 10.49	< 14.49	< 9.63	< 13.06	< 13.06	< 19.92	< 8.91	< 12.67	< 14.73	< 39.67	< 12.24
20080583	MW-10	5/14/2008	< 10.67	< 10.60	< 22.02	< 12.47	< 28.13	< 14.61	< 18.27	< 12.71	< 12.53	< 11.48	< 38.85	< 14.73
20080584	EB-05	5/14/2008	< 10.82	< 9.10	< 17.73	< 7.48	< 23.67	< 11.96	< 24.07	< 10.17	< 7.76	< 12.23	< 35.56	< 14.92
20080585	MW-9	5/14/2008	< 11.83	< 7.72	< 19.88	< 7.15	< 22.94	< 14.56	< 14.55	< 12.58	< 14.52	< 9.57	< 39.32	< 9.05
20080586	EB-06	5/14/2008	< 11.00	< 6.00	< 14.74	< 7.95	< 23.24	< 6.90	< 21.90	< 10.55	< 8.95	< 12.89	< 39.66	< 12.84
20080587	MW-07	5/14/2008	< 11.97	< 10.11	< 24.61	< 9.34	< 18.14	< 14.08	< 12.66	< 9.76	< 13.04	< 10.43	< 37.78	< 13.96
20080588	MW-07D	5/14/2008	< 10.10	< 14.26	< 21.09	< 7.89	< 18.22	< 12.75	< 17.97	< 10.77	< 11.73	< 10.19	< 41.74	< 14.90
20080589	EB-7	5/14/2008	< 10.42	< 11.48	< 13.94	< 6.44	< 19.25	< 10.37	< 14.63	< 11.17	< 10.02	< 9.11	< 33.95	< 11.10
20080905	EB-01	8/6/2008	< 14.96	< 8.22	< 14.59	< 9.65	< 26.76	< 9.84	< 23.57	< 12.66	< 12.22	< 11.85	< 41.42	< 12.75
20080906	MW-05	8/6/2008	< 10.76	< 9.50	< 18.15	< 8.81	< 18.44	< 8.40	< 14.67	< 8.71	< 8.79	< 8.72	< 33.72	< 14.18

Table 8
(Continued)

GROUND MONTORING WELL SAMPLES (GAMMA) - RBS

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	LOCATION	DATE	MN-54	C0-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
20080907	EB-02	8/6/2008	< 8.61	< 12.54	< 16.17	< 12.01	< 12.15	< 10.44	< 16.06	< 10.57	< 9.26	< 8.43	< 40.59	< 13.79
20080908	MW-08	8/6/2008	< 11.85	< 9.46	< 17.41	< 9.14	< 18.00	< 10.58	< 13.50	< 8.49	< 10.73	< 8.59	< 26.91	< 12.03
20080909	EB-03	8/6/2008	< 10.28	< 9.63	< 13.15	< 10.48	< 22.78	< 13.13	< 16.42	< 11.21	< 12.98	< 12.00	< 39.83	< 13.81
20080910	MW-02	8/6/2008	< 9.78	< 9.30	< 24.99	< 8.18	< 20.34	< 12.55	< 17.17	< 10.29	< 12.24	< 9.08	< 34.58	< 9.64
20080911	MW-02D	8/6/2008	< 10.82	< 13.33	< 23.07	< 14.19	< 22.45	< 14.26	< 20.56	< 13.11	< 12.12	< 9.80	< 31.95	< 12.21
20080912	EB-04	8/6/2008	< 11.95	< 9.79	< 24.28	< 7.09	< 22.97	< 11.12	< 15.52	< 10.19	< 8.38	< 11.96	< 30.94	< 9.89
20080913	MW-10	8/6/2008	< 9.03	< 8.94	< 15.99	< 11.44	< 18.73	< 13.53	< 17.39	< 11.07	< 11.92	< 8.59	< 33.28	< 14.94
20080914	EB-05	8/6/2008	< 10.01	< 8.25	< 15.34	< 8.64	< 21.47	< 9.16	< 16.50	< 10.25	< 10.60	< 8.23	< 32.67	< 11.90
20080915	MW-09	8/6/2008	< 10.24	< 9.51	< 13.75	< 10.31	< 15.96	< 11.51	< 10.58	< 10.31	< 8.69	< 11.07	< 31.95	< 12.46
20080916	EB-06	8/6/2008	< 9.45	< 9.02	< 17.22	< 7.04	< 24.04	< 9.50	< 20.32	< 10.36	< 10.18	< 11.76	< 40.37	< 10.98
20080917	MW-07	8/6/2008	< 10.76	< 10.90	< 21.17	< 12.46	< 25.88	< 12.43	< 11.81	< 9.92	< 12.14	< 10.83	< 40.06	< 14.58
20080918	EB-07	8/6/2008	< 8.97	< 9.03	< 19.43	< 8.98	< 17.24	< 11.58	< 16.69	< 9.27	< 10.26	< 9.46	< 28.33	< 10.22
20081324	EB-1	11/19/2008	< 9.48	< 6.39	< 19.36	< 8.09	< 21.90	< 10.26	< 13.09	< 8.33	< 9.80	< 11.49	< 32.71	< 13.54
20081325	MW-20	11/19/2008	< 8.83	< 10.75	< 9.45	< 11.12	< 20.42	< 11.28	< 18.48	< 10.16	< 7.91	< 7.81	< 31.87	< 14.93
20081326	EB-2	11/19/2008	< 11.59	< 8.72	< 20.05	< 7.89	< 22.65	< 12.43	< 18.64	< 8.20	< 10.55	< 10.04	< 40.12	< 12.72

Table 8
(Continued)

GROUND MONTORING WELL SAMPLES (GAMMA) - RBS

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	LOCATION	DATE	MN-54	C0-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
20081327	MW-19	11/19/2008	< 9.99	< 8.74	< 13.33	< 5.81	< 19.65	< 9.00	< 11.82	< 9.80	< 8.13	< 8.03	< 30.04	< 7.92
20081328	EB-3	11/19/2008	< 10.11	< 9.08	< 16.37	< 8.79	< 19.38	< 9.92	< 20.04	< 9.99	< 10.92	< 10.67	< 27.49	< 13.63
20081329	MW-03	11/19/2008	< 9.58	< 10.55	< 19.11	< 7.86	< 24.65	< 11.45	< 11.02	< 13.49	< 11.25	< 12.62	< 41.44	< 12.39
20081330	EB-4	11/19/2008	< 8.01	< 9.32	< 24.53	< 6.44	< 13.83	< 11.90	< 11.49	< 12.63	< 7.40	< 11.42	< 42.06	< 8.23
20081331	MW-17	11/19/2008	< 8.24	< 8.42	< 15.53	< 5.49	< 18.67	< 8.60	< 10.62	< 9.50	< 7.94	< 9.75	< 33.21	< 12.05
20081332	MW-17D	11/19/2008	< 10.26	< 9.46	< 14.58	< 7.66	< 22.12	< 9.92	< 14.18	< 11.77	< 9.95	< 9.43	< 44.34	< 14.71
20081333	EB-5	11/19/2008	< 7.49	< 9.20	< 14.63	< 9.35	< 18.04	< 8.06	< 18.84	< 14.16	< 7.49	< 9.51	< 42.12	< 13.09
20081334	MW-11	11/19/2008	< 8.39	< 8.55	< 13.90	< 9.37	< 23.32	< 6.78	< 15.85	< 14.31	< 10.24	< 8.92	< 35.71	< 9.32
20081335	EB-6	11/19/2008	< 7.05	< 9.45	< 17.23	< 13.02	< 28.40	< 11.86	< 22.87	< 13.38	< 10.81	< 7.78	< 40.69	< 14.14
20081336	MW-15	11/19/2008	< 9.98	< 7.56	< 20.99	< 9.71	< 21.72	< 14.13	< 16.58	< 14.83	< 9.14	< 10.25	< 31.05	< 13.01
20081337	EB-7	11/19/2008	< 11.34	< 10.54	< 12.03	< 11.05	< 20.04	< 11.24	< 17.49	< 10.75	< 10.58	< 7.35	< 37.01	< 14.53
20081338	MW-08	11/20/2008	< 7.17	< 7.11	< 18.13	< 10.20	< 19.26	< 13.39	< 16.51	< 12.97	< 10.53	< 11.32	< 47.11	< 12.88
20081339	EB-8	11/19/2008	< 9.82	< 9.45	< 23.03	< 8.72	< 18.98	< 12.29	< 15.25	< 13.28	< 11.03	< 12.75	< 38.42	< 14.86
20081340	MW-05	11/19/2008	< 9.78	< 5.76	< 18.86	< 8.32	< 14.21	< 10.75	< 12.21	< 11.29	< 10.98	< 10.25	< 40.24	< 12.73
20081341	EB-9	11/19/2008	< 10.36	< 10.89	< 12.63	< 7.70	< 27.07	< 11.97	< 18.32	< 14.13	< 9.59	< 8.63	< 44.89	< 14.40

Table 8
(Continued)

GROUND MONTORING WELL SAMPLES (GAMMA) - RBS

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	LOCATION	DATE	MN-54	C0-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
20081342	MW-02	11/20/2008	< 7.61	< 11.44	< 17.39	< 7.87	< 20.84	< 13.50	< 26.02	< 14.46	< 12.44	< 13.50	< 31.76	< 11.81
20081343	eb-10	11/20/2008	< 9.75	< 9.88	< 18.44	< 11.53	< 21.31	< 14.18	< 18.96	< 13.09	< 9.12	< 10.02	< 36.37	< 13.97
20081344	MW-10	11/20/2008	< 9.76	< 10.72	< 21.55	< 9.05	< 19.17	< 7.36	< 14.66	< 14.24	< 9.54	< 11.62	< 39.34	< 12.87
20081345	EB-11	11/20/2008	< 9.87	< 10.09	< 10.08	< 8.13	< 20.47	< 8.46	< 22.10	< 13.43	< 11.40	< 10.03	< 39.53	< 14.08
20081346	MW-09	11/20/2008	< 8.95	< 8.83	< 19.32	< 9.20	< 12.58	< 10.28	< 11.34	< 11.60	< 8.48	< 9.87	< 33.06	< 8.63
20081347	EB-12	11/20/2008	< 11.36	< 8.26	< 22.45	< 10.35	< 22.39	< 11.96	< 15.56	< 10.66	< 10.44	< 10.44	< 40.37	< 14.16
20081348	MW-07	11/20/2008	< 10.83	< 8.64	< 12.40	< 6.83	< 18.97	< 9.96	< 14.62	< 11.77	< 9.76	< 9.59	< 29.26	< 12.20
20081349	EB-13	11/20/2008	< 8.59	< 10.21	< 21.54	< 5.68	< 19.39	< 7.79	< 14.31	< 13.00	< 11.49	< 10.58	< 37.32	< 14.89
20081350	MW-02 D	11/20/2008	< 4.77	< 8.34	< 18.36	< 5.26	< 17.79	< 8.93	< 14.05	< 11.34	< 10.18	< 9.06	< 35.31	< 13.66

MW – Monitoring Well

EB – Equipment Blank

D – Duplicate

DUP – Duplicate

ATTACHMENT 1

PROCESS CONTROL PROGRAM

Procedure Contains NMM REFLIB Forms: YES ☐ NO ☒

Effective Date	Procedure Owner: Title: Site:	Mark L. Carver Manager, Fleet Radwaste Echelon – HQN	Executive Sponsor: Title: Site:	Kevin Walsh VP - Operations Waterford 3
7/30/2008				

Exception Date*	Site	Site Procedure Champion	Title
	ANO	David Moore	RPM
N/A	BRP	N/A	N/A
	GGNS	Roy Wilson	RPM
	IPEC	Dennis Loope	RPM
	JAF	John Solowski	RPM
	PLP	Chuck Sherman	RPM
	PNPS	Jack Priest	RPM
	RBS	Brad Houston	RPM
	VY	Sam Wender IV	RPM
	W3	Blake Pilutti	RPM
N/A	NP	N/A	N/A
N/A	HQN	Mark L. Carver	Manager, Fleet Radwaste

Site and NMM Procedures Canceled or Superseded By This Revision

Palisades Nuclear Plant, Process Control Program (PCP) – Rev. 11

Process Applicability Exclusion All Sites: ☐

Specific Sites: ANO ☐ BRP ☐ GGNS ☐ IPEC☐ JAF ☐ PLP ☐ PNPS ☐ RBS ☐ VY ☐ W3 ☐ NP ☐

Change Statement

- The revision to EN-RW-105 included a major re-write to provide updates to allow VTY, PLP and IPEC to be included as sites implementing this Process Control Program.
- The following are updates:
  - Waste management practices section replaced dry and liquid waste management
  - Waste stream sampling methods and frequency section added
  - Waste classification section added
  - Quality Control section added
  - Dewatering section added
  - Waste packaging section added
  - Miscellaneous section added for special tools/equipment & training requirements

* Exception Dates to permit appropriate change management training and to facilitate outage schedules.

TABLE OF CONTENTS

Section	Title	Page
1.0	PURPOSE	3
2.0	REFERENCES	3
3.0	DEFINITIONS	5
4.0	RESPONSIBILITIES	9
5.0	DETAILS	10
6.0	INTERFACES	20
7.0	RECORDS	20
8.0	OBLIGATION AND REGULATORY COMMITMENT CROSS-REFERENCES	21
9.0	ATTACHMENTS	21

1.0 PURPOSE

The Process Control Program (PCP) requires formulas, sampling, analyses, test and determinations to be made to ensure that the processing and packing of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61 and 71, State Regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste. The scope of a PCP is to assure that radioactive waste will be handled, shipped, and disposed of in a safe manner in accordance with approved site or vendor procedures, whichever is applicable. **[GGNS UFSAR, Chapter 16B.1 / TRM – 7.6.3.8 paragraph 1]**

1.1 The purpose of this document is to provide a description of the solid radioactive waste Process Control Program (PCP) at all the Entergy fleet sites. The PCP describes the methods used for processing, classification and packaging low-level wet radioactive waste into a form acceptable for interim on-site storage, shipping and disposal, in accordance with 10 CFR Part 61 and current disposal site criteria.

1.2 To ensure the safe operation of the solid radwaste system, the solid radwaste system will be used in accordance with this Process Control Program to process radioactive wastes to meet interim on-site storage, shipping and burial ground requirements.

1.3 This document addresses the process control program in the context of disposal criteria, on-site processing and vendor processing requirements.

1.4 The Process Control Program implements the requirements of 10CFR50.36a and General Design Criteria 60 of Appendix A to 10CFR Part 50. The process parameters included in the Process Control Program may include but are not limited to waste type, waste pH, waste/liquid/solidification agent/catalyst ratios, waste oil content, waste principal chemical constituents, and mixing and curing times.

1.5 This document does NOT address the requirements for 10CFR Part 61.56 (waste characteristics) for material sent to intermediate processors, because the final treatment and packaging is performed at the vendor facilities.

2.0 REFERENCES

[1] EN-QV-104, "Entergy Quality Assurance Program Manual Control"

[2] Title 49, Code of Federal Regulations

[3] Title 10, Code of Federal Regulations, Part 20

[4] Title 10, Code of Federal Regulations, Part 61

[5] Title 10, Code of Federal Regulations, Part 71, Appendix H **[QAPM, Section A.1.c]**

2.0 continued

[6] Low-Level Waste Licensing Branch Technical Position on Radioactive Waste Classification, 11 May 1983

[7] Disposal Site Criteria and License

[8] Waste Processor Acceptance Criteria

[9] EN-LI-100, "Process Applicability Determination"

[10] NRC Information and Enforcement Bulletins

- NRC Information Notice 79-19: Packaging of Low-Level Radioactive Waste for Transport and Burial.
- NRC Information Notice 80-24: Low-Level Radioactive Waste Burial Criteria.
- NRC Information Notice 80-32: Clarification of Certain Requirements for Exclusive-Use Shipments of Radioactive Materials.
- NRC Information Notice 80-32, Rev. 1: Clarification of Certain Requirements for Exclusive-Use Shipments of Radioactive Materials.
- NRC Information Notice 83-05: Obtaining Approval for Disposing of Very-Low-Level Radioactive Waste - 10CFR Section 20.302.
- NRC Information Notice 83-10: Clarification of Several Aspects Relating to Use of NRC-Certified Transport Packages.
- NRC Information Notice 83-33: Non-Representative Sampling of Contaminated Oil.
- NRC Information Notice 84-50: Clarification of Scope of Quality Assurance Programs for Transport Packages Pursuant to 10CFR 50 Appendix B.
- NRC Information Notice 84-72: Clarification of Conditions for Waste Shipments Subject to Hydrogen Gas Generation.
- NRC Information Notice 85-92: Surveys of Wastes Before Disposal from Nuclear Reactor Facilities.
- NRC Information Notice 86-20: Low-Level Radioactive Waste Scaling Factors, 10CFR 61.
- NRC Information Notice 86-90: Requests to Dispose of Very Low-Level Radioactive Waste Pursuant 10CFR 20.302
- NRC Information Notice 87-03: Segregation of Hazardous and Low-Level Radioactive Wastes
- NRC Information Notice 87-07: Quality Control of On-Site Dewatering/ Solidification Operations by Outside Contractors

2.0 continued

[11] NRC Information and Enforcement Bulletins (continued)

- NRC Information Notice 89-27: Limitations on the Use of Waste Forms and High Integrity Containers for the Disposal of Low-Level Radioactive Waste
- NRC Information Notice 92-62: Emergency Response Information Requirements for Radioactive Material Shipments
- NRC Information Notice 92-72: Employee Training and Shipper Registration Requirements for Transporting Radioactive Materials
- NRC Generic Letter 89-01, "Implementation of Programmatic Controls for Radiological Effluent Technical Specifications in the Administrative Controls Section of the Technical Specifications and the Relocation of Procedural Details of RETS to the Offsite Dose Calculation Manual or to the Process Control Program".

[12] Nureg-0800 Standard Review Plan Section 11.4 Revision 2, Solid Waste Management Systems.

[13] NRC Waste Form Technical Position, Revision 1 Jan 24 1991.

[14] NRC SECY 94-198 Review of Existing Guidance Concerning the Extended Storage of Low-Level Radioactive Waste.

[15] EPRI TR-106925 Rev-1, Interim On-Site Storage of Low Level Waste: Guidelines for Extended Storage - October1996

[16] NRC Branch Technical Position On Concentration Averaging And Encapsulation Jan 17 1995

[17] Commitment Documents (U-2 and U-3)

- IPN-99-079, "Supplement to Proposed Changes to Technical Specifications Incorporating Recommendations of Generic Letter 89-01 and the Revised 10 CFR Part 20 and 10 CFR Part 50.36a.
- Appendix B Technical Specifications, Section 4.5 **[IP, RECS ODCM Part 1]**

3.0 DEFINITIONS

[1] **Batch** – A quantity of waste to be processed having essentially consistent physical and chemical characteristics as determined through past experience or system operation knowledge by the Radwaste Shipping Specialist. A batch could be a waste tank, several waste tanks grouped together or a designated time period such as between outages as with the DAW waste stream. An isolated quantity of feed waste to be processed having essentially constant physical and chemical characteristics. (The addition or removal of water will not be considered to create a new batch).

3.0 continued

[2] **Certificate of Compliance** - Document issued by the USNRC regulating use of a NRC licensed cask or issued by (SCDHEC) South Carolina Department of Health and Environmental Conservation regulating a High Integrity Container.

[3] **Chelating Agents** - EDTA, DTPA, hydroxy-carboxylic acids, citric acid, carbolic acid and glucinic acid.

[4] **Compaction** - The process of volume reducing solid waste by applying external pressure.

[5] **Confirmatory Analysis** - The practice of verifying that gross radioactivity measurements using MCA are reasonably consistent with independent laboratory sample data.

[6] **Dewatered Waste** - Wet waste that has been processed by means other than solidification, encapsulation, or absorption to meet the free standing liquid requirements of 10CFR Part 61.56 (a)(3) and (b)(2).

[7] **De-watering** - The removal of water or liquid from a waste form, usually by gravity or pumping.

[8] **Dilution Factor** - The RADMAN computer code factor to account for the non-radioactive binder added to the waste stream in the final product when waste is solidified.

[9] **Dry Waste** - Radioactive waste which exist primarily in a non-liquid form and includes such items as dry materials, metals, resins, filter media and sludges.

[10] **Encapsulation** - Encapsulation is a means of providing stability for certain types of waste by surrounding the waste by an appropriate encapsulation media.

[11] **Gamma-Spectral-Analysis** - Also known as IG, MCA, Ge/Li and gamma spectroscopy.

[12] **Gross Radioactivity Measurements** - More commonly known as dose to curie conversion for packaged waste characterization and classification.

[13] **Homogeneous** - Of the same kind or nature; essentially alike. Most Volumetric waste streams are considered homogeneous for purposes of waste classification.

[14] **Incineration** – The process of burning a combustible material to reduce its volume and yield an ash residue.

[15] **Liquid Waste** - Radioactive waste that exist primarily in a liquid form and is contained in other than installed plant systems, to include such items as oil, EHC fluid, and other liquids. This waste is normally processed off-site.

3.0 continued

[16] **Low-Level Radioactive Waste (LLW)** - Those wastes containing source, special nuclear, or by-product material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level radioactive waste has the same meaning as in the Low-Level Waste Policy Act, that is, radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or by-product material as defined in section 11e.(2) of the Atomic Energy Act (uranium or thorium tailings and waste).

[17] **Measurement of Specific Radionuclides** - More commonly known as direct sample or container sample using MCA data for packaged waste characterization and classification.

[18] **Operable** - A system, subsystem, train, component or device SHALL be OPERABLE or have OPERABILITY when it is capable of performing its specified functions(s), and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing their related support function(s).

[19] **Prequalification Program** - The testing program implemented to demonstrate that the proposed method of wet waste processing will result in a waste form acceptable to the land disposal facility and the NRC.

[20] **Processing** - Changing, modifying, and/or packaging radioactive waste into a form that is acceptable to a disposal facility.

[21] **Quality Assurance/Quality Control** - As used in this document, "quality assurance" comprises all those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service. Quality assurance includes quality control, which comprises those quality assurance actions related to the physical characteristics of a material structure, component, or system to predetermined requirements.

[22] **Reportable Quantity Radionuclides (RQ)** - Any radionuclide listed in column (1) of Table 2 of 49CFR Part 172.101 which is present in quantities as listed in column (3) of Table 2 of 49CFR Part 172.101.

[23] **Sampling Plan** - A program to ensure that representative samples from the feed waste and the final waste form are obtained and tested for conformance with parameters stated in the PCP and waste form acceptance criteria.

[24] **Scaling Factor** - A dimensionless number which relates the concentration of an easy to measure radionuclide (gamma emitter) to one which is difficult to measure (beta and/or alpha emitters).

3.0 continued

[25] **Significant Quantity** - For purposes of waste classification all the following radionuclide values SHALL be considered significant and must be reported on the disposal manifest.

- Any value (real or LLD) for radionuclides listed in Appendix G to 10CFR20 (H-3, C-14, I-129, Tc-99).
- Greater than or equal to 1 percent of the concentration limits as listed in 10CFR Part 61.55 Table 1.
- Greater than or equal to 1 percent of the Class A concentration limits listed in 10CFR Part 61.55 Table 2.
- Greater than or equal to 1 percent of the total activity.
- Greater than or equal to 1 percent of the Reportable Quantity limits listed on 49CFR Part 172.101 Table 2.

[26] **Solidification** - The conversion of wet waste into a free-standing monolith by the addition of an agent so that the waste meets the stability and free-standing liquid requirements of the disposal site.

[27] **Special Radionuclides** - The RADMAN computer code term for radionuclides listed in Appendix G to 10CFR20 (i.e., H-3, C-14, I-129 & Tc-99)

[28] **Stability** – Structural stability per 10CFR61.2, Waste Form Technical Position, and Waste Form Technical Position Revision 1. This can be provided by the waste form, or by placing the waste in a disposal container or structure that provides stability after disposal. Stability requires that the waste form maintain its structural integrity under the expected disposal conditions.

[29] **Training** - A systematic program that ensures a person has knowledge of hazardous materials and hazardous materials regulations.

[30] **Type A Package** - Is the packaging together with its radioactive contents limited to A1 or A2 as appropriate that meets the requirements of 49CFR Part 173.410 and Part 173.412, and is designed to retain the integrity of containment and shielding under normal conditions of transport as demonstrated by the tests set forth in 49CFR Part 173.465 or Part 173.466 as appropriate.

[31] **Type B Package** - Is the packaging together with its radioactive contents that is designed to retain the integrity of containment and shielding when subjected to the normal conditions of transport and hypothetical accident test conditions set forth in 10CFR Part 71.

3.0 continued

[32] **Volume Reduction** – any process that reduces the volume of waste. This includes but is not limited to, compaction and incineration.

[33] **Waste Container** - A vessel of any shape, size, and composition used to contain the waste media.

[34] **Waste Form** - Waste in a waste container acceptable for disposal at a licensed disposal facility.

[35] **Waste Stream** - A Plant specific and constant source of waste with a distinct radionuclide content and distribution.

[36] **Waste Type** – A single packaging configuration and waste form tied to a specific waste stream.

4.0 RESPONSIBILITIES

[1] The **Vice President Operations Support (VPOS)** is responsible for the implementation of this procedure.

[2] Each site **Senior Nuclear Executive (SNE)** is responsible for ensuring that necessary site staff implements this procedure.

[3] The **Low Level RadWaste (LLRW) Focus Group** is responsible for evaluating and recommending changes and revisions to this procedure.

[4] Each site **RP Department – Radwaste Supervisor / Specialist** (title may vary at the site's respectively) has the overall responsibility for implementing the PCP and is responsible for processing and transportation is tasked with the day-to-day responsibilities for the following:

- Implementing the requirements of this document.
- Ensuring that radioactive waste is characterized and classified in accordance with 10CFR Part 61.55 and Part 61.56.
- Ensuring that radioactive waste is characterized and classified in accordance with volume reduction facility and disposal site licenses and other requirements.
- Designating other approved procedures (if required) to be implemented in the packaging of any specific batch of waste.
- Providing a designated regulatory point of contact between the Plant and the NRC, volume reduction facility or disposal site.

4.0 continued

- Maintaining records of on-site and off-site waste stream sample analysis and Plant evaluations.
- Suspending shipments of defectively processed or defectively packaged radioactive wastes from the site when the provisions of this process control program are not satisfied.

5.0 DETAILS

An isotopic analysis SHALL be performed on every batch for each waste stream so that the waste can be classified in accordance with 10CFR61. The isotopic and curie content of each shipping container SHALL be determined in accordance with 49CFR packaging requirements. The total activity in the container may be determined by either isotopic analysis or by dose-rate-to-curie conversion.

5.1. Precautions and Limitations

[1] Precautions

(a) Radioactive materials SHALL be handled in accordance with applicable radiation protection procedures.

(b) All radioactive waste must be processed or packaged to meet the minimum requirements listed in 10CFR Part 61.56 (a) (1) through (8).

(c) If the provisions of the Process Control Program are not satisfied, suspend shipment of the defectively processed or defectively packaged waste from the site. Shipment may be accomplished when the waste is processed / packaged in accordance with the Process Control Program.

(d) The generation of combustible gases is dependent on the waste form, radioactive concentration and accumulated dose in the waste. Changes to organic inputs (e.g. oil) to waste stream may change biogas generation rates.

[2] Limitations

(a) Only qualified personnel will characterize OR package radioactive waste OR radioactive materials for transportation or disposal.

(b) All site personnel that have any involvement with radioactive waste management computer software SHALL be familiar with its functions, operation and maintenance.

5.2. Waste Management Practices

[1] Waste processing methods include the following:

(a) Present and planned practice is NOT to solidify or encapsulate any waste streams.

(b) Waste being shipped directly for burial in a HIC (High Integrity Container) is dewatered to less than 1 percent by volume prior to shipment.

(c) Waste being shipped directly for burial in a container other than a HIC is dewatered to less than 0.5 percent by volume prior to shipment.

(d) IF solidification is required in the future, THEN at least one representative test specimen from at least every 10th batch of each type of radioactive waste will be checked to verify solidification.

(1) IF any specimen fails to verify solidification, THEN the solidification of the batch under test SHALL be suspended until such time as additional test specimens can be obtained, alternative solidification parameters can be determined, and a subsequent test verifies solidification. If alternative parameters are determined, the subsequent tests shall be verified using the alternative parameters determined.

(2) IF the initial test specimen from a batch of waste fails to verify solidification, THEN provide for the collection and testing of representative test specimens from each consecutive batch of the same type of waste until at least 3 consecutive initial test specimens demonstrates solidification. The process SHALL be modified as required to assure solidification of subsequent batches of waste.

[2] Operation and maintenance of dewatering systems and equipment include the following:

(a) Present and planned practice is to utilize plant personnel supplemented by vendor personnel or contracted vendor personnel, to operate AND maintain dewatering systems and equipment (as needed to meet disposal site requirements).

(b) All disposal liners are manufactured by and purchased from QA-approved vendors.

[3] ALARA considerations are addressed in all phases of the processes involving handling, packaging AND transfer of any type OR form of radioactive waste (dewatered or dry). Resin, charcoal media, spent filter cartridges AND sludges are typically processed within shields. Sluiceable demineralizers are shielded when in service. Radiation exposure and other health physics requirements are controlled by the issuance of a Radiation Work Permit (RWP) for each task.

5.3. Waste Stream Sampling Methods and Frequency

[1] The following general requirements apply to Plant waste stream sampling:

(a) Treat each waste stream separately for classification purposes.

(b) Ensure samples are representative of or can be correlated to the final waste form.

(c) Determine the density for each new waste stream initially or as needed (not applicable for DAW and filters).

(d) Perform an in-house analysis for gamma-emitting radionuclides for each sample sent to an independent laboratory.

(e) Periodically perform in-house analysis for gamma emitting radionuclides for comparison to the current data base values for gamma emitters. (The current database is usually based on the most recent independent laboratory results.)

(f) Resolve any discrepancies between in-house results AND the independent laboratory results for the same or replicate sample as soon as possible.

(g) Maintain records of on-site and off-site waste stream sample analysis and evaluations.

[2] When required, waste stream samples should be analyzed, re-evaluated and if necessary, shipped to a vendor laboratory for additional analysis. The same is true when there is a reason to believe that an equipment or process change has significantly altered the previously determined scaling factors by a factor of 10.

Specific examples include but are not limited to:

- Changes in oxidation reduction methods such as zinc, injection, hydrogen water chemistry,
- Changes in purification methods including media specialization, media distribution, ion/cation ratios,
- Changes in fuel performance criteria including fuel leaks
- Other changes in reactor coolant chemistry.
- Sustained, unexplained, changes in the routinely monitored Beta/Alpha ratios, as determined by Radiation Protection,
- When there is an extended reactor shutdown (> 90 days).
- When there are changes to liquid waste processing, such as bypassing filters, utilizing filters or a change in ion exchange media.
- When there are changes to the waste stream that could change the biogas generation rate.

5.3 continued

[3] The following requirements apply to infrequent or abnormal waste types:

(a) Infrequent OR abnormal waste types that may be generated must be evaluated on a case-by-case basis.

(b) The RP Department Supervisor / Specialist responsible for processing AND shipping will determine if the waste can be correlated to an existing waste stream.

(c) IF the radioactive waste cannot be correlated to an existing waste stream, THEN the RP Department Supervisor / Specialist responsible for processing and shipping SHALL determine specific off-site sampling and analysis requirements necessary to properly classify the material.

[4] Specific sampling methods and data evaluation criteria are detailed in EN-RW-104 for specific waste streams.

5.4. Waste Classification

[1] General requirements for scaling factors include the following:

(a) The Plant has established an inferential measurement program whereby concentrations of radionuclides which cannot be readily measured are estimated through ratio-ing with radionuclides which can be readily measured.

(b) Scaling factor relationships are developed on a waste stream-specific basis. These relationships are periodically revised to reflect current independent lab data from direct measurement of samples. The scaling factor relationships currently used by the sites are as follows:

- Hard to detect ACTIVATION product radionuclides and C-14 are estimated by using scaling factors with measured Co-60 activities.
- Hard to detect FISSION product radionuclides and H-3, Tc-99 and I-129 are estimated by using scaling factors with measured Cs-137 activities.
- Hard to detect TRANSURANIC radionuclides are estimated by using scaling factors with measured Ce-144 activities. Where Ce-144 cannot be readily measured, transuranics are estimated by using scaling factors with measured Cs-137 activities. Second order scaling of transuranics is acceptable when Cs-137 and Ce-144 are not readily measurable.

5.4 ***continued***

[2] General requirements for the determination of total activity and radionuclide concentrations include the following:

(a) The activity for the waste streams is estimated by using either Gross Radioactivity Measurement OR Direct Measurement of Radionuclides. Current specific practices are as follows:

- DAW - Gross radioactivity measurement in conjunction with the RADMAN computer codes, other approved computer codes or hand calculation.
- Filters - Gross radioactivity measurement in conjunction with the FILTRK computer code, other approved computer codes or hand calculation.
- All Other Waste Streams - Direct measurement of radionuclides in conjunction with the RADMAN computer codes, other approved computer codes or hand calculation.

(b) Determination of the NRC waste classification is performed by comparing the measured or calculated concentrations of significant radionuclides in the final waste form to those listed in 10CFR Part 61.55.

5.5. Quality Control

[1] The RADMAN computer code provides a mechanism to assist the Plant in conducting a quality control program in accordance with the waste classification requirements listed in 10CFR Part 61.55. All waste stream sample data changes are written to a computer data file for future review and reference.

[2] Audits and Management Review includes the following:

(a) Appendix G to 10CFR20 requires conduct of a QC program which must include management review of audits.

(b) Management audits of the Plant Sampling and Classification Program SHALL be periodically performed to verify the adequacy of maintenance sampling and analysis.

(c) Audits and assessments are performed and documented by any of the following:

- Radiation Protection Department
- Quality Assurance Department
- Qualified Vendors

(d) Certain elements of the Entergy Quality Assurance Program Manual are applied to the Process Control Program. **[QAPM, Section A.1.c]**

5.6. Dewatering Operations

[1] Processing requirements during dewatering operations include the following:

(a) All dewatering operations are performed per approved Plant or vendor operating procedures and instructions.

(b) Dewatering limitations and capabilities are verified by vendor Topical Reports or Operating and Testing Procedures.

[2] Dewatered resin activity limitations include the following:

(a) Dewatered resins will not be shipped off-site that have activities which will produce greater than 1.0E+8 rads total accumulated dose over 300 years. This is usually verified by comparing the container specific activity at the time of shipment to the following concentration limits for radionuclides with a half-life greater than five years:

- 10 Ci (0.37 TBq) per cubic foot.
- 350 uCi (12.95 MBq) per cubic centimeter

5.7. Waste Packaging

Waste in final form will be packaged in accordance with Title 10 and Title 49 of the Code of federal regulations and in accordance with current burial site criteria as is detailed in EN-RW-102.

5.8. Administrative Controls

[1] Information on solid radioactive waste shipped off-site is reported annually to the Nuclear Regulatory Commission in the Annual Radioactive Effluent Release Report as specified by the Offsite Dose Calculation Manual (ODCM) or Technical Specification. **[ANO1 Technical Specifications - 5.6.3] [ANO2 Technical Specifications – 6.9.3] [WF3 Technical Specifications – 6.9.18] [GGNS ODCM – 5.6.3.c] [JAF Technical Specifications – 5.6.3] [PLP ODCM, Appendix A – IV. A].**

[2] All changes to the PCP SHALL be documented. All records of reviews performed SHALL be retained as required by the Quality Assurance Program. The documentation of the changes **SHALL [GGNS UFSAR, Chapter 16B.1 / TRM – 7.6.3.8 paragraph 2]:**

(a) Contain sufficient information to support the change with appropriate analyses or evaluations justifying the change.

(b) Include a determination that the change will maintain the overall conformance of the solidified waste product (if applicable) to existing requirements of Federal, State or other applicable regulations.

[3] All changes in the Process Control Program and supporting documentation are included in each site's next Annual Radiological Effluent Release Report to the Nuclear Regulatory Commission. **[ANO ODCM - L3.2.1.B] [VTY TRM 6.12]**

[4] The changes to EN-RW-105 SHALL become effective upon review and acceptance by the site's General Plant Manager except as listed below:

(a) For Grand Gulf Nuclear Station, the changes to RW-105 SHALL be accomplished as specified in Grand Gulf Nuclear Station Technical Requirements Manual (TRM) Section 7.6.3.8. The changes SHALL become effective upon review and acceptance by the On-site Safety Review Committee (OSRC) and the approval of the GGNS Plant General Manager. **[GGNS UFSAR, Chapter 16B.1 / TRM – 7.6.3.8 paragraph 2]**

(b) For River Bend Nuclear Station, the procedure approval along with changes to RW-105 SHALL be accomplished per the River Bend Nuclear Station Technical Requirements, Section 5.5.14.1. The changes SHALL become effective upon review and acceptance by approval from the River Bend Nuclear Station Plant Manager or Radiation Protection Manager. **[RBS Technical Requirements – 5.5.14.1, 5.5.14.2 & 5.8.2]**

5.8 Continued

(c) For Waterford 3, the procedure approval along with changes to RW-105 SHALL be accomplished per Waterford 3 Technical Specifications 6.13.2. The changes SHALL become effective upon review and acceptance by the Waterford 3 General Plant Manager. **[WF3 Technical Specifications – 6.13.2.b]**

(d) For James A. FitzPatrick Nuclear Station, the procedure approval along with changes to EN-RW-105 SHALL be accomplished per the James A. FitzPatrick Station Technical Specifications, Section 5.6.3. The changes SHALL become effective upon review and acceptance through approval from the James A. FitzPatrick Nuclear Station On-Site Safety Review Committee. **[JAF UFSAR, Chapter 11.3.5]**

(e) For Vermont Yankee, Changes to the Process Control Program SHALL become effective after review and acceptance by the (OSRC) On-Site Safety Review Committee and the Site VP.

(f) For IPEC, Changes to the Process Control Program SHALL become effective after final review and acceptance by the On-Site Safety Review Committee (OSRC).

5.9. Vendor Requirements

[1] Vendors performing radwaste services under 10CFR61 and 10CFR71 requirements will be on the Entergy Qualified Supplier's List (QSL). **[QAPM, Section A.1.c]**

[2] Vendors performing radwaste services on-site are to comply with the following:

(a) Dewatering and solidification services SHALL have a NRC-approved Topical Report or other form of certification documenting NRC approval of the processes and associated equipment/containers.

(b) All vendor procedures utilized for performing on-site radwaste processing services (to assure compliance with 10 CFR Parts 20, 61 and 71, State Regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste) will be reviewed per the requirements of EN-LI-100, technically by the applicable site's Radiation Protection organization and only be accepted per the approvals specified in Section 5.8 [4].

(c) All changes to vendor procedures for ongoing on-site radwaste services will be reviewed technically by the site's Radiation Protection organization and screened per the requirements of EN-LI-100. Significant procedural changes will require the approvals specified in Section 5.8 [4]. During screening, the level of significance for procedural changes on equipment and process parameters may warrant the full 10CFR50.59 documentation and approval process.

5.9 continued

(d) Plant management SHALL review vendor(s) topical reports and test procedures per applicable requirements in Section 5.8.

NOTE

The PCP does not have to include the vendor's Topical Report if it has NRC approval, or has been previously submitted to the NRC.

(e) Plant management review will assure that the vendor's operations and requirements are compatible with the responsibilities and operation of the Plant.

(f) Training requirements and records listed in Section 5.10 also apply to contracted vendors.

5.10. Miscellaneous

[1] Special tools and equipment

(a) Frequency of Use and Descriptions

Required tools and equipment will vary depending on the specific process and waste container that is used. The various tools and equipment which may be required are detailed in specific procedures developed to govern activities described in this document.

[2] Pre-requisites

(a) Maintenance of Regulatory Material

Ensure that a current set of DOT, NRC, EPA and applicable State regulations, vendor processing facility and disposal site regulations and requirements are maintained at the site and are readily available for reference. The use of web based regulations is acceptable.

(b) Representative Radionuclide Sample Data

Ensure that representative radionuclide sample data is on file for each active waste stream. Unless operation conditions or changes in processing methods require increased sample frequency, data is considered to be current if it meets the requirements of EN-RW-104.

5.10 continued

(c) Initial and Cyclic Training

- A training program SHALL be developed, implemented and maintained for all personnel involved in processing, packaging, handling and transportation of radioactive waste to ensure radwaste operations are performed within the requirements of NRC Information Bulletin 79-19 and 49CFR Part 172.700 through Part 172.704.

- Training requirements and documentation also apply to contracted on-site vendors.

NOTE

Cyclic training is defined as within three years for DOT, and two years for IATA

(d) Specific employee training is required for each person who performs the following job functions [172.702(b)].

- Classifies hazardous materials.
- Packages hazardous materials.
- Fills, loads and/or closes packages.
- Marks and labels packages containing hazardous materials.
- Prepares shipping papers for hazardous materials.
- Offers or accepts hazardous materials for transportation.
- Handles hazardous materials.
- Marks or placards transport vehicles.
- Operates transport vehicles.
- Works in a transportation facility and performs functions in proximity to hazardous materials which are to be transported.
- Inspects or tests packages.

5.10 continued

(e) Cyclic training is defined as within three years for DOT & within two years for IATA.

Copies of training records are required for as long as a person is employed and 90 days thereafter. The records should include, as a minimum, the following:

- Trainee's name and signature
- Training dates
- Training material or source reference
- Trainer's information

6.0 INTERFACES

[1] EN-LI-100, "Process Applicability Determination"

[2] EN-RW-104, "Scaling Factors"

[3] EN-QV-104, "Entergy Quality Assurance Program Manual Control"

7.0 RECORDS

[1] Documentation of pertinent data required to classify waste and verify solidification will be maintained on each batch of processed waste as required by approved procedures.

[2] Documentation will also be maintained to ensure that containers, shipping casks, and methods of packaging wastes meet applicable Federal regulations and disposal site criteria. The records of reviews performed and documents associated with these reviews will be maintained as QA records.

8.0 OBLIGATION AND REGULATORY COMMITMENT CROSS-REFERENCES

Document	Document Section	NMM Procedure Section	Site Applicability
ANO ODCM	L3.2.1.B	5.8 [3]	ANO
ANO1 Technical Specifications	5.6.3	5.8 [1]	ANO
ANO2 Technical Specifications	6.9.3	5.8 [1]	ANO
RBS Technical Requirements	5.5.14	*	RBS
RBS Technical Requirements	5.5.14.1	5.8 [3] 5.8 [4] (b)	RBS
RBS Technical Requirements	5.5.14.2	5.8 [4] (b)	RBS
RBS Technical Requirements	5.8.2	5.8 [4] (b)	RBS
WF3 Technical Specifications	1.22	*	WF3
WF3 Technical Specifications	6.9.18	5.8 [1]	WF3
WF3 Technical Specifications	6.13.2.b	5.8 [4] (c)	WF3
JAF ODCM	6.2.1	5.8 [1]	JAF
JAF Technical Specifications	5.6.3	5.8 [1], 5.8 [4]	JAF
JAF FSAR	Chapters 7 and 11	5.8 [4]	JAF
11759 – NRC IN 79-19	All	*	WF3
GGNS UFSAR, Chapter 16B.1 / TRM	7.6.3.8 paragraph 1	1.0	GGNS
GGNS ODCM	5.6.3.c	5.8 [1]	GGNS
GGNS FSAR	11.4.5.S2	5.9 [2](a)	GGNS
GGNS FSAR	11.4.2.3AS7	5.9 [2](a)	GGNS
IPN-99-079	All	*	IPEC
Appendix B Technical Specifications	Section 4.5, RECS ODCM Part 1	*	IPEC
PLP Technical Specifications	5.5.15	5.8 [4]	PLP
PLP ODCM	Appendix A – IV. A	5.8 [1]	PLP
NRC Letter 1.98.091	All	*	VY
NRC Letter 1.88.078	All	*	VY
VY TRM	6.12	5.8 (3)	VY
QAPM	Section A.1.c	*	All

* Covered by directive as a whole or by various paragraphs of the directive.

9.0 ATTACHMENTS

None

CONTROLLED DOCUMENT REVIEW/APPROVAL FORM

DOCUMENT INFORMATION

REVIEWS / APPROVALS					
Action Taken	Action Date	Last Name	First Name	Facility	Approval

Note: all fields are taken from the TIMX600 panel for documents with an associated routing/approval (TIMX600) panel.

NMM REVIEW AND APPROVAL FORM

NMM PROCEDURE TITLE:	NMM NO.	REV NO.	TC NO.
PROCESS CONTROL PROGRAM	EN-RW-105	1	

TYPE OF CHANGE:
NEW ☐ REV - EDITORIAL ☐ REV - NON-EDITORIAL ■ TEMPORARY CHANGE ☐ CANCELLATION ☐

REVIEWING SITE						
	ANO ☐	GGNS ☐	IPEC ☐	JAF ☐	PLP ☐	PNPS ☐
	RBS ■	VY ☐	W3 ☐	NP ☐	HQN ☐	BRP ☐

Supersedes NMM:
Supersedes Site NONE

EDITORIAL CHANGE REVIEW PROCESS

SITE PROCEDURE CHAMPION NOTIFICATION: (Record Names of Site Procedure Champions notified and the date by Procedure Writer.)

ANO: Date:
BRP: Date:
GGNS: Date:
IPEC: Date:
JAF: Date:
PLP: Date:
PNPS: Date:
RBS: Date:
VY: Date:
W3: Date:
NP: Date:
HQN: Date:

N/A

NON-EDITORIAL CHANGE REVIEW PROCESS

TECHNICAL REVIEWER (verify that NMM Overview CMI is complete):
Comments Made (Attach) ☐
Name/Signature: Dan Heath / [signature] Date: 7/24/08
Phone #: 8558-4481

PROCESS APPLICABILITY REVIEWER:
Comments Made (Attach) ☐ N/A per EN-LI-100 Exclusion ☐
Name/Signature: Douglas L. Myers, KCN 3278 Date: 7-22-08
Phone #: 8-558-4590

COMMITMENT REVIEWER (verify that NMM Procedure Commitment Review Process CMI is complete): Comments Made (Attach) ☐
Name: Douglas L. Myers, KCN 3278 Date: 7-22-08
Phone #: 8-558-4590

CROSS-DISCIPLINE REVIEW (use additional RAF as necessary)
Required YES ☐ NO ■ 'No' Justification RP shipping primarily; OPS reviewed and indicated no need to cross-discipline review.

Department	Initials	Date:
Department	Initials	Date:
Department	Initials	Date:
Department	Initials	Date:

N/A

TEMPORARY CHANGE REVIEW PROCESS

SITE PROCEDURE CHAMPION REVIEW
Change Management Developed for Site:
YES ☐ attach NO ☐ justify
Print and Sign name: DATE:
TC EXPIRATION DATE: (Not to exceed 90 days)

TECHNICAL REVIEWER (verify that NMM CMI overview is complete):
Comments Made (Attach) ☐
Name: Date:
Phone #:

PROCESS APPLICABILITY REVIEWER
Comments Made (Attach) ☐ N/A per EN-LI-100 Exclusion ☐
Name: Date:
Phone #:

CROSS-DISCIPLINE REVIEW (use additional RAF as necessary)
Required YES ☐ NO ☐ 'No' Justification

Department	Initials	Date:
Department	Initials	Date:
Department	Initials	Date:

SITE SRO APPROVAL
Comments Made (Attach) ☐
Print and Sign name: DATE:

CONDITIONAL REVIEWS (Also used for Temporary Change as required)

OSRC REVIEW: Meeting Number:
Comments Made (Attach) ☐
OSRC Chair:
Name/Signature: DATE:

LEVEL III REVIEW (NDE Procedures only)
Name/Signature: DATE:

N/A

SITE PROCEDURE CHAMPION REVIEW (Signature includes acknowledgement that NMM CMI overview is complete)

1. Supersede/cancel another site or NMM procedure? (If YES, record the procedure(s) on the NMM Title Page.) YES ☐ NO ■
2. Delete/alter an existing regulatory commitment or obligation? (If YES, contact Licensing before implementing.) YES ☐ NO ■
3. Change Management Developed for Site:
   YES ■ attach
   NO ☐ justify

Proposed Effective Date: 7-28-08
Print and Sign name: BC Houston / [signature] DATE: 7/24/08
Job Title: RPM
PHONE #: 3646

PROCEDURE WRITER: Print and Sign name: (Signature acknowledges (1) NMM CMI overview is complete, (2) ECH TEAR initiated.)
NAME: N/A DATE:

PROCEDURE OWNER APPROVAL: Print and Sign name
NAME: N/A DATE: N/A

GOVERNANCE OWNER APPROVAL: Print and Sign name
NAME: N/A DATE: N/A

I. OVERVIEW

Facility: River Bend Station (RBS)

Proposed Activity / Document: EN-RW-105, Process Control Program **Change/Rev. #: 1**

Description of Proposed Activity: **This procedure change is a major rewrite of the document to include additions for waste classification, quality control, waste packaging, dewatering, waste stream sampling, and miscellaneous items. See the procedure cover page for additional details.**

II. REGULATORY REVIEW PROCESS

REFERENCES REVIEWED / SEARCH METHODOLOGY

Provide the requested information for each item below.

1. **For documents available electronically:**

   a. **List Search Engine or LBDs searched, and keywords used:**

   Autonomy was used keyed to the USAR, ODCM, QAPM, SERs, Holtec 212 report, Holtec C of C, Holtec FSAR, Final Environmental Statement, the Environmental Report-Operating License Stage, the Emergency Plan and the TS/TRM to search the following keywords/phrases: shipping training, transportation training, DOT training, IATA, Chem Nuclear, process control program, waste stream, waste processing, waste classification, dewatering, waste packaging, solidification, waste handling, scaling factor and waste management.

   b. **List relevant sections of controlled electronic documents reviewed:**

   USAR 11.2, 11.3 and 11.4.

2. **LBD sections reviewed manually (hardcopy):**

   None

3. **For those documents that are not available for either electronic search or hardcopy manual search (e.g., the Security Plan), use the specific questions provided in Sections III, IV, and V of Attachment 9.2 of EN-LI-100 as needed. IF the questions are used, THEN document this below.**

III. PROCESS REVIEW

Does the proposed activity affect, invalidate, or render incorrect, OR have the potential to affect, invalidate, or render incorrect, information contained in any of the following processes?

PROCESS APPLICABILITY	YES	NO	REVIEW RESULTS
Chemistry / Effluents	☐	■	
Radwaste / Process Control Program (PCP) (EN-RW-105 or contact the Radiation Protection Dept.)	■	☐	RBS RP shipping personnel were involved in discussions with the fleet as this change was developed and reviewed.
Radiation Protection / ALARA (EN-RP-110 or contact the Radiation Protection Dept.)	■	☐	RP Radwaste personnel were involved in the procedure change development and are cognizant of the changes.
Inservice Inspection Program (10 CFR 50.55a / ENN-DC-120, ENS-DC-120)	☐	■	
Inservice Testing Program (10 CFR 50.55a / EN-DC-332)	☐	■	
Maintenance Rule Program (10 CFR 50.65 / EN-DC-204, -205, -206, -207)	☐	■	

IF any box is checked "Yes," THEN contact the appropriate department to ensure that the proposed change is acceptable and document the results in the REVIEW RESULTS column.

IV. LICENSING BASIS DOCUMENT REVIEW

IV.A.1 Does the proposed activity affect, invalidate, or render incorrect, OR have the potential to affect, invalidate, or render incorrect, information contained in any Part 50 licensing basis document that is controlled in accordance with 10 CFR 50.90?

LICENSING BASIS DOCUMENTS (Control Process)	YES	NO	SECTIONS AFFECTED OR LBDCR #
Operating License (OL) / Technical Specifications (TS) (10 CFR 50.90 / EN-LI-103)	☐	■	
NRC Orders (10 CFR 50.90 / EN-LI-103 or as directed by the Order)	☐	■	

IF any box is checked "Yes," THEN contact the site Licensing department to seek a license amendment and document the affected sections or the LBDCR # in the SECTIONS AFFECTED OR LBDCR # column.

ATTACHMENT 9.1 PROCESS APPLICABILITY DETERMINATION FORM

Sheet 3 of 7

IV.A.2 Does the proposed activity affect, invalidate, or render incorrect, OR have the potential to affect, invalidate, or render incorrect, information contained in any Part 72 spent fuel storage cask Certificate of Compliance that is controlled in accordance with 10 CFR 72.244?

LICENSING BASIS DOCUMENTS (Control Process)	YES	NO	N/A	SECTIONS AFFECTED OR LBDCR #
Storage Cask Certificate of Compliance (CoC)	☐	■	☐	

IF any box is checked "Yes," THEN contact the site Licensing department to request the Certificate Holder pursue a CoC amendment and document the affected sections or the LBDCR # in the SECTIONS AFFECTED OR LBDCR # column.

IV.A.3 Does the proposed activity affect, invalidate, or render incorrect, OR have the potential to affect, invalidate, or render incorrect, information contained in any Licensing Basis Document(s) that is controlled in accordance with a regulatory process other than 10 CFR 50.59 or 10 CFR 72.48?

LICENSING BASIS DOCUMENTS (Control Process)	YES	NO	SECTIONS AFFECTED OR LBDCR #
Quality Assurance Program Manual (QAPM) (10 CFR 50.54(a) / EN-QV-104)	☐	■	
Fire Protection Program (FPP) [includes the Fire Hazards Analysis (FHA)] (OL Condition, 10 CFR 50.48 / EN-DC-128)	☐	■	
Emergency Plan (10 CFR 50.54(q) / EN-EP-305)	☐	■	
Environmental Protection Plan (Appendix B of the OL, Environmental Evaluation / EN-EV-115, EN-EV-117, EN-LI-103)	☐	■	
Security Plan [10 CFR 50.54(p) / ENS-NS-210 or contact the site Security Dept.]	☐	■	
Site Specific Exemptions to CFR (10 CFR 50.12, 10 CFR 55.11, 10 CFR 55.13, 10 CFR 72.7) Contact site Licensing	☐	■	

IF any box is checked "Yes," THEN ensure the applicable regulatory review is performed, prepare an LBDCR per NMM Procedure EN-LI-113 if the LBD is to be changed, and document the affected sections or the LBDCR # in the SECTIONS AFFECTED OR LBDCR # column.

IV.B COMMITMENT REVIEW

Does the proposed activity modify or delete a commitment or obligation? ☐ Yes ■ No

IF "Yes," THEN ensure the effect to the commitment is evaluated in accordance with NMM Procedure EN-LI-110.

V. DOCUMENTS CONTROLLED VIA 10 CFR 50.59 / 10 CFR 72.48

V.A Does the proposed activity affect, invalidate, or render incorrect, OR have the potential to affect, invalidate, or render incorrect, information contained in any Licensing Basis Document that is controlled in accordance with 10 CFR 50.59? (document the affected sections or the LBDCR # in the SECTIONS AFFECTED OR LBDCR # column)

LICENSING BASIS DOCUMENTS (Control Process)	YES	NO	SECTIONS AFFECTED OR LBDCR #
Updated Final Safety Analysis Report (UFSAR) (10 CFR 50.59 / EN-LI-100 / EN-LI-101)	☐	■	
TS Bases (10 CFR 50.59 / EN-LI-100 / EN-LI-101)	☐	■	
Technical Requirements Manual (TRM) (including TRM Bases) (10 CFR 50.59 / EN-LI-100 / EN-LI-101)	☐	■	
Offsite Dose Calculation Manual (ODCM) (TS Administrative Controls, 10 CFR 50.59 / EN-LI-100 / EN-LI-101)	☐	■	
Core Operating Limits Report (COLR) (10 CFR 50.59 / EN-LI-100 / EN-LI-101)	☐	■	

V.B Does the proposed activity affect, invalidate, or render incorrect, OR have the potential to affect, invalidate, or render incorrect, information contained in any Licensing Basis Document that is controlled in accordance with 10 CFR 72.48? (document the affected sections or the LBDCR # in the SECTIONS AFFECTED OR LBDCR # column)

LICENSING BASIS DOCUMENTS (Control Process)	YES	NO	N/A	SECTIONS AFFECTED OR LBDCR #
Cask FSAR (CFSAR) (including the CTS Bases) (10 CFR 72.48 / EN-LI-100 / EN-LI-112)	☐	■	☐	
10 CFR 72.212 Evaluation Report (212 Report) (10 CFR 72.48 / EN-LI-100 / EN-LI-112)	☐	■	☐	

V.C Can the proposed activity be dispositioned by one of the following criteria? Check the appropriate box (if any).

☐	An approved, valid 50.59/72.48 Evaluation covering associated aspects of the proposed activity already exists. Reference 50.59/72.48 Evaluation # _____ (if applicable) or attach documentation. Verify the previous 50.59/72.48 review remains valid.
☐	The NRC has approved the proposed activity or portions thereof or a license amendment being reviewed by the NRC addresses the proposed activity. Reference the approval document: _____
☐	The proposed activity is controlled by a specific regulation, such as those identified in Section III or Section IV.A.3 (e.g., Maintenance Rule, QAPM, FPP, etc.), as discussed in NEI 96-07, Section 4.1. Reference the controlling regulation: _____

IF the proposed activity can be dispositioned by one of the criteria in Section V.C, THEN proceed to Section VII and provide basis for conclusion in Section VII.A; otherwise, continue to Section V.D.

V.D TEST OR EXPERIMENT [10 CFR 50.59(c)(1)]

1. Does the proposed activity involve a test or experiment NOT described in the UFSAR? ☐ Yes ■ No

2. Does the proposed activity involve a test or experiment NOT described in the CFSAR? ☐ Yes ■ No

V.E Can the proposed activity potentially affect a design function, method of controlling or performing a design function, or a method of evaluation of a design function as described in the UFSAR or CFSAR?

UFSAR	CFSAR
☐ Yes	☐ Yes
■ No	■ No

IF any box in Section V.D is checked "Yes," THEN perform a 50.59 and/or 72.48 Evaluation in accordance with EN-LI-101 and/or EN-LI-112.

IF any box in Sections V.A, V.B, and/or V.E is checked "Yes," THEN proceed to Section VI OR perform a 50.59 and/or 72.48 Evaluation in accordance with EN-LI-101 and/or EN-LI-112.

IF all the boxes in Sections V.A, V.B, V.D and V.E are checked "No," THEN proceed to Section VII and provide basis for conclusion in Section VII.A.

VI. 50.59 / 72.48 SCREENING REVIEW

VI.A DESIGN FUNCTION SCREENING (Check the appropriate box associated with any "YES" response to Section V.E, if the criteria are met)

■	**10 CFR 50.59** [10 CFR 50.59(c)(1)] The proposed activity meets all of the following criteria regarding design function: • Does not adversely affect the design function of an SSC as described in the UFSAR; AND • Does not adversely affect a method of performing or controlling a design function of an SSC as described in the UFSAR; AND • Does not adversely affect a method of evaluation that demonstrates intended design function(s) of an SSC will be accomplished as described in the UFSAR.
☐	**10 CFR 72.48** [10 CFR 72.48(c)(1)] (Applicable to sites with an ISFSI) The proposed activity meets all of the following criteria regarding design function: • Does not adversely affect the design function of an SSC as described in the CFSAR; AND • Does not adversely affect a method of performing or controlling a design function of an SSC as described in the CFSAR; AND • Does not adversely affect a method of evaluation that demonstrates intended design function(s) of an SSC will be accomplished as described in the CFSAR.

IF the 10 CFR 50.59 box is checked, THEN complete VI.B, below, and proceed to Section VII. IF the proposed activity does not meet the criteria, THEN perform a 50.59 Evaluation in accordance with NMM Procedure EN-LI-101, attach a copy to this form, and THEN proceed to Section VII.

IF the 10 CFR 72.48 box is checked, THEN complete VI.B, below, and proceed to Section VII. IF the proposed activity does not meet the criteria, THEN perform a 72.48 Evaluation in accordance with NMM Procedure EN-LI-112, attach a copy to this form, and THEN proceed to Section VII.

VI.B BASIS

Provide a clear, concise basis for determining the proposed activity may be screened out such that a third-party reviewer can reach the same conclusions. Provide supporting documentation or references as appropriate.

The changes to EN-RW-105 from revision 0 to revision 1 add information needed to help radioactive material shippers in the performance of their tasks. The information added regarding solidification in step 5.2[1](d) applies to the TRM in TR 3.11.3. The procedure implements the requirements of the technical requirement and will result in compliance if properly implemented. The fleet radwaste lead was contacted regarding procedure content versus River Bend technical requirements manual (TRM) requirements and wording was clarified/verified to ensure compliance with the TRM.

Waste streams are discussed in USAR chapter section 11.2 and waste processing in chapter sections 11.3 and 11.4. The material in the procedure does not change or misrepresent any of the information provided in the USAR and therefore, is just related to using the USAR information to physically manipulate the waste and waste streams to do the work needed to gather, process and ship the waste generated at the site.

Dewatering is mentioned in the USAR, but the references are primarily to the dewatering performed as part of the site construction process. No references were noted that showed a conflict between the procedure stipulations and the requirements of the USAR for waste processing.

The Environmental report-Operating License Stage discusses solidification based upon earlier methods when a vendor was employed on-site to actually solidify certain waste. The use of an alternative method such as is now the primary processing method is not prevented by the report. No conflict was noted to prevent use of EN-RW-105, revision 1.

Based upon the license basis document (LBDs) reviews, EN-RW-105, revision 1 complements and complies with the LBDs in force and therefore, may be implemented after appropriate reviews and approvals.

VII. REGULATORY REVIEW SUMMARY

VII.A GENERAL REVIEW COMMENTS (Provide pertinent review details and basis for conclusions if not addressed elsewhere.)

See section VIB for additional information.

Waste streams are discussed in USAR chapter section 11.2 and waste processing in chapter sections 11.3 and 11.4. The material in the procedure does not change or misrepresent any of the information provided in the USAR and therefore, is just related to using the USAR information to physically manipulate the waste and waste streans to do the work needed to gather, process and ship the waste generated at the site.

Dewatering is mentioned in the USAR, but the references are primarily to the dewatering performed as part of the site construction process. No references were noted that showed a conflict between the procedure stipulations and the requirements of the uSAR for waste processing.

The Environmental report-Operating License Stage discusses solidification based upon earlier methods when a vendor was employed on-site to actually solidify certain waste. The use of an alternative method such as is now the primary processing method is not prevented by the report. No conflict was noted to prevent use of EN-RW-105, revision 1.

The procedure implementation of the RBS technical requirements manual was discussed with the fleet radwaste lead and with site personnel to clarify/verify wording met the requirements.

Based upon the license basis document (LBDs) reviews, EN-RW-105, revision 1 complements and complies with the LBDs in force and therefore, may be implemented after appropriate reviews and approvals.

VII.B CONCLUSIONS

1. **Is a change to an LBD being initiated?** ☐ Yes

   IF "Yes," THEN enter the appropriate change control process and include this form with the change package. ■ No

2. **Is a 10 CFR 50.59 Evaluation required?** ☐ Yes

   IF "Yes," THEN complete a 50.59 Evaluation in accordance with EN-LI-101 and attach a copy to the change activity. ■ No

3. **Is a 10 CFR 72.48 Evaluation required?** ☐ Yes

   IF "Yes," THEN complete a 72.48 Evaluation in accordance with EN-LI-112 and attach a copy to the change activity. ■ No

VIII. **SIGNATURES** [1]

Preparer: Douglas L. Myers/ Douglas L. Myers /KCN3278/EOI-RBS/RP/7-24-08

Name (print) / Signature / Company / Department / Date

Reviewer: Dan Heart / Dan Heart KCN 3266 / EOI-RBS/RP/ 7-24-08

Name (print) / Signature / Company / Department / Date

Process Applicability Exclusion

Site Procedure Champion or Owner: /

Name (print) / Signature / Company / Department / Date

[1] Signatures may be obtained via electronic processes (e.g., PCRS, ER processes, IAS signature), manual methods (e.g., ink signature), e-mail, or telecommunication. If using an e-mail , attach it to this form.