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April 30, 2010

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Subject: Radioactive Effluent Release Report for 2009
River Bend Station - Unit 1
License No. NPF-47
Docket No. 50-458

File Nos.: G9.5, G9.25.1.5

RBG-47025
RBF1-10-0068

Dear Sir or Madam,

Enclosed is the River Bend Station (RBS) Annual Radioactive Effluent Release Report for the period January 1, 2009, through December 31, 2009. 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/tjb
enclosure

TE48
NRR

Radioactive Effluent Release Report for 2009

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2009 ANNUAL EFFLUENT RELEASE REPORT

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I. INTRODUCTION

This is the annual Radioactive Effluent Release Report for the period of January 1, 2009, through December 31, 2009. 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:

$$\begin{aligned}
 D_{\text{Gamma-Air}} &= \text{gamma air dose from radioactive noble gases in millirad (mrad)} \\
 &= 3.17\text{E-}8 \sum_{i=1}^n M_i \overline{(X/Q)} Q_i \leq 5 \text{ mrad/qtr} \\
 &\leq 10 \text{ mrad/yr}
 \end{aligned}$$

$$\begin{aligned}
 D_{\text{Beta-Air}} &= \text{beta air dose from radioactive noble gases in millirad (mrad)} \\
 &= 3.17\text{E-}8 \sum_{i=1}^n N_i \overline{(X/Q)} Q_i \leq 10 \text{ mrad/qtr} \\
 &\leq 20 \text{ mrad/yr}
 \end{aligned}$$

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:

$$\begin{aligned}
 D_{I\&8DP\tau} &= \text{Dose in mrem to the organ } (\tau) \text{ for the age group of interest from radioiodine (I-131, I-133, tritium, and 8 day particulate via the pathway of interest.)} \\
 &= 3.17\text{E-}08 (F_0) \sum_{I=1}^n P_{I\tau} \overline{(X/Q)} Q_i \quad \text{and}
 \end{aligned}$$

$$= 3.17E-08 (F_0) \sum_{I=1}^n R_{i\tau} (D/Q) Q_i \quad \text{and}$$

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

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

(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

$$D_{TOTAL} \quad \text{Total Body} \quad \leq 1.5 \text{ mrem/qtr}$$

$$\leq 3 \text{ mrem/yr}$$

$$D_{TOTAL} \quad \text{Any Organ} \quad \leq 5 \text{ mrem/qtr}$$

$$\leq 10 \text{ mrem/yr}$$

(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:

$$\leq 25 \text{ mrem to the total body or any organ (except the thyroid)}$$

$$\leq 75 \text{ mrem to the thyroid}$$

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:

$$\begin{aligned} DR_{TB} &= \text{Dose rate to the total body in mrem/yr} \\ &= \sum_{i=1}^n K_i \overline{(X/Q)} Q_i \leq 500 \text{ mrem/yr and} \end{aligned}$$

$$\begin{aligned} DR_{SKIN} &= \text{Dose rate to the skin in mrem/yr} \\ &= \sum_{i=1}^n L_i + 1.1M_i \overline{(X/Q)} Q_i \leq 3000 \text{ mrem/yr} \end{aligned}$$

(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:

$$\begin{aligned} DR_{I\&8DP\tau} &= \text{Dose rate to the organ } \tau \text{ for the age pathway group} \\ &\quad \text{of interest from Radioiodines (I-131 \& I-133), tritium,} \\ &\quad \text{and 8 day particulate via the inhalation pathway in} \\ &\quad \text{mrem/yr.} \\ &= \sum_{i=1}^n P_i \overline{(X/Q)} Q_i \leq 1500 \text{ mrem/yr} \end{aligned}$$

(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 effluents are 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 purity 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. The activity of each nuclide released to the environment is determined from the nuclide specific concentration and total tank volume released.

D. Batch Releases

1. Liquid Effluents

Batch releases and receiving stream flow from River Bend Station during the reporting period of January 1, 2009, through December 31, 2009 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.

2. Gaseous Effluents

There were no routine batch releases of gaseous effluents from River Bend Station during the reporting period of January 1, 2009, through December 31, 2009.

E. Abnormal Releases

Number of abnormal liquid releases: 0

Number of abnormal gaseous releases: 0

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 error (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:

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

where:

E_T = total error

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

III. GASEOUS 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	1.11E-01
Skin	1.32E-01
Thyroid	4.19E-01
Other Organ	1.11E-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 2009. 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 2009 was 99 %.

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, 2009, through December 31, 2009, restored to operable status within the required time, except as noted in the following paragraph.

A review of eSOMS and PCRS revealed that Action E2 was entered once during 2009 for TLCO 3.3.11.2 on RMS-RE107, Radioactive Liquid Effluent Monitoring Instrumentation. The entry was made because RMS-RE107 (TS-09-1379) (CR RBS-2009-1641) was not restored to operable within the required 14 days. Actions D1 and D2 were entered on March 22, 2009 and as of April 5, 2009, RMS-RE107 had not been restored to service. RMS-RE107 was restored to operable on April 13, 2009. No radioactive liquid effluent discharges occurred while RMS-RE107 was inoperable. The reason for failure to restore this component within the required time frame was because after the initial defective part was replaced, additional information was needed to restore RMS-RM107. The additional information was not readily available and required contacting the vendor, manufacturer and industry peers. When this information was obtained at the end of the second week, additional deficiencies postponed the completion of the work. The unit could not reestablish communications and additional troubleshooting was required.

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, 2009, through December 31, 2009, 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, 2009, through December 31, 2009 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, 2009, through December 31, 2009.

XII. LAND USE CENSUS

The Land Use Census was not conducted in 2009. The next scheduled land use census as

required by Technical Requirements Manual (TRM) (TR 3.12.2) is in 2010.

XIII. OFFSITE DOSE CALCULATION MANUAL (ODCM)

There were no changes to the ODCM in 2009.

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

Engineering has performed a review of the eB and Asset Suite databases to evaluate non-administrative design changes completed or partially completed during 2009 involving the subject systems (i.e. changes classified as evaluations or nuclear changes). These design changes were then reviewed to determine if there were 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 Updated Safety Analysis Report.

No engineering change was identified as being completed during this time period that modified any radioactive waste system major component such that the processing method or effluent was changed. Also, no changes were identified affecting the method of processing solid, liquid or gaseous waste or 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 liquid, solid or gaseous radwaste treatment systems.

XV. PROCESS CONTROL PROGRAM (PCP)

There were no changes to the PCP in 2009.

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 have been no positive groundwater samples since the NEI groundwater monitoring sampling began in the third quarter 2007.

The Minimum Detectable Activity (MDA) in all samples taken in support of the GPI is 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 2009	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	8.41E+00	3.20E+01	3.49E+01	2.39E+01	9.92E+01
2. Avg. Release Rate	uCi/sec	1.08E+00	4.07E+00	4.39E+00	3.00E+00	3.15E+00
3. % Applicable Limit	% (1)	8.48E-02	7.96E-01	4.31E-01	2.05E-01	7.59E-01
Iodine-131						
1. Total Release	Ci	1.14E-03	2.55E-03	3.43E-03	5.63E-04	7.68E-03
2. Avg. Release Rate	uCi/sec	1.47E-04	3.24E-04	4.32E-04	7.08E-05	2.44E-04
3. % Applicable Limit	% (2)	4.86E-01	1.09E+00	1.51E+00	2.51E-01	1.67E+00
Particulates Half Life >= 8 days						
1. Total Release	Ci	5.13E-04	8.62E-04	8.71E-04	2.41E-04	2.49E-03
2. Avg. Release Rate	uCi/sec	6.60E-05	1.10E-04	1.10E-04	3.03E-05	7.89E-05
3. % Applicable Limit	% (2)	1.17E-01	2.70E-01	3.58E-01	6.70E-02	4.06E-01
Tritium						
1. Total Release	Ci	4.55E+00	4.29E+00	4.91E+00	3.66E+00	1.74E+01
2. Avg. Release Rate	uCi/sec	5.85E-01	5.45E-01	6.17E-01	4.60E-01	5.52E-01
3. % Applicable Limit	% (2)	1.28E-01	1.16E-01	1.15E-01	1.26E-01	2.41E-01
Gross Alpha Radioactivity						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Avg. Release Rate	uCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

1) Either the gamma air dose limit of 5 mrad/qtr or beta air dose limit of 10 mrad/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 2009	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
XE-133	Ci	5.76E-02	0.00E+00	2.69E-01	1.72E-01	4.99E-01
XE-133M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-135	Ci	4.99E-01	5.36E+00	2.11E+00	1.01E-01	8.07E+00
XE-135M	Ci	3.13E-01	4.50E+00	1.78E+00	8.51E-02	6.68E+00
Totals for Period...	Ci	8.70E-01	9.86E+00	4.16E+00	3.59E-01	1.52E+01
Iodines						
I-131	Ci	0.00E+00	1.39E-05	5.26E-05	1.15E-05	7.80E-05
I-133	Ci	0.00E+00	1.19E-04	2.40E-04	0.00E+00	3.58E-04
Totals for Period...	Ci	0.00E+00	1.33E-04	2.92E-04	1.15E-05	4.36E-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	0.00E+00	0.00E+00	1.70E-05	7.98E-06	2.50E-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	0.00E+00	0.00E+00	0.00E+00
NB-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RU-103	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RU-106	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SR-89	Ci	0.00E+00	3.01E-08	4.87E-06	0.00E+00	4.90E-06
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	3.01E-08	2.19E-05	7.98E-06	2.99E-05
Tritium						
H-3	Ci	1.69E+00	1.52E+00	1.45E+00	1.73E+00	6.39E+00
Totals for Period...	Ci	1.69E+00	1.52E+00	1.45E+00	1.73E+00	6.39E+00

Gross Alpha Radioactivity

** No Nuclide Activities **

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

REPORT FOR 2009	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	0.00E+00	0.00E+00	0.00E+00
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	0.00E+00	0.00E+00	0.00E+00
Iodines						
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	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	0.00E+00	0.00E+00	0.00E+00
Particulates Half Life >= 8 days						
BA-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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	0.00E+00	0.00E+00	0.00E+00
SR-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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	0.00E+00	0.00E+00	0.00E+00
Tritium						
H-3	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	0.00E+00	0.00E+00	0.00E+00
Gross Alpha Radioactivity						
** No Nuclide Activities **						

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

REPORT FOR 2009	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	0.00E+00	0.00E+00	0.00E+00	2.94E+00	2.94E+00
KR-87	Ci	0.00E+00	0.00E+00	0.00E+00	5.75E-01	5.75E-01
KR-88	Ci	0.00E+00	0.00E+00	0.00E+00	1.95E-01	1.95E-01
XE-131M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-133	Ci	2.14E-02	2.80E-01	1.03E+00	3.41E+00	4.74E+00
XE-133M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-135	Ci	7.43E+00	1.21E+01	1.61E+01	2.82E+00	3.85E+01
XE-135M	Ci	9.44E-02	9.82E+00	1.35E+01	2.55E+00	2.60E+01
XE-137	Ci	0.00E+00	0.00E+00	0.00E+00	4.72E+00	4.72E+00
XE-138	Ci	0.00E+00	0.00E+00	0.00E+00	6.32E+00	6.32E+00
Totals for Period...	Ci	7.54E+00	2.22E+01	3.07E+01	2.35E+01	8.40E+01
Iodines						
I-131	Ci	1.14E-03	2.53E-03	3.38E-03	5.52E-04	7.60E-03
I-132	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	Ci	1.01E-02	2.23E-02	2.84E-02	4.87E-03	6.56E-02
I-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Totals for Period...	Ci	1.13E-02	2.48E-02	3.17E-02	5.42E-03	7.32E-02
Particulates Half Life >= 8 days						
BA-140	Ci	2.82E-04	4.71E-04	5.45E-04	7.62E-05	1.37E-03
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO-60	Ci	0.00E+00	2.40E-05	0.00E+00	4.31E-05	6.71E-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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SR-89	Ci	2.31E-04	3.68E-04	3.04E-04	1.13E-04	1.02E-03
SR-90	Ci	0.00E+00	0.00E+00	0.00E+00	7.32E-07	7.32E-07
ZN-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Totals for Period...	Ci	5.13E-04	8.62E-04	8.49E-04	2.33E-04	2.46E-03
Tritium						
H-3	Ci	2.86E+00	2.76E+00	3.46E+00	1.93E+00	1.10E+01

Totals for Period...	Ci	2.86E+00	2.76E+00	3.46E+00	1.93E+00	1.10E+01
Gross Alpha Radioactivity						
** No Nuclide Activities **						
	

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

REPORT FOR 2009	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Number of releases		0	0	0	0	0
Total release time	minutes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum release time	minutes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Average release time	minutes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Minimum release time	minutes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE 1F
Effluent and Waste Disposal Annual Report 2009 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 Emitters Gamma	1.00E-04
			H-3	1.00E-06
B. Fuel Building Ventilation Exhaust Duct	M Grab Sample	M	Principal Emitters Gamma	1.00E-04
			H-3	1.00E-06
C. Radwaste Building Ventilation Exhaust Duct	M Grab Sample	M	Principal Emitters Gamma	1.00E-04
D. All Release Types as listed in A, B, & C above	Continuous	W Charcoal Sample	I-131	1.00E-12
			I-133	1.00E-10
	Continuous	W Particulate Sample	Principal Emitters Gamma (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

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

Period-Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q1 - T.Spec Any Organ	CHILD	THYROID	5.48E-02	7.50E+00	7.30E-01
Q2 - T.Spec Any Organ	CHILD	THYROID	1.11E-01	7.50E+00	1.48E+00
Q3 - T.Spec Any Organ	CHILD	THYROID	1.49E-01	7.50E+00	1.98E+00
Q4 - T.Spec Any Organ	CHILD	THYROID	3.33E-02	7.50E+00	4.44E-01
Yr - T.Spec Any Organ	CHILD	THYROID	3.48E-01	1.50E+01	2.32E+00

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

Period-Limit	Dose (mrad)	Limit (mrad)	% of Limit
Q1 - T.Spec Gamma	4.24E-03	5.00E+00	8.48E-02
Q2 - T.Spec Gamma	3.98E-02	5.00E+00	7.96E-01
Q3 - T.Spec Gamma	2.16E-02	5.00E+00	4.31E-01
Q4 - T.Spec Gamma	1.02E-02	5.00E+00	2.05E-01
Yr - T.Spec Gamma	7.59E-02	1.00E+01	7.59E-01
Q1 - T.Spec Beta	3.96E-03	1.00E+01	3.96E-02
Q2 - T.Spec Beta	2.59E-02	1.00E+01	2.59E-01
Q3 - T.Spec Beta	1.44E-02	1.00E+01	1.44E-01
Q4 - T.Spec Beta	1.27E-02	1.00E+01	1.27E-01
Yr - T.Spec Beta	5.70E-02	2.00E+01	2.85E-01

EFFLUENT AND WASTE DISPOSAL REPORT

TABLE 2A

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

REPORT FOR 2009	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation						
1. Total Release	Ci	0.00E+00	2.46E-04	4.57E-04	4.39E-04	1.14E-03
2. Avg. Diluted Conc.	uCi/ml	0.00E+00	1.69E-10	3.40E-10	3.83E-10	2.13E-10
3. % Applicable Limit	% (1)	0.00E+00	9.52E-05	2.15E-04	3.06E-04	3.05E-04
Tritium						
1. Total Release	Ci	0.00E+00	1.68E+01	2.73E+01	4.98E+00	4.91E+01
2. Avg. Diluted Conc.	uCi/ml	0.00E+00	1.15E-05	2.04E-05	4.34E-06	9.17E-06
3. % Applicable Limit	% (1)	0.00E+00	2.37E-04	9.21E-04	4.38E-05	3.47E-04
Dissolved and Entrained Gases						
1. Total Release	Ci	0.00E+00	1.29E-02	4.37E-02	1.33E-03	5.80E-02
2. Avg. Diluted Conc.	uCi/ml	0.00E+00	8.88E-09	3.26E-08	1.16E-09	1.08E-08
3. % Applicable Limit	% (2)	0.00E+00	4.45E-03	1.63E-02	5.78E-04	5.42E-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	0.00E+00	1.35E+06	3.07E+06	6.16E+05	5.04E+06
Volume of dil. water	liters	1.41E+09	1.45E+09	1.34E+09	1.15E+09	5.35E+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 2009	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 2009	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
CO-60	Ci	0.00E+00	2.41E-04	3.98E-04	2.95E-04	9.34E-04
LA-140	Ci	0.00E+00	0.00E+00	3.86E-05	8.40E-06	4.70E-05
MN-54	Ci	0.00E+00	5.49E-06	0.00E+00	1.72E-05	2.27E-05
MO-99	Ci	0.00E+00	0.00E+00	4.24E-06	0.00E+00	4.24E-06
NB-97	Ci	0.00E+00	0.00E+00	8.00E-06	0.00E+00	8.00E-06
TC-99M	Ci	0.00E+00	0.00E+00	4.63E-06	0.00E+00	4.63E-06
ZN-65	Ci	0.00E+00	0.00E+00	0.00E+00	1.18E-04	1.18E-04
ZR-97	Ci	0.00E+00	0.00E+00	2.94E-06	0.00E+00	2.94E-06
Totals for Period...	Ci	0.00E+00	2.46E-04	4.57E-04	4.39E-04	1.14E-03
Tritium						
H-3	Ci	0.00E+00	1.68E+01	2.73E+01	4.98E+00	4.91E+01
Totals for Period...	Ci	0.00E+00	1.68E+01	2.73E+01	4.98E+00	4.91E+01
Dissolved and Entrained Gases						
XE-133	Ci	0.00E+00	3.59E-03	1.42E-02	3.94E-04	1.82E-02
XE-133M	Ci	0.00E+00	7.65E-05	1.80E-04	0.00E+00	2.56E-04
XE-135	Ci	0.00E+00	9.26E-03	2.94E-02	9.34E-04	3.96E-02
Totals for Period...	Ci	0.00E+00	1.29E-02	4.37E-02	1.33E-03	5.80E-02
Gross Alpha Radioactivity						
** No Nuclide Activities **						

EFFLUENT AND WASTE DISPOSAL REPORT
 SUPPLEMENTAL INFORMATION
 LIQUID EFFLUENTS - BATCH MODE
 TABLE 2D

REPORT FOR 2009	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Number of releases		0	24	57	12	93
Total release time	minutes	0.00E+00	8.85E+03	1.98E+04	4.41E+03	3.31E+04
Maximum release time	minutes	0.00E+00	5.74E+02	4.43E+02	3.90E+02	5.74E+02
Average release time	minutes	0.00E+00	3.69E+02	3.48E+02	3.68E+02	3.56E+02
Minimum release time	minutes	0.00E+00	3.25E+02	8.70E+01	3.35E+02	8.70E+01

		<u>QTR1</u>	<u>QTR2</u>	<u>QTR3</u>	<u>QTR4</u>
Average Mississippi River stream flow during periods of release of effluent into a flowing stream	ft ³ /sec	548,522	907,066	398,804	734,452

TABLE 2E
Effluent and Waste Disposal Annual Report 2009 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	5.00E-07 ----- 5.00E-06 -----
			I-131	1.00E-06
			Dissolved and Entrained Gases (Gamma Emitters)	1.00E-05
	P Each Batch	M Composite	H-3	1.00E-05 -----
			Gross Alpha	1.00E-07
	P Each Batch	Q Composite	Sr-89, Sr-90	5.00E-08 -----
			Fe-55	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: 2009

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	0.00E+00	5.00E+00	0.00E+00
Qtr 1 - T.Spec Total Body	ADULT	TBODY	0.00E+00	1.50E+00	0.00E+00
Qtr 2 - T.Spec Any Organ	ADULT	GILLI	8.32E-06	5.00E+00	1.66E-04
Qtr 2 - T.Spec Total Body	ADULT	TBODY	3.95E-06	1.50E+00	2.64E-04
Qtr 3 - T.Spec Any Organ	ADULT	GILLI	2.45E-05	5.00E+00	4.91E-04
Qtr 3 - T.Spec Total Body	ADULT	TBODY	1.46E-05	1.50E+00	9.71E-04
Qtr 4 - T.Spec Any Organ	ADULT	GILLI	1.38E-05	5.00E+00	2.76E-04
Qtr 4 - T.Spec Total Body	ADULT	TBODY	5.25E-06	1.50E+00	3.50E-04
2009 - T.Spec Any Organ	ADULT	GILLI	4.09E-05	1.00E+01	4.09E-04
2009 - T.Spec Total Body	ADULT	TBODY	1.85E-05	3.00E+00	6.18E-04

TABLE 3
Effluent and Waste Disposal Annual Report 2009 Year
Solid Waste and Irradiated Fuel Shipments
Reporting Period from 01/01/09 to 12/31/09

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	m3	6.59E+01	A	± 25%
Sludges, Evaporator Bottoms, Etc.	Ci	7.51E+01	A	
<hr/>				
Dry Compressible Wastes, Contaminated Equipment Etc.	m3	5.06E+02	A	± 25%
	Ci	4.71E+00	A	
<hr/>				
Irradiated Components, Control Rods, Etc.	m3	0.00E+00		
	Ci	0.00E+00		
<hr/>				
Other (Water, EHC, Waste Oil, etc.)	m3	2.91E+01	A	± 25%
	Ci	3.74E-02	A	
<hr/>				

**Effluent and Waste Disposal Annual Report 2009 Year
Solid Waste and Irradiated Fuel Shipments
Reporting Period from 01/01/09 to 12/31/09
Table 3 (continued)**

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
C-14	1.665	1.25E+00	MN-54	2.366	1.11E-01	MN-54	2.367	8.84E-04
MN-54	1.878	1.41E+00	FE-55	71.471	3.37E+00	FE-55	71.472	2.67E-02
FE-55	13.934	1.05E+01	CO-60	22.603	1.07E+00	CO-60	22.601	8.45E-03
CO-60	55.577	4.18E+01	CS-137	1.086	5.12E-02	CS-137	1.086	4.06E-04
NI-63	11.131	8.36E+00						
ZN-65	6.914	5.19E+00						
SR-90	1.328	9.98E-01						
CS-134	1.016	7.64E-01						
CS-137	5.384	4.04E+00						

No Control Rods, Etc. were shipped in 2009

3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
17	Truck	Energy Solutions (Bear Creek)- Oak Ridge, TN
13	Truck	Energy Solutions (Gallaher)-Oak Ridge, TN
2	Truck	Clive Disposal Facility (Containerized) - Clive, UT

B. Irradiated Fuel Shipments Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
0	N/A	N/A

TABLE 4
Effluent and Waste Disposal Annual Report 2009 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	292
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 2009.
- (4) Workers began staying at the Activity Center Trailer City beginning April 10, 2007 and have been permitted to stay long term. During refueling outages additional workers were on site for about 60 days. The long term individuals will be the receptors for this pathway. For 2009, 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 2009

	<u>Critical Organ Dose Annual (mrem)</u>	<u>Total Body Dose Annual (mrem)</u>	<u>Skin Dose Annual (mrem)</u>	<u>Annual Duration Factor</u>
Alligator Bayou	1.28E-04	3.29E-05	6.10E-05	4.57E-03
Lawn Service Provider	1.62E-01	3.21E-02	5.83E-02	3.33E-02
Workers staying onsite	1.11E-02	1.95E-02	3.55E-02	2.74E-01
Delivery Driver	1.94E-02	4.36E-03	8.02E-03	1.43E-02

Table 6
Effluent and Waste Disposal Annual Report 2009 Year
Meteorological Data - Joint Frequency Tables

RIVER BEND STATION
 JOINT FREQUENCY TABLE
 ALL STABILITY CLASSES

FROM 1/01/09 0:00 TO 3/31/09 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	6	7	10	35	47	64	39	1	0	0	0	0	209
NNE	7	12	14	26	40	48	5	0	0	0	0	0	152
NE	8	6	12	23	51	47	1	0	0	0	0	0	148
ENE	3	13	8	16	12	19	2	0	0	0	0	0	73
E	2	9	14	19	15	4	0	0	0	0	0	0	63
ESE	2	12	26	74	40	17	0	0	0	0	0	0	171
SE	3	4	19	59	75	63	15	1	0	0	0	0	239
SSE	1	6	4	18	32	73	73	8	0	0	0	0	215
S	2	5	7	22	38	77	80	5	0	0	0	0	236
SSW	5	2	3	6	14	20	39	3	0	0	0	0	92
SW	5	6	1	11	5	13	12	1	0	0	0	0	54
WSW	1	4	6	12	9	25	9	0	0	0	0	0	66
W	1	5	7	17	15	12	11	0	0	0	0	0	68
WNW	4	7	10	16	7	17	9	0	0	0	0	0	70
NW	2	14	9	18	11	17	21	2	0	0	0	0	94
NNW	3	11	8	23	21	40	50	7	0	0	0	0	163
TOTAL	55	123	158	395	432	556	366	28	0	0	0	0	2113

NUMBER OF CALMS: 8
 NUMBER OF INVALID HOURS: 39
 NUMBER OF VALID HOURS: 2121
 TOTAL HOURS FOR THE PERIOD: 2160

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 1/01/09 0:00 TO 3/31/09 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	3	4	12	57	89	11	0	0	0	0	177
NNE	1	2	1	5	7	76	90	2	0	0	0	0	184
NE	0	0	2	3	9	29	71	8	0	0	0	0	122
ENE	0	1	1	4	6	15	40	7	0	0	0	0	74
E	0	0	0	3	9	17	34	16	0	0	0	0	79
ESE	0	0	0	4	10	38	161	39	0	0	0	0	252
SE	0	0	1	5	4	22	102	25	0	0	0	0	159
SSE	0	2	0	3	2	24	123	39	6	0	0	0	199
S	0	0	0	4	7	42	135	41	3	0	0	0	232
SSW	0	0	0	2	9	22	58	22	2	0	0	0	115
SW	0	0	0	3	6	19	21	7	0	0	0	0	56
WSW	0	0	3	4	5	32	42	4	2	0	0	0	92
W	0	2	0	3	11	21	22	7	1	0	0	0	67
WNW	0	1	0	9	4	14	31	9	1	0	0	0	69
NW	1	0	0	8	8	19	35	23	3	0	0	0	97
NNW	1	1	1	3	3	37	63	30	7	0	0	0	146
TOTAL	3	10	12	67	112	484	1117	290	25	0	0	0	2120

NUMBER OF CALMS: 1
NUMBER OF INVALID HOURS: 39
NUMBER OF VALID HOURS: 2121
TOTAL HOURS FOR THE PERIOD: 2160

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 4/01/09 0:00 TO 6/30/09 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND	.22-	.51-	.76-	1.1-	1.6-	2.1-	3.1-	5.1-	7.1-	10.1-	13.1-	>18	TOT.
DIR	.50	.75	1.0	1.5	2.0	3.0	5.0	7.0	10.0	13.0	18.0		

N	18	15	13	32	23	27	9	1	0	0	0	0	138
NNE	7	7	8	31	16	24	3	0	0	0	0	0	96
NE	11	5	4	24	28	33	2	0	0	0	0	0	107
ENE	9	14	6	10	7	8	2	0	0	0	0	0	56
E	7	8	10	5	8	3	0	0	0	0	0	0	41
ESE	8	12	15	15	9	10	1	0	0	0	0	0	70
SE	4	7	26	62	39	49	19	0	0	0	0	0	206
SSE	4	6	13	49	36	47	42	4	0	0	0	0	201
S	4	4	11	37	60	105	89	3	0	0	0	0	313
SSW	5	6	23	46	33	44	14	0	0	0	0	0	171
SW	4	6	13	25	24	32	6	0	0	0	0	0	110
WSW	6	6	10	15	17	43	7	0	0	0	0	0	104
W	8	8	10	18	16	49	8	0	0	0	0	0	117
WNW	11	20	7	32	16	41	1	3	0	0	0	0	131
NW	13	30	11	18	17	32	32	1	0	0	0	0	154
NNW	21	27	14	11	17	28	11	1	0	0	0	0	130

TOTAL	140	181	194	430	366	575	246	13	0	0	0	0	2145
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NUMBER OF CALMS: 39

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 2184

TOTAL HOURS FOR THE PERIOD: 2184

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 4/01/09 0:00 TO 6/30/09 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

WIND .22- .51- .76- 1.1- 1.6- 2.1- 3.1- 5.1- 7.1- 10.1- 13.1- >18 TOT.
DIR .50 .75 1.0 1.5 2.0 3.0 5.0 7.0 10.0 13.0 18.0

N	1	0	1	3	6	29	30	2	0	0	0	0	72
NNE	0	0	1	4	16	33	52	0	0	0	0	0	106
NE	1	0	0	2	6	17	80	14	1	0	0	0	121
ENE	0	2	1	2	8	15	24	19	1	0	0	0	72
E	0	0	1	3	6	12	24	5	3	0	0	0	54
ESE	1	1	1	5	6	33	120	24	12	0	0	0	203
SE	1	1	3	5	13	42	62	18	3	0	0	0	148
SSE	0	0	3	9	13	49	63	23	3	0	0	0	163
S	0	3	1	8	14	90	173	34	0	0	0	0	323
SSW	0	1	0	9	19	87	71	6	0	0	0	0	193
SW	0	0	2	15	15	74	32	3	0	0	0	0	141
WSW	1	1	2	7	19	55	36	5	0	0	0	0	126
W	0	1	4	10	16	75	51	4	1	0	0	0	162
WNW	0	1	2	9	10	29	33	15	4	0	0	0	103
NW	0	0	0	4	2	33	48	21	1	0	0	0	109
NNW	0	0	3	5	7	31	37	3	1	1	0	0	88

TOTAL 5 11 25 100 176 704 936 196 30 1 0 0 2184

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 2184

TOTAL HOURS FOR THE PERIOD: 2184

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 7/01/09 0:00 TO 9/30/09 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND	.22-	.51-	.76-	1.1-	1.6-	2.1-	3.1-	5.1-	7.1-	10.1-	13.1-	>18	TOT.
DIR	.50	.75	1.0	1.5	2.0	3.0	5.0	7.0	10.0	13.0	18.0		

N	23	17	25	27	25	20	1	0	0	0	0	0	138
NNE	16	15	30	34	21	6	0	0	0	0	0	0	122
NE	24	13	21	36	18	11	0	0	0	0	0	0	123
ENE	15	11	23	23	11	5	1	0	0	0	0	0	89
E	13	16	20	22	5	1	1	0	0	0	0	0	78
ESE	9	19	16	15	7	2	0	0	0	0	0	0	68
SE	14	22	36	42	30	12	2	0	0	0	0	0	158
SSE	9	9	31	41	26	35	8	0	0	0	0	0	159
S	6	10	19	43	36	32	18	1	0	0	0	0	165
SSW	9	11	17	46	32	37	11	0	0	0	0	0	163
SW	10	12	18	31	32	22	3	0	0	0	0	0	128
WSW	7	14	16	24	29	35	5	0	0	0	0	0	130
W	11	20	14	22	23	49	7	0	0	0	0	0	146
WNW	19	23	13	33	34	40	9	0	0	0	0	0	171
NW	22	22	18	20	18	18	4	0	0	0	0	0	122
NNW	29	21	17	25	16	25	4	0	0	0	0	0	137

TOTAL	236	255	334	484	363	350	74	1	0	0	0	0	2097
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NUMBER OF CALMS: 57

NUMBER OF INVALID HOURS: 54

NUMBER OF VALID HOURS: 2154

TOTAL HOURS FOR THE PERIOD: 2208

RIVER BEND STATION
 JOINT FREQUENCY TABLE
 ALL STABILITY CLASSES

FROM 7/01/09 0:00 TO 9/30/09 23:00

PRIMARY SENSORS - 150 FOOT

WIND SPEED (METERS/SECOND)

 WIND .22- .51- .76- 1.1- 1.6- 2.1- 3.1- 5.1- 7.1- 10.1- 13.1- >18 TOT.
 DIR .50 .75 1.0 1.5 2.0 3.0 5.0 7.0 10.0 13.0 18.0

N	0	1	6	8	16	43	32	0	0	0	0	0	106
NNE	0	3	3	12	19	52	37	0	0	0	0	0	126
NE	0	1	4	13	23	61	74	3	0	0	0	0	179
ENE	2	1	7	14	30	29	40	7	2	0	0	0	132
E	2	3	3	18	25	31	17	1	2	0	0	0	102
ESE	1	2	7	18	17	59	69	8	0	0	0	0	181
SE	0	4	5	10	18	42	34	1	0	0	0	0	114
SSE	2	1	5	20	26	57	36	3	0	0	0	0	150
S	0	0	5	16	28	82	62	6	1	0	0	0	200
SSW	0	1	5	12	25	73	32	5	0	0	0	0	153
SW	1	1	6	19	31	62	33	0	0	0	0	0	153
WSW	2	2	3	14	29	91	29	1	0	0	0	0	171
W	1	4	5	13	24	63	49	1	1	0	0	0	161
WNW	0	5	2	5	13	29	14	3	0	0	0	0	71
NW	1	0	0	11	18	22	16	3	0	0	0	0	71
NNW	2	0	0	7	11	30	29	1	1	0	0	0	81

 TOTAL 14 29 66 210 353 826 603 43 7 0 0 0 2151

NUMBER OF CALMS: 3
 NUMBER OF INVALID HOURS: 54
 NUMBER OF VALID HOURS: 2154
 TOTAL HOURS FOR THE PERIOD: 2208

RIVER BEND STATION
JOINT FREQUENCY TABLE
ALL STABILITY CLASSES

FROM 10/01/09 0:00 TO 12/31/09 23:00

PRIMARY SENSORS - 30 FOOT

WIND SPEED (METERS/SECOND)

WIND	.22-	.51-	.76-	1.1-	1.6-	2.1-	3.1-	5.1-	7.1-	10.1-	13.1-	>18	TOT.
DIR	.50	.75	1.0	1.5	2.0	3.0	5.0	7.0	10.0	13.0	18.0		
N	13	15	28	39	35	71	43	2	0	0	0	0	246
NNE	15	16	22	31	41	42	2	0	0	0	0	0	169
NE	15	15	18	34	44	50	5	0	0	0	0	0	181
ENE	23	29	35	26	20	26	4	0	0	0	0	0	163
E	9	28	28	37	16	7	0	0	0	0	0	0	125
ESE	6	21	26	28	28	19	0	0	0	0	0	0	128
SE	6	16	15	37	53	59	17	0	0	0	0	0	203
SSE	4	14	12	25	40	38	33	2	0	0	0	0	168
S	5	3	4	16	24	28	19	2	0	0	0	0	101
SSW	3	3	12	9	4	20	9	4	0	0	0	0	64
SW	6	5	6	15	11	12	5	0	0	0	0	0	60
WSW	3	4	9	10	8	9	7	0	0	0	0	0	50
W	4	5	14	11	8	11	9	0	0	0	0	0	62
WNW	9	11	17	16	9	27	14	0	0	0	0	0	103
NW	10	16	13	19	23	31	19	0	0	0	0	0	131
NNW	13	27	24	41	32	37	32	0	0	0	0	0	206
TOTAL	144	228	283	394	396	487	218	10	0	0	0	0	2160

NUMBER OF CALMS: 24

NUMBER OF INVALID HOURS: 24

NUMBER OF VALID HOURS: 2184

TOTAL HOURS FOR THE PERIOD: 2208

RIVER BEND STATION
 JOINT FREQUENCY TABLE
 ALL STABILITY CLASSES

FROM 10/01/09 0:00 TO 12/31/09 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	6	9	61	100	22	1	0	0	0	201
NNE	0	2	2	11	12	69	97	4	0	0	0	0	197
NE	1	1	4	5	7	40	103	13	4	0	0	0	178
ENE	1	1	0	5	5	41	61	44	2	0	0	0	160
E	0	3	3	7	12	65	48	18	2	0	0	0	158
ESE	1	1	3	8	15	54	123	69	8	0	0	0	282
SE	0	1	1	4	13	25	66	15	8	0	0	0	133
SSE	0	0	1	7	9	30	43	21	2	0	0	0	113
S	1	0	2	3	9	31	48	7	3	0	0	0	104
SSW	1	1	1	10	6	22	9	7	3	0	0	0	60
SW	1	1	0	10	12	18	15	6	2	0	0	0	65
WSW	2	0	4	13	13	20	5	8	1	0	0	0	66
W	0	0	6	5	7	23	19	8	3	0	0	0	71
WNW	1	0	3	6	13	32	48	10	0	0	0	0	113
NW	1	0	3	3	13	36	44	10	3	0	0	0	113
NNW	0	0	4	4	12	39	87	19	0	0	0	0	165
TOTAL	10	12	38	107	167	606	916	281	42	0	0	0	2179

NUMBER OF CALMS: 5
 NUMBER OF INVALID HOURS: 24
 NUMBER OF VALID HOURS: 2184
 TOTAL HOURS FOR THE PERIOD: 2208

Table 7

**Effluent and Waste Disposal Annual Report 2009 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/m³
- (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
20090204	EB-1	3/11/2009	< 567
20090205	MW-20	3/11/2009	< 564
20090206	EB-02	3/11/2009	< 565
20090207	MW-19	3/11/2009	< 565
20090208	EB-3	3/11/2009	< 565
20090209	MW-16	3/11/2009	< 566
20090210	EB-4	3/11/2009	< 568
20090211	MW-17	3/11/2009	< 568
20090212	EB-5	3/11/2009	< 566
20090225	MW-11	3/11/2009	< 567
20090226	EB-6	3/11/2009	< 569
20090227	MW-03	3/11/2009	< 569
20090228	EB-7	3/11/2009	< 571
20090229	MW-18	3/12/2009	< 577
20090230	EB-8	3/12/2009	< 569

LLD (pCi/l)			3000
LAB ID	LOCATION	DATE	TRITIUM
20090231	MW-15	3/12/2009	< 573
20090232	EB-9	3/12/2009	< 557
20090233	MW-08	3/12/2009	< 544
20090234	EB-10	3/12/2009	< 545
20090235	MW-05	3/12/2009	< 550
20090236	EB-11	3/12/2009	< 541
20090237	MW-02	3/12/2009	< 540
20090238	MW-02D	3/12/2009	< 539
20090239	EB-12	3/12/2009	< 549
20090240	MW-10	3/12/2009	< 546
20090241	MW-10D	3/12/2009	< 554
20090242	EB-13	3/12/2009	< 551
20090243	MW-09	3/12/2009	< 554
20090244	EB-14	3/12/2009	< 543
20090245	MW-07	3/12/2009	< 550
20090246	EB-15	3/12/2009	< 551

LLD (pCi/l)			3000
LAB ID	LOCATION	DATE	TRITIUM
20090608	EB-1	6/17/2009	< 550
20090609	MW-20	6/17/2009	< 558
20090610	EB-2	6/17/2009	< 547
20090611	MW-19	6/17/2009	< 545
20090612	EB-3	6/17/2009	< 552
20090613	MW-17	6/17/2009	< 545
20090614	EB-4	6/17/2009	< 574
20090615	MW-11	6/17/2009	< 549
20090616	EB-5	6/17/2009	< 546
20090617	MW-18	6/17/2009	< 544
20090618	EB-6	6/17/2009	< 552
20090619	MW-08	6/17/2009	< 551
20090620	EB-7	6/17/2009	< 546
20090621	MW-05	6/18/2009	< 544
20090622	EB-8	6/18/2009	< 545
20090623	MW-02	6/18/2009	< 544

LLD (pCi/l)			3000
LAB ID	LOCATION	DATE	TRITIUM
20090624	MW-02D	6/18/2009	< 549
20090625	EB-9	6/18/2009	< 550
20090626	MW-10	6/18/2009	< 544
20090627	EB-10	6/18/2009	< 549
20090628	MW-09	6/18/2009	< 582
20090629	EB-11	6/18/2009	< 549
20090630	MW-07	6/18/2009	< 549
20090631	MW-07D	6/18/2009	< 549
20090632	EB-12	6/18/2009	< 546
20090771	EB-1	7/22/2009	< 548
20090772	MW-20	7/22/2009	< 547
20090773	EB-2	7/22/2009	< 549
20090774	MW-19	7/22/2009	< 548
20090775	EB-3	7/22/2009	< 551
20090776	MW-17	7/22/2009	< 549
20090777	EB-4	7/22/2009	< 579
20090778	MW-11	7/22/2009	< 549

LLD (pCi/l)			3000
LAB ID	LOCATION	DATE	TRITIUM
20090779	EB-5	7/22/2009	< 548
20090780	MW-18	7/22/2009	< 549
20090781	EB-6	7/22/2009	< 552
20090788	MW-05	7/23/2009	< 552
20090789	EB-8	7/23/2009	< 585
20090790	MW-05D	7/23/2009	< 553
20090791	MW-8	7/22/2009	< 550
20090792	EB-7	7/22/2009	< 547
20090793	MW-02	7/23/2009	< 553
20090794	MW-02D	7/23/2009	< 554
20090795	EB-9	7/23/2009	< 551
20090796	MW-10	7/23/2009	< 549
20090797	EB-10	7/23/2009	< 550
20090798	MW-09	7/23/2009	< 548
20090799	EB-11	7/23/2009	< 547
20090800	MW-07	7/23/2009	< 553
20090801	EB-12	7/23/2009	< 549

LLD (pCi/l)			3000
LAB ID	LOCATION	DATE	TRITIUM
20091073	EB-01	10/13/2009	< 532
20091074	MW-20	10/13/2009	< 548
20091075	MW-20D	10/13/2009	< 547
20091076	EB-02	10/13/2009	< 526
20091077	MW-19	10/13/2009	< 533
20091078	EB-03	10/13/2009	< 536
20091079	MW-18	10/13/2009	< 534
20091080	EB-04	10/13/2009	< 529
20091081	MW-08	10/13/2009	< 527
20091082	EB-05	10/13/2009	< 533
20091083	MW-02	10/13/2009	< 541
20091084	EB-06	10/13/2009	< 524
20091085	MW-10	10/13/2009	< 532
20091086	EB-07	10/13/2009	< 533

EB – Equipment Blank

D – Duplicate (ex: MW-20D)

MW – Monitoring Well

GROUND MONITORING 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	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
20090204	EB-1	3/11/2009	< 6.22	< 6.11	< 14.53	< 5.02	< 10.15	< 6.50	< 10.58	< 11.87	< 7.13	< 4.58	< 30.85	< 14.65
20090205	MW-20	3/11/2009	< 8.74	< 8.01	< 17.33	< 5.70	< 12.68	< 6.80	< 13.64	< 13.41	< 8.97	< 9.94	< 33.58	< 14.91
20090206	EB-02	3/11/2009	< 7.08	< 6.43	< 10.94	< 7.98	< 14.64	< 7.06	< 11.44	< 14.85	< 8.90	< 7.17	< 33.19	< 10.37
20090207	MW-19	3/11/2009	< 7.74	< 7.97	< 18.45	< 8.86	< 16.85	< 8.76	< 13.03	< 14.17	< 8.80	< 8.87	< 40.25	< 9.49
20090208	EB-3	3/11/2009	< 8.31	< 6.66	< 13.70	< 6.35	< 19.04	< 7.15	< 13.71	< 13.39	< 7.98	< 8.01	< 26.12	< 12.97
20090209	MW-16	3/11/2009	< 4.95	< 5.44	< 14.64	< 5.14	< 16.04	< 7.98	< 7.54	< 13.96	< 6.53	< 6.08	< 35.95	< 9.65
20090210	EB-4	3/11/2009	< 5.41	< 4.91	< 12.40	< 4.13	< 12.48	< 6.98	< 11.07	< 14.91	< 6.52	< 5.98	< 40.23	< 13.94
20090211	MW-17	3/11/2009	< 5.00	< 5.85	< 8.84	< 5.86	< 11.68	< 6.76	< 10.36	< 14.90	< 6.54	< 5.23	< 37.12	< 14.04
20090212	EB-5	3/11/2009	< 5.83	< 4.73	< 11.52	< 5.75	< 11.05	< 6.41	< 8.79	< 14.53	< 5.31	< 5.62	< 35.04	< 10.84
20090225	MW-11	3/11/2009	< 4.08	< 5.41	< 12.63	< 5.02	< 8.65	< 7.08	< 11.50	< 14.86	< 5.47	< 5.43	< 34.98	< 12.31
20090226	EB-6	3/11/2009	< 5.29	< 4.76	< 10.54	< 5.56	< 9.83	< 6.31	< 9.02	< 14.85	< 5.38	< 4.73	< 32.33	< 10.48
20090227	MW-03	3/11/2009	< 6.83	< 5.34	< 12.83	< 5.13	< 14.53	< 7.05	< 9.96	< 15.00	< 7.68	< 4.94	< 32.70	< 13.71
20090228	EB-7	3/11/2009	< 4.97	< 4.79	< 12.22	< 6.04	< 9.05	< 5.77	< 9.39	< 14.92	< 6.20	< 5.28	< 35.12	< 12.09
20090229	MW-18	3/12/2009	< 6.03	< 5.20	< 12.86	< 4.79	< 12.35	< 7.01	< 10.45	< 14.31	< 5.49	< 5.57	< 27.96	< 11.80
20090230	EB-8	3/12/2009	< 5.69	< 5.36	< 12.74	< 4.83	< 13.30	< 7.38	< 10.65	< 14.73	< 6.55	< 5.90	< 33.87	< 12.74
20090231	MW-15	3/12/2009	< 5.77	< 4.92	< 10.34	< 4.64	< 10.27	< 6.36	< 9.24	< 14.96	< 6.31	< 5.11	< 33.58	< 13.19
20090232	EB-9	3/12/2009	< 4.72	< 5.14	< 8.30	< 4.79	< 9.29	< 6.32	< 9.27	< 14.94	< 4.86	< 5.26	< 28.33	< 11.87

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	LOCATION	DATE	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
20090233	MW-08	3/12/2009	< 4.96	< 5.56	< 12.64	< 4.42	< 9.38	< 6.89	< 11.63	< 14.39	< 6.02	< 4.65	< 35.29	< 11.35
20090234	EB-10	3/12/2009	< 5.06	< 5.48	< 10.36	< 4.61	< 8.69	< 7.06	< 8.68	< 14.74	< 5.75	< 5.08	< 31.90	< 11.89
20090235	MW-05	3/12/2009	< 4.45	< 4.33	< 8.53	< 3.67	< 7.50	< 5.71	< 8.76	< 14.97	< 5.71	< 3.67	< 34.08	< 10.10
20090236	EB-11	3/12/2009	< 4.03	< 4.88	< 10.01	< 4.34	< 9.16	< 5.31	< 8.80	< 14.95	< 5.32	< 4.03	< 29.96	< 9.02
20090237	MW-02	3/12/2009	< 5.49	< 4.64	< 12.01	< 5.54	< 9.49	< 6.30	< 10.35	< 14.78	< 5.41	< 5.61	< 35.05	< 11.11
20090238	MW-02D	3/12/2009	< 5.04	< 5.52	< 9.97	< 4.48	< 10.67	< 6.60	< 9.47	< 14.97	< 6.28	< 4.76	< 34.01	< 12.08
20090239	EB-12	3/12/2009	< 3.23	< 3.34	< 7.40	< 2.58	< 6.48	< 4.05	< 6.27	< 14.90	< 3.54	< 3.10	< 26.45	< 7.81
20090240	MW-10	3/12/2009	< 3.22	< 3.01	< 7.09	< 2.74	< 6.43	< 3.85	< 5.66	< 14.97	< 3.33	< 2.97	< 26.76	< 9.92
20090241	MW-10D	3/12/2009	< 3.39	< 3.58	< 7.23	< 3.34	< 6.65	< 4.89	< 6.36	< 15.00	< 3.73	< 3.43	< 32.20	< 9.98
20090242	EB-13	3/12/2009	< 2.80	< 3.20	< 6.22	< 2.60	< 6.10	< 3.94	< 5.82	< 14.52	< 3.18	< 2.75	< 26.20	< 9.07
20090243	MW-09	3/12/2009	< 3.54	< 3.50	< 6.35	< 3.07	< 8.10	< 4.56	< 7.06	< 14.98	< 4.07	< 3.46	< 29.27	< 9.58
20090244	EB-14	3/12/2009	< 3.20	< 3.21	< 6.87	< 2.98	< 5.81	< 4.65	< 5.49	< 14.97	< 3.40	< 2.85	< 28.60	< 10.64
20090245	MW-07	3/12/2009	< 2.55	< 3.16	< 6.43	< 2.50	< 5.56	< 3.58	< 5.36	< 15.00	< 2.82	< 2.60	< 25.82	< 7.72
20090246	EB-15	3/12/2009	< 2.63	< 2.73	< 5.49	< 2.59	< 5.32	< 3.70	< 5.12	< 14.14	< 2.92	< 2.52	< 25.99	< 9.26
20090608	EB-1	6/17/2009	< 8.28	< 7.48	< 15.31	< 6.38	< 19.69	< 9.93	< 12.81	< 14.49	< 9.32	< 8.10	< 42.98	< 8.17
20090609	MW-20	6/17/2009	< 7.65	< 7.09	< 12.41	< 7.46	< 15.96	< 7.27	< 11.10	< 14.45	< 8.72	< 7.55	< 38.31	< 11.15
20090610	EB-2	6/17/2009	< 2.43	< 2.65	< 5.96	< 2.36	< 4.66	< 3.30	< 4.98	< 14.89	< 2.56	< 2.41	< 25.30	< 8.35
20090611	MW-19	6/17/2009	< 5.04	< 4.84	< 10.77	< 4.83	< 9.06	< 5.70	< 8.28	< 14.92	< 5.58	< 4.85	< 33.98	< 11.19
20090612	EB-3	6/17/2009	< 9.53	< 10.81	< 17.98	< 10.43	< 22.94	< 4.66	< 15.66	< 14.69	< 9.58	< 10.16	< 50.80	< 9.28

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	LOCATION	DATE	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
20090613	MW-17	6/17/2009	< 5.81	< 5.88	< 12.61	< 4.38	< 10.95	< 5.81	< 10.95	< 14.96	< 5.87	< 5.29	< 38.23	< 12.52
20090614	EB-4	6/17/2009	< 2.72	< 2.93	< 5.73	< 2.51	< 6.08	< 3.54	< 4.80	< 15.00	< 3.06	< 2.65	< 25.76	< 8.31
20090615	MW-11	6/17/2009	< 4.31	< 5.21	< 11.34	< 5.46	< 9.95	< 6.28	< 9.21	< 14.10	< 5.59	< 5.02	< 30.70	< 12.70
20090616	EB-5	6/17/2009	< 2.81	< 2.98	< 6.45	< 2.60	< 5.94	< 4.03	< 5.95	< 14.89	< 3.05	< 2.51	< 28.25	< 10.42
20090617	MW-18	6/17/2009	< 5.30	< 4.70	< 10.13	< 4.59	< 11.46	< 6.28	< 7.79	< 14.99	< 5.29	< 5.11	< 34.11	< 10.43
20090618	EB-6	6/17/2009	< 3.23	< 3.91	< 8.43	< 3.83	< 7.77	< 4.52	< 6.20	< 14.99	< 3.85	< 3.33	< 28.35	< 10.15
20090619	MW-08	6/17/2009	< 5.15	< 4.97	< 9.65	< 5.24	< 10.49	< 5.81	< 10.14	< 14.64	< 5.76	< 5.47	< 34.51	< 9.03
20090620	EB-7	6/17/2009	< 2.83	< 3.16	< 6.82	< 2.93	< 5.91	< 3.76	< 5.52	< 15.00	< 3.13	< 2.90	< 25.86	< 9.00
20090621	MW-05	6/18/2009	< 6.13	< 5.09	< 12.13	< 5.31	< 10.65	< 7.46	< 9.32	< 13.94	< 6.60	< 5.93	< 33.79	< 10.05
20090622	EB-8	6/18/2009	< 2.81	< 2.90	< 6.58	< 2.74	< 5.02	< 3.75	< 5.14	< 14.90	< 3.10	< 2.65	< 26.64	< 9.47
20090623	MW-02	6/18/2009	< 5.71	< 5.08	< 11.25	< 5.28	< 10.10	< 6.35	< 9.91	< 15.00	< 5.83	< 4.22	< 30.58	< 9.98
20090624	MW-02D	6/18/2009	< 2.76	< 3.12	< 6.55	< 2.68	< 5.42	< 3.93	< 5.73	< 14.93	< 3.09	< 2.73	< 25.58	< 9.26
20090625	EB-9	6/18/2009	< 4.07	< 4.49	< 8.80	< 3.87	< 3.87	< 7.63	< 4.76	< 13.56	< 4.73	< 4.62	< 27.70	< 9.21
20090626	MW-10	6/18/2009	< 2.99	< 3.08	< 6.59	< 2.86	< 5.36	< 4.07	< 5.57	< 14.90	< 2.94	< 2.86	< 26.70	< 9.22
20090627	EB-10	6/18/2009	< 2.78	< 3.11	< 6.23	< 2.59	< 6.39	< 4.09	< 5.60	< 15.00	< 3.00	< 2.73	< 26.55	< 10.45
20090628	MW-09	6/18/2009	< 8.86	< 5.51	< 17.08	< 9.46	< 17.02	< 8.79	< 13.58	< 12.85	< 8.74	< 7.10	< 36.35	< 12.38
20090629	EB-11	6/18/2009	< 3.32	< 3.88	< 8.45	< 3.27	< 6.94	< 4.82	< 6.97	< 14.79	< 3.19	< 3.60	< 31.73	< 11.32
20090630	MW-07	6/18/2009	< 4.85	< 4.65	< 9.93	< 4.19	< 9.24	< 5.43	< 7.71	< 14.14	< 5.40	< 4.82	< 33.06	< 10.52
20090631	MW-07D	6/18/2009	< 6.14	< 6.26	< 13.21	< 5.93	< 12.07	< 8.28	< 10.64	< 14.19	< 6.11	< 5.56	< 35.05	< 12.69

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
20090632	EB-12	6/18/2009	< 5.01	< 5.85	< 9.89	< 4.65	< 11.44	< 5.89	< 9.85	< 13.97	< 5.81	< 5.48	< 27.37	< 11.54
20090771	EB-1	7/22/2009	< 10.07	< 8.31	< 13.02	< 11.14	< 28.42	< 12.31	< 19.22	< 11.36	< 9.75	< 9.26	< 35.90	< 9.49
20090772	MW-20	7/22/2009	< 9.48	< 7.35	< 10.82	< 14.23	< 26.21	< 13.64	< 17.91	< 9.25	< 11.90	< 7.06	< 29.74	< 11.45
20090773	EB-2	7/22/2009	< 8.14	< 8.00	< 13.13	< 6.08	< 16.15	< 9.99	< 10.66	< 7.52	< 11.49	< 10.36	< 35.71	< 49.99
20090774	MW-19	7/22/2009	< 9.14	< 10.13	< 15.34	< 10.29	< 21.09	< 6.99	< 10.70	< 9.99	< 9.29	< 7.96	< 28.33	< 9.32
20090775	EB-3	7/22/2009	< 11.94	< 12.42	< 16.86	< 5.56	< 25.05	< 10.69	< 15.44	< 11.33	< 9.49	< 11.94	< 37.52	< 11.81
20090776	MW-17	7/22/2009	< 8.16	< 10.53	< 21.62	< 10.18	< 21.05	< 11.80	< 13.93	< 9.57	< 10.42	< 9.28	< 29.77	< 8.74
20090777	EB-4	7/22/2009	< 14.72	< 9.43	< 25.12	< 7.40	< 21.06	< 10.09	< 14.62	< 11.69	< 9.99	< 10.17	< 39.26	< 11.43
20090778	MW-11	7/22/2009	< 10.25	< 6.69	< 21.21	< 11.65	< 19.24	< 12.26	< 18.32	< 11.41	< 10.89	< 10.40	< 37.85	< 7.53
20090779	EB-5	7/22/2009	< 7.90	< 8.89	< 13.23	< 9.19	< 20.59	< 10.50	< 11.69	< 9.67	< 8.41	< 10.81	< 21.71	< 12.00
20090780	MW-18	7/22/2009	< 8.80	< 7.46	< 19.66	< 7.86	< 19.61	< 7.15	< 19.81	< 11.57	< 13.56	< 11.11	< 22.07	< 12.13
20090781	EB-6	7/22/2009	< 7.11	< 9.38	< 19.34	< 7.87	< 19.91	< 8.97	< 8.71	< 6.35	< 9.93	< 9.54	< 25.07	< 10.27
20090788	MW-05	7/23/2009	< 12.62	< 10.39	< 17.53	< 11.09	< 28.35	< 11.14	< 19.66	< 10.18	< 10.71	< 9.40	< 32.36	< 14.03
20090789	EB-8	7/23/2009	< 9.18	< 7.07	< 18.61	< 7.84	< 25.93	< 8.50	< 19.03	< 9.83	< 11.59	< 12.37	< 37.53	< 10.63
20090790	MW-05D	7/23/2009	< 8.88	< 10.04	< 13.28	< 8.78	< 21.10	< 13.15	< 9.61	< 9.25	< 8.08	< 8.49	< 31.66	< 12.48
20090791	MW-8	7/22/2009	< 11.47	< 8.81	< 15.66	< 10.76	< 11.76	< 11.22	< 16.92	< 8.45	< 9.87	< 7.03	< 27.06	< 8.76
20090792	EB-7	7/22/2009	< 8.00	< 10.66	< 16.25	< 9.64	< 15.47	< 8.96	< 18.01	< 8.85	< 8.95	< 10.92	< 25.36	< 14.78
20090793	MW-02	7/23/2009	< 11.07	< 10.91	< 17.11	< 7.52	< 22.97	< 12.20	< 16.85	< 9.92	< 12.98	< 10.33	< 33.94	< 6.19
20090794	MW-02D	7/23/2009	< 13.14	< 12.06	< 14.78	< 7.17	< 18.52	< 9.09	< 20.90	< 11.00	< 9.68	< 13.56	< 30.88	< 13.59

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	LOCATION	DATE	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
20090795	EB-9	7/23/2009	< 8.33	< 7.76	< 13.01	< 8.21	< 18.85	< 12.02	< 19.59	< 12.36	< 10.94	< 9.98	< 30.43	< 13.39
20090796	MW-10	7/23/2009	< 8.50	< 9.37	< 18.69	< 6.32	< 15.43	< 9.21	< 11.75	< 14.18	< 8.13	< 8.25	< 37.57	< 12.28
20090797	EB-10	7/23/2009	< 9.58	< 5.81	< 16.49	< 8.75	< 17.19	< 9.54	< 17.08	< 10.45	< 12.41	< 13.23	< 39.05	< 6.19
20090798	MW-09	7/23/2009	< 9.26	< 11.43	< 16.20	< 6.45	< 15.57	< 13.36	< 17.09	< 13.42	< 13.66	< 11.11	< 38.78	< 13.13
20090799	EB-11	7/23/2009	< 6.09	< 7.97	< 11.07	< 7.46	< 9.78	< 8.13	< 11.39	< 7.57	< 9.33	< 7.38	< 30.25	< 13.80
20090800	MW-07	7/23/2009	< 5.53	< 5.93	< 8.18	< 6.56	< 11.84	< 6.95	< 11.01	< 8.30	< 6.98	< 6.14	< 23.20	< 12.34
20090801	EB-12	7/23/2009	< 9.02	< 7.62	< 11.49	< 8.03	< 20.32	< 11.47	< 13.00	< 8.59	< 10.07	< 8.76	< 27.84	< 7.44
20091073	EB-01	10/13/2009	< 10.69	< 8.49	< 15.33	< 6.54	< 19.24	< 8.35	< 16.02	< 9.53	< 11.59	< 9.82	< 35.11	< 9.28
20091074	MW-20	10/13/2009	< 7.12	< 7.42	< 18.48	< 7.79	< 17.72	< 11.34	< 17.81	< 9.12	< 8.84	< 8.46	< 30.66	< 13.58
20091075	MW-20D	10/13/2009	< 11.86	< 9.16	< 17.50	< 7.78	< 8.23	< 11.64	< 14.27	< 9.91	< 10.35	< 9.26	< 42.55	< 14.06
20091076	EB-02	10/13/2009	< 9.41	< 10.53	< 11.33	< 6.94	< 24.30	< 10.02	< 16.30	< 8.54	< 9.79	< 8.56	< 28.60	< 11.56
20091077	MW-19	10/13/2009	< 9.65	< 9.16	< 20.77	< 5.11	< 28.97	< 11.78	< 12.94	< 11.88	< 11.38	< 10.87	< 34.16	< 13.05
20091078	EB-03	10/13/2009	< 8.85	< 9.59	< 12.97	< 10.68	< 16.83	< 8.39	< 14.33	< 8.19	< 8.85	< 9.03	< 27.61	< 6.35
20091079	MW-18	10/13/2009	< 10.78	< 8.46	< 15.57	< 6.47	< 15.00	< 9.59	< 17.78	< 9.29	< 9.99	< 7.29	< 32.66	< 4.54
20091080	EB-04	10/13/2009	< 7.55	< 11.07	< 9.97	< 8.08	< 16.68	< 8.29	< 16.33	< 9.39	< 10.80	< 10.37	< 35.78	< 13.84
20091081	MW-08	10/13/2009	< 11.81	< 8.46	< 17.20	< 9.40	< 22.98	< 9.60	< 10.98	< 8.42	< 8.98	< 8.32	< 37.54	< 7.50
20091082	EB-05	10/13/2009	< 10.20	< 8.63	< 21.11	< 10.52	< 12.91	< 7.09	< 13.10	< 10.80	< 7.99	< 8.78	< 38.48	< 14.51
20091083	MW-02	10/13/2009	< 7.39	< 9.69	< 19.38	< 11.19	< 25.73	< 7.90	< 16.72	< 10.98	< 9.11	< 11.12	< 27.48	< 7.49
20091084	EB-06	10/13/2009	< 9.93	< 10.95	< 5.61	< 12.45	< 24.67	< 9.92	< 9.86	< 12.55	< 10.88	< 11.40	< 41.04	< 14.50

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	LOCATION	DATE	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	I-131	CS-134	CS-137	BA-140	LA-140
20091085	MW-10	10/13/2009	< 9.86	< 10.66	< 18.02	< 12.35	< 28.04	< 13.80	< 15.69	< 9.47	< 12.60	< 9.51	< 38.16	< 12.20
20091086	EB-07	10/13/2009	< 8.28	< 6.01	< 18.05	< 8.60	< 13.66	< 11.46	< 12.02	< 10.31	< 10.88	< 10.61	< 28.74	< 13.82

EB – Equipment Blank

D – Duplicate (ex: MW-20D)

MW – Monitoring Well