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May 1, 2015

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RBG-47562
RBF1-15-0066

Subject: Annual Radioactive Effluent Release Report for 2014
River Bend Station – Unit 1
License No. NPF-47
Docket No. 50-458

Dear Sir or Madam,

Enclosed is the River Bend Station (RBS) Annual Radioactive Effluent Release Report for 2014 for the period January 1, 2014 through December 31, 2014. This report is submitted in accordance with the RBS Technical Specifications, Section 5.6.2

Should you have any questions regarding the enclosed, please contact Mr. Joseph Clark, at (225) 381-4177.

Sincerely,

JAC/tjb
enclosure

IE48
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RIVER BEND STATION

2014 ANNUAL EFFLUENT RELEASE REPORT

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This is the annual Radioactive Effluent Release Report for the period of January 1, 2014, through December 31, 2014. This report is submitted in accordance with Technical Specification 5.6.3 of Appendix A to River Bend Station (RBS) License Number NPF-47.

I. 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)

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

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

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

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:

$D_{I\&8D P\tau}$ = 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.)

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

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

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

(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:

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

<u>and</u>

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

$D_{TOTAL\tau}$ = 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

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

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

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

(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.

$$DR_{I\&8DP\tau} = \sum_{i=1}^{n} P_i \ \overline{(X/Q)} \cdot Q_i \leq 1500 \text{ mrem/yr}$$

(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 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 gas flow proportional 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.

d. Carbon-14 (C-14)

C-14 release details are discussed in Section VI.

e. Nickel-63

No Nickel-63 was quantified in 2014.

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 (Cherenkov 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, 2014, through December 31, 2014 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, 2014, through December 31, 2014.

E. Abnormal Releases

There were no liquid abnormal releases in 2014. The releases reported in the groundwater monitoring section are not expected to be detectable outside the site boundary.

There was one potential abnormal gaseous release.

During rounds on 5/11/2014, an operator determined that the direction of airflow between the Turbine Building and C-Tunnel was from the Turbine Building into C-Tunnel, and the expected direction of airflow should be from C-Tunnel into the Turbine Building. The investigation revealed there was an inlet screen associated with the Normal Switchgear ventilation louver that was clogged contributing to the incorrect flow. Maintenance was performed on filters and louvers to correct the situation. In addition, future cleaning of the filters and louvers were combined into one preventative maintenance task.

The significance of air flowing from the Turbine Building into the C-Tunnel is the potential of an unmonitored release pathway due to the fact that the Turbine Building ventilation at the 67-foot elevation was positive with respect to the C-Tunnel. The C-Tunnel discharge is through the Normal Switchgear Building, which is not a monitored gaseous release point. It is not known for certain if activity was actually released via this building vent. Nevertheless a conservative estimate of the activity released and the potential worst case dose to a member of the public demonstrated that if the activity in C-Tunnel had been released from the Normal Switchgear Building for an entire year, any dose to the public would be a small fraction of the typical annual effluent dose. The estimated activity and the potential dose impact are reported in the Table 1 series.

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: $\pm$ 14.2%
Tritium: $\pm$ 14.2%
Dissolved and Entrained Noble Gases: $\pm$ 14.2%
Gross Alpha Radioactivity: $\pm$ 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: $\pm$ 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:

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

where:

E_T = total error

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

II. GASEOUS EFFLUENT SUMMARY INFORMATION

Refer to the Table 1 series for the summation of gaseous releases. 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.

III. LIQUID EFFLUENT SUMMARY INFORMATION

Refer to the Table 2 series for the summation of liquid releases. 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.

IV. SOLID WASTE

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

V. 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.

Carbon-14 (C-14)

The bounding annual dose from C-14 was calculated using guidance from Regulatory Guide 1.21, Revision 2, NUREG-0016, and the methodology in Regulatory Guide 1.109. The C-14 source term of 11 curies was taken from the site calculation PR(C)-359-3A, Gaseous Releases per NUREG-0016 Revision 1. Carbon-14 does not have dose factors associated with standing on contaminated ground; therefore, no ground plane dose was calculated. There is no milk pathway within five miles of River Bend Station so this pathway is not evaluated. RBS does not take credit for decay in the X/Q. This calculation assumes the inhalation, meat and vegetation pathways are at the site boundary in the sector with the highest X/Q. The dose from liquid effluents is not calculated as the dose contribution from C-14 is considered to be insignificant as indicated in Regulatory Guide 1.21, Revision 2. According to EPRI 1021106, Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents, 95% of the carbon released is in the form of carbon dioxide and this contributes the highest dose to man. The ingestion pathway, specifically vegetation, is the most likely route of intake for man. An assumption has been made for gaseous releases that plants obtain all of their C-14 from carbon dioxide.

Dose not including C-14:

Organ	mrem
Total Body	4.21E-02
Skin	2.60E-02
Thyroid	5.18E-02
Other Organ	4.22E-02

Bounding Dose from C-14 only:

Organ	mrem
Total Body	9.39E-01
Skin	0.00E+00
Thyroid	9.39E-01
Other Organ (bone)	4.70E+00

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 an employee staying at RBS during the week and is conservatively calculated to have stayed at least four days per week for 34 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.

VI. METEOROLOGICAL DATA

See Tables 6 and 7 for the cumulative joint frequency distributions and annual average data for continuous releases. The meteorological recovery for 2014 was 98.5 %.

VII. 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, 2014, through December 31, 2014, restored to operable status within the required time.

VIII. 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, 2014, through December 31, 2014, restored to operable status within the required time.

IX. 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, 2014, through December 31, 2014 was less than or equal to the 10 curie limit as required by Technical Specification 5.5.8.b.

X. RADIOLOGICAL ENVIRONMENTAL MONITORING

There were no changes to the Radiological Environmental Monitoring Program during the reporting period January 1, 2014, through December 31, 2014.

XI. LAND USE CENSUS

The Land Use Census for 2014 was conducted in accordance with procedure ESP-8-051, as required by the Technical Requirements Manual (TRM) (TR 3.12.2). The results of the Land Use Census will be included in the Annual Radiological Environmental Operating Report pursuant to Technical Specification 5.6.2. The attached Table 1 summarizes the results.

A garden census is not conducted pursuant to the note in the TRM 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 resident census changes were noted.

No locations were identified this period 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 confirmed that there was no commercial harvesting of crawfish within the five-mile radius downstream of RBS. RBS conservatively uses the invertebrate pathway although not required by NUREG-0133 liquid dose factor methodology for fresh water nuclear power plants.

XII. OFFSITE DOSE CALCULATION MANUAL (ODCM)

There were no changes to the ODCM in 2014.

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

Engineering performed a review of the Asset Suite database to evaluate non-administrative design changes completed or partially completed during 2014 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 Updated Safety Analysis Report (USAR).

The Engineering Changes (EC's) to liquid, solid or gaseous radwaste systems implemented during this time period were:

EC-50174 TMOD ECN Rev. 0 – This was a change to reflect a new Engineering TMOD owner for TMOD EC-35300. TMOD EC-35300 was documented in the 2012 Annual Effluent Report input and determined that this change does not constitute a major change to either the liquid, solid or gaseous radwaste treatment systems.

The following TMOD ECNs were processed to provide changes to TMOD EC-41004. TMOD EC-41004 was documented in the 2013 Annual Effluent Report input and determined that this change does not constitute and major change to either the liquid, solid or gaseous radwaste treatment systems.

EC-54762 TMOD ECN Rev. 0 – This was a change to provide additional details regarding freeze protection methods for the remediation skid.

EC-50608 TMOD ECN Rev. 0 – This was a change to revise preventative maintenance statement in TMOD EC-41004.

EC-50177 TMOD ECN Rev. 0 – This was a change to provide a new Engineering TMOD owner for TMOD EC-41004.

EC-47305 TMOD ECN Rev. 0 – This was a change allowing a deviation from the provided requirements for hose installation in TMOD EC-45515. TMOD EC-45515 was documented in the 2013 Annual Effluent Report input and determined that this change does not constitute and major change to either the liquid, solid or gaseous radwaste treatment systems.

No EC 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 either the liquid, solid or gaseous radwaste treatment systems.

XIV. PROCESS CONTROL PROGRAM (PCP)

There were two editorial changes to the PCP in 2014. A copy of that revision is attached to this report.

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

Ground water samples were taken in support of the GPI. These samples are not part of the Radiological Environmental Monitoring Program. The sample results for 2014 are located in Table 8.

River Bend Station made two NEI 07-07 voluntary notifications in 2014, which are being included here per NEI 07-07 Objective 2.4.c. The first notification occurred on January 8, 2014, when the bonnet on a temporary blow down line gate valve (RWS-0339-V8) cracked due to a few days of sub-freezing temperatures. This caused a circulating water/liquid radwaste discharge water mixture to leak onto the ground. A radioactive waste discharge was not in progress; however, due to the temporary piping configuration, a dead leg of radioactive water is sometimes present in the piping connected to the valve that ruptured. The exact volume released is unknown because the exact time the valve body failed is unknown. The volume released estimated to be between 100 and 1200 gallons and is based on times that workers were in the area and the observed leakage rate.
Actions were taken at the time of the leak to contain the water, and dams were successfully installed to prevent any water from reaching any storm drains. The spill was confined to the Owner Controlled Area. The water analysis indicated no gamma activity, and the maximum tritium sample value was 4.58E-06 uCi/ml. Securing the Circulating Water System blow down stopped the leak and repairs were made.

The second notification occurred on May 12, 2014 because of contaminated water leaking into the C-Tunnel. An Operator discovered a small amount of water (~ 2 drips/minute) leaking into the C-Tunnel on the 67-foot elevation through a service water primary (SWP) piping penetration. The SWP is normally a radiologically clean system, and the water was sampled to determine if the service water pipe was leaking. The results indicated that the leak did not originate from the SWP system as was suspected so an additional sample was taken for radiological purposes. Tritium was detected in the followup sample. The highest confirmed sample for tritium was 2.82E-05 uCi/ml. Tritium was the only radioisotope detected. Follow-up sampling and leak rate determinations indicated the tritium activity and leak rates varied and seemed to be affected by rainfall. Based on this information, it is believed that the water was coming from outside the C-Tunnel.

The only source of radioactive material capable of giving the activity level detected is two small-bore pipes in the overhead of C-Tunnel that have been used for liquid radwaste discharges. These pipes are approximately 16 feet above the SWP piping and have been out of service since 2012. The service water pipes and the liquid radwaste pipes are all below grade once they leave the C-Tunnel. It is possible the liquid radwaste pipes developed a leak below grade outside the building, and some remaining water leaked into the soil and moved down to the SWP pipe.

The water being detected is not in the nearest aquifer beneath the site, and the activity detected is not from a groundwater monitoring well. The bottom of the SWP line is about 11 feet above the water table.

Although likely insignificant, the potential offsite impacts for both events have been reviewed. The Upland Terrace Aquifer is the closest aquifer beneath the site. The Upland Terrace Aquifer is hydrologically connected to the Mississippi River Alluvial aquifer, and then to the Mississippi River, approximately two miles west of the facility. The site conceptual hydrology model indicates a down-gradient flow generally to the southwest from the CWS-MOV104 pit and C-Tunnel to the Mississippi River. River Bend Station site does not utilize ground water for drinking water use, and the nearest known drinking water user from the Mississippi River is many miles downstream below Baton Rouge, Louisiana. The most recent information River Bend Station has is all neighbors surrounding the station use the parish water supply for their primary source of drinking water. Intakes to the parish water supply are not downgradient of River Bend Station. Our geologist estimates that the activity detected in both events are not likely to be detected if they were to infiltrate to the Upland Terrace Aquifer and migrate to the Mississippi River due to decay, dilution and dispersion. Due to the significant dilution volume of the Mississippi River, there would not be any meaningful dose impact offsite. The potential annual dose for both events to a member of the public is estimated to be less than the 10 CFR 50 Appendix I dose limits.

TABLE 1A
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

REPORT FOR 2014	Units	QTR 1	QTR 2(3)	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	9.76E-01	7.17E-01	9.08E-01	7.19E+00	9.79E+00
2. Avg. Release Rate	uCi/sec	1.26E-01	9.12E-02	1.14E-01	9.05E-01	3.11E-01
3. % Applicable Limit	%	6.91E-02	4.83E-02	6.07E*02	1.63E-02	1.71E-01
Iodine-131						
1. Total Release	Ci	6.64E-05	5.20E-05	6.08E-05	7.44E-05	2.54E-04
2. Avg. Release Rate	uCi/sec	8.55E-06	6.61E-06	7.65E-06	9.36E-06	8.04E-06
3. % Applicable Limit	% (1)	2.82E-02	2.21E-02	2.59E-02	3.17E-02	5.41E-02
Particulates Half Life >= 8 days						
1. Total Release	Ci	1.86E-05	2.24E-05	2.22E-05	0.00E+00	6.32E-05
2. Avg. Release Rate	uCi/sec	2.39E-06	2.84E-06	2.79E-06	0.00E+00	2.01E-06
3. % Applicable Limit	% (2)	2.39E-05	2.74E-05	2.79E-05	0.00E+00	1.48E-02
Tritium						
1. Total Release	Ci	5.06E+00	7.23E+00	3.24E+00	1.02E+01	2.57E+01
2. Avg. Release Rate	uCi/sec	6.51E-01	9.19E-01	4.08E-01	1.28E+00	8.15E-01
3. % Applicable Limit	% (2)	6.51E+00	9.00E+00	4.08E+00	1.28E+01	1.77E-01
Carbon-14						
1. Total Release	Ci	2.73E+00	2.73E+00	2.77E+00	2.77E+00	1.10E+01
2. Avg. Release Rate	uCi/sec	3.50E-01	3.49E-01	3.48E-01	3.48E-01	3.49E-01
3. % Applicable Limit	% (2)	1.56E+01	1.56E+01	1.58E+01	1.58E+01	3.13E+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.
3) Includes conservative estimate of abnormal release activity as discussed in Section I Part E of this report.

TABLE 1B

GASEOUS EFFLUENTS - GROUND RELEASES - CONTINUOUS MODE

REPORT FOR 2014	Units	QTR 1	QTR 2(1)	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-133M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-135	Ci	3.31E-01	2.31E-01	2.90E-01	6.82E-01	1.53E+00
XE-135M	Ci	5.79E-01	4.03E-01	5.07E-01	1.19E+00	2.68E+00
Totals for Period...	Ci	9.09E-01	6.34E-01	7.96E-01	1.87E+00	4.21E+00
Iodines						
I-131	Ci	0.00E+00	1.25E-06	0.00E+00	0.00E+00	1.25E-06
I-133	Ci	0.00E+00	1.39E-05	0.00E+00	0.00E+00	1.39E-05
Totals for Period...	Ci	0.00E+00	1.42E-05	0.00E+00	0.00E+00	1.42E-05
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	3.33E-06	1.85E-07	0.00E+00	0.00E+00	3.52E-06
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
NI-63	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	8.09E-07	0.00E+00	0.00E+00	8.09E-07
ZN-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Totals for Period...	Ci	3.33E-06	9.94E-07	0.00E+00	0.00E+00	4.33E-06
Tritium						
H-3	Ci	1.16E+00	1.36E+00	5.95E-01	4.81E-01	3.60E+00
Totals for Period...	Ci	2.07E*00	1.99E+00	1.39E*00	2.35E+00	7.81E+00

1) Includes conservative estimate of abnormal release activity as discussed in Section I Part E of this report.

TABLE 1C
GASEOUS EFFLUENTS - GROUND RELEASES - BATCH MODE

REPORT FOR 2014	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
Carbon-14						
C-14	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE 1D

GASEOUS EFFLUENTS - MIXED MODE RELEASES - CONTINUOUS MODE

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	0.00E+00	0.00E+00
KR-87	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
KR-88	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-131M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-133	Ci	0.00E+00	0.00E+00	0.00E+00	1.16E+00	1.16E+00
XE-133M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-135	Ci	6.70E-02	8.33E-02	1.12E-01	2.89E+00	3.16E+00
XE-135M	Ci	0.00E+00	0.00E+00	0.00E+00	1.26E+00	1.26E+00
XE-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-138	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		---	---	---	---	---
Totals for Period...	Ci	6.70E-02	8.33E-02	1.12E-01	5.32E+00	5.58E+00
Iodines						
I-131	Ci	6.64E-05	5.07E-05	6.08E-05	7.44E-05	2.52E-04
I-132	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	Ci	5.05E-04	5.40E-04	5.04E-04	4.94E-04	2.04E-03
I-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
		---	---	---	---	---
Totals for Period...	Ci	5.71E-04	5.90E-04	5.65E-04	5.68E-04	2.29E-03
Particulates Half Life >= 8 days						
BA-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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	9.84E-07	0.00E+00	0.00E+00	0.00E+00	9.84E-07
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	1.42E-05	2.14E-05	2.22E-05	0.00E+00	5.76E-05
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	1.52E-05	2.14E-05	2.22E-05	0.00E+00	5.86E-05
Tritium						
H-3	Ci	3.90E+00	5.87E+00	2.65E+00	9.68E+00	2.21E+01
---	---	---	---	---	---	---
Totals for Period...	Ci	3.97E+00	5.95E+00	2.76E+00	1.50E+01	2.77E+01
Carbon-14						
C-14	Ci	2.73E+00	2.73E+00	2.77E+00	2.77E+00	1.10E+01

TABLE 1E
SUPPLEMENTAL INFORMATION
GASEOUS EFFLUENTS - BATCH MODE

REPORT FOR 2014	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
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 ANNUAL DOSE SUMMARY REPORT

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

Period-Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Q1 - T.Spec Any Organ	CHILD	THYROID	1.01E-02	7.50E+00	1.34E-01
Q2 - T.Spec Any Organ (1)	CHILD	THYROID	1.14E-02	7.50E+00	1.52E-01
Q3 - T.Spec Any Organ	CHILD	THYROID	6.40E-03	7.50E+00	8.54E-02
Q4 - T.Spec Any Organ	CHILD	THYROID	9.03E-03	7.50E+00	1.20E-01
Yr - T.Spec Any Organ	CHILD	THYROID	3.69E-02	1.50E+01	2.46E-01
Carbon-14 (Bounding calculation)					
Q1 - T.Spec Any Organ	CHILD	BONE	1.17E+00	7.50E+00	1.56E+01
Q2 - T.Spec Any Organ	CHILD	BONE	1.17E+00	7.50E+00	1.56E+01
Q3 - T.Spec Any Organ	CHILD	BONE	1.18E+00	7.50E+00	1.58E+01
Q4 - T.Spec Any Organ	CHILD	BONE	1.18E+00	7.50E+00	1.58E+01
Yr - T.Spec Any Organ	CHILD	BONE	4.70E+00	1.50E+01	3.13E+01

=== NG DOSE LIMIT ANALYSIS ===

Period-Limit	Dose (mrad)	Limit (mrad)	% of Limit
Q1 - T.Spec Gamma	3.46E-03	5.00E+00	6.91E-02
Q1 - T.Spec Beta	1.67E-03	1.00E+01	1.67E-02
Q2 - T.Spec Gamma	2.42E-03	5.00E+00	4.83E-02
Q2 - T.Spec Beta	1.18E-03	1.00E+01	1.18E-02
Q3 - T.Spec Gamma	3.04E-03	5.00E+00	6.07E-02
Q3 - T.Spec Beta	1.48E-03	1.00E+01	1.48E-02
Q4 - T.Spec Gamma	8.16E-03	5.00E+00	1.63E-01
Q4 - T.Spec Beta	4.39E-03	1.00E+01	4.39E-02
Yr - T.Spec Gamma	1.71E-02	1.00E+01	1.71E-01
Yr - T.Spec Beta	8.72E-03	2.00E+01	4.36E-02

1) Includes conservative estimate of abnormal release dose as discussed in Section I Part E of this report.

TABLE 2A
LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

REPORT FOR 2014	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
1. Total Release	Ci	1.27E-03	1.04E-04	1.33E-03	1.06E-03	3.77E-03
2. Avg. Diluted Conc.	uCi/ml	1.06E-09	7.28E-11	9.35E-10	7.58E-10	6.91E-10
3. % Applicable Limit	% (1)	1.39E-04	1.75E-05	2.94E-04	2.85E-03	2.33E-03
Tritium						
1. Total Release	Ci	7.38E+00	1.96E+00	2.13E+01	1.50E+01	4.56E+01
2. Avg. Diluted Conc.	uCi/ml	6.13E-06	1.37E-06	1.49E-05	1.08E-05	8.36E-06
3. % Applicable Limit	% (1)	5.74E-05	3.92E-06	1.23E-03	2.23E-04	4.82E-04
Dissolved and Entrained Gases						
1. Total Release	Ci	4.82E-04	7.88E-05	1.71E-03	5.56E-04	2.82E-03
2. Avg. Diluted Conc.	uCi/ml	4.00E-10	5.52E-11	1.20E-09	3.99E-10	5.18E-10
3. % Applicable Limit	% (2)	2.01E-04	2.76E-05	6.02E-04	2.00E-04	2.59E-04
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	7.55E+05	2.25E+05	8.07E+06	1.74E+06	1.08E+07
Volume of dil. water	liters	1.20E+09	1.43E+09	1.42E+09	1.39E+09	5.44E+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.

TABLE 2B
LIQUID EFFLUENTS - CONTINUOUS MODE

REPORT FOR 2014	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
** No Nuclide Activities **	.....	.....	.....	.....	.....	.....
Tritium						
** No Nuclide Activities **	.....	.....	.....	.....	.....	.....
Dissolved and Entrained Gases						
** No Nuclide Activities **	.....	.....	.....	.....	.....	.....
Gross Alpha Radioactivity						
** No Nuclide Activities **	.....	.....	.....	.....	.....	.....

TABLE 2C
LIQUID EFFLUENTS - BATCH MODE

REPORT FOR 2014	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Products						
AG-110M	Ci	0.00E+00	0.00E+00	0.00E+00	2.74E-06	2.74E-06
CO-58	Ci	0.00E+00	0.00E+00	0.00E+00	2.04E-05	2.04E-05
CO-60	Ci	2.05E-04	8.54E-05	2.49E-04	4.80E-04	1.02E-03
CR-51	Ci	0.00E+00	0.00E+00	0.00E+00	2.28E-04	2.28E-04
CS-137	Ci	6.04E-06	3.21E-06	1.71E-06	0.00E+00	1.10E-05
FE-55	Ci	9.89E-04	0.00E+00	0.00E+00	0.00E+00	9.89E-04
FE-59	Ci	0.00E+00	0.00E+00	0.00E+00	1.22E-05	1.22E-05
I-132	Ci	0.00E+00	0.00E+00	0.00E+00	1.70E-06	1.70E-06
MN-54	Ci	1.21E-05	1.00E-05	0.00E+00	2.31E-04	2.53E-04
MO-99	Ci	0.00E+00	0.00E+00	2.33E-04	0.00E+00	2.33E-04
NA-24	Ci	0.00E+00	0.00E+00	8.38E-04	0.00E+00	8.38E-04
NB-95	Ci	0.00E+00	0.00E+00	0.00E+00	3.60E-06	3.60E-06
NB-97	Ci	0.00E+00	0.00E+00	0.00E+00	4.21E-06	4.21E-06
RH-105	Ci	0.00E+00	0.00E+00	0.00E+00	7.32E-05	7.32E-05
SB-125	Ci	4.55E-05	5.25E-06	0.00E+00	0.00E+00	5.07E-05
TC-99M	Ci	0.00E+00	0.00E+00	1.27E-05	0.00E+00	1.27E-05
ZN-65	Ci	1.41E-05	0.00E+00	0.00E+00	0.00E+00	1.41E-05
Totals for Period...	Ci	1.27E-03	1.04E-04	1.33E-03	1.06E-03	3.77E-03
Tritium						
H-3	Ci	7.38E+00	1.96E+00	2.13E+01	1.50E+01	4.56E+01
Totals for Period...	Ci	7.38E+00	1.96E+00	2.13E+01	1.50E+01	4.56E+01
Dissolved and Entrained Gases						
XE-133	Ci	2.84E-04	4.77E-05	8.45E-04	2.09E-04	1.39E-03
XE-133M	Ci	0.00E+00	0.00E+00	5.92E-06	0.00E+00	5.92E-06
XE-135	Ci	1.98E-04	3.11E-05	8.55E-04	3.48E-04	1.43E-03

Totals for Period...	Ci	4.82E-04	7.88E-05	1.71E-03	5.56E-04	2.82E-03

Gross Alpha Radioactivity

** No Nuclide Activities **	.....	.....	.....	.....	.....

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

REPORT FOR 2014	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Number of releases		13	4	63	32	112
Total release time	minutes	4.10E+03	1.25E+03	3.59E+04	9.03E+03	5.03E+04
Maximum release time	minutes	3.47E+02	3.43E+02	2.02E+03	3.63E+02	2.02E+03
Average release time	minutes	3.15E+02	3.12E+02	5.70E+02	2.82E+02	4.49E+02
Minimum release time	minutes	2.78E+02	2.70E+02	2.31E+02	1.00E+02	1.00E+02

		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	560,778	634,802	373,120	340,261

TABLE 2E
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
	P One Batch/M	M	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 ANNUAL DOSE SUMMARY REPORT

Report for: 2014

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	6.89E-06	5.00E+00	1.38E-04
Qtr 1 - T.Spec Total Body	ADULT	TBODY	2.95E-06	1.50E+00	1.97E-04
Qtr 2 - T.Spec Any Organ	ADULT	GILLI	9.32E-07	5.00E+00	1.86E-05
Qtr 2 - T.Spec Total Body	ADULT	TBODY	2.49E-07	1.50E+00	1.66E-05
Qtr 3 - T.Spec Any Organ	ADULT	GILLI	2.74E-05	5.00E+00	5.49E-04
Qtr 3 - T.Spec Total Body	ADULT	TBODY	2.28E-05	1.50E+00	1.52E-03
Qtr 4 - T.Spec Any Organ	ADULT	GILLI	1.46E-04	5.00E+00	2.92E-03
Qtr 4 - T.Spec Total Body	ADULT	TBODY	1.22E-05	1.50E+00	8.12E-04
2014 - T.Spec Any Organ	ADULT	GILLI	2.47E-04	1.00E+01	2.47E-03
2014 - T.Spec Total Body	ADULT	TBODY	3.64E-05	3.00E+00	1.21E-03

TABLE 3
Effluent and Waste Disposal Annual Report 2014 Year
Solid Waste and Irradiated Fuel Shipments
Reporting Period from 01/01/14 to 12/31/14

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.	m^3	6.32E+01	A	± 25%
	Ci	2.97E+01	A	
	m^3	0.00E+00	B	
	Ci	0.00E+00	B	
	m^3	0.00E+00	C	
	Ci	0.00E+00	C	
Dry Compressible Wastes, Contaminated Equipment Etc.	m^3	6.88E+02	A	± 25%
	Ci	2.99E-01	A	
Irradiated Components, Control Rods, Etc.	m^3	0.00E+00		
	Ci	0.00E+00		
Other (Water, EHC, Waste Oil, etc.)	m^3	5.42E+02	A	± 25%
	Ci	5.39E+00	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) and non-compactible/compactible dry active waste.

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 2014 Year
Solid Waste and Irradiated Fuel Shipments
Reporting Period from 01/01/14 to 12/31/14
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	2.395	7.11E-01	CR-51	4.180	1.25E-02	MN-54	2.224	1.20E-01
FE-55	36.963	1.10E+01	MN-54	4.406	1.32E-02	FE-55	35.339	1.90E+00
CO-60	49.145	1.46E+01	FE-55	18.939	5.66E-02	CO-60	47.669	2.57E+00
ZN-65	5.106	1.51E+00	CO-58	2.542	7.60E-03	ZR-95	9.479	5.11E-01
CS-137	3.419	1.01E+00	CO-60	40.965	1.23E-01	CS-137	2.341	1.26E-01
			ZN-65	1.366	4.09E-03			
			ZR-95	9.920	9.97E-02			
			NB-95	15.814	4.73E-02			

Determined by Measurement & Correlation.
Packaged in Strong, Tight Liners.

No Solidification Agent or Absorbent Used.

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
30	Truck	Energy Solutions (Gallaher) - Oak Ridge, TN
25	Truck	Energy Solutions (Bear Creek) - Oak Ridge, TN

B. Irradiated Fuel Shipments Disposition

No Irradiated Components, Control Rods, Etc. were shipped in 2014

TABLE 4
DOSES TO A MEMBER OF THE PUBLIC INSIDE SITE BOUNDARY
ASSUMPTIONS/PARAMETERS

MEMBER OF THE PUBLIC	LOCATION	DISTANCE[1] METERS	SECTOR	DURATION (HR/YEAR)[2]
People Entering Site Without Consent	Alligator Bayou	2500	SW	40
National Guard	Activity Center	994	WNW	0[3]
Workers staying onsite	Activity Center Trailer City	994	WNW	1632[4]
Deer Hunters	Activity Center	994	WNW	256[5]

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

(2) Liquid dose pathway 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 2014.

(4) Workers have been permitted to stay long term at the Activity Center Trailer City beginning April 10, 2007. Effective August 15, 2014, site management closed the Activity Center Trailer City and all trailers were removed. Going forward, trailers will be allowed 30 days prior to and must be removed 14 days following refueling outages. For 2014, this conservative estimate is based on 12 hours per day, 4 days per week for 34 weeks, totaling 1632 hours. The adult age group is the only age group considered for this activity.

(5) Employees are allowed to deer hunt on company property. Since the hunters are spread out all over the site, those workers are conservatively evaluated at the activity center using occupancy information provided by the Bow Club. In 2014, hunter's dose is not greater than Trailer City.

TABLE 5
DOSES TO MEMBERS OF THE PUBLIC ON SITE
FROM GASEOUS RELEASES 2014

Location	Critical Organ Dose Annual (mrem)	Total Body Dose Annual (mrem)	Skin Dose Annual (mrem)	Annual Duration Factor
Alligator Bayou	2.11E-05	6.22E-06	1.02E-05	4.57E-03
Workers staying onsite	1.79E-03	2.96E-04	4.82E-03	1.86E-01
Deer Hunters	2.81E-04	4.65E-04	7.56E-04	2.92E-02

TABLE 6
2014 YEAR METEOROLOGICAL DATA - JOINT FREQUENCY TABLES

RIVER BEND STATION

JOINT FREQUENCY TABLE

ALL STABILITY CLASSES

FROM 1/01/14 0:00 TO 12/31/14 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	105	76	87	165	144	203	93	2	0	0	0	0	875
NNE	81	39	69	190	137	145	7	0	0	0	0	0	668
NE	85	44	54	153	103	63	0	0	0	0	0	0	502
ENE	68	81	58	101	47	38	2	0	0	0	0	0	395
E	50	68	66	80	29	9	0	0	0	0	0	0	302
ESE	32	67	66	143	55	19	1	0	0	0	0	0	383
SE	20	64	115	289	213	145	12	0	0	0	0	0	858
SSE	16	37	65	150	168	246	126	1	0	0	0	0	809
S	6	26	62	130	143	240	102	3	0	0	0	0	712
SSW	7	29	62	82	80	97	48	0	0	0	0	0	405
SW	11	34	54	62	48	36	17	0	0	0	0	0	262
WSW	16	34	36	56	83	52	1	0	0	0	0	0	278
W	42	56	32	45	86	74	2	0	0	0	0	0	337
WNW	75	73	29	57	59	58	13	0	0	0	0	0	364
NW	127	119	47	68	52	80	72	1	0	0	0	0	566
NNW	131	105	63	79	81	133	157	6	0	0	0	0	755
TOTAL	872	952	965	1850	1528	1638	653	13	0	0	0	0	8471

NUMBER OF CALMS: 178

NUMBER OF INVALID HOURS: 111

NUMBER OF VALID HOURS: 8649

TOTAL HOURS FOR THE PERIOD: 8760

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS A

FROM 1/01/14 0:00 TO 12/31/14 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	26	54	65	25	0	0	0	0	0	174
NNE	1	0	4	28	55	45	1	0	0	0	0	0	134
NE	0	1	6	31	42	33	0	0	0	0	0	0	113
ENE	0	0	7	25	29	18	0	0	0	0	0	0	79
E	0	1	4	18	15	8	0	0	0	0	0	0	46
ESE	0	0	3	25	17	10	1	0	0	0	0	0	56
SE	1	1	1	19	61	48	5	0	0	0	0	0	136
SSE	0	0	2	13	51	72	66	1	0	0	0	0	205
S	0	0	5	23	49	134	65	3	0	0	0	0	279
SSW	0	0	4	15	32	39	20	0	0	0	0	0	110
SW	0	0	1	17	23	19	5	0	0	0	0	0	65
WSW	0	0	1	22	64	40	0	0	0	0	0	0	127
W	0	0	3	27	64	59	2	0	0	0	0	0	155
WNW	0	0	1	19	32	27	5	0	0	0	0	0	84
NW	0	0	5	19	21	41	23	0	0	0	0	0	109
NNW	1	0	1	14	29	46	46	6	0	0	0	0	143
TOTAL	3	3	52	341	638	704	264	10	0	0	0	0	2015

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 2015

TOTAL HOURS FOR THE PERIOD: 2015

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS B

FROM 1/01/14 0:00 TO 12/31/14 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	3	1	5	0	0	0	0	0	11
NNE	0	1	3	0	3	1	0	0	0	0	0	0	8
NE	0	0	1	2	3	0	0	0	0	0	0	0	6
ENE	0	1	1	4	1	0	0	0	0	0	0	0	7
E	0	0	0	1	1	1	0	0	0	0	0	0	3
ESE	0	0	1	4	1	1	0	0	0	0	0	0	7
SE	0	0	0	7	5	4	2	0	0	0	0	0	18
SSE	0	0	1	5	5	9	8	0	0	0	0	0	28
S	0	0	0	2	5	9	5	0	0	0	0	0	21
SSW	0	0	1	1	4	4	2	0	0	0	0	0	12
SW	0	0	0	1	3	1	2	0	0	0	0	0	7
WSW	0	0	3	2	4	3	0	0	0	0	0	0	12
W	0	1	1	1	1	5	0	0	0	0	0	0	9
WNW	0	1	0	2	2	1	2	0	0	0	0	0	8
NW	0	0	1	4	2	1	4	0	0	0	0	0	12
NNW	0	0	0	1	1	5	10	0	0	0	0	0	17
TOTAL	0	4	13	39	44	46	40	0	0	0	0	0	186

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 186

TOTAL HOURS FOR THE PERIOD: 186

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS C

FROM 1/01/14 0:00 TO 12/31/14 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	3	2	9	8	1	0	0	0	0	24
NNE	0	0	2	5	4	12	0	0	0	0	0	0	23
NE	0	0	4	2	4	2	0	0	0	0	0	0	12
ENE	0	0	1	5	0	2	2	0	0	0	0	0	10
E	0	1	2	3	1	0	0	0	0	0	0	0	7
ESE	0	1	0	5	4	1	0	0	0	0	0	0	11
SE	0	0	2	13	9	9	0	0	0	0	0	0	33
SSE	0	1	0	3	5	13	12	0	0	0	0	0	34
S	0	0	1	3	7	11	10	0	0	0	0	0	32
SSW	0	0	1	2	6	4	5	0	0	0	0	0	18
SW	0	0	2	0	8	2	5	0	0	0	0	0	17
WSW	0	0	3	2	4	4	0	0	0	0	0	0	13
W	0	0	0	3	4	2	0	0	0	0	0	0	9
WNW	0	1	1	1	1	2	4	0	0	0	0	0	10
NW	0	2	0	2	2	1	6	1	0	0	0	0	14
NNW	0	1	1	1	5	6	11	0	0	0	0	0	25
TOTAL	0	7	21	53	66	80	63	2	0	0	0	0	292

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 292

TOTAL HOURS FOR THE PERIOD: 292

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS D

FROM 1/01/14 0:00 TO 12/31/14 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	4	7	27	38	101	48	1	0	0	0	0	227
NNE	1	2	10	26	29	53	5	0	0	0	0	0	126
NE	1	2	2	21	14	14	0	0	0	0	0	0	54
ENE	0	7	7	14	5	8	0	0	0	0	0	0	41
E	1	3	7	17	5	0	0	0	0	0	0	0	33
ESE	1	3	4	24	12	4	0	0	0	0	0	0	48
SE	0	4	8	30	27	21	5	0	0	0	0	0	95
SSE	0	0	2	11	20	31	13	0	0	0	0	0	77
S	0	2	4	12	18	32	11	0	0	0	0	0	79
SSW	0	0	2	10	9	14	9	0	0	0	0	0	44
SW	0	2	7	6	4	6	3	0	0	0	0	0	28
WSW	0	0	5	14	3	1	0	0	0	0	0	0	23
W	0	2	2	8	7	3	0	0	0	0	0	0	22
WNW	0	2	6	9	4	14	2	0	0	0	0	0	37
NW	0	3	5	15	5	23	32	0	0	0	0	0	83
NNW	0	0	7	13	20	43	73	0	0	0	0	0	156
TOTAL	5	36	85	257	220	368	201	1	0	0	0	0	1173

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1173

TOTAL HOURS FOR THE PERIOD: 1173

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS E

FROM 1/01/14 0:00 TO 12/31/14 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	12	22	69	45	27	7	0	0	0	0	0	188
NNE	7	9	22	101	42	33	1	0	0	0	0	0	215
NE	11	11	16	56	30	14	0	0	0	0	0	0	138
ENE	7	13	23	37	11	10	0	0	0	0	0	0	101
E	11	11	35	32	7	0	0	0	0	0	0	0	96
ESE	7	13	33	75	19	3	0	0	0	0	0	0	150
SE	5	28	58	165	107	63	0	0	0	0	0	0	426
SSE	2	10	32	80	71	120	27	0	0	0	0	0	342
S	0	8	24	53	51	54	11	0	0	0	0	0	201
SSW	3	13	33	39	28	35	12	0	0	0	0	0	163
SW	3	9	24	34	10	8	2	0	0	0	0	0	90
WSW	3	11	13	15	8	4	1	0	0	0	0	0	55
W	6	12	12	4	9	5	0	0	0	0	0	0	48
WNW	9	16	10	22	17	13	0	0	0	0	0	0	87
NW	6	16	12	19	14	14	7	0	0	0	0	0	88
NNW	9	10	10	27	25	33	17	0	0	0	0	0	131
TOTAL	95	202	379	828	494	436	85	0	0	0	0	0	2519

NUMBER OF CALMS: 4

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 2523

TOTAL HOURS FOR THE PERIOD: 2523

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS F

FROM 1/01/14 0:00 TO 12/31/14 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	19	24	27	2	0	0	0	0	0	0	0	87
NNE	13	12	23	29	4	1	0	0	0	0	0	0	82
NE	20	12	17	35	10	0	0	0	0	0	0	0	94
ENE	17	17	11	14	1	0	0	0	0	0	0	0	60
E	21	28	13	8	0	0	0	0	0	0	0	0	70
ESE	13	35	21	10	2	0	0	0	0	0	0	0	81
SE	7	20	40	48	4	0	0	0	0	0	0	0	119
SSE	9	19	21	35	16	1	0	0	0	0	0	0	101
S	4	14	23	35	13	0	0	0	0	0	0	0	89
SSW	3	14	17	15	1	0	0	0	0	0	0	0	50
SW	7	14	15	3	0	0	0	0	0	0	0	0	39
WSW	7	17	8	1	0	0	0	0	0	0	0	0	33
W	17	16	6	2	1	0	0	0	0	0	0	0	42
WNW	28	19	8	4	3	1	0	0	0	0	0	0	63
NW	32	27	13	8	8	0	0	0	0	0	0	0	88
NNW	22	20	19	18	1	0	0	0	0	0	0	0	80
TOTAL	235	303	279	292	66	3	0	0	0	0	0	0	1178

NUMBER OF CALMS: 35

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1213

TOTAL HOURS FOR THE PERIOD: 1213

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS G

FROM 1/01/14 0:00 TO 12/31/14 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	83	41	29	11	0	0	0	0	0	0	0	0	164
NNE	59	15	5	1	0	0	0	0	0	0	0	0	80
NE	53	18	8	6	0	0	0	0	0	0	0	0	85
ENE	44	43	8	2	0	0	0	0	0	0	0	0	97
E	17	24	5	1	0	0	0	0	0	0	0	0	47
ESE	11	15	4	0	0	0	0	0	0	0	0	0	30
SE	7	11	6	7	0	0	0	0	0	0	0	0	31
SSE	5	7	7	3	0	0	0	0	0	0	0	0	22
S	2	2	5	2	0	0	0	0	0	0	0	0	11
SSW	1	2	4	0	0	1	0	0	0	0	0	0	8
SW	1	9	5	1	0	0	0	0	0	0	0	0	16
WSW	6	6	3	0	0	0	0	0	0	0	0	0	15
W	19	25	8	0	0	0	0	0	0	0	0	0	52
WNW	38	34	3	0	0	0	0	0	0	0	0	0	75
NW	89	71	11	1	0	0	0	0	0	0	0	0	172
NNW	99	74	25	5	0	0	0	0	0	0	0	0	203
TOTAL	534	397	136	40	0	1	0	0	0	0	0	0	1108

NUMBER OF CALMS: 139

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1247

TOTAL HOURS FOR THE PERIOD: 1247

RIVER BEND STATION

JOINT FREQUENCY TABLE

ALL STABILITY CLASSES

FROM 1/01/14 0:00 TO 12/31/14 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	4	8	31	71	230	255	38	2	0	0	0	640
NNE	0	4	7	40	75	284	303	13	0	0	0	0	726
NE	2	2	8	40	65	148	310	11	0	0	0	0	586
ENE	3	1	7	46	78	133	159	22	0	0	0	0	449
E	3	7	5	45	68	109	96	11	2	0	0	0	346
ESE	5	4	8	27	47	208	481	63	1	0	0	0	844
SE	3	5	7	25	61	222	347	43	1	0	0	0	714
SSE	1	2	8	27	81	197	348	66	6	0	0	0	736
S	1	4	7	34	66	280	351	27	7	0	0	0	777
SSW	1	7	8	31	53	217	168	42	3	0	0	0	530
SW	5	7	9	29	56	161	54	14	2	0	0	0	337
WSW	3	2	4	26	86	184	63	5	0	0	0	0	373
W	6	2	6	33	76	169	82	4	0	0	0	0	378
WNW	3	4	11	28	49	94	75	21	0	0	0	0	285
NW	5	4	12	26	44	106	127	44	3	0	0	0	371
NNW	3	0	7	19	34	142	201	104	9	0	0	0	519
TOTAL	45	59	122	507	1010	2884	3420	528	36	0	0	0	8611

NUMBER OF CALMS: 21

NUMBER OF INVALID HOURS: 128

NUMBER OF VALID HOURS: 8632

TOTAL HOURS FOR THE PERIOD: 8760

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS A

FROM 1/01/14 0:00 TO 12/31/14 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	8	20	56	29	12	1	0	0	0	127
NNE	0	0	2	10	24	66	35	1	0	0	0	0	138
NE	0	0	2	9	30	39	46	1	0	0	0	0	127
ENE	0	1	0	14	19	33	48	3	0	0	0	0	118
E	0	0	0	5	14	12	14	1	1	0	0	0	47
ESE	0	0	0	4	10	33	57	14	0	0	0	0	118
SE	1	0	1	4	12	41	42	14	1	0	0	0	116
SSE	0	0	1	5	17	42	93	22	6	0	0	0	186
S	0	0	3	11	18	75	131	14	5	0	0	0	257
SSW	0	0	1	5	11	25	40	12	0	0	0	0	94
SW	1	1	2	3	17	29	10	4	1	0	0	0	68
WSW	0	0	0	11	39	68	28	2	0	0	0	0	148
W	0	0	1	9	37	80	35	2	0	0	0	0	164
WNW	0	1	1	5	14	23	17	7	0	0	0	0	68
NW	1	1	6	9	18	32	32	11	0	0	0	0	110
NNW	0	0	0	2	11	37	38	28	7	0	0	0	123
TOTAL	3	4	21	114	311	691	695	148	22	0	0	0	2009

NUMBER OF CALMS: 2

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 2011

TOTAL HOURS FOR THE PERIOD: 2011

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS B

FROM 1/01/14 0:00 TO 12/31/14 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	0	1	2	2	4	1	0	0	0	0	11
NNE	0	0	0	1	0	3	0	1	0	0	0	0	5
NE	0	0	1	2	1	1	0	0	0	0	0	0	5
ENE	0	0	0	1	1	3	4	0	0	0	0	0	9
E	0	0	0	3	1	1	0	0	0	0	0	0	5
ESE	0	1	0	0	2	9	5	2	0	0	0	0	19
SE	0	0	0	0	0	5	8	1	0	0	0	0	14
SSE	0	0	0	1	2	4	10	4	0	0	0	0	21
S	0	0	0	3	1	5	13	2	0	0	0	0	24
SSW	0	0	0	2	0	5	4	0	1	0	0	0	12
SW	0	0	0	2	1	2	1	1	0	0	0	0	7
WSW	0	0	0	1	1	5	1	0	0	0	0	0	8
W	0	0	0	3	1	3	2	1	0	0	0	0	10
WNW	0	0	0	2	3	4	1	2	0	0	0	0	12
NW	0	0	0	0	2	1	3	3	0	0	0	0	9
NNW	0	0	0	0	1	2	6	6	0	0	0	0	15
TOTAL	0	2	1	22	19	55	62	24	1	0	0	0	186

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 186

TOTAL HOURS FOR THE PERIOD: 186

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS C

FROM 1/01/14 0:00 TO 12/31/14 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	2	3	3	9	5	1	0	0	0	24
NNE	0	0	1	3	1	8	11	0	0	0	0	0	24
NE	0	1	0	1	4	3	8	0	0	0	0	0	17
ENE	0	0	0	4	1	2	3	4	0	0	0	0	14
E	0	0	0	0	2	4	1	0	0	0	0	0	7
ESE	0	0	0	2	3	5	11	5	0	0	0	0	26
SE	0	0	0	0	2	5	7	1	0	0	0	0	15
SSE	1	0	0	1	3	4	19	8	0	0	0	0	36
S	0	0	0	1	1	6	19	2	0	0	0	0	29
SSW	0	0	1	0	2	4	5	3	1	0	0	0	16
SW	0	1	0	2	1	8	2	5	0	0	0	0	19
WSW	0	1	0	0	4	8	0	1	0	0	0	0	14
W	1	0	2	0	3	4	1	1	0	0	0	0	12
WNW	0	0	0	0	2	2	2	4	0	0	0	0	10
NW	0	0	0	1	0	2	6	2	1	0	0	0	12
NNW	0	0	0	1	0	2	7	7	0	0	0	0	17
TOTAL	2	3	5	18	32	70	111	48	3	0	0	0	292

NUMBER OF CALMS: 0

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 292

TOTAL HOURS FOR THE PERIOD: 292

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS D

FROM 1/01/14 0:00 TO 12/31/14 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	8	14	35	105	14	0	0	0	0	178
NNE	0	2	1	9	13	44	87	8	0	0	0	0	164
NE	1	0	1	4	5	15	28	3	0	0	0	0	57
ENE	0	0	2	4	6	12	23	4	0	0	0	0	51
E	1	1	1	5	4	9	16	3	0	0	0	0	40
ESE	0	1	1	3	2	25	49	8	0	0	0	0	89
SE	0	0	3	1	5	15	22	9	0	0	0	0	55
SSE	0	0	0	1	5	23	34	8	0	0	0	0	71
S	0	1	1	2	7	15	32	3	1	0	0	0	62
SSW	0	3	2	3	5	13	23	7	1	0	0	0	57
SW	0	0	0	2	3	6	6	1	1	0	0	0	19
WSW	0	0	1	2	7	14	2	0	0	0	0	0	26
W	1	0	0	4	4	19	11	0	0	0	0	0	39
WNW	1	0	3	1	4	3	10	8	0	0	0	0	30
NW	1	0	3	5	6	6	43	21	0	0	0	0	85
NNW	0	0	1	5	8	24	60	49	2	0	0	0	149
TOTAL	5	9	21	59	98	278	551	146	5	0	0	0	1172

NUMBER OF CALMS: 1

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1173

TOTAL HOURS FOR THE PERIOD: 1173

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS E

FROM 1/01/14 0:00 TO 12/31/14 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	3	5	13	52	57	6	0	0	0	0	136
NNE	0	1	2	8	10	83	108	3	0	0	0	0	215
NE	0	0	0	8	14	53	121	2	0	0	0	0	198
ENE	1	0	2	10	19	42	42	6	0	0	0	0	122
E	0	0	1	12	20	36	50	4	1	0	0	0	124
ESE	3	0	2	6	13	81	227	32	1	0	0	0	365
SE	0	3	2	5	21	65	149	18	0	0	0	0	263
SSE	0	2	3	4	15	56	152	24	0	0	0	0	256
S	0	0	1	3	15	68	98	6	1	0	0	0	192
SSW	0	2	2	3	12	71	78	20	0	0	0	0	188
SW	0	2	1	5	8	50	29	3	0	0	0	0	98
WSW	0	0	0	3	6	33	18	2	0	0	0	0	62
W	2	0	1	9	9	28	20	0	0	0	0	0	69
WNW	1	0	4	6	10	18	30	0	0	0	0	0	69
NW	1	0	1	2	5	23	15	7	2	0	0	0	56
NNW	0	0	2	3	4	31	47	14	0	0	0	0	101
TOTAL	8	10	27	92	194	790	1241	147	5	0	0	0	2514

NUMBER OF CALMS: 7

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 2521

TOTAL HOURS FOR THE PERIOD: 2521

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS F

FROM 1/01/14 0:00 TO 12/31/14 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	0	3	6	36	18	0	0	0	0	0	64
NNE	0	1	0	8	13	38	32	0	0	0	0	0	92
NE	1	1	2	6	5	25	77	3	0	0	0	0	120
ENE	1	0	0	5	19	24	28	4	0	0	0	0	81
E	0	1	1	10	16	20	13	3	0	0	0	0	64
ESE	0	1	3	5	7	36	103	2	0	0	0	0	157
SE	1	0	0	9	7	40	68	0	0	0	0	0	125
SSE	0	0	1	6	18	34	29	0	0	0	0	0	88
S	1	0	1	2	10	49	43	0	0	0	0	0	106
SSW	0	0	0	3	8	50	10	0	0	0	0	0	71
SW	2	1	4	8	13	28	4	0	0	0	0	0	60
WSW	1	0	1	3	20	17	6	0	0	0	0	0	48
W	1	0	1	3	7	17	3	0	0	0	0	0	32
WNW	1	0	3	3	5	10	6	0	0	0	0	0	28
NW	1	0	0	5	3	13	16	0	0	0	0	0	38
NNW	2	0	0	0	3	14	12	0	0	0	0	0	31
TOTAL	13	5	17	79	160	451	468	12	0	0	0	0	1205

NUMBER OF CALMS: 6

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1211

TOTAL HOURS FOR THE PERIOD: 1211

RIVER BEND STATION

JOINT FREQUENCY TABLE

STABILITY CLASS G

FROM 1/01/14 0:00 TO 12/31/14 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	2	2	4	13	46	33	0	0	0	0	0	100
NNE	0	0	1	1	14	42	30	0	0	0	0	0	88
NE	0	0	2	10	6	12	30	2	0	0	0	0	62
ENE	1	0	3	8	13	17	11	1	0	0	0	0	54
E	2	5	2	10	11	27	2	0	0	0	0	0	59
ESE	2	1	2	7	10	19	29	0	0	0	0	0	70
SE	1	2	1	6	14	51	51	0	0	0	0	0	126
SSE	0	0	3	9	21	34	11	0	0	0	0	0	78
S	0	3	1	12	14	62	15	0	0	0	0	0	107
SSW	1	2	2	15	15	49	8	0	0	0	0	0	92
SW	2	2	2	7	13	38	2	0	0	0	0	0	66
WSW	2	1	2	6	9	39	8	0	0	0	0	0	67
W	1	2	1	5	15	18	10	0	0	0	0	0	52
WNW	0	3	0	11	11	34	9	0	0	0	0	0	68
NW	1	3	2	4	10	29	12	0	0	0	0	0	61
NNW	1	0	4	8	7	32	31	0	0	0	0	0	83
TOTAL	14	26	30	123	196	549	292	3	0	0	0	0	1233

NUMBER OF CALMS: 5

NUMBER OF INVALID HOURS: 0

NUMBER OF VALID HOURS: 1238

TOTAL HOURS FOR THE PERIOD: 1238

TABLE 7
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.
(6) Other onsite receptors
(7) Revisions to X/Q and D/Q can be performed using NUREG/CR-2919, XOQDOQ, Computer Program for the Meteorological Evaluation of Routine Effluent Releases at Nuclear Power Stations

TABLE 8
GROUNDWATER MONITORING WELL SAMPLE RESULTS

GROUND WATER SAMPLES (H-3) - RBS

MW-01

Start Date/Time	Lab ID	H-3
11/11/2014 1535	L61121-2	< 6.4E+02
11/11/2014 1601	L61161-12	< 5.9E+02

MW-02

Start Date/Time	Lab ID	H-3
02/13/2014 0850	L57892-6	< 6.5E+02
02/13/2014 0910	L57892-7	< 6.6E+02
05/07/2014 1100	L58842-7	< 6.1E+02
08/19/2014 1750	L60242-23	< 6.5E+02
11/13/2014 1157	L61161-7	< 5.9E+02

MW-03

Start Date/Time	Lab ID	H-3
11/13/2014 0855	L61140-9	< 5.8E+02

MW-04

Start Date/Time	Lab ID	H-3
02/13/2014 0856	L57892-18	< 6.4E+02
02/13/2014 0911	L57892-15	< 6.7E+02
05/08/2014 1119	L58842-23	< 6.2E+02
08/20/2014 1235	L60242-14	< 6.2E+02
11/12/2014 0825	L61121-9	< 6.2E+02

MW-05

Start Date/Time	Lab ID	H-3
11/13/2014 1140	L61140-10	< 5.8E+02

MW-06

Start Date/Time	Lab ID	H-3
02/12/2014 1535	L57892-5	< 6.6E+02
05/07/2014 1340	L58842-5	< 6.3E+02
08/21/2014 0923	L60242-26	< 6.5E+02
11/13/2014 1043	L61161-1	< 5.8E+02
11/13/2014 1058	L61161-2	< 5.9E+02

GROUND WATER SAMPLES (H-3) - RBS

MW-07

Start Date/Time	Lab ID	H-3
11/13/2014 1133	L61161-3	< 5.7E+02

MW-08

Start Date/Time	Lab ID	H-3
02/12/2014 1700	L57892-1	< 6.7E+02
05/08/2014 1115	L58842-20	< 6.2E+02
08/20/2014 1650	L60242-11	< 6.2E+02
11/13/2014 1415	L61140-15	< 5.8E+02

MW-09

Start Date/Time	Lab ID	H-3
11/13/2014 1300	L61161-4	< 5.8E+02

MW-10

Start Date/Time	Lab ID	H-3
02/13/2014 1020	L57892-8	< 6.6E+02
02/13/2014 1050	L57892-9	< 6.5E+02
05/07/2014 1215	L58842-8	< 6.3E+02
08/21/2014 0850	L60242-25	< 6.4E+02
11/12/2014 1614	L61140-16	< 5.7E+02

MW-11

Start Date/Time	Lab ID	H-3
11/12/2014 0910	L61140-1	< 5.7E+02

MW-12

Start Date/Time	Lab ID	H-3
11/20/2014 1555	L61161-31	< 5.9E+02

MW-13

Start Date/Time	Lab ID	H-3
11/21/2014 0925	L61161-32	< 5.9E+02

MW-14

Start Date/Time	Lab ID	H-3
11/20/2014 1000	L61161-33	< 5.8E+02

GROUND WATER SAMPLES (H-3) - RBS

MW-15

Start Date/Time	Lab ID	H-3
11/20/2014 1215	L61161-34	< 5.8E+02

MW-16

Start Date/Time	Lab ID	H-3
11/11/2014 1340	L61121-1	< 6.4E+02

MW-17

Start Date/Time	Lab ID	H-3
11/12/2014 1210	L61140-2	< 5.7E+02

MW-18

Start Date/Time	Lab ID	H-3
02/13/2014 1350	L57892-22	< 6.2E+02
05/08/2014 0935	L58842-19	< 6.0E+02
08/20/2014 1715	L60242-12	< 6.2E+02
11/13/2014 1110	L61161-10	< 5.9E+02

MW-19

Start Date/Time	Lab ID	H-3
02/13/2014 1555	L57892-23	< 6.3E+02
05/07/2014 1705	L58842-2	< 6.3E+02
08/21/2014 0805	L60242-15	< 6.4E+02
11/13/2014 1316	L61140-14	< 5.8E+02

MW-20

Start Date/Time	Lab ID	H-3
11/12/2014 1620	L61140-12	< 5.7E+02

MW-21

Start Date/Time	Lab ID	H-3
11/12/2014 1430	L61140-11	< 5.9E+02

GROUND WATER SAMPLES (H-3) - RBS

MW-100

Start Date/Time	Lab ID	H-3
02/13/2014 1110	L57892-11	< 6.5E+02
05/08/2014 1130	L58842-22	< 6.3E+02
08/20/2014 1010	L60242-19	< 6.2E+02
11/12/2014 0913	L61121-11	< 6.4E+02
11/12/2014 0945	L61121-12	< 6.3E+02

MW-102

Start Date/Time	Lab ID	H-3
02/13/2014 1210	L57892-2	< 6.6E+02
05/07/2014 1505	L58842-6	< 6.2E+02
08/21/2014 0820	L60242-7	< 6.3E+02
08/21/2014 0835	L60242-8	< 6.2E+02
11/13/2014 0857	L61161-5	< 5.9E+02
11/13/2014 0915	L61161-6	< 5.9E+02

MW-103

Start Date/Time	Lab ID	H-3
02/11/2014 1346	L57792-4	< 6.8E+02
05/06/2014 1344	L58737-10	< 6.0E+02
08/19/2014 1140	L60027-8	< 5.0E+02
11/11/2014 1521	L61117-11	< 6.2E+02

MW-104

Start Date/Time	Lab ID	H-3
02/13/2014 1528	L57892-14	< 6.0E+02
05/07/2014 1435	L58842-13	< 6.3E+02
05/07/2014 1450	L58842-14	< 6.2E+02
08/20/2014 1450	L60242-10	< 6.2E+02
11/12/2014 1215	L61140-4	< 5.8E+02

GROUND WATER SAMPLES (H-3) - RBS

MW-106

Start Date/Time	Lab ID	H-3
02/13/2014 1245	L57892-16	< 6.6E+02
05/07/2014 1705	L58842-15	< 6.3E+02
08/19/2014 1755	L60242-3	< 5.9E+02
08/19/2014 1815	L60242-4	< 6.3E+02
11/12/2014 1256	L61140-5	< 5.8E+02

MW-107

Start Date/Time	Lab ID	H-3
02/13/2014 1341	L57892-31	< 6.3E+02
05/07/2014 1605	L58842-10	< 6.3E+02
08/20/2014 0820	L60242-5	< 6.3E+02
11/12/2014 1320	L61140-6	< 5.7E+02

MW-108

Start Date/Time	Lab ID	H-3
02/12/2014 1723	L57892-26	< 6.2E+02
05/07/2014 1312	L58842-11	< 6.3E+02
05/07/2014 1330	L58842-12	< 6.3E+02
08/20/2014 1350	L60242-9	< 6.3E+02
11/12/2014 0902	L61121-10	< 6.4E+02

MW-110

Start Date/Time	Lab ID	H-3
02/12/2014 1026	L57792-14	6.40E+04
05/07/2014 1010	L58737-23	6.20E+04
08/19/2014 1240	L60027-9	6.50E+04
11/11/2014 1324	L61117-8	5.80E+04

MW-111

Start Date/Time	Lab ID	H-3
02/13/2014 1136	L57892-13	< 6.5E+02
05/08/2014 1338	L58842-40	< 6.1E+02
08/20/2014 1005	L60242-6	< 6.3E+02
11/12/2014 1136	L61140-3	< 5.9E+02

GROUND WATER SAMPLES (H-3) - RBS

MW-112

Start Date/Time	Lab ID	H-3
02/11/2014 1532	L57792-6	1.20E+04
05/06/2014 1526	L58737-11	1.20E+04
08/19/2014 1430	L60027-13	9.50E+03
08/19/2014 1455	L60027-14	9.00E+03
11/11/2014 1644	L61117-2	9.10E+03

MW-114

Start Date/Time	Lab ID	H-3
02/12/2014 1148	L57792-22	1.60E+03
02/12/2014 1200	L57792-23	1.60E+03
05/06/2014 1630	L58737-7	2.30E+03
08/19/2014 1530	L60027-1	2.30E+03
11/11/2014 1559	L61117-12	2.30E+03
11/11/2014 1610	L61117-1	2.50E+03

MW-116

Start Date/Time	Lab ID	H-3
02/12/2014 1334	L57792-15	4.70E+03
05/06/2014 1635	L58737-12	7.00E+03
08/19/2014 1705	L60027-6	5.70E+03
11/11/2014 1610	L61117-4	3.30E+03

MW-118

Start Date/Time	Lab ID	H-3
02/12/2014 0910	L57792-13	4.20E+03
05/07/2014 0858	L58737-22	3.30E+03
08/19/2014 1315	L60027-15	5.30E+03
11/11/2014 1240	L61117-7	3.70E+03

MW-120

Start Date/Time	Lab ID	H-3
02/12/2014 1544	L57892-25	< 6.2E+02
05/08/2014 1016	L58842-18	< 6.3E+02
08/20/2014 1605	L60242-40	< 6.4E+02
11/12/2014 1048	L61121-8	< 6.4E+02

GROUND WATER SAMPLES (H-3) - RBS

MW-122R

Start Date/Time	Lab ID	H-3
02/13/2014 1035	L57892-32	< 6.3E+02
05/08/2014 1231	L58842-24	< 6.3E+02
08/20/2014 1135	L60242-13	< 6.3E+02
11/12/2014 0950	L61121-7	< 6.5E+02

MW-124

Start Date/Time	Lab ID	H-3
02/11/2014 1615	L57792-8	7.60E+03
05/06/2014 1400	L58737-2	7.10E+03
08/19/2014 1510	L60027-17	3.60E+03
11/11/2014 1420	L61117-17	1.70E+04

MW-126

Start Date/Time	Lab ID	H-3
02/12/2014 1210	L57792-18	< 6.4E+02
05/06/2014 1700	L58737-6	< 6.2E+02
08/19/2014 1740	L60027-12	< 6.3E+02
11/11/2014 1640	L61117-20	< 6.4E+02
11/11/2014 1655	L61117-21	< 6.4E+02

MW-128

Start Date/Time	Lab ID	H-3
02/13/2014 1350	L57892-21	< 6.5E+02
05/08/2014 1350	L58842-31	< 6.1E+02
08/20/2014 0908	L60242-17	< 6.3E+02
08/20/2014 0912	L60242-18	< 6.1E+02
11/12/2014 1315	L61121-13	< 6.5E+02

MW-130

Start Date/Time	Lab ID	H-3
02/13/2014 1250	L57892-20	< 6.5E+02
05/08/2014 1300	L58842-27	< 6.2E+02
08/20/2014 1250	L60242-39	< 6.5E+02
11/12/2014 1448	L61121-6	< 6.3E+02

GROUND WATER SAMPLES (H-3) - RBS

MW-131

Start Date/Time	Lab ID	H-3
02/13/2014 1210	L57892-12	< 6.5E+02
05/08/2014 1225	L58842-25	< 6.3E+02
08/20/2014 1220	L60242-38	< 6.5E+02
11/12/2014 1349	L61121-5	< 6.3E+02

MW-132

Start Date/Time	Lab ID	H-3
02/13/2014 1425	L57892-28	< 6.2E+02
05/08/2014 1420	L58842-32	< 6.4E+02
08/20/2014 1430	L60242-22	< 6.6E+02
11/12/2014 1524	L61121-15	< 6.3E+02

MW-134

Start Date/Time	Lab ID	H-3
02/13/2014 1520	L57892-27	< 6.2E+02
05/08/2014 1505	L58842-28	< 6.2E+02
08/20/2014 1350	L60242-21	< 6.6E+02
11/12/2014 1610	L61121-16	< 6.6E+02

MW-137

Start Date/Time	Lab ID	H-3
02/11/2014 1520	L57792-2	1.30E+04
05/06/2014 1525	L58737-15	1.60E+04
08/19/2014 1630	L60027-2	3.40E+04
08/19/2014 1645	L60027-3	3.30E+04
11/11/2014 1527	L61117-6	2.10E+04

MW-139

Start Date/Time	Lab ID	H-3
02/11/2014 1635	L57792-5	1.20E+03
05/06/2014 1732	L58737-9	1.70E+03
08/19/2014 1340	L60027-5	2.00E+03
11/11/2014 1340	L61117-5	1.20E+03

GROUND WATER SAMPLES (H-3) - RBS

MW-141

Start Date/Time	Lab ID	H-3
02/11/2014 1615	L57792-3	< 6.7E+02
05/06/2014 1720	L58737-8	< 6.1E+02
08/19/2014 1243	L60027-4	< 6.3E+02
11/11/2014 1206	L61117-3	< 6.3E+02

MW-142

Start Date/Time	Lab ID	H-3
02/13/2014 1210	L57892-42	< 6.0E+02
05/07/2014 1130	L58842-3	< 5.5E+02
08/20/2014 1005	L60242-1	< 6.2E+02
11/12/2014 1410	L61121-3	< 6.4E+02

MW-144

Start Date/Time	Lab ID	H-3
02/12/2014 1125	L57792-10	< 6.8E+02
05/07/2014 1205	L58737-16	< 6.2E+02
08/20/2014 1035	L60027-19	< 5.0E+02
11/12/2014 1255	L61117-15	9.80E+02

MW-146

Start Date/Time	Lab ID	H-3
02/12/2014 1255	L57792-11	8.90E+04
05/07/2014 1235	L58737-17	5.80E+04
08/20/2014 1135	L60027-20	1.10E+05
11/12/2014 1140	L61117-13	1.60E+05

MW-147

Start Date/Time	Lab ID	H-3
02/12/2014 1340	L57792-12	9.30E+04
05/07/2014 1350	L58737-18	1.10E+04
08/20/2014 1240	L60027-22	7.70E+04
11/12/2014 1055	L61117-27	4.00E+04

GROUND WATER SAMPLES (H-3) - RBS

MW-148

Start Date/Time	Lab ID	H-3
02/12/2014 1700	L57892-41	< 6.4E+02
05/07/2014 1315	L58842-4	< 6.2E+02
08/20/2014 1100	L60242-2	< 6.3E+02
11/12/2014 1457	L61121-4	< 6.4E+02

MW-151

Start Date/Time	Lab ID	H-3
02/11/2014 1415	L57792-7	< 6.9E+02
05/06/2014 1235	L58737-1	< 6.2E+02
08/19/2014 1330	L60027-16	< 5.8E+02
11/11/2014 1245	L61117-16	< 6.3E+02

MW-153

Start Date/Time	Lab ID	H-3
02/12/2014 1620	L57892-4	< 6.4E+02
05/08/2014 1538	L58842-38	< 6.3E+02
05/08/2014 1600	L58842-39	< 6.3E+02
08/21/2014 0900	L60242-16	< 6.1E+02
11/13/2014 1313	L61161-8	< 5.7E+02

MW-155

Start Date/Time	Lab ID	H-3
02/11/2014 1645	L57792-9	1.70E+05
05/06/2014 1505	L58737-3	8.30E+04
08/19/2014 1550	L60027-18	2.10E+05
11/11/2014 1515	L61117-18	9.60E+04

MW-156

Start Date/Time	Lab ID	H-3
02/12/2014 1025	L57792-16	2.50E+03
05/06/2014 1540	L58737-4	5.00E+03
08/19/2014 1630	L60027-10	3.30E+03
11/11/2014 1555	L61117-19	3.80E+03

GROUND WATER SAMPLES (H-3) - RBS

MW-157

Start Date/Time	Lab ID	H-3
02/12/2014 1105	L57792-17	1.80E+05
05/06/2014 1605	L58737-5	2.10E+05
08/19/2014 1710	L60027-11	1.80E+05
11/12/2014 1219	L61117-22	2.00E+05

MW-158

Start Date/Time	Lab ID	H-3
02/12/2014 1425	L57792-19	4.50E+05
02/12/2014 1445	L57792-20	4.40E+05
05/07/2014 1430	L58737-19	6.70E+05
08/20/2014 1315	L60027-23	6.80E+05
11/12/2014 1215	L61117-14	4.60E+05

MW-159

Start Date/Time	Lab ID	H-3
02/12/2014 1515	L57792-21	2.90E+03
05/07/2014 1500	L58737-20	4.70E+03
08/20/2014 1355	L60027-24	1.90E+04
11/12/2014 0935	L61117-25	6.50E+03

MW-161

Start Date/Time	Lab ID	H-3
02/13/2014 1629	L57892-30	< 6.1E+02
05/07/2014 1154	L58842-9	< 6.4E+02
08/20/2014 1750	L60242-32	< 6.5E+02
11/12/2014 1421	L61140-7	< 5.7E+02

MW-162

Start Date/Time	Lab ID	H-3
05/07/2014 1545	L58737-21	2.10E+03
05/07/2014 1555	L58737-25	1.60E+03
08/20/2014 1205	L60027-21	< 5.0E+02
11/12/2014 1020	L61117-26	< 6.3E+02

GROUND WATER SAMPLES (H-3) - RBS

MW-162-1

Start Date/Time	Lab ID	H-3
05/06/2014 1730	L58737-24	< 6.2E+02

PZ-01

Start Date/Time	Lab ID	H-3
02/11/2014 1345	L57792-1	2.80E+04
05/06/2014 1425	L58737-13	2.80E+04
05/06/2014 1440	L58737-14	2.70E+04
08/19/2014 1100	L60027-7	3.20E+04
11/11/2014 1417	L61117-9	2.60E+04
11/11/2014 1430	L61117-10	2.60E+04

PZ-02

Start Date/Time	Lab ID	H-3
02/13/2014 1739	L57892-17	< 6.5E+02
05/08/2014 0916	L58842-17	< 6.2E+02
08/20/2014 1710	L60242-41	< 6.5E+02
11/12/2014 1521	L61140-8	< 5.8E+02

PZ-03

Start Date/Time	Lab ID	H-3
02/13/2014 1020	L57892-10	< 6.6E+02
05/08/2014 1045	L58842-21	< 6.2E+02
08/20/2014 1125	L60242-20	< 6.3E+02
11/12/2014 1058	L61121-14	< 6.4E+02

SW-101

Start Date/Time	Lab ID	H-3
02/14/2014 1000	L57892-38	< 6.3E+02
05/08/2014 1455	L58842-34	< 6.2E+02
08/20/2014 1610	L60242-27	< 6.5E+02

SW-102

Start Date/Time	Lab ID	H-3
02/14/2014 1100	L57892-37	< 6.3E+02
05/08/2014 1400	L58842-33	< 6.2E+02

GROUND WATER SAMPLES (H-3) - RBS

SW-103

Start Date/Time	Lab ID	H-3
02/14/2014 0925	L57892-34	< 6.3E+02
05/08/2014 1340	L58842-30	< 6.2E+02
08/20/2014 1700	L60242-28	< 6.5E+02
11/13/2014 1430	L61140-13	< 5.7E+02

SW-104

Start Date/Time	Lab ID	H-3
02/13/2014 1700	L57892-33	< 6.3E+02
05/08/2014 1310	L58842-29	< 6.1E+02
08/20/2014 1737	L60242-24	< 6.5E+02
11/13/2014 1445	L61161-11	< 5.9E+02

T-14

Start Date/Time	Lab ID	H-3
11/13/2014 0945	L61161-9	< 5.7E+02

Gamma Emitters

MW-01

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/11/2014 1535	L61121-2	< 5.2E+00	< 4.9E+00	< 1.2E+01	< 5.0E+00	< 1.4E+01	< 3.7E+00	< 7.6E+00	< 1.2E+01	< 4.9E+00	< 6.1E+00	< 3.2E+01	< 1.1E+01
11/11/2014 1601	L61161-12	< 1.3E+00	< 1.5E+00	< 3.8E+00	< 1.2E+00	< 2.6E+00	< 1.6E+00	< 2.8E+00	< 1.2E+01	< 1.3E+00	< 1.4E+00	< 1.8E+01	< 5.5E+00

MW-02

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 0850	L57892-6	< 4.2E+00	< 4.2E+00	< 1.0E+01	< 4.5E+00	< 9.2E+00	< 5.3E+00	< 8.6E+00	< 1.2E+01	< 4.1E+00	< 4.4E+00	< 3.0E+01	< 1.0E+01
02/13/2014 0910	L57892-7	< 4.5E+00	< 4.3E+00	< 9.2E+00	< 4.4E+00	< 8.0E+00	< 4.4E+00	< 8.1E+00	< 1.3E+01	< 4.1E+00	< 4.1E+00	< 2.9E+01	< 9.9E+00
05/07/2014 1100	L58842-7	< 3.5E+00	< 4.2E+00	< 8.9E+00	< 3.8E+00	< 8.1E+00	< 4.2E+00	< 6.5E+00	< 1.3E+01	< 3.5E+00	< 3.9E+00	< 2.9E+01	< 8.5E+00
08/19/2014 1750	L60242-23	< 7.0E-01	< 7.6E-01	< 2.1E+00	< 4.6E-01	< 1.4E+00	< 8.9E-01	< 1.4E+00	< 1.2E+01	< 6.3E-01	< 6.6E-01	< 1.3E+01	< 3.3E+00
11/13/2014 1157	L61161-7	< 1.7E+00	< 2.0E+00	< 4.9E+00	< 1.9E+00	< 3.9E+00	< 2.3E+00	< 3.7E+00	< 1.4E+01	< 1.7E+00	< 2.0E+00	< 2.1E+01	< 6.9E+00

MW-03

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/13/2014 0855	L61140-9	< 7.5E-01	< 6.5E-01	< 1.7E+00	< 5.5E-01	< 1.4E+00	< 8.7E-01	< 1.5E+00	< 6.0E+00	< 6.1E-01	< 8.1E-01	< 8.9E+00	< 2.1E+00

MW-04

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 0856	L57892-18	< 3.3E+00	< 3.6E+00	< 8.6E+00	< 4.2E+00	< 6.8E+00	< 4.4E+00	< 6.9E+00	< 1.2E+01	< 3.6E+00	< 3.9E+00	< 2.8E+01	< 8.4E+00
02/13/2014 0911	L57892-15	< 3.1E+00	< 3.3E+00	< 6.6E+00	< 2.7E+00	< 7.4E+00	< 3.6E+00	< 6.1E+00	< 1.2E+01	< 3.6E+00	< 3.3E+00	< 2.5E+01	< 7.3E+00
05/08/2014 1119	L58842-23	< 2.0E+00	< 2.3E+00	< 4.9E+00	< 1.9E+00	< 3.6E+00	< 2.4E+00	< 4.0E+00	< 7.7E+00	< 2.1E+00	< 2.3E+00	< 1.6E+01	< 4.1E+00
08/20/2014 1235	L60242-14	< 1.1E+00	< 1.3E+00	< 2.4E+00	< 1.2E+00	< 2.3E+00	< 1.3E+00	< 2.3E+00	< 1.3E+01	< 1.1E+00	< 1.1E+00	< 1.8E+01	< 4.7E+00
11/12/2014 0825	L61121-9	< 5.5E+00	< 5.3E+00	< 1.3E+01	< 5.8E+00	< 1.2E+01	< 5.9E+00	< 9.1E+00	< 9.9E+00	< 4.7E+00	< 5.2E+00	< 2.8E+01	< 9.5E+00

Gamma Emitters

MW-05

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/13/2014 1140	L61140-10	< 8.7E-01	< 1.0E+00	< 2.5E+00	< 9.0E-01	< 1.7E+00	< 1.1E+00	< 2.1E+00	< 7.8E+00	< 8.3E-01	< 8.8E-01	< 1.1E+01	< 3.9E+00

MW-06

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1535	L57892-5	< 4.6E+00	< 3.8E+00	< 8.3E+00	< 4.4E+00	< 8.1E+00	< 4.7E+00	< 8.0E+00	< 1.2E+01	< 4.0E+00	< 3.6E+00	< 2.7E+01	< 9.2E+00
05/07/2014 1340	L58842-5	< 3.1E+00	< 3.4E+00	< 7.1E+00	< 3.0E+00	< 6.7E+00	< 3.8E+00	< 6.1E+00	< 1.3E+01	< 3.6E+00	< 3.7E+00	< 2.8E+01	< 9.1E+00
08/21/2014 0923	L60242-26	< 7.9E-01	< 1.1E+00	< 2.6E+00	< 1.0E+00	< 1.9E+00	< 1.2E+00	< 1.7E+00	< 1.5E+01	< 7.9E-01	< 9.4E-01	< 1.6E+01	< 4.5E+00
11/13/2014 1043	L61161-1	< 2.8E+00	< 3.3E+00	< 7.0E+00	< 3.3E+00	< 5.4E+00	< 3.2E+00	< 5.3E+00	< 1.5E+01	< 2.8E+00	< 3.0E+00	< 2.5E+01	< 8.7E+00
11/13/2014 1058	L61161-2	< 2.6E+00	< 3.0E+00	< 6.4E+00	< 2.5E+00	< 5.8E+00	< 3.1E+00	< 5.0E+00	< 1.3E+01	< 2.5E+00	< 2.9E+00	< 2.5E+01	< 8.3E+00

MW-07

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/13/2014 1133	L61161-3	< 1.8E+00	< 2.0E+00	< 4.1E+00	< 1.6E+00	< 3.8E+00	< 2.1E+00	< 3.6E+00	< 1.1E+01	< 2.0E+00	< 2.0E+00	< 1.9E+01	< 4.7E+00

MW-08

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1700	L57892-1	< 2.8E+00	< 3.4E+00	< 6.5E+00	< 3.2E+00	< 6.3E+00	< 3.6E+00	< 5.7E+00	< 9.9E+00	< 3.0E+00	< 3.4E+00	< 1.7E+01	< 8.5E+00
05/08/2014 1115	L58842-20	< 2.6E+00	< 3.0E+00	< 6.0E+00	< 3.5E+00	< 6.7E+00	< 3.3E+00	< 5.5E+00	< 1.0E+01	< 2.4E+00	< 3.1E+00	< 2.0E+01	< 6.6E+00
08/20/2014 1650	L60242-11	< 1.1E+00	< 1.4E+00	< 3.0E+00	< 1.2E+00	< 2.3E+00	< 1.5E+00	< 2.2E+00	< 1.3E+01	< 9.9E-01	< 1.2E+00	< 1.7E+01	< 4.9E+00
11/13/2014 1415	L61140-15	< 1.0E+00	< 9.6E-01	< 2.3E+00	< 8.9E-01	< 1.8E+00	< 1.2E+00	< 1.9E+00	< 9.1E+00	< 8.9E-01	< 1.1E+00	< 1.3E+01	< 3.9E+00

MW-09

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/13/2014 1300	L61161-4	< 1.6E+00	< 1.8E+00	< 4.0E+00	< 1.7E+00	< 3.5E+00	< 1.8E+00	< 3.4E+00	< 9.0E+00	< 1.6E+00	< 1.7E+00	< 1.6E+01	< 4.9E+00

Gamma Emitters

MW-10

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1020	L57892-8	< 3.6E+00	< 4.0E+00	< 7.8E+00	< 4.0E+00	< 7.9E+00	< 4.1E+00	< 6.9E+00	< 1.3E+01	< 3.2E+00	< 4.2E+00	< 2.6E+01	< 6.7E+00
02/13/2014 1050	L57892-9	< 4.4E+00	< 4.6E+00	< 1.0E+01	< 5.0E+00	< 1.0E+01	< 5.8E+00	< 9.1E+00	< 1.4E+01	< 4.4E+00	< 4.8E+00	< 3.2E+01	< 1.1E+01
05/07/2014 1215	L58842-8	< 3.5E+00	< 4.0E+00	< 8.7E+00	< 3.6E+00	< 6.8E+00	< 4.2E+00	< 7.7E+00	< 1.3E+01	< 3.6E+00	< 4.0E+00	< 2.7E+01	< 1.1E+01
08/21/2014 0850	L60242-25	< 1.1E+00	< 1.2E+00	< 2.8E+00	< 1.1E+00	< 2.0E+00	< 1.3E+00	< 2.5E+00	< 2.1E+00	< 9.5E-01	< 1.1E+00	< 2.0E+01	< 5.2E+00
11/12/2014 1614	L61140-16	< 1.1E+00	< 1.0E+00	< 2.2E+00	< 7.7E-01	< 1.8E+00	< 1.3E+00	< 2.0E+00	< 1.0E+01	< 9.7E-01	< 1.1E+00	< 1.4E+01	< 3.5E+00

MW-11

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/12/2014 0910	L61140-1	< 1.7E+00	< 2.1E+00	< 4.6E+00	< 1.9E+00	< 3.5E+00	< 2.1E+00	< 3.8E+00	< 1.1E+01	< 1.7E+00	< 1.8E+00	< 1.9E+01	< 6.9E+00

MW-12

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/20/2014 1555	L61161-31	< 3.6E+00	< 3.7E+00	< 8.5E+00	< 3.9E+00	< 7.5E+00	< 4.6E+00	< 6.6E+00	< 1.1E+01	< 3.7E+00	< 3.4E+00	< 2.6E+01	< 9.7E+00

MW-13

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/21/2014 0925	L61161-32	< 3.6E+00	< 4.1E+00	< 8.6E+00	< 3.9E+00	< 7.6E+00	< 4.2E+00	< 8.3E+00	< 1.4E+01	< 3.6E+00	< 4.9E+00	< 2.4E+01	< 7.2E+00

MW-14

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/20/2014 1000	L61161-33	< 3.2E+00	< 4.1E+00	< 7.2E+00	< 3.4E+00	< 6.2E+00	< 4.0E+00	< 6.6E+00	< 1.3E+01	< 3.2E+00	< 3.6E+00	< 2.6E+01	< 8.5E+00

MW-15

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/20/2014 1215	L61161-34	< 4.0E+00	< 4.4E+00	< 9.5E+00	< 3.6E+00	< 6.3E+00	< 5.1E+00	< 7.0E+00	< 1.3E+01	< 3.7E+00	< 4.4E+00	< 2.9E+01	< 8.8E+00

Gamma Emitters

MW-16

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/11/2014 1340	L61121-1	< 4.8E+00	< 4.3E+00	< 1.0E+01	< 4.6E+00	< 9.8E+00	< 5.0E+00	< 5.8E+00	< 1.0E+01	< 4.8E+00	< 3.9E+00	< 2.4E+01	< 8.6E+00

MW-17

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/12/2014 1210	L61140-2	< 1.4E+00	< 1.7E+00	< 3.6E+00	< 1.4E+00	< 2.9E+00	< 1.8E+00	< 3.0E+00	< 8.9E+00	< 1.4E+00	< 1.5E+00	< 1.6E+01	< 5.1E+00

MW-18

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1350	L57892-22	< 3.9E+00	< 4.3E+00	< 9.4E+00	< 4.7E+00	< 8.1E+00	< 4.4E+00	< 7.4E+00	< 1.3E+01	< 3.7E+00	< 4.5E+00	< 3.1E+01	< 8.2E+00
05/08/2014 0935	L58842-19	< 3.2E+00	< 3.4E+00	< 7.2E+00	< 4.0E+00	< 6.3E+00	< 3.7E+00	< 6.7E+00	< 1.2E+01	< 3.4E+00	< 3.6E+00	< 2.5E+01	< 7.3E+00
08/20/2014 1715	L60242-12	< 1.1E+00	< 1.1E+00	< 2.6E+00	< 1.2E+00	< 2.0E+00	< 1.1E+00	< 2.0E+00	< 1.1E+01	< 8.5E-01	< 9.4E-01	< 1.5E+01	< 3.7E+00
11/13/2014 1110	L61161-10	< 1.7E+00	< 2.0E+00	< 4.1E+00	< 1.5E+00	< 3.5E+00	< 2.1E+00	< 3.5E+00	< 1.4E+01	< 1.8E+00	< 1.8E+00	< 2.2E+01	< 6.0E+00

MW-19

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1555	L57892-23	< 3.8E+00	< 4.7E+00	< 1.1E+01	< 4.9E+00	< 7.9E+00	< 4.9E+00	< 8.9E+00	< 1.5E+01	< 4.5E+00	< 4.8E+00	< 2.8E+01	< 1.3E+01
05/07/2014 1705	L58842-2	< 3.3E+00	< 3.7E+00	< 7.4E+00	< 3.3E+00	< 5.6E+00	< 3.6E+00	< 5.1E+00	< 1.1E+01	< 3.1E+00	< 3.1E+00	< 2.6E+01	< 4.7E+00
08/21/2014 0805	L60242-15	< 1.4E+00	< 1.7E+00	< 4.0E+00	< 1.4E+00	< 3.0E+00	< 1.5E+00	< 2.8E+00	< 1.5E+01	< 1.2E+00	< 1.3E+00	< 1.9E+01	< 7.0E+00
11/13/2014 1316	L61140-14	< 7.3E-01	< 7.6E-01	< 1.6E+00	< 7.7E-01	< 1.1E+00	< 9.4E-01	< 1.7E+00	< 7.2E+00	< 6.9E-01	< 7.9E-01	< 8.1E+00	< 2.9E+00

MW-20

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/12/2014 1620	L61140-12	< 1.6E+00	< 1.9E+00	< 4.4E+00	< 1.7E+00	< 3.2E+00	< 2.1E+00	< 3.5E+00	< 1.4E+01	< 1.5E+00	< 1.7E+00	< 2.1E+01	< 6.6E+00

Gamma Emitters

MW-21

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/12/2014 1430	L61140-11	< 6.4E-01	< 7.7E-01	< 1.8E+00	< 6.9E-01	< 1.6E+00	< 8.6E-01	< 1.4E+00	< 6.5E+00	< 6.5E-01	< 6.1E-01	< 9.5E+00	< 2.6E+00

MW-100

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1110	L57892-11	< 4.0E+00	< 4.5E+00	< 9.2E+00	< 4.0E+00	< 8.2E+00	< 4.9E+00	< 9.1E+00	< 1.5E+01	< 4.0E+00	< 4.7E+00	< 2.9E+01	< 8.1E+00
05/08/2014 1130	L58842-22	< 3.4E+00	< 4.3E+00	< 8.2E+00	< 3.6E+00	< 7.7E+00	< 4.0E+00	< 8.2E+00	< 1.3E+01	< 3.7E+00	< 4.1E+00	< 2.8E+01	< 9.5E+00
08/20/2014 1010	L60242-19	< 1.2E+00	< 1.3E+00	< 2.7E+00	< 1.1E+00	< 2.5E+00	< 1.4E+00	< 2.3E+00	< 1.5E+01	< 1.1E+00	< 1.2E+00	< 2.0E+01	< 4.3E+00
11/12/2014 0913	L61121-11	< 6.1E+00	< 6.7E+00	< 1.3E+01	< 6.4E+00	< 1.1E+01	< 7.8E+00	< 1.1E+01	< 1.5E+01	< 5.5E+00	< 7.7E+00	< 3.6E+01	< 1.3E+01
11/12/2014 0945	L61121-12	< 5.3E+00	< 5.9E+00	< 1.3E+01	< 7.3E+00	< 1.3E+01	< 5.9E+00	< 1.2E+01	< 1.3E+01	< 4.9E+00	< 7.4E+00	< 3.4E+01	< 9.1E+00

MW-102

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1210	L57892-2	< 4.2E+00	< 4.7E+00	< 8.4E+00	< 3.2E+00	< 1.0E+01	< 5.1E+00	< 8.2E+00	< 1.3E+01	< 4.1E+00	< 3.8E+00	< 3.0E+01	< 9.0E+00
05/07/2014 1505	L58842-6	< 3.5E+00	< 3.2E+00	< 7.6E+00	< 3.5E+00	< 6.2E+00	< 3.9E+00	< 6.0E+00	< 1.3E+01	< 3.4E+00	< 3.3E+00	< 2.4E+01	< 6.7E+00
08/21/2014 0820	L60242-7	< 1.0E+00	< 1.0E+00	< 2.4E+00	< 1.1E+00	< 1.8E+00	< 1.0E+00	< 2.0E+00	< 9.8E+00	< 9.4E-01	< 9.8E-01	< 1.3E+01	< 3.6E+00
08/21/2014 0835	L60242-8	< 1.2E+00	< 1.3E+00	< 3.2E+00	< 1.7E+00	< 2.6E+00	< 1.4E+00	< 2.0E+00	< 1.0E+01	< 1.0E+00	< 1.1E+00	< 1.6E+01	< 5.2E+00
11/13/2014 0857	L61161-5	< 1.3E+00	< 1.7E+00	< 4.0E+00	< 1.5E+00	< 3.2E+00	< 1.9E+00	< 3.1E+00	< 1.2E+01	< 1.4E+00	< 1.4E+00	< 1.8E+01	< 6.0E+00
11/13/2014 0915	L61161-6	< 1.6E+00	< 1.8E+00	< 4.3E+00	< 1.5E+00	< 3.4E+00	< 2.0E+00	< 3.3E+00	< 1.3E+01	< 1.5E+00	< 1.7E+00	< 2.0E+01	< 6.2E+00

Gamma Emitters

MW-103

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/11/2014 1346	L57792-4	< 6.8E+00	< 7.4E+00	< 1.6E+01	< 7.6E+00	< 1.5E+01	< 6.9E+00	< 1.3E+01	< 1.4E+01	< 7.5E+00	< 8.1E+00	< 3.6E+01	< 1.5E+01
05/06/2014 1344	L58737-10	< 4.5E+00	< 4.3E+00	< 8.4E+00	< 4.3E+00	< 7.8E+00	< 5.1E+00	< 7.4E+00	< 1.0E+01	< 4.4E+00	< 4.9E+00	< 2.7E+01	< 8.0E+00
08/19/2014 1140	L60027-8	< 6.5E+00	< 6.6E+00	< 1.4E+01	< 4.8E+00	< 1.3E+01	< 6.0E+00	< 1.2E+01	< 1.0E+01	< 6.3E+00	< 7.0E+00	< 3.5E+01	< 1.1E+01
11/11/2014 1521	L61117-11	< 5.5E+00	< 5.8E+00	< 1.2E+01	< 7.5E+00	< 1.2E+01	< 7.2E+00	< 9.5E+00	< 1.5E+01	< 6.1E+00	< 6.9E+00	< 3.9E+01	< 1.3E+01

MW-104

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1528	L57892-14	< 4.3E+00	< 4.7E+00	< 1.1E+01	< 5.1E+00	< 9.1E+00	< 5.1E+00	< 8.4E+00	< 1.4E+01	< 4.4E+00	< 4.9E+00	< 3.3E+01	< 1.1E+01
05/07/2014 1435	L58842-13	< 3.2E+00	< 4.0E+00	< 9.3E+00	< 2.9E+00	< 7.0E+00	< 3.6E+00	< 7.1E+00	< 1.3E+01	< 3.6E+00	< 4.4E+00	< 2.8E+01	< 7.3E+00
05/07/2014 1450	L58842-14	< 2.1E+00	< 2.3E+00	< 5.0E+00	< 2.2E+00	< 4.2E+00	< 2.5E+00	< 4.1E+00	< 8.3E+00	< 2.1E+00	< 2.3E+00	< 1.8E+01	< 5.4E+00
08/20/2014 1450	L60242-10	< 1.2E+00	< 1.5E+00	< 3.4E+00	< 1.2E+00	< 2.6E+00	< 1.6E+00	< 2.7E+00	< 1.3E+01	< 1.2E+00	< 1.3E+00	< 1.8E+01	< 5.0E+00
11/12/2014 1215	L61140-4	< 5.6E-01	< 6.8E-01	< 1.7E+00	< 6.4E-01	< 1.4E+00	< 8.5E-01	< 1.4E+00	< 5.4E+00	< 6.6E-01	< 5.9E-01	< 7.5E+00	< 2.5E+00

MW-106

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1245	L57892-16	< 4.5E+00	< 4.4E+00	< 8.8E+00	< 4.3E+00	< 1.0E+01	< 5.4E+00	< 9.6E+00	< 1.5E+01	< 4.3E+00	< 5.2E+00	< 3.0E+01	< 7.9E+00
05/07/2014 1705	L58842-15	< 3.5E+00	< 3.4E+00	< 7.0E+00	< 3.6E+00	< 5.6E+00	< 3.6E+00	< 5.9E+00	< 1.2E+01	< 3.0E+00	< 3.0E+00	< 2.6E+01	< 7.4E+00
08/19/2014 1755	L60242-3	< 7.6E-01	< 7.8E-01	< 1.7E+00	< 6.8E-01	< 1.2E+00	< 8.4E-01	< 1.4E+00	< 7.1E+00	< 6.4E-01	< 6.6E-01	< 8.6E+00	< 2.8E+00
08/19/2014 1815	L60242-4	< 9.3E-01	< 1.1E+00	< 2.6E+00	< 7.2E-01	< 2.1E+00	< 1.1E+00	< 1.9E+00	< 8.1E+00	< 8.8E-01	< 8.5E-01	< 1.3E+01	< 3.4E+00
11/12/2014 1256	L61140-5	< 7.3E-01	< 1.0E+00	< 1.7E+00	< 8.7E-01	< 1.7E+00	< 1.1E+00	< 1.9E+00	< 6.9E+00	< 7.3E-01	< 9.2E-01	< 1.2E+01	< 3.4E+00

Gamma Emitters

MW-107

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1341	L57892-31	< 4.5E+00	< 4.6E+00	< 8.6E+00	< 3.8E+00	< 1.0E+01	< 4.5E+00	< 7.5E+00	< 1.4E+01	< 3.8E+00	< 5.3E+00	< 2.9E+01	< 1.1E+01
05/07/2014 1605	L58842-10	< 2.9E+00	< 3.7E+00	< 8.5E+00	< 3.7E+00	< 7.8E+00	< 4.8E+00	< 7.8E+00	< 1.3E+01	< 3.3E+00	< 4.3E+00	< 2.8E+01	< 9.8E+00
08/20/2014 0820	L60242-5	< 1.0E+00	< 1.4E+00	< 3.0E+00	< 9.1E-01	< 2.5E+00	< 1.3E+00	< 2.2E+00	< 1.2E+01	< 1.1E+00	< 1.2E+00	< 1.8E+01	< 4.6E+00
11/12/2014 1320	L61140-6	< 6.8E-01	< 7.3E-01	< 1.8E+00	< 5.6E-01	< 1.1E+00	< 7.6E-01	< 1.4E+00	< 5.5E+00	< 6.1E-01	< 6.5E-01	< 8.3E+00	< 2.5E+00

MW-108

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1723	L57892-26	< 3.5E+00	< 3.8E+00	< 9.0E+00	< 3.7E+00	< 7.0E+00	< 4.0E+00	< 6.1E+00	< 1.4E+01	< 3.3E+00	< 3.8E+00	< 2.8E+01	< 8.6E+00
05/07/2014 1312	L58842-11	< 3.6E+00	< 4.3E+00	< 8.6E+00	< 3.4E+00	< 8.6E+00	< 4.0E+00	< 7.1E+00	< 1.4E+01	< 4.2E+00	< 3.9E+00	< 3.0E+01	< 8.3E+00
05/07/2014 1330	L58842-12	< 3.6E+00	< 3.9E+00	< 7.8E+00	< 3.6E+00	< 7.0E+00	< 4.0E+00	< 6.5E+00	< 1.4E+01	< 3.8E+00	< 3.8E+00	< 2.8E+01	< 7.6E+00
08/20/2014 1350	L60242-9	< 8.0E-01	< 9.1E-01	< 2.0E+00	< 7.6E-01	< 1.6E+00	< 9.8E-01	< 1.6E+00	< 9.2E+00	< 8.4E-01	< 7.2E-01	< 1.2E+01	< 3.0E+00
11/12/2014 0902	L61121-10	< 7.5E+00	< 6.1E+00	< 1.3E+01	< 6.2E+00	< 1.3E+01	< 6.5E+00	< 1.3E+01	< 1.3E+01	< 5.6E+00	< 7.0E+00	< 3.7E+01	< 1.2E+01

MW-110

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1026	L57792-14	< 8.1E+00	< 6.9E+00	< 1.7E+01	< 9.2E+00	< 1.8E+01	< 9.0E+00	< 1.2E+01	< 1.2E+01	< 7.0E+00	< 7.3E+00	< 3.7E+01	< 1.0E+01
05/07/2014 1010	L58737-23	< 5.0E+00	< 5.2E+00	< 1.2E+01	< 6.1E+00	< 1.1E+01	< 6.8E+00	< 9.8E+00	< 1.1E+01	< 4.3E+00	< 6.0E+00	< 2.9E+01	< 1.1E+01
08/19/2014 1240	L60027-9	< 6.3E+00	< 5.2E+00	< 1.1E+01	< 5.7E+00	< 1.1E+01	< 5.4E+00	< 6.8E+00	< 1.1E+01	< 5.0E+00	< 5.1E+00	< 3.0E+01	< 1.1E+01
11/11/2014 1324	L61117-8	< 5.8E+00	< 5.8E+00	< 1.4E+01	< 5.6E+00	< 1.2E+01	< 6.7E+00	< 1.2E+01	< 1.4E+01	< 6.3E+00	< 5.6E+00	< 3.5E+01	< 1.2E+01

Gamma Emitters

MW-111

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1136	LS7892-13	< 4.6E+00	< 4.4E+00	< 1.2E+01	< 4.9E+00	< 9.3E+00	< 4.7E+00	< 8.5E+00	< 1.4E+01	< 4.7E+00	< 5.6E+00	< 3.2E+01	< 9.5E+00
05/08/2014 1338	LS8842-40	< 2.1E+00	< 2.1E+00	< 4.9E+00	< 2.0E+00	< 3.6E+00	< 2.2E+00	< 3.8E+00	< 1.0E+01	< 1.8E+00	< 2.1E+00	< 2.0E+01	< 5.7E+00
08/20/2014 1005	L60242-6	< 1.5E+00	< 1.6E+00	< 3.9E+00	< 1.4E+00	< 2.8E+00	< 1.7E+00	< 2.8E+00	< 1.3E+01	< 1.3E+00	< 1.4E+00	< 2.0E+01	< 6.9E+00
11/12/2014 1136	L61140-3	< 1.5E+00	< 1.8E+00	< 3.9E+00	< 1.5E+00	< 3.0E+00	< 1.9E+00	< 3.2E+00	< 1.0E+01	< 1.5E+00	< 1.6E+00	< 1.7E+01	< 5.0E+00

MW-112

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/11/2014 1532	LS7792-6	< 7.9E+00	< 8.4E+00	< 1.8E+01	< 1.0E+01	< 1.6E+01	< 9.5E+00	< 1.4E+01	< 1.5E+01	< 7.5E+00	< 6.9E+00	< 3.9E+01	< 1.3E+01
05/06/2014 1526	LS8737-11	< 5.4E+00	< 5.4E+00	< 1.0E+01	< 5.5E+00	< 9.4E+00	< 5.5E+00	< 9.2E+00	< 1.2E+01	< 5.1E+00	< 5.4E+00	< 3.2E+01	< 8.3E+00
08/19/2014 1430	L60027-13	< 4.0E+00	< 3.5E+00	< 8.2E+00	< 4.1E+00	< 8.4E+00	< 4.2E+00	< 6.4E+00	< 7.1E+00	< 3.7E+00	< 4.0E+00	< 1.8E+01	< 6.4E+00
08/19/2014 1455	L60027-14	< 4.1E+00	< 3.7E+00	< 9.2E+00	< 4.7E+00	< 8.4E+00	< 4.4E+00	< 7.9E+00	< 8.6E+00	< 4.4E+00	< 5.0E+00	< 2.3E+01	< 7.3E+00
11/11/2014 1644	L61117-2	< 6.8E+00	< 6.8E+00	< 1.3E+01	< 6.2E+00	< 1.5E+01	< 7.1E+00	< 9.5E+00	< 1.5E+01	< 7.7E+00	< 6.2E+00	< 3.6E+01	< 1.1E+01

MW-114

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1148	LS7792-22	< 4.9E+00	< 4.1E+00	< 1.1E+01	< 5.1E+00	< 8.7E+00	< 5.2E+00	< 9.1E+00	< 8.6E+00	< 5.0E+00	< 5.2E+00	< 2.4E+01	< 7.5E+00
02/12/2014 1200	LS7792-23	< 5.5E+00	< 6.0E+00	< 9.2E+00	< 5.0E+00	< 1.2E+01	< 5.8E+00	< 1.1E+01	< 1.0E+01	< 6.0E+00	< 5.9E+00	< 2.8E+01	< 9.0E+00
05/06/2014 1630	LS8737-7	< 5.0E+00	< 5.1E+00	< 1.0E+01	< 4.8E+00	< 1.1E+01	< 5.6E+00	< 9.7E+00	< 1.1E+01	< 4.5E+00	< 5.4E+00	< 2.9E+01	< 9.9E+00
08/19/2014 1530	L60027-1	< 3.8E+00	< 3.8E+00	< 9.0E+00	< 3.2E+00	< 8.6E+00	< 4.9E+00	< 7.6E+00	< 8.2E+00	< 4.4E+00	< 4.6E+00	< 2.2E+01	< 5.8E+00
11/11/2014 1559	L61117-12	< 6.0E+00	< 7.7E+00	< 1.1E+01	< 5.7E+00	< 1.0E+01	< 7.7E+00	< 1.1E+01	< 1.3E+01	< 6.1E+00	< 6.8E+00	< 4.1E+01	< 1.2E+01
11/11/2014 1610	L61117-1	< 4.9E+00	< 5.5E+00	< 8.1E+00	< 5.4E+00	< 9.6E+00	< 5.7E+00	< 8.4E+00	< 1.1E+01	< 4.2E+00	< 5.7E+00	< 2.5E+01	< 9.2E+00

Gamma Emitters

MW-116

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1334	L57792-15	< 5.8E+00	< 6.9E+00	< 1.1E+01	< 2.8E+00	< 1.1E+01	< 7.0E+00	< 1.2E+01	< 1.2E+01	< 5.7E+00	< 5.8E+00	< 3.2E+01	< 9.3E+00
05/06/2014 1635	L58737-12	< 5.0E+00	< 5.8E+00	< 1.1E+01	< 5.0E+00	< 1.0E+01	< 6.3E+00	< 9.6E+00	< 1.4E+01	< 5.4E+00	< 6.0E+00	< 3.4E+01	< 8.2E+00
08/19/2014 1705	L60027-6	< 7.4E+00	< 7.4E+00	< 1.8E+01	< 6.6E+00	< 1.6E+01	< 8.4E+00	< 1.2E+01	< 1.1E+01	< 6.5E+00	< 7.9E+00	< 4.1E+01	< 1.1E+01
11/11/2014 1610	L61117-4	< 5.5E+00	< 7.6E+00	< 1.8E+01	< 7.0E+00	< 1.7E+01	< 7.8E+00	< 1.6E+01	< 1.5E+01	< 7.5E+00	< 8.8E+00	< 4.2E+01	< 8.6E+00

MW-118

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 0910	L57792-13	< 5.5E+00	< 5.4E+00	< 1.1E+01	< 5.5E+00	< 1.2E+01	< 5.4E+00	< 1.1E+01	< 9.5E+00	< 5.9E+00	< 4.9E+00	< 2.7E+01	< 8.4E+00
05/07/2014 0858	L58737-22	< 7.0E+00	< 6.4E+00	< 1.5E+01	< 8.4E+00	< 1.2E+01	< 7.7E+00	< 1.5E+01	< 1.4E+01	< 6.3E+00	< 7.0E+00	< 3.1E+01	< 1.2E+01
08/19/2014 1315	L60027-15	< 3.0E+00	< 3.5E+00	< 6.7E+00	< 3.4E+00	< 6.1E+00	< 3.5E+00	< 6.0E+00	< 6.1E+00	< 3.1E+00	< 3.6E+00	< 1.6E+01	< 5.3E+00
11/11/2014 1240	L61117-7	< 6.9E+00	< 6.0E+00	< 1.5E+01	< 6.9E+00	< 1.2E+01	< 7.5E+00	< 1.2E+01	< 1.4E+01	< 5.6E+00	< 7.1E+00	< 3.7E+01	< 1.4E+01

MW-120

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1544	L57892-25	< 3.5E+00	< 3.5E+00	< 8.1E+00	< 3.6E+00	< 7.5E+00	< 4.0E+00	< 7.3E+00	< 1.3E+01	< 3.7E+00	< 3.9E+00	< 2.9E+01	< 7.4E+00
05/08/2014 1016	L58842-18	< 3.0E+00	< 2.9E+00	< 6.6E+00	< 2.8E+00	< 5.3E+00	< 3.2E+00	< 4.9E+00	< 9.3E+00	< 2.6E+00	< 3.4E+00	< 2.3E+01	< 7.2E+00
08/20/2014 1605	L60242-40	< 5.2E-01	< 7.5E-01	< 1.3E+00	< 5.6E-01	< 9.9E-01	< 7.3E-01	< 1.3E+00	< 1.1E+01	< 4.5E-01	< 5.2E-01	< 1.1E+01	< 3.8E+00
11/12/2014 1048	L61121-8	< 6.4E+00	< 6.6E+00	< 1.1E+01	< 4.8E+00	< 1.0E+01	< 5.7E+00	< 8.9E+00	< 1.2E+01	< 5.1E+00	< 5.8E+00	< 3.5E+01	< 1.1E+01

Gamma Emitters

MW-122R

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1035	L57892-32	< 4.2E+00	< 4.1E+00	< 9.2E+00	< 3.6E+00	< 8.3E+00	< 5.1E+00	< 7.5E+00	< 1.5E+01	< 4.2E+00	< 4.8E+00	< 3.1E+01	< 7.6E+00
05/08/2014 1231	L58842-24	< 3.7E+00	< 3.6E+00	< 8.4E+00	< 3.4E+00	< 8.0E+00	< 4.2E+00	< 7.0E+00	< 1.4E+01	< 3.6E+00	< 4.6E+00	< 3.2E+01	< 1.0E+01
08/20/2014 1135	L60242-13	< 1.2E+00	< 1.4E+00	< 3.4E+00	< 1.5E+00	< 2.5E+00	< 1.5E+00	< 2.6E+00	< 1.4E+01	< 1.1E+00	< 1.2E+00	< 1.8E+01	< 5.9E+00
11/12/2014 0950	L61121-7	< 4.8E+00	< 5.5E+00	< 1.6E+01	< 6.8E+00	< 1.2E+01	< 6.4E+00	< 1.1E+01	< 1.1E+01	< 6.4E+00	< 6.4E+00	< 3.3E+01	< 1.3E+01

MW-124

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/11/2014 1615	L57792-8	< 6.8E+00	< 6.6E+00	< 1.4E+01	< 6.4E+00	< 1.5E+01	< 7.5E+00	< 1.2E+01	< 1.3E+01	< 5.7E+00	< 7.3E+00	< 3.5E+01	< 1.2E+01
05/06/2014 1400	L58737-2	< 5.4E+00	< 5.8E+00	< 1.1E+01	< 6.0E+00	< 1.1E+01	< 5.5E+00	< 1.0E+01	< 1.3E+01	< 6.0E+00	< 6.1E+00	< 3.1E+01	< 9.0E+00
08/19/2014 1510	L60027-17	< 3.6E+00	< 3.6E+00	< 7.5E+00	< 3.6E+00	< 8.5E+00	< 3.5E+00	< 6.3E+00	< 6.9E+00	< 3.5E+00	< 4.1E+00	< 1.8E+01	< 5.6E+00
11/11/2014 1420	L61117-17	< 5.4E+00	< 6.6E+00	< 1.4E+01	< 7.6E+00	< 2.0E+01	< 9.4E+00	< 1.2E+01	< 1.2E+01	< 6.3E+00	< 7.3E+00	< 4.2E+01	< 1.1E+01

MW-126

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1210	L57792-18	< 5.9E+00	< 5.8E+00	< 1.3E+01	< 6.3E+00	< 1.3E+01	< 7.3E+00	< 1.3E+01	< 1.3E+01	< 7.1E+00	< 7.1E+00	< 3.3E+01	< 8.7E+00
05/06/2014 1700	L58737-6	< 5.4E+00	< 5.2E+00	< 1.2E+01	< 5.8E+00	< 1.1E+01	< 5.9E+00	< 9.9E+00	< 1.3E+01	< 4.9E+00	< 6.0E+00	< 3.0E+01	< 9.7E+00
08/19/2014 1740	L60027-12	< 4.5E+00	< 3.9E+00	< 8.2E+00	< 5.1E+00	< 9.1E+00	< 4.9E+00	< 6.9E+00	< 7.1E+00	< 3.7E+00	< 4.8E+00	< 1.9E+01	< 6.0E+00
11/11/2014 1640	L61117-20	< 4.1E+00	< 4.3E+00	< 8.4E+00	< 3.6E+00	< 6.8E+00	< 3.8E+00	< 6.5E+00	< 8.8E+00	< 3.6E+00	< 3.4E+00	< 2.2E+01	< 6.9E+00
11/11/2014 1655	L61117-21	< 4.2E+00	< 4.4E+00	< 1.0E+01	< 4.2E+00	< 7.6E+00	< 4.9E+00	< 7.8E+00	< 9.3E+00	< 3.9E+00	< 4.7E+00	< 2.0E+01	< 8.4E+00

Gamma Emitters

MW-128

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1350	L57892-21	< 4.7E+00	< 4.7E+00	< 1.1E+01	< 5.4E+00	< 7.2E+00	< 5.4E+00	< 7.7E+00	< 1.4E+01	< 4.3E+00	< 4.6E+00	< 3.1E+01	< 9.7E+00
05/08/2014 1350	L58842-31	< 2.6E+00	< 3.0E+00	< 6.1E+00	< 2.5E+00	< 4.9E+00	< 3.3E+00	< 5.0E+00	< 9.9E+00	< 2.5E+00	< 2.8E+00	< 2.1E+01	< 6.8E+00
08/20/2014 0908	L60242-17	< 1.1E+00	< 1.4E+00	< 3.4E+00	< 1.4E+00	< 2.8E+00	< 1.5E+00	< 2.7E+00	< 1.4E+01	< 1.0E+00	< 1.3E+00	< 1.9E+01	< 6.0E+00
08/20/2014 0912	L60242-18	< 1.0E+00	< 1.2E+00	< 2.7E+00	< 1.9E+00	< 2.4E+00	< 1.5E+00	< 2.3E+00	< 1.4E+01	< 1.0E+00	< 1.1E+00	< 1.8E+01	< 6.8E+00
11/12/2014 1315	L61121-13	< 3.8E+00	< 2.7E+00	< 6.9E+00	< 3.3E+00	< 6.9E+00	< 3.6E+00	< 5.9E+00	< 7.9E+00	< 3.4E+00	< 4.0E+00	< 2.1E+01	< 5.3E+00

MW-130

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1250	L57892-20	< 4.7E+00	< 5.1E+00	< 8.3E+00	< 4.2E+00	< 9.5E+00	< 4.4E+00	< 8.7E+00	< 1.4E+01	< 4.4E+00	< 4.7E+00	< 3.0E+01	< 9.0E+00
05/08/2014 1300	L58842-27	< 3.2E+00	< 3.3E+00	< 8.1E+00	< 3.5E+00	< 6.5E+00	< 3.5E+00	< 6.5E+00	< 1.2E+01	< 3.3E+00	< 3.6E+00	< 2.6E+01	< 1.0E+01
08/20/2014 1250	L60242-39	< 7.6E-01	< 9.2E-01	< 2.0E+00	< 7.4E-01	< 1.8E+00	< 1.0E+00	< 1.6E+00	< 1.3E+01	< 6.3E-01	< 6.8E-01	< 1.6E+01	< 4.9E+00
11/12/2014 1448	L61121-6	< 5.8E+00	< 5.8E+00	< 1.4E+01	< 6.8E+00	< 1.5E+01	< 5.8E+00	< 1.3E+01	< 1.2E+01	< 4.9E+00	< 6.0E+00	< 3.4E+01	< 1.1E+01

MW-131

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1210	L57892-12	< 4.4E+00	< 4.3E+00	< 1.0E+01	< 4.0E+00	< 8.6E+00	< 5.4E+00	< 8.7E+00	< 1.5E+01	< 4.3E+00	< 4.8E+00	< 3.1E+01	< 1.0E+01
05/08/2014 1225	L58842-25	< 3.3E+00	< 3.2E+00	< 6.3E+00	< 3.3E+00	< 5.9E+00	< 3.4E+00	< 6.0E+00	< 1.1E+01	< 2.8E+00	< 3.2E+00	< 2.2E+01	< 6.8E+00
08/20/2014 1220	L60242-38	< 8.0E-01	< 1.1E+00	< 2.2E+00	< 8.1E-01	< 1.9E+00	< 1.1E+00	< 1.7E+00	< 1.3E+01	< 7.0E-01	< 7.6E-01	< 1.6E+01	< 5.2E+00
11/12/2014 1349	L61121-5	< 5.6E+00	< 5.5E+00	< 1.2E+01	< 5.1E+00	< 1.2E+01	< 5.6E+00	< 1.1E+01	< 1.2E+01	< 4.8E+00	< 5.3E+00	< 3.3E+01	< 1.1E+01

Gamma Emitters

MW-132

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1425	L57892-28	< 4.4E+00	< 4.1E+00	< 8.0E+00	< 4.2E+00	< 9.1E+00	< 3.4E+00	< 8.5E+00	< 1.4E+01	< 4.2E+00	< 4.4E+00	< 2.9E+01	< 9.8E+00
05/08/2014 1420	L58842-32	< 1.5E+00	< 1.3E+00	< 3.8E+00	< 2.6E+00	< 2.8E+00	< 1.6E+00	< 2.9E+00	< 4.7E+00	< 1.2E+00	< 1.5E+00	< 1.1E+01	< 3.6E+00
08/20/2014 1430	L60242-22	< 1.1E+00	< 1.2E+00	< 3.1E+00	< 1.1E+00	< 1.9E+00	< 1.3E+00	< 2.6E+00	< 2.3E+00	< 1.0E+00	< 1.1E+00	< 2.2E+01	< 5.1E+00
11/12/2014 1524	L61121-15	< 4.9E+00	< 5.2E+00	< 1.2E+01	< 5.1E+00	< 1.1E+01	< 6.5E+00	< 8.5E+00	< 1.3E+01	< 5.0E+00	< 5.3E+00	< 3.1E+01	< 1.1E+01

MW-134

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1520	L57892-27	< 4.1E+00	< 4.5E+00	< 9.6E+00	< 6.1E+00	< 7.7E+00	< 4.9E+00	< 7.5E+00	< 1.4E+01	< 4.4E+00	< 4.0E+00	< 3.3E+01	< 8.9E+00
05/08/2014 1505	L58842-28	< 3.1E+00	< 3.5E+00	< 7.7E+00	< 3.2E+00	< 6.3E+00	< 3.6E+00	< 6.0E+00	< 1.3E+01	< 3.1E+00	< 3.7E+00	< 2.7E+01	< 8.8E+00
08/20/2014 1350	L60242-21	< 6.4E-01	< 8.4E-01	< 1.6E+00	< 5.4E-01	< 1.1E+00	< 8.4E-01	< 1.3E+00	< 1.1E+01	< 5.2E-01	< 6.7E-01	< 1.4E+01	< 3.7E+00
11/12/2014 1610	L61121-16	< 4.2E+00	< 3.9E+00	< 9.8E+00	< 4.3E+00	< 8.9E+00	< 4.6E+00	< 7.0E+00	< 9.8E+00	< 4.3E+00	< 5.0E+00	< 2.3E+01	< 8.2E+00

MW-137

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/11/2014 1520	L57792-2	< 5.5E+00	< 5.6E+00	< 1.4E+01	< 8.3E+00	< 1.1E+01	< 7.7E+00	< 1.0E+01	< 1.4E+01	< 6.1E+00	< 5.6E+00	< 3.4E+01	< 5.2E+00
05/06/2014 1525	L58737-15	< 5.6E+00	< 5.3E+00	< 1.1E+01	< 6.4E+00	< 1.2E+01	< 6.7E+00	< 1.1E+01	< 1.2E+01	< 5.9E+00	< 6.2E+00	< 3.1E+01	< 8.5E+00
08/19/2014 1630	L60027-2	< 5.0E+00	< 5.3E+00	< 1.3E+01	< 6.9E+00	< 1.2E+01	< 5.8E+00	< 1.1E+01	< 9.6E+00	< 5.0E+00	< 6.4E+00	< 3.1E+01	< 1.2E+01
08/19/2014 1645	L60027-3	< 4.6E+00	< 5.7E+00	< 9.3E+00	< 4.1E+00	< 1.1E+01	< 7.1E+00	< 9.1E+00	< 1.1E+01	< 5.3E+00	< 5.3E+00	< 2.7E+01	< 6.0E+00
11/11/2014 1527	L61117-6	< 6.2E+00	< 5.6E+00	< 1.2E+01	< 6.1E+00	< 8.0E+00	< 5.1E+00	< 1.2E+01	< 1.4E+01	< 5.7E+00	< 5.7E+00	< 3.2E+01	< 7.8E+00

Gamma Emitters

MW-139

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/11/2014 1635	L57792-5	< 4.9E+00	< 4.9E+00	< 1.2E+01	< 5.8E+00	< 1.1E+01	< 6.3E+00	< 9.8E+00	< 1.0E+01	< 4.9E+00	< 6.4E+00	< 2.6E+01	< 1.1E+01
05/06/2014 1732	L58737-9	< 5.4E+00	< 5.7E+00	< 1.3E+01	< 5.7E+00	< 1.2E+01	< 5.4E+00	< 1.1E+01	< 1.2E+01	< 5.4E+00	< 5.5E+00	< 3.6E+01	< 9.4E+00
08/19/2014 1340	L60027-5	< 4.0E+00	< 4.2E+00	< 8.7E+00	< 3.8E+00	< 8.6E+00	< 5.2E+00	< 7.7E+00	< 8.5E+00	< 4.4E+00	< 5.2E+00	< 2.1E+01	< 6.0E+00
11/11/2014 1340	L61117-5	< 5.7E+00	< 6.2E+00	< 1.1E+01	< 5.6E+00	< 1.4E+01	< 7.7E+00	< 1.0E+01	< 1.1E+01	< 5.1E+00	< 7.4E+00	< 3.5E+01	< 1.2E+01

MW-141

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/11/2014 1615	L57792-3	< 6.0E+00	< 6.6E+00	< 1.3E+01	< 5.4E+00	< 1.1E+01	< 7.1E+00	< 1.3E+01	< 1.4E+01	< 6.2E+00	< 7.2E+00	< 3.4E+01	< 7.7E+00
05/06/2014 1720	L58737-8	< 3.7E+00	< 4.3E+00	< 9.6E+00	< 3.6E+00	< 8.7E+00	< 4.8E+00	< 8.2E+00	< 1.0E+01	< 4.2E+00	< 4.5E+00	< 2.6E+01	< 6.5E+00
08/19/2014 1243	L60027-4	< 6.0E+00	< 6.6E+00	< 1.3E+01	< 7.0E+00	< 1.2E+01	< 5.5E+00	< 1.0E+01	< 1.2E+01	< 5.4E+00	< 7.0E+00	< 2.8E+01	< 1.4E+01
11/11/2014 1206	L61117-3	< 5.8E+00	< 4.8E+00	< 1.0E+01	< 5.4E+00	< 1.0E+01	< 5.9E+00	< 1.1E+01	< 1.1E+01	< 5.4E+00	< 5.1E+00	< 3.0E+01	< 6.9E+00

MW-142

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1210	L57892-42	< 4.6E+00	< 4.4E+00	< 9.2E+00	< 4.9E+00	< 8.4E+00	< 5.3E+00	< 8.3E+00	< 1.5E+01	< 3.7E+00	< 4.6E+00	< 3.2E+01	< 1.0E+01
05/07/2014 1130	L58842-3	< 4.2E+00	< 3.6E+00	< 9.1E+00	< 3.3E+00	< 4.6E+00	< 4.7E+00	< 7.0E+00	< 1.5E+01	< 4.2E+00	< 4.3E+00	< 2.9E+01	< 9.6E+00
08/20/2014 1005	L60242-1	< 1.3E+00	< 1.4E+00	< 3.6E+00	< 1.2E+00	< 2.7E+00	< 1.3E+00	< 2.6E+00	< 1.2E+01	< 1.1E+00	< 1.2E+00	< 1.8E+01	< 5.7E+00
11/12/2014 1410	L61121-3	< 4.8E+00	< 5.2E+00	< 8.8E+00	< 4.3E+00	< 1.0E+01	< 5.7E+00	< 8.7E+00	< 9.5E+00	< 4.5E+00	< 3.8E+00	< 2.7E+01	< 1.1E+01

Gamma Emitters

MW-144

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1125	L57792-10	< 5.5E+00	< 6.4E+00	< 1.3E+01	< 5.7E+00	< 1.1E+01	< 4.5E+00	< 8.9E+00	< 9.2E+00	< 5.1E+00	< 4.6E+00	< 2.9E+01	< 8.2E+00
05/07/2014 1205	L58737-16	< 7.2E+00	< 6.3E+00	< 1.8E+01	< 5.0E+00	< 1.2E+01	< 4.9E+00	< 1.2E+01	< 1.3E+01	< 7.1E+00	< 8.1E+00	< 3.6E+01	< 1.2E+01
08/20/2014 1035	L60027-19	< 3.3E+00	< 3.3E+00	< 7.0E+00	< 2.9E+00	< 7.6E+00	< 3.7E+00	< 5.4E+00	< 6.1E+00	< 3.1E+00	< 3.6E+00	< 1.7E+01	< 6.0E+00
11/12/2014 1255	L61117-15	< 6.4E+00	< 5.6E+00	< 1.0E+01	< 5.5E+00	< 1.7E+01	< 8.1E+00	< 1.0E+01	< 1.3E+01	< 6.3E+00	< 7.0E+00	< 3.8E+01	< 9.9E+00

MW-146

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1255	L57792-11	< 4.6E+00	< 4.8E+00	< 8.9E+00	< 5.1E+00	< 8.0E+00	< 5.1E+00	< 4.7E+00	< 7.9E+00	< 3.6E+00	< 5.3E+00	< 1.9E+01	< 6.9E+00
05/07/2014 1235	L58737-17	< 5.9E+00	< 6.6E+00	< 1.3E+01	< 6.5E+00	< 1.1E+01	< 7.4E+00	< 1.1E+01	< 1.5E+01	< 5.2E+00	< 6.3E+00	< 3.6E+01	< 1.3E+01
08/20/2014 1135	L60027-20	< 4.1E+00	< 3.8E+00	< 7.5E+00	< 4.3E+00	< 8.5E+00	< 4.5E+00	< 6.8E+00	< 7.1E+00	< 4.7E+00	< 4.4E+00	< 2.0E+01	< 5.5E+00
11/12/2014 1140	L61117-13	< 7.3E+00	< 7.7E+00	< 1.6E+01	< 4.5E+00	< 1.4E+01	< 7.4E+00	< 1.1E+01	< 1.4E+01	< 7.4E+00	< 8.9E+00	< 4.1E+01	< 1.2E+01

MW-147

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1340	L57792-12	< 7.1E+00	< 6.6E+00	< 1.4E+01	< 8.5E+00	< 1.5E+01	< 6.3E+00	< 1.1E+01	< 1.2E+01	< 6.4E+00	< 7.4E+00	< 3.0E+01	< 1.2E+01
05/07/2014 1350	L58737-18	< 4.8E+00	< 4.8E+00	< 1.1E+01	< 4.3E+00	< 7.1E+00	< 5.0E+00	< 7.6E+00	< 1.1E+01	< 5.4E+00	< 4.6E+00	< 2.6E+01	< 8.0E+00
08/20/2014 1240	L60027-22	< 5.3E+00	< 7.5E+00	< 1.6E+01	< 6.9E+00	< 1.3E+01	< 7.1E+00	< 1.2E+01	< 1.2E+01	< 6.0E+00	< 6.1E+00	< 3.4E+01	< 8.0E+00
11/12/2014 1055	L61117-27	< 3.5E+00	< 3.8E+00	< 6.9E+00	< 3.6E+00	< 9.5E+00	< 4.2E+00	< 7.9E+00	< 1.1E+01	< 3.7E+00	< 4.2E+00	< 2.8E+01	< 7.7E+00

Gamma Emitters

MW-148

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1700	L57892-41	< 4.0E+00	< 3.9E+00	< 9.3E+00	< 4.4E+00	< 7.7E+00	< 4.6E+00	< 8.2E+00	< 1.5E+01	< 3.7E+00	< 4.5E+00	< 3.2E+01	< 8.0E+00
05/07/2014 1315	L58842-4	< 3.5E+00	< 3.8E+00	< 9.2E+00	< 3.5E+00	< 7.6E+00	< 4.0E+00	< 6.7E+00	< 1.4E+01	< 3.7E+00	< 4.3E+00	< 2.8E+01	< 7.2E+00
08/20/2014 1100	L60242-2	< 7.7E-01	< 1.1E+00	< 2.4E+00	< 9.3E-01	< 1.8E+00	< 1.0E+00	< 1.9E+00	< 7.8E+00	< 7.4E-01	< 9.1E-01	< 1.1E+01	< 3.3E+00
11/12/2014 1457	L61121-4	< 5.3E+00	< 6.5E+00	< 1.3E+01	< 3.6E+00	< 1.5E+01	< 8.0E+00	< 1.1E+01	< 1.3E+01	< 5.7E+00	< 7.3E+00	< 3.4E+01	< 1.2E+01

MW-151

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/11/2014 1415	L57792-7	< 5.0E+00	< 4.2E+00	< 1.1E+01	< 5.7E+00	< 1.0E+01	< 4.9E+00	< 1.0E+01	< 1.2E+01	< 4.9E+00	< 5.8E+00	< 2.3E+01	< 6.1E+00
05/06/2014 1235	L58737-1	< 7.8E+00	< 7.1E+00	< 1.9E+01	< 7.5E+00	< 1.3E+01	< 8.4E+00	< 1.5E+01	< 1.3E+01	< 6.3E+00	< 7.4E+00	< 3.1E+01	< 9.8E+00
08/19/2014 1330	L60027-16	< 4.5E+00	< 4.6E+00	< 1.0E+01	< 5.2E+00	< 9.3E+00	< 4.6E+00	< 8.6E+00	< 8.0E+00	< 4.3E+00	< 4.4E+00	< 2.3E+01	< 7.5E+00
11/11/2014 1245	L61117-16	< 6.0E+00	< 4.9E+00	< 1.4E+01	< 6.7E+00	< 1.3E+01	< 7.7E+00	< 1.1E+01	< 1.2E+01	< 6.7E+00	< 7.4E+00	< 3.5E+01	< 9.4E+00

MW-153

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1620	L57892-4	< 2.6E+00	< 3.3E+00	< 8.4E+00	< 3.9E+00	< 6.8E+00	< 4.0E+00	< 7.9E+00	< 1.3E+01	< 3.5E+00	< 3.8E+00	< 2.6E+01	< 9.4E+00
05/08/2014 1538	L58842-38	< 2.6E+00	< 2.7E+00	< 6.3E+00	< 3.5E+00	< 6.0E+00	< 3.5E+00	< 4.7E+00	< 9.7E+00	< 2.3E+00	< 2.9E+00	< 2.1E+01	< 7.0E+00
05/08/2014 1600	L58842-39	< 3.3E+00	< 3.6E+00	< 7.3E+00	< 3.5E+00	< 8.0E+00	< 3.9E+00	< 6.4E+00	< 1.3E+01	< 3.8E+00	< 3.9E+00	< 2.7E+01	< 6.8E+00
08/21/2014 0900	L60242-16	< 1.5E+00	< 1.6E+00	< 3.4E+00	< 1.4E+00	< 2.8E+00	< 1.6E+00	< 2.9E+00	< 1.5E+01	< 1.1E+00	< 1.4E+00	< 2.1E+01	< 6.1E+00
11/13/2014 1313	L61161-8	< 1.6E+00	< 1.8E+00	< 4.0E+00	< 1.5E+00	< 3.1E+00	< 1.8E+00	< 3.2E+00	< 1.2E+01	< 1.5E+00	< 1.6E+00	< 1.9E+01	< 6.2E+00

Gamma Emitters

MW-155

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/11/2014 1645	L57792-9	< 6.0E+00	< 6.7E+00	< 1.1E+01	< 6.5E+00	< 1.5E+01	< 5.9E+00	< 1.2E+01	< 1.3E+01	< 6.0E+00	< 7.6E+00	< 3.0E+01	< 1.0E+01
05/06/2014 1505	L58737-3	< 5.1E+00	< 5.6E+00	< 1.2E+01	< 7.1E+00	< 1.5E+01	< 5.3E+00	< 9.7E+00	< 1.4E+01	< 4.4E+00	< 7.0E+00	< 3.1E+01	< 1.1E+01
08/19/2014 1550	L60027-18	< 3.5E+00	< 3.9E+00	< 7.9E+00	< 4.3E+00	< 7.2E+00	< 3.9E+00	< 7.1E+00	< 7.5E+00	< 3.5E+00	< 3.8E+00	< 2.0E+01	< 6.2E+00
11/11/2014 1515	L61117-18	< 4.6E+00	< 5.2E+00	< 1.2E+01	< 3.8E+00	< 1.0E+01	< 4.5E+00	< 1.1E+01	< 1.2E+01	< 4.7E+00	< 5.4E+00	< 2.8E+01	< 8.5E+00

MW-156

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1025	L57792-16	< 5.9E+00	< 5.9E+00	< 9.3E+00	< 6.6E+00	< 1.3E+01	< 7.6E+00	< 9.9E+00	< 1.1E+01	< 5.9E+00	< 6.4E+00	< 3.2E+01	< 7.5E+00
05/06/2014 1540	L58737-4	< 3.7E+00	< 3.3E+00	< 7.3E+00	< 3.2E+00	< 6.4E+00	< 3.6E+00	< 6.6E+00	< 8.0E+00	< 3.1E+00	< 3.5E+00	< 1.9E+01	< 4.2E+00
08/19/2014 1630	L60027-10	< 6.9E+00	< 6.6E+00	< 1.3E+01	< 5.7E+00	< 1.4E+01	< 6.1E+00	< 1.1E+01	< 1.2E+01	< 7.0E+00	< 6.9E+00	< 3.0E+01	< 9.8E+00
11/11/2014 1555	L61117-19	< 4.0E+00	< 3.8E+00	< 7.8E+00	< 4.0E+00	< 7.4E+00	< 3.8E+00	< 6.0E+00	< 8.1E+00	< 3.2E+00	< 3.7E+00	< 2.3E+01	< 6.4E+00

MW-157

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1105	L57792-17	< 6.5E+00	< 6.5E+00	< 1.2E+01	< 7.7E+00	< 1.1E+01	< 6.9E+00	< 1.1E+01	< 1.3E+01	< 6.4E+00	< 6.2E+00	< 2.6E+01	< 1.2E+01
05/06/2014 1605	L58737-5	< 4.9E+00	< 5.1E+00	< 1.2E+01	< 5.0E+00	< 9.2E+00	< 5.9E+00	< 8.9E+00	< 1.1E+01	< 4.2E+00	< 5.2E+00	< 2.8E+01	< 1.1E+01
08/19/2014 1710	L60027-11	< 3.0E+00	< 3.0E+00	< 5.4E+00	< 3.0E+00	< 6.2E+00	< 3.3E+00	< 5.5E+00	< 5.7E+00	< 3.1E+00	< 2.9E+00	< 1.4E+01	< 4.2E+00
11/12/2014 1219	L61117-22	< 6.7E+00	< 7.4E+00	< 1.7E+01	< 6.6E+00	< 1.3E+01	< 7.9E+00	< 1.2E+01	< 1.5E+01	< 7.3E+00	< 7.0E+00	< 4.1E+01	< 9.0E+00

Gamma Emitters

MW-158

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1425	L57792-19	< 5.3E+00	< 5.0E+00	< 9.2E+00	< 3.8E+00	< 8.1E+00	< 6.2E+00	< 8.3E+00	< 1.1E+01	< 4.9E+00	< 5.5E+00	< 2.4E+01	< 1.1E+01
02/12/2014 1445	L57792-20	< 6.6E+00	< 5.8E+00	< 1.6E+01	< 6.2E+00	< 1.2E+01	< 5.3E+00	< 1.1E+01	< 9.4E+00	< 6.5E+00	< 5.5E+00	< 2.7E+01	< 1.4E+01
05/07/2014 1430	L58737-19	< 7.0E+00	< 7.8E+00	< 1.0E+01	< 6.2E+00	< 1.4E+01	< 7.8E+00	< 1.3E+01	< 1.4E+01	< 6.8E+00	< 7.0E+00	< 3.1E+01	< 1.2E+01
08/20/2014 1315	L60027-23	< 5.3E+00	< 5.0E+00	< 1.0E+01	< 4.3E+00	< 1.1E+01	< 6.0E+00	< 8.5E+00	< 9.1E+00	< 4.2E+00	< 4.6E+00	< 2.2E+01	< 7.8E+00
11/12/2014 1215	L61117-14	< 8.5E+00	< 8.1E+00	< 1.8E+01	< 7.3E+00	< 1.5E+01	< 6.2E+00	< 1.4E+01	< 1.4E+01	< 7.3E+00	< 8.0E+00	< 4.0E+01	< 8.1E+00

MW-159

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/12/2014 1515	L57792-21	< 3.4E+00	< 4.6E+00	< 1.1E+01	< 5.8E+00	< 7.0E+00	< 4.6E+00	< 8.5E+00	< 8.4E+00	< 4.0E+00	< 4.8E+00	< 2.2E+01	< 7.2E+00
05/07/2014 1500	L58737-20	< 5.4E+00	< 5.1E+00	< 1.2E+01	< 4.4E+00	< 9.3E+00	< 4.5E+00	< 1.1E+01	< 1.1E+01	< 5.0E+00	< 6.2E+00	< 3.0E+01	< 7.6E+00
08/20/2014 1355	L60027-24	< 5.5E+00	< 4.3E+00	< 1.1E+01	< 6.7E+00	< 1.3E+01	< 5.9E+00	< 1.1E+01	< 9.8E+00	< 5.2E+00	< 6.9E+00	< 2.4E+01	< 1.1E+01
11/12/2014 0935	L61117-25	< 5.0E+00	< 6.0E+00	< 1.3E+01	< 5.8E+00	< 1.3E+01	< 6.2E+00	< 1.1E+01	< 1.2E+01	< 6.2E+00	< 5.8E+00	< 2.9E+01	< 9.6E+00

MW-161

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1629	L57892-30	< 4.1E+00	< 4.7E+00	< 9.2E+00	< 6.3E+00	< 8.0E+00	< 4.2E+00	< 7.7E+00	< 1.4E+01	< 3.3E+00	< 4.5E+00	< 2.9E+01	< 7.8E+00
05/07/2014 1154	L58842-9	< 3.9E+00	< 4.6E+00	< 8.4E+00	< 4.7E+00	< 7.2E+00	< 4.3E+00	< 8.0E+00	< 1.4E+01	< 3.4E+00	< 3.9E+00	< 3.1E+01	< 8.5E+00
08/20/2014 1750	L60242-32	< 7.5E-01	< 1.0E+00	< 2.0E+00	< 6.8E-01	< 1.7E+00	< 1.0E+00	< 2.0E+00	< 1.5E+01	< 7.0E-01	< 6.9E-01	< 1.6E+01	< 6.6E+00
11/12/2014 1421	L61140-7	< 8.3E-01	< 1.1E+00	< 2.4E+00	< 1.2E+00	< 2.6E+00	< 1.2E+00	< 1.9E+00	< 7.0E+00	< 9.4E-01	< 1.1E+00	< 1.2E+01	< 3.8E+00

Gamma Emitters

MW-162

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
05/07/2014 1545	L58737-21	< 6.2E+00	< 6.3E+00	< 1.2E+01	< 5.9E+00	< 1.3E+01	< 7.8E+00	< 1.1E+01	< 1.4E+01	< 5.6E+00	< 6.1E+00	< 3.3E+01	< 9.5E+00
05/07/2014 1555	L58737-25	< 3.3E+00	< 3.1E+00	< 5.8E+00	< 3.1E+00	< 6.2E+00	< 3.6E+00	< 6.2E+00	< 7.0E+00	< 3.2E+00	< 3.4E+00	< 1.9E+01	< 5.4E+00
08/20/2014 1205	L60027-21	< 4.6E+00	< 4.3E+00	< 7.6E+00	< 4.0E+00	< 8.4E+00	< 4.0E+00	< 8.5E+00	< 7.4E+00	< 4.8E+00	< 4.4E+00	< 2.0E+01	< 8.2E+00
11/12/2014 1020	L61117-26	< 3.0E+00	< 3.7E+00	< 7.5E+00	< 3.6E+00	< 7.4E+00	< 3.8E+00	< 6.8E+00	< 7.8E+00	< 3.1E+00	< 3.6E+00	< 2.2E+01	< 6.7E+00

PZ-01

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/11/2014 1345	L57792-1	< 4.1E+00	< 5.0E+00	< 8.9E+00	< 6.4E+00	< 9.0E+00	< 5.7E+00	< 9.3E+00	< 1.0E+01	< 4.5E+00	< 4.8E+00	< 2.2E+01	< 8.2E+00
05/06/2014 1425	L58737-13	< 4.4E+00	< 3.8E+00	< 1.0E+01	< 4.8E+00	< 8.0E+00	< 4.6E+00	< 8.0E+00	< 1.2E+01	< 4.7E+00	< 5.0E+00	< 2.2E+01	< 9.2E+00
05/06/2014 1440	L58737-14	< 4.3E+00	< 4.1E+00	< 9.5E+00	< 3.5E+00	< 8.3E+00	< 4.2E+00	< 6.2E+00	< 1.0E+01	< 4.1E+00	< 3.9E+00	< 2.4E+01	< 6.4E+00
08/19/2014 1100	L60027-7	< 5.7E+00	< 6.4E+00	< 1.6E+01	< 6.1E+00	< 1.3E+01	< 6.6E+00	< 9.9E+00	< 1.1E+01	< 5.6E+00	< 7.0E+00	< 3.2E+01	< 1.1E+01
11/11/2014 1417	L61117-9	< 6.5E+00	< 6.3E+00	< 1.2E+01	< 7.5E+00	< 1.3E+01	< 7.0E+00	< 1.2E+01	< 1.4E+01	< 7.7E+00	< 7.4E+00	< 3.6E+01	< 1.2E+01
11/11/2014 1430	L61117-10	< 5.5E+00	< 5.1E+00	< 1.0E+01	< 5.2E+00	< 1.1E+01	< 6.2E+00	< 1.1E+01	< 1.0E+01	< 4.3E+00	< 5.7E+00	< 3.5E+01	< 1.1E+01

PZ-02

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1739	L57892-17	< 4.6E+00	< 4.7E+00	< 9.7E+00	< 4.3E+00	< 1.0E+01	< 4.9E+00	< 7.5E+00	< 1.4E+01	< 4.4E+00	< 4.7E+00	< 3.1E+01	< 1.0E+01
05/08/2014 0916	L58842-17	< 2.9E+00	< 3.1E+00	< 6.3E+00	< 3.0E+00	< 6.2E+00	< 3.4E+00	< 5.2E+00	< 9.8E+00	< 2.6E+00	< 3.0E+00	< 2.0E+01	< 6.9E+00
08/20/2014 1710	L60242-41	< 7.8E-01	< 9.0E-01	< 2.4E+00	< 8.3E-01	< 1.7E+00	< 1.0E+00	< 1.8E+00	< 1.4E+01	< 7.2E-01	< 8.3E-01	< 1.7E+01	< 4.1E+00
11/12/2014 1521	L61140-8	< 6.5E-01	< 8.3E-01	< 1.7E+00	< 7.4E-01	< 1.5E+00	< 8.5E-01	< 1.5E+00	< 5.9E+00	< 5.7E-01	< 7.5E-01	< 8.3E+00	< 2.7E+00

Gamma Emitters

PZ-03

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1020	L57892-10	< 3.8E+00	< 3.7E+00	< 8.0E+00	< 4.8E+00	< 7.6E+00	< 3.2E+00	< 6.6E+00	< 1.4E+01	< 4.0E+00	< 4.6E+00	< 3.2E+01	< 8.8E+00
05/08/2014 1045	L58842-21	< 3.4E+00	< 3.8E+00	< 1.2E+01	< 3.5E+00	< 6.7E+00	< 4.3E+00	< 7.1E+00	< 1.4E+01	< 3.8E+00	< 4.4E+00	< 3.1E+01	< 7.8E+00
08/20/2014 1125	L60242-20	< 1.2E+00	< 1.3E+00	< 3.6E+00	< 1.4E+00	< 2.5E+00	< 1.5E+00	< 2.8E+00	< 1.4E+01	< 1.1E+00	< 1.2E+00	< 1.7E+01	< 5.3E+00
11/12/2014 1058	L61121-14	< 4.3E+00	< 4.8E+00	< 1.2E+01	< 4.6E+00	< 1.0E+01	< 4.6E+00	< 8.7E+00	< 1.1E+01	< 5.2E+00	< 4.2E+00	< 2.6E+01	< 8.7E+00

SW-101

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/14/2014 1000	L57892-38	< 4.1E+00	< 4.3E+00	< 9.7E+00	< 5.0E+00	< 9.2E+00	< 5.4E+00	< 8.1E+00	< 1.4E+01	< 4.3E+00	< 4.5E+00	< 2.8E+01	< 8.9E+00
05/08/2014 1455	L58842-34	< 3.5E+00	< 3.5E+00	< 8.2E+00	< 3.9E+00	< 7.0E+00	< 3.7E+00	< 6.7E+00	< 1.2E+01	< 3.2E+00	< 3.5E+00	< 2.6E+01	< 7.9E+00
08/20/2014 1610	L60242-27	< 8.6E-01	< 1.0E+00	< 2.2E+00	< 8.0E-01	< 1.8E+00	< 1.2E+00	< 2.1E+00	< 1.4E+01	< 7.2E-01	< 9.4E-01	< 1.6E+01	< 4.8E+00

SW-102

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/14/2014 1100	L57892-37	< 5.2E+00	< 4.7E+00	< 1.1E+01	< 4.6E+00	< 8.7E+00	< 5.5E+00	< 9.3E+00	< 1.5E+01	< 4.2E+00	< 5.3E+00	< 3.6E+01	< 1.3E+01
05/08/2014 1400	L58842-33												

SW-103

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/14/2014 0925	L57892-34	< 3.6E+00	< 4.0E+00	< 8.7E+00	< 4.1E+00	< 4.6E+00	< 4.7E+00	< 6.2E+00	< 1.3E+01	< 3.5E+00	< 3.6E+00	< 2.7E+01	< 8.0E+00
05/08/2014 1340	L58842-30	< 3.7E+00	< 4.2E+00	< 9.3E+00	< 3.9E+00	< 8.7E+00	< 4.3E+00	< 7.6E+00	< 1.2E+01	< 3.6E+00	< 3.9E+00	< 2.7E+01	< 1.0E+01
08/20/2014 1700	L60242-28	< 8.6E-01	< 9.5E-01	< 2.3E+00	< 6.9E-01	< 1.8E+00	< 1.1E+00	< 2.2E+00	< 2.5E+00	< 7.7E-01	< 8.5E-01	< 1.7E+01	< 6.2E+00
11/13/2014 1430	L61140-13	< 1.0E+00	< 1.2E+00	< 2.8E+00	< 1.1E+00	< 2.1E+00	< 1.2E+00	< 2.2E+00	< 7.6E+00	< 9.8E-01	< 1.0E+00	< 1.3E+01	< 4.3E+00

Gamma Emitters

SW-104

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
02/13/2014 1700	L57892-33	< 3.8E+00	< 5.0E+00	< 8.6E+00	< 4.4E+00	< 8.3E+00	< 4.1E+00	< 6.5E+00	< 1.4E+01	< 3.7E+00	< 4.8E+00	< 3.7E+01	< 1.4E+01
05/08/2014 1310	L58842-29	< 2.5E+00	< 2.9E+00	< 6.2E+00	< 2.6E+00	< 5.4E+00	< 3.1E+00	< 5.2E+00	< 9.3E+00	< 2.5E+00	< 2.8E+00	< 2.0E+01	< 6.1E+00
08/20/2014 1737	L60242-24	< 1.2E+00	< 1.4E+00	< 3.6E+00	< 1.2E+00	< 2.3E+00	< 1.4E+00	< 2.6E+00	< 4.2E+00	< 1.1E+00	< 1.3E+00	< 1.9E+01	< 8.2E+00
11/13/2014 1445	L61161-11	< 3.1E+00	< 3.3E+00	< 7.0E+00	< 3.5E+00	< 6.7E+00	< 3.7E+00	< 6.0E+00	< 9.1E+00	< 3.2E+00	< 3.4E+00	< 2.2E+01	< 6.7E+00

T-14

Start Date/Time	Lab ID	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
11/13/2014 0945	L61161-9	< 1.4E+00	< 1.6E+00	< 3.6E+00	< 1.5E+00	< 3.1E+00	< 1.7E+00	< 2.9E+00	< 1.1E+01	< 1.3E+00	< 1.4E+00	< 1.7E+01	< 5.5E+00

Hard-To-Detects

MW-158

Start Date/Time	Lab ID	Fe-55	Ni-63	Sr-89	Sr-90	Am-242	Cm-243/244	Pu-238
02/12/2014 1425	L57792-19	< 8.3E+01	< 1.6E+01	< 1.8E+01	< 7.5E-01	< 7.4E-02	< 8.2E-02	< 1.3E-01

Attachment 1
Process Applicability Program

PROCESS CONTROL PROGRAM

Procedure Contains NMM ECH eB REFLIB Forms: YES ☐ NO ☒

HQN Effective Date	Procedure Owner: Title: Site:	Donnie Marvel Manager, RP ANO	Governance Owner: Title: Site:	David Moore Manager, Fleet RP HQN
3/25/14				

Site	Site Procedure Champion	Title
ANO	Donnie Marvel	Manager, RP
BRP	N/A	N/A
CNS	Bob Beilke	Manager, RP
GGNS	Roy Miller	Manager, RP
IPEC	Frank Mitchell	Manager, RP
JAF	Robert Brown	Manager, RP
PLP	Doug Watkins	Manager, RP
PNPS	Steven Brewer	Manager, RP
RBS	Jim Hogan	Manager, RP (acting)
VY	David Tkatch	Manager, RP
W3	Daniel Frey	Manager, RP
HQN	David Moore	Manager, Fleet RP

For site implementation dates see ECH eB REFLIB using site tree view (Navigation panel).

Site and NMM Procedures Canceled or Superseded By This Revision

None

Process Applicability Exclusion: All Sites: ☐

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

Change Statement

Editorial revision to address the issue identified in CR-HQN-2013-00858, CA-02 (Develop a draft procedure that includes instructions for vendors processing waste still owned by Entergy to comply with the PCP program.)

Reworded Step 5.1[1](b) to improve clarity: inserted text "processed on-site OR off-site by vendors"

Associated PRHQN #: PR-PRHQN-2014-00048

TABLE OF CONTENTS

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

2.0 continued

[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]**

[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

2.0[10], continued

- 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

[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).

[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.

3.0 continued

[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.

[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.

3.0, continued

[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).

[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.

3.0, continued

[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.

[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.

4.0, continued

[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.
- 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 processed on-site **OR** off-site by vendors must be processed or packaged to meet the minimum requirements listed in 10CFR Part 61.56 (a) (1) through (8).

5.1[1], continued

(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.

5.2[1](d), continued

(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.

5.3, continued

[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.

[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.

[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 – 6.6.3] [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.C] [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 (equivalent title at Palisades is Plant Superintendent) 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]**

5.8[4], continued

(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]**

(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].

5.9[2], continued

(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.

(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.

5.10[2], continued

(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.

(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[2] 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 SITE SPECIFIC COMMITMENTS

Document	Document Section	NMM Procedure Section	Site Applicability
ANO ODCM	L3.2.1.C	5.8 [3]	ANO
ANO1 Technical Specifications	5.6.3	5.8 [1]	ANO
ANO2 Technical Specifications	6.6.3	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	*	PNPS
NRC Letter 1.88.078	All	*	PNPS
VY Technical Specifications	6.4.H	*	VY
VY ODCM	10.1	5.8 [1]	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