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Subject: Radiological Environmental Operating Report for 2007
River Bend Station - Unit 1
License No. NPF-47
Docket No. 50-458

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RBG-46806
RBF1-08-0049

Dear Sir or Madam,

Enclosed is the River Bend Station (RBS) Annual Radiological Environmental Operating Report for the period January 1, 2007, through December 31, 2007. This report is submitted in accordance with the RBS Technical Specifications, Section 5.6.2.

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

Sincerely,

David N. Lorfing

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RIVER BEND STATION

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT FOR 2007

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Summary

The Annual Radiological Environmental Operating Report presents data obtained through analyses of environmental samples collected for the River Bend Station (RBS) Radiological Environmental Monitoring Program (REMP) for the period January 1, 2007 through December 31, 2007. This report fulfills a requirement specified in RBS Technical Requirements Manual (TRM) 5.6.2 as required by Technical Specification 5.6.2 of Appendix A to RBS License Number NPF-47. During 2007, REMP results remained at background levels, as has been the case in previous years.

All required lower limit of detection (LLD) capabilities were achieved in all sample analyses during 2007. No measurable levels of radiation above baseline levels were detected in the vicinity of River Bend Station. The 2007 Radiological Environmental Monitoring Program thus substantiated the adequacy of source control and effluent monitoring at River Bend Station with no observed impact of plant operations on the environment.

Radiological Environmental Monitoring Program

RBS established the REMP prior to the station's becoming operational (1985) to provide data on background radiation and radioactivity normally present in the area. RBS has continued to monitor the environment by sampling air, water, sediment, fish and food products, as well as measuring direct radiation. RBS also samples milk if milk-producing animals used for human consumption are present within five miles (8 km) of the plant.

The REMP includes sampling indicator and control locations within an approximately 20-mile radius of the plant. The REMP utilizes indicator locations near the site to show any increases or buildup of radioactivity that might occur due to station operation, and control locations farther away from the site to indicate the presence of only naturally occurring radioactivity. RBS personnel compare indicator results with control and preoperational results to assess any impact RBS operation might have had on the surrounding environment.

In 2007, environmental samples were collected for radiological analysis. The results of indicator locations were compared with control locations and previous studies. It was concluded that overall, no significant relationship exists between RBS operation and effect on the area around the plant. The review of 2007 data, in many cases, showed radioactivity levels in the environment were undetectable in many locations and near background levels in significant pathways.

Harmful Effects or Irreversible Damage

The REMP monitoring did not detect any harmful effects or evidence of irreversible damage in 2007. Therefore, no analysis or planned course of action to alleviate problems was necessary.

Reporting Levels

RBS's review indicates that no samples equaled or exceeded reporting levels for radioactivity concentration in environmental samples, as outlined in RBS Technical Requirements Manual Table 3.12.1-2, when averaged over any calendar quarter. Therefore, 2007 results did not result in any Radiological Monitoring Program Special Reports.

Radioactivity Not Attributable to RBS

The RBS REMP detected no radioactivity attributable to other sources during year 2007. Following the radioactive plume release due to reactor core degradation at the Chernobyl Nuclear Power Plant in 1986, RBS REMP detected I-131 in water, vegetation, and air samples. I-131 was also detected during 1998 in the wastewater treatment plant effluent. This was attributed to the medical treatment of a RBS employee. In 2006, Cs-137 was detected in upstream and downstream Mississippi River sediment samples. This activity was not present in the 2007 samples.

Comparison to Federal and State Programs

RBS personnel compared REMP data to federal and state monitoring programs as results became available. Historically, the programs used for comparison have included the U.S. Nuclear Regulatory Commission (NRC) TLD (Thermoluminescent Dosimeter) Direct Radiation Monitoring Network and the Environmental Radiological Laboratory – Department of Environmental Quality Laboratory Services Division (ERL-DEQLSD).

The NRC TLD Network Program was discontinued in 1998. Historically these results have compared to those from the RBS REMP. RBS TLD results continue to remain similar to the historical average and continue to verify that plant operation is not affecting the ambient radiation levels in the environment.

The ERL-DEQLSD and the RBS REMP entail similar radiological environmental monitoring program requirements. These programs include co-located air sample locations, and splitting or sharing sample media such as water, fish and food products. Both programs have obtained similar results over previous years.

Sample Deviations

- **Milk**

  The REMP did not include milk sampling within five miles (8 km) of RBS in 2007 due to unavailability of milk-producing animals used for human consumption. The RBS Technical Requirements Manual requires collection of milk samples if available commercially within 8 km (5 miles) of the plant. RBS personnel collected vegetation samples to monitor the ingestion pathway, as specified in RBS Technical Requirements Manual Table 3.12.1-1, because of milk unavailability.

- **Required Lower Limit of Detection (LLD) Values**

All LLDs during this reporting period were more conservative than the acceptable limits required by the RBS Technical Requirement Manual (TRM).

- **Sampling Deviations**

Listed below are sampling deviations that occurred during 2007. No LLD values were exceeded in the air sampling deviations. As described in footnote (a) to RBS Technical Requirements Manual Table 3.12.1-1, deviations are permitted from the required sampling schedule due to malfunction of equipment or other legitimate reasons.

Station	Sampling Period	Problem Description	Comment
AP1	06/18/07 to 07/2/07	Power Outage	Air sampler location AP1 was short 3.4 hours (1 % volume) for period 06/18/07 to 07/2/07 due to the construction loop power outage at Grant Substation. Sampler operating normal at time of sample collection. Sample volume adequate to achieve required LLD for I-131 in analysis. No program impacts accessed due to this loss of sample volume.
AN1	06/18/07 to 07/2/02	Equipment Failure	Air sampler location AN1 was found not running. The sample run time was short 301.8 hours for period 06/18/07 to 07/2/02 due to burnt power switch at sampler. Sample volume was adequate to achieve required LLD for I-131 in analysis. No program impacts accessed due to this loss of sample volume.
AN1	07/02/07 to 07/16/07	Equipment Failure	Air sampler AN1 was found off with a switch problem. The sampler was restarted and will be checked peridically until a new sampler can be calibrated and installed. Approximately 18 hours were missing.
TLD's	2nd Quarter 2007	TLD Badges Irradiated	The 2nd quarter 2007 environmental TLDs received from the TLD vendor were irradiated in transit. New TLDs are being shipped and will be swapped as soon as received.
TQ1 TR1	3rd Quarter 2007	TLD Badges Mislabled	Two TLD locations were swapped. TLD TQ1 and TR1 were relabeled to their location.

TL1	2nd Quarter 2007	TLD Damaged	TLD TL1 was found off of the telephone pole in the grass and removed from its protective plastic bag. The cause appears to be due to a vehicle sliding off the road and impacting the TLD holder. The TLD was rebagged and reinstalled with a new holder. The TLD may be damaged internally and the vendor will be notified to use care when reading the TLD.
AP1 AN1	07/30/07 to 08/13/07	Power Outage	Air sampler location AP1 and AN1 were short 5.2 and 5.5 hours, respectly for period 07/30/07 to 08/13/07 due to lost of the construction loop. Samplers were operating normal at time of sample collection. Sample volume adequate to achieve required LLD for I-131 in analysis. No program impacts accessed due to this loss of sample volume
AGC	08/27/07 to 09/10/07	Power Outage	Air sampler location AGC was short 3.6 hours for period 08/27/07 to 09/10/07 due local thunderstorms. Samplers were operating normal at time of sample collection. Sample volume adequate to achieve required LLD for I-131 in analysis. No program impacts accessed due to this loss of sample volume
AGC	09/24/07 to 10/8/07	Timer Disconnected	Air sampler location AGC was found with run timer unplugged/ disconnected for period 09/24/07 to 10/8/07. The wire seems to be too tight. The sampler was reconnected to run timer and ran normally. Sampler operating normal at time of sample collection. This is admin issue only.

Missed Samples

No samples were missed during 2007.

Unavailable Results

Results of one TLD from the second quarter 2007 from location TL1 was unavailable due to damage to the TLD. This deviation is noted above.

Program Modifications

RBS made no modifications to the REMP during the year 2007.

Attachments

Attachment 1 contains results of air, TLD, water, sediment, fish, food products and special samples collected in 2007. TLDs were analyzed by AREVA. All remaining samples were analyzed by RBS Environmental Laboratory. Attachment 1 also contains RBS' participation in the Interlaboratory Comparison Program during the year 2007.

1.0 Introduction

1.1 Radiological Environmental Monitoring Program

RBS established the REMP to ensure that plant operating controls properly function to minimize any associated radiation endangerment to human health or the environment. The REMP is designed for:

- Analyzing important pathways for anticipated types and quantities of radionuclides released into the environment.
- Considering the possibility of a buildup of long-lived radionuclides in the environment and identifying physical and biological accumulations that may contribute to human exposures.
- Considering the potential radiation exposure to plant and animal life in the environment surrounding RBS.
- Correlating levels of radiation and radioactivity in the environment with radioactive releases from station operation.

1.2 Pathways Monitored

The airborne, direct radiation, waterborne and ingestion pathways, as seen in Figure 1-1, are monitored as required by the RBS Technical Requirements Manual 3.12.1. A description of the RBS REMP sample locations utilized to monitor exposure pathways are described in Table 1.1 and shown in Figures 1-2 and 1-3. RBS may occasionally supplement this program with additional sampling in order to provide a comprehensive and well-balanced program.

Section 2.0 of this report provides a discussion of 2007 sampling results with Section 3.0 providing a summary of results for the monitored exposure pathways.

1.3 Land Use Census

RBS personnel conduct a land use census biannually, as required by RBS Technical Requirements Manual 3.12.2. The last land use census was performed in 2006. The next Land Use Census will be performed in 2008.

Table 1.1

Radiological Environmental Sampling Program

Exposure Pathway	Requirement	Sample Point Description, Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
Airborne	**Radioiodine and Particulates** 2 samples from close to the 2 SITE BOUNDARY locations, in different sectors, of the highest calculated annual average ground level D/Q.	**AN1 (0.9 km W)** - RBS site Hwy 965; 0.4 km south of Activity Center. **AP1 (0.9 km WNW)** – Behind River Bend Station Activity Center.	Continuous sampler operation with sample collection every two weeks, or more frequently if required by dust loading.	Radioiodine Canisters – I-131 analysis every two weeks. Air Particulate – Gross beta radioactivity analysis following filter change.
	Radioiodine and Particulates 1 sample from the vicinity of a community having the highest calculated annual average ground level D/Q.	**AQS2 (5.8 km NW)** - St. Francis Substation on US Hwy. (Bus.) 61 in St. Francisville.		
	Radioiodine and Particulates 1 sample from a control location, as for example 15 - 30 km distance and in the least prevalent wind direction.	**AGC (17.0 km SE)** – Entergy Service Center compound in Zachary. (Control)		
Direct Radiation	**TLDs** One ring of stations, one in each meteorological sector in the general area of the SITE BOUNDARY.	**TA1 (1.7 km N)** - River Bend Training Center. **TB1 (0.5 km NNE)** - Utility pole near River Bend Station cooling tower yard area. **TC1 (1.7 km NE)** - Telephone pole at Jct. US Hwy. 61 and Old Highway 61.	Quarterly	mR exposure quarterly.

Table 1.1

Radiological Environmental Sampling Program

Exposure Pathway	Requirement	Sample Point Description, Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
Direct Radiation	**TLDs** One ring of stations, one in each meteorological sector in the general area of the SITE BOUNDARY.	**TD1 (1.6 km ENE)** – Stub pole along WF7, 150m S of Jct. WF7 and US Hwy. 61. **TE1 (1.3 km E)** – Stub pole along WF7, 1 km S of Jct. WF7 and US Hwy. 61. **TF1 (1.3 km ESE)** – Stub pole along WF7, 1.6 km S of Jct. WF7 and US Hwy. 61. **TG1 (1.6 km SE)** – Stub pole along WF7, 2 km S of Jct. WF7 and US Hwy. 61. **TH1 (1.7 km SSE)** – Stub pole at power line crossing of WF7 (near Grants Bayou). **TJ1 (1.5 km S)** – Stub pole near River Bend Station Gate #23 on Powell Station Road (LA Hwy. 965). **TK1 (0.9 km SSW)** – Utility pole on Powell Station Road (LA Hwy. 965), 20 m S of River Bend Station River Access Road. **TL1 (1.0 km SW)** – First utility pole on Powell Station Road (LA Hwy. 965) S of former Illinois Central Gulf RR crossing.	Quarterly	mR exposure quarterly.

Table 1.1

Radiological Environmental Sampling Program

Exposure Pathway	Requirement	Sample Point Description, Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
Direct Radiation	**TLDs** One ring of stations, one in each meteorological sector in the general area of the SITE BOUNDARY.	**TM1 (0.9 km WSW)** - Third utility pole on Powell Station Road (LA Hwy. 965) N of former Illinois Central Gulf RR crossing. **TN1 (0.9 km W)** – Utility pole along Powell Station Road (LA Hwy. 965), near garden and AN1 air sampler location. **TP1 (0.9 km WNW)** - Behind River Bend Station Activity Center at AP1 air sampler location. **TQ1 (0.6 km NW)** – Across from MA-1 on RBS North Access Road. **TR1 (0.8 km NNW)** – River Bend Station North Access Road across from Main Plant entrance.	Quarterly	mR exposure quarterly.
	TLDs The balance of the stations (8) to be placed in special interest areas such as population centers, nearby residences, schools, and in 1 or 2 areas to serve as control locations.	**TAC (15.8 km N)** – Utility pole at Jct. of US Hwy. 61 and LA Hwy. 421, 7.9 km north of Bains. (Control) **TCS (12.3 km NE)** – Utility pole at gate to East Louisiana State Hospital in Jackson. (Special) **TEC (16.0 km E)** – Stub pole at jct. of Hwy. 955 and Greenbrier Road, 4.8 km North of Jct. of Hwys 955 and 964. (Control)		

Table 1.1

Radiological Environmental Sampling Program

Exposure Pathway	Requirement	Sample Point Description, Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
Direct Radiation	**TLDs** The balance of the stations (8) to be placed in special interest areas such as population centers, nearby residences, schools, and in 1 or 2 areas to serve as control locations.	**TGS (17.0 km SE)** – Entergy Service Center compound in Zachary. (Special) **TNS (6.0 km W)** – Utility pole with electrical meter at west bank ferry landing (LA Hwy. 10). (Special) **TQS1 (4.0 km NW)** – Utility pole front of Pentecostal church (opposite West Feliciana Parish Hospital) near Jct. US Hwy. 61 and Commerce Street. (Special) **TQS2 (5.8 km NW)** – St. Francis Substation on business US Hwy. 61 in St. Francisville. (Special) **TRS (9.2 km NNW)** - Stub pole at Jct. of US Hwy. 61 and WF2 near Bains (West Feliciana High School). (Special)	Quarterly	mR exposure quarterly.
Waterborne	**Surface Water** 1 sample upstream and 1 sample downstream.	**SWU (5.0 km W) -** Mississippi River about 4 km upstream from the plant liquid discharge outfall, near LA Hwy. 10 ferry crossing. **SWD (7.75 km S) -** Mississippi River about 4 km downstream from plant liquid discharge outfall, near paper mill.	Grab samples quarterly	Gamma isotopic analysis ,and tritium analysis quarterly.

Table 1.1

Radiological Environmental Sampling Program

Exposure Pathway	Requirement	Sample Point Description, Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
Waterborne	**Groundwater** Samples from 1 or 2 sources only if likely to be affected.	**WU (~470 m NNE)** - Upland Terrace Aquifer well upgradient from plant. **WD (~470 m SW)** – Upland Terrace Aquifer well downgradient from plant.	Semiannually	Gamma isotopic and tritium analysis semiannually.
	Sediment From Shoreline 1 sample from downstream area with existing or potential recreational value.	**SEDD (7.75 km S)** – Mississippi River about 4 km downstream from plant liquid discharge outfall, near paper mill.	Annually	Gamma isotopic analysis annually.
Ingestion	**Milk** If commercially available, 1 sample from milking animals within 8 km distant where doses are calculated to be greater than 1 mrem per year. 1 sample from milking animals at a control location 15 – 30 km distant when an indicator location exists.	Currently, no available milking animals within 8 km of RBS.	Quarterly when animals are on pasture.	Gamma isotopic and I-131 analysis quarterly when animals are on pasture.
	Fish and Invertebrates 1 sample of a commercially and/or recreationally important species in vicinity of plant discharge area. 1 sample of similar species in area not influenced by plant discharge.	**FD (7.75 km S)** - One sample of a commercially and/or recreationally important species from downstream area influenced by plant discharge. **FU (4.0 km WSW)** - One sample of a commercially and/or recreationally important species from upstream area not influenced by plant discharge.	Annually	Gamma isotopic analysis on edible portions annually

Table 1.1

Radiological Environmental Sampling Program

Exposure Pathway	Requirement	Sample Point Description, Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
Ingestion	**Food Products** 1 sample of one type of broadleaf vegetation grown near the SITE BOUNDARY location of highest predicted annual average ground level D/Q if milk sampling is not performed. 1 sample of similar broadleaf vegetation grown 15 – 30 km distant, if milk sampling is not performed.	**GN1 (0.9 km W)** – Sampling will be performed in accordance with Table 3.12.1-1 Section 4.a of the Technical Requirements Manual. **GQC (32.0 km NW)** - One sample of similar vegetables from LA State Penitentiary at Angola. (Control)	Quarterly during the growing season.	Gamma isotopic and I-131 analysis quarterly.

FIGURE 1-1
EXPOSURE PATHWAYS

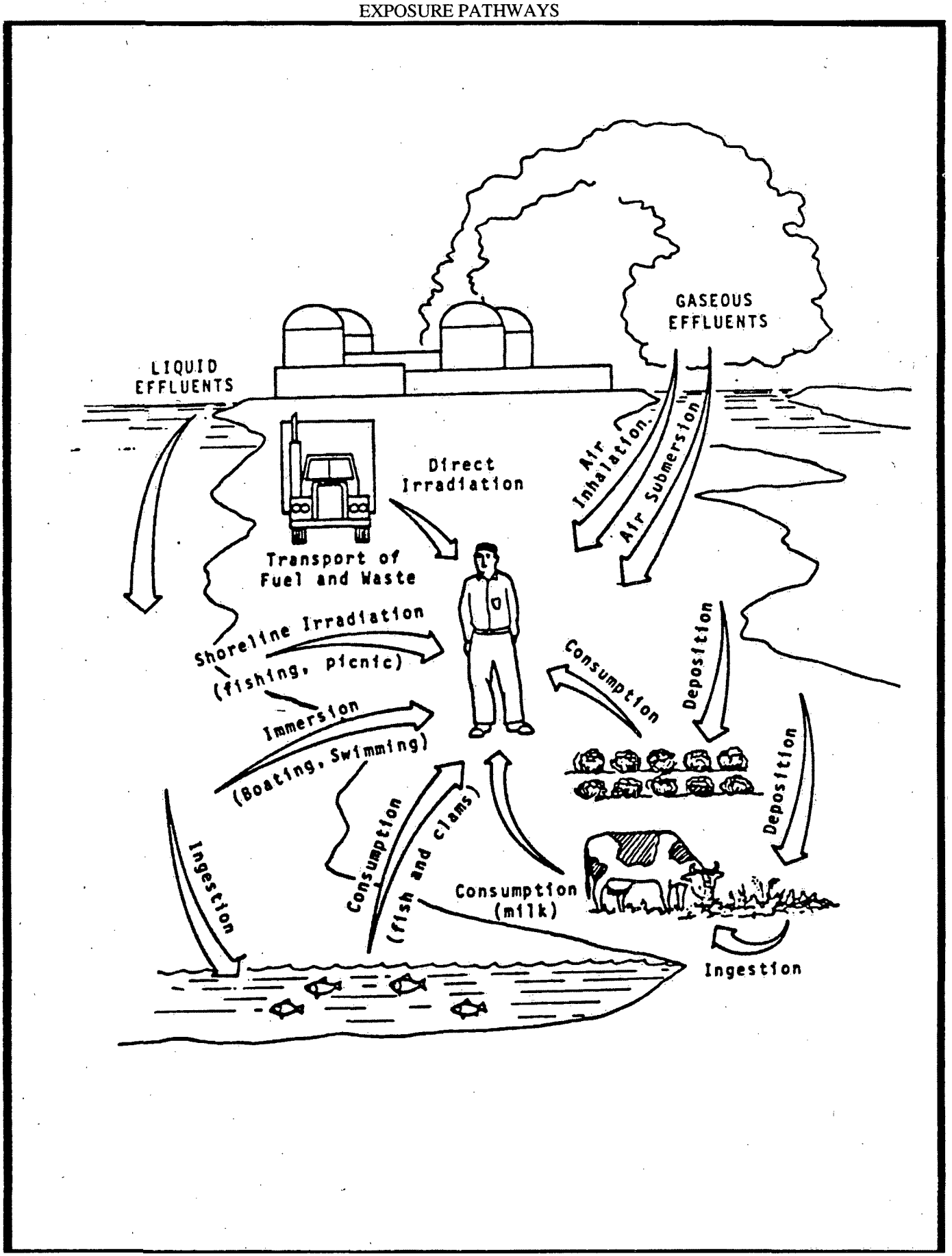


FIGURE 1-2
SAMPLE COLLECTION SITES – NEAR FIELD

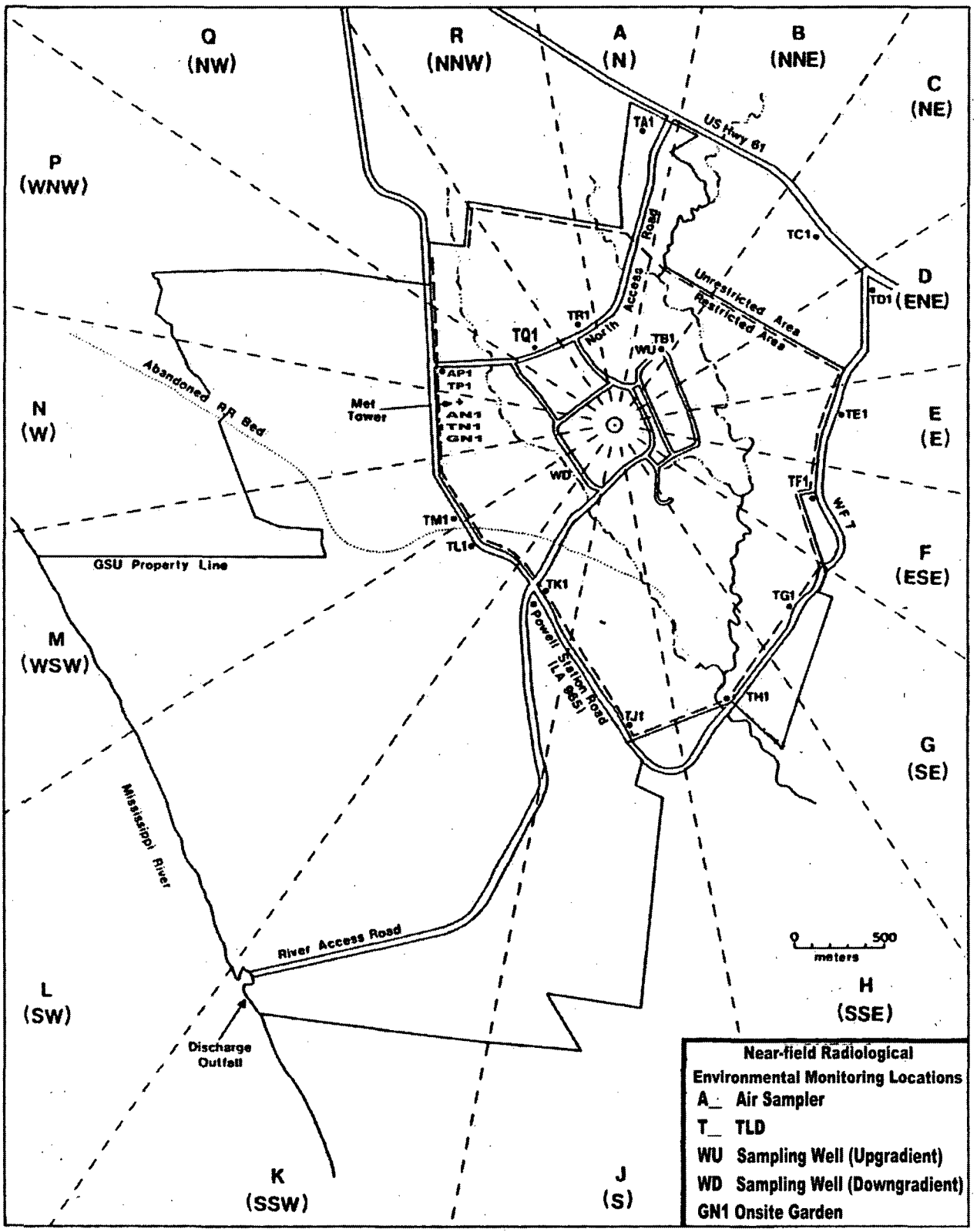
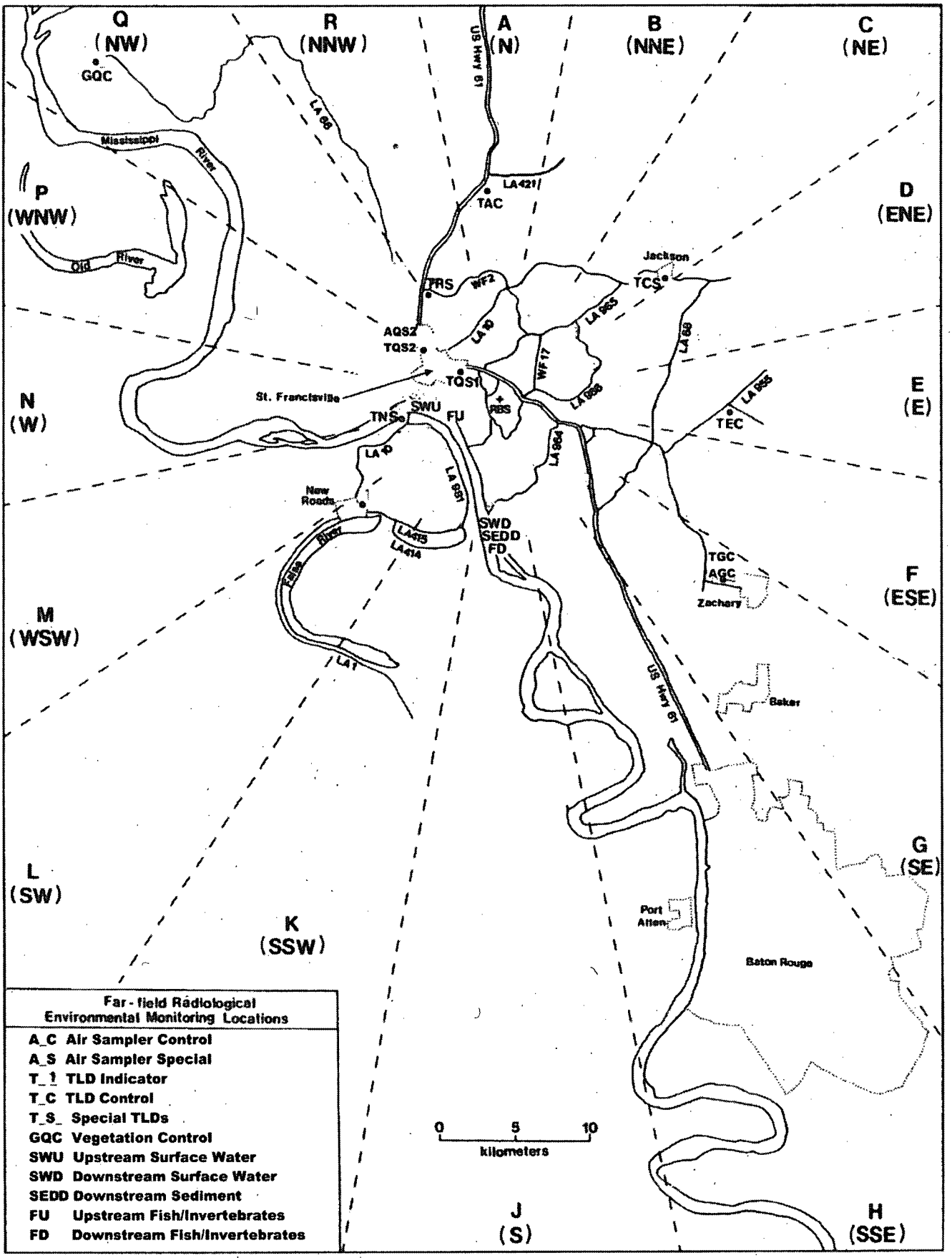


FIGURE 1-3
SAMPLE COLLECTION SITES-FAR FIELD



2.0 Interpretation and Trends of Results

2.1 Air Particulate and Radioiodine Sample Results

Iodine-131 was not detected in the radioiodine cartridges during 2007, as has been the case in previous years. Indicator gross beta air particulate results for 2007 were similar to preoperational and operational levels as seen below. Results are reported as annual average pCi/m^3 (picocuries per cubic meter).

Monitoring Period	Result
Preoperational	0.030
2007	0.024
2006	0.024
2005	0.022
2004	0.018
2003	0.021

Table 3.1 provides a comparison of the indicator and control location mean values, which further emphasizes that the airborne pathway continues to remain at background levels. Figure 2-2 also shows a comparison of indicator results from 2007 versus control location data from 1986 to 2006. Eleven indicator results for 2007 were out of the three-sigma levels. A review of the gross beta counter quality control data indicated no anomalies that would account for these readings. Also, a review of data from Grand Gulf and Waterford 3 showed elevated results over similar time frames indicating that the higher than normal indicator readings were due to atmospheric conditions.

2.2 Thermoluminescent Dosimetry Sample Results

Gamma radiation exposure in the reporting period compares to previous years. Figure 2-1 compares quarterly indicator results for 2007 with control location data from 1986 to 2006. Six second quarter indicator results are above the upper control three-sigma limit. The most probable cause is assumed to be due to irradiation during transit. Overall precision for 2007 appears to be lower than in previous years. This is attributed to TLD processing being performed by a different vendor than in the past.

RBS normalizes measured exposure to 90 days and relies on comparison of the indicator locations to the control as a measure of plant impact. RBS's comparison of the inner ring and special interest area TLD results to the controls, as seen in Table 3.1, indicates that the ambient radiation levels are unaffected by plant operations. Therefore, levels continue to remain at or near background.

Results of one TLD from the second quarter 2007 from location TL1 was unavailable due to damage to the TLD. This deviation is noted the appropriate section above.

2.3 Water Sample Results

Analytical results for 2007 surface water and groundwater samples were similar to those reported in previous years.

Surface water samples were collected from two locations (indicator and control) and analyzed for gamma radionuclides and tritium. Gamma radionuclides were below detectable limits at the indicator and control locations. Tritium was also below detectable limits at all locations. Listed below is a comparison of 2007 results from the indicator location as compared to the preoperational and previous operational years. Results are reported as annual average pCi/l (picocuries per liter).

Radionuclide	2007	2002 – 2006	Preoperational
Gammas	<LLD	<LLD	<LLD
Tritium	<LLD	<LLD	<LLD

Groundwater samples were collected from two locations (indicator and control) and analyzed for gamma radionuclides and tritium. Gamma radionuclides and Tritium were below detectable limits at the indicator and control locations. Listed below is a comparison of 2007 results from the indicator location as compared to the preoperational and previous operational years. Results are reported as annual average pCi/l.

Radionuclide	2007	2002 – 2006	Preoperational
Gammas	<LLD	<LLD	<LLD
Tritium	<LLD	<LLD	<LLD

Based on these comparisons, the operation of RBS had no impact on this pathway during 2007, and levels of radionuclides monitored for this pathway continue to remain similar to those obtained in operational and preoperational years.

2.4 Shoreline Sediment Sample Results

A shoreline sediment sample was collected from the indicator location in 2007 and analyzed for gamma radionuclides. RBS also samples a non-REMP upstream control sediment sample. A review of historical indicator and upstream sediment samples periodically shows Cs-137. No Cs-137 was indicated on the samples in 2007. Therefore, based on these measurements, RBS operations had no significant radiological impact upon the environment or public via this pathway.

2.5 Milk Sample Results

Milk samples were not collected during 2007 due to the unavailability of indicator locations within 5 miles (8 km) of RBS. Since there are no dairies within five miles of the RBS site, it is concluded RBS's operation had no impact on this pathway in 2007.

2.6 Fish and Invertebrate Sample Results

Fish samples were collected from two locations (indicator and control) and analyzed for gamma radionuclides. In 2007, gamma radionuclides were below detectable limits, which is consistent with the preoperational and operational monitoring periods. Therefore, based on these measurements, RBS operations had no significant radiological impact upon the environment or public by this pathway.

2.7 Food Product Sample Results

Food product samples were collected when available from two locations (indicator and control) in 2007 and analyzed for gamma radionuclides in accordance with Table TRM 3.12-1. The 2007 levels remained undetectable, which is consistent with previous operational years. Therefore, since levels continue to remain at background, it can be concluded that plant operations is not impacting this pathway.

2.8 Land Use Census Results

The current land use census was conducted for the 2005-06 time period in accordance with RBS Technical Requirements Manual 3.12.2. No Land Use Census was performed in 2007. Table 2.1 contains data from the most recently completed Land Use Census.

2.9 Interlaboratory Comparison Results

RBS' Environmental Laboratory analyzed interlaboratory comparison samples to fulfill the requirements of Technical Requirements Manual 3.12.3. Attachment 8.1 contains these results.

Table 2-1
Land Use Census Results
2006

Item	Sector	Direction	Nearest Residence	Range (km)	Nearest Milk Animal	Range (km)
1	A	N	5498 Hwy. 61	1.8	-	-
2	B	NNE	5435 Hwy. 61	1.6	-	-
3	C	NE	End of Old Hwy. 61[1]	1.4	-	-
4	D	ENE	12657 Powell Station Road	1.4	-	-
5	E	E	4635 Hwy. 61[2]	2.5	-	-
6	F	ESE	12010 Fairview Way, Star Hill Trace Subdivision	2.8	-	-
7	G	SE	3379 Hwy. 9643[3]	3.7	-	-
8	H	SSE	11813 Powell Station Road	1.8	-	-
9	J	S	11649 Powell Station Road	1.8	-	-
10	K	SSW	8909 Hwy. 981	6.5	-	-
11	L	SW	[4]	-	-	-
12	M	WSW	[4]	-	-	-
13	N	W	11101 Ferdinand Street	6.1	-	-
14	P	WNW	10426 Old Field Road	3.7	-	-
15	Q	NW	9537 Hwy.965[5]	1.3	-	-
16	R	NNW	Ricks Trailer Park Hwy. 965[6]	2.6	-	-

1. Address correction in Sector C; range remains at 1.4 km.
2. Use of GPS reveals resident at a range of 2.59 km in 2006 compared to 2.6 km in Sector E
3. New resident at a range of 3.7 km, compared to 4.0 km in 2004 census in sector G. GPS use shows this resident near sector line.
4. No resident found in sector L or M within 8 km. distance.
5. Incorrect address for sector Q, no change in distance
6. New resident at a range of 1.7 km, right on Q/R boundary inside Ricks Trailer Park. Use of GPS determined a couple of trailers are actually in sector R.

FIGURE 2-1
TLD Indicator Results (2007) Versus Control Data (1986-2006)

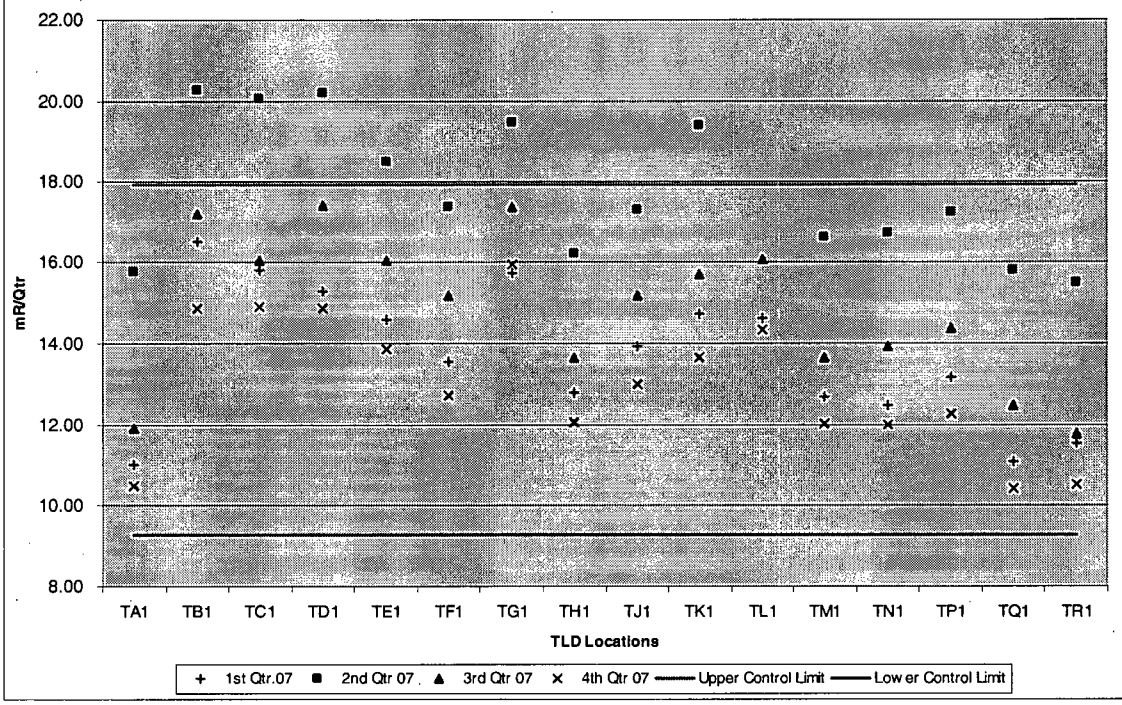
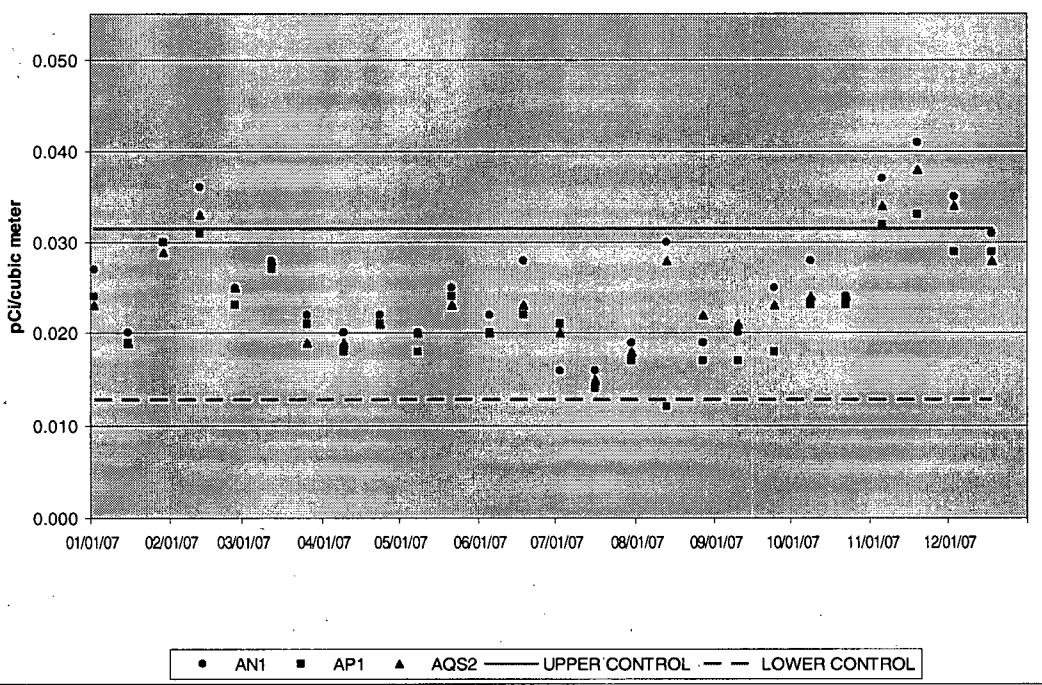


FIGURE 2-2
Gross Beta Indicator Results (2007) Versus Control Data (1986-2006)



3.0 Radiological Environmental Monitoring Program Summary

3.1 2007 Program Results Summary

Table 3.1 summarizes the 2007 REMP results. RBS personnel did not use values reported as less than the lower limit of detection (<LLD) when determining ranges and means for indicator and control locations.

TABLE 3.1

Radiological Environmental Monitoring Program Summary

Name of Facility: River Bend Station Docket No: 50-458
Location of Facility: West Feliciana Parish, Louisiana Reporting Period: January - December 2007

Sample Type (Units)	Type & Number of Analyses	LLD [a]	Indicator Locations Mean (F) [b] [Range]	Location with Highest Annual Mean		Control Locations Mean (F) [b] [Range]	Number of Nonroutine Results [d]
				Location [c]	Mean (F) [b] [Range]		
Air Particulates (pCi/m^3)	Gross Beta 104	0.01	0.024 (78 / 78) [0.012 - 0.041]	AN1 (0.9 km W)	0.026 (26 / 26) [0.016 - 0.041]	0.023 (26 / 26) [0.013 - 0.038]	0
Airborne Iodine (pCi/m^3)	I-131 104	0.07	<LLD	N/A	N/A	<LLD	0
Indicators TLDs (mR/Qtr)	Gamma 64	(e)	14.56 (63 / 64) [11.25 – 17.22]	TB1 (0.5 km NNE)	17.22 (4 / 4) [14.85 – 20.27]	N/A	0
Special Interest TLDs (mR/Qtr)	Gamma 24	(e)	15.44 (23 / 24) [13.75 – 17.21]	TGS (17.0 km SE)	17.21 (4 / 4) [15.52 – 19.60]	N/A	0
Control TLDs (mR/Qtr)	Gamma 8	(e)	N/A	N/A	N/A	16.71 (8 / 8) [16.14 – 17.28]	0

TABLE 3.1

Radiological Environmental Monitoring Program Summary

Name of Facility: River Bend Station Docket No: 50-458
Location of Facility: West Feliciana Parish, Louisiana Reporting Period: January - December 2007

Sample Type (Units)	Type & Number of Analyses	LLD [a]	Indicator Location Mean (F) [b] [Range]	Location with Highest Annual Mean		Control Locations Mean (F) [b] [Range]	Number of Nonroutine Results [d]
				Location [c]	Mean (F) [b] [Range]		
Surface Water (pCi/L)	H-3 8	3000	<LLD	N/A	N/A	<LLD	0
	Gamma 8						
	Mn-54	15	<LLD	N/A	N/A	<LLD	0
	Co-58	15	<LLD	N/A	N/A	<LLD	0
	Fe-59	30	<LLD	N/A	N/A	<LLD	0
	Co-60	15	<LLD	N/A	N/A	<LLD	0
	Zn-65	30	<LLD	N/A	N/A	<LLD	0
	Zr-95	30	<LLD	N/A	N/A	<LLD	0
	Nb-95	15	<LLD	N/A	N/A	<LLD	0
	I-131	15	<LLD	N/A	N/A	<LLD	0
	Cs-134	15	<LLD	N/A	N/A	<LLD	0
	Cs-137	18	<LLD	N/A	N/A	<LLD	0
	Ba-140	60	<LLD	N/A	N/A	<LLD	0
	La-140	15	<LLD	N/A	N/A	<LLD	0

TABLE 3.1

Radiological Environmental Monitoring Program Summary

Name of Facility: River Bend Station Docket No: 50-458
Location of Facility: West Feliciana Parish, Louisiana Reporting Period: January - December 2007

Sample Type (Units)	Type & Number of Analyses [a]	LLD [a]	Indicator Locations Mean (F) [b] [Range]	Location with Highest Annual Mean		Control Locations Mean (F) [b] [Range]	Number of Nonroutine Results [d]
				Location [c]	Mean (F) [b] [Range]		
Groundwater (pCi/L)	H-3 4	3000	<LLD	N/A	N/A	<LLD	0
	Gamma 4						
	Mn-54	15	<LLD	N/A	N/A	<LLD	0
	Co-58	15	<LLD	N/A	N/A	<LLD	0
	Fe-59	30	<LLD	N/A	N/A	<LLD	0
	Co-60	15	<LLD	N/A	N/A	<LLD	0
	Zn-65	30	<LLD	N/A	N/A	<LLD	0
	Zr-95	30	<LLD	N/A	N/A	<LLD	0
	Nb-95	15	<LLD	N/A	N/A	<LLD	0
	I-131	15	<LLD	N/A	N/A	<LLD	0
	Cs-134	15	<LLD	N/A	N/A	<LLD	0
	Cs-137	18	<LLD	N/A	N/A	<LLD	0
	Ba-140	60	<LLD	N/A	N/A	<LLD	0
	La-140	15	<LLD	N/A	N/A	<LLD	0
Shoreline Sediment (pCi/kg) [f]	Gamma 2						
	Cs-134	150	<LLD	N/A	N/A	<LLD	0
	Cs-137	180	<LLD	N/A	N/A	<LLD	0

TABLE 3.1

Radiological Environmental Monitoring Program Summary

Name of Facility: River Bend Station **Docket No:** 50-458
Location of Facility: West Feliciana Parish, Louisiana **Reporting Period:** January - December 2007

Sample Type (Units)	Type & Number of Analyses	LLD [a]	Indicator Location Mean (F) [b] [Range]	Location with Highest Annual Mean		Control Locations Mean (F) [b] [Range]	Number of Nonroutine Results [d]
				Location [c]	Mean (F) [b] [Range]		
Fish	Gamma 2						
(pCi/kg)	Mn-54	130	<LLD	N/A	N/A	<LLD	0
	Fe-59	260	<LLD	N/A	N/A	<LLD	0
	Co-58	130	<LLD	N/A	N/A	<LLD	0
	Co-60	130	<LLD	N/A	N/A	<LLD	0
	Zn-65	260	<LLD	N/A	N/A	<LLD	0
	Cs-134	130	<LLD	N/A	N/A	<LLD	0
	Cs-137	150	<LLD	N/A	N/A	<LLD	0
Food Products	I-131 8	60	<LLD	N/A	N/A	<LLD	0
(pCi/kg)	Gamma 8						
	Cs-134	60	<LLD	N/A	N/A	<LLD	0
	Cs-137	80	<LLD	N/A	N/A	<LLD	0

a LLD = Required lower limit of detection based on RBS Technical Requirements Manual Table 3.12.1-3.
b Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis (F).
c Locations are specified (1) by name and (2) direction and distance relative to reactor site.
d Non-routine results are those which exceed ten times the control station value. If no control station value is available, the result is considered non-routine if it exceeds ten times the preoperational value for the location.
e LLD is not defined in RBS Technical Requirements Manual Table 3.12.1-3.
f Control location for sediment is upstream surface water sample.

Attachment 1

2007 Radiological Monitoring Report

Summary of Monitoring Results

TABLE OF CONTENTS

Attachment 1.1
Sample Type: **Air Particulate and Charcoal Cartridge – Indicator Location AN1**
Analysis: Gross Beta and Iodine
Units: pCi/m^3

LLD (pCi/m^3)			0.07	0.01	
LAB ID	**START DATE**	**END DATE**	**I-131**	**GROSS BETA**	
20070002	12/18/2006	1/2/2007	< 0.006	0.027	+/- 0.0007
20070047	1/2/2007	1/15/2007	< 0.009	0.020	+/- 0.0006
20070097	1/15/2007	1/29/2007	< 0.008	0.030	+/- 0.0007
20070148	1/29/2007	2/12/2007	< 0.010	0.036	+/- 0.0008
20070185	2/12/2007	2/26/2007	< 0.009	0.025	+/- 0.0006
20070230	2/26/2007	3/12/2007	< 0.009	0.028	+/- 0.0007
20070287	3/12/2007	3/26/2007	< 0.010	0.022	+/- 0.0006
20070340	3/26/2007	4/9/2007	< 0.009	0.020	+/- 0.0006
20070397	4/9/2007	4/23/2007	< 0.008	0.022	+/- 0.0006
20070458	4/23/2007	5/8/2007	< 0.007	0.020	+/- 0.0006
20070500	5/8/2007	5/21/2007	< 0.009	0.025	+/- 0.0007
20070561	5/21/2007	6/5/2007	< 0.009	0.022	+/- 0.0006
20070627	6/5/2007	6/18/2007	< 0.011	0.028	+/- 0.0007
20070690	6/18/2007	7/2/2007	< 0.063	0.016	+/- 0.0028
20070747	7/2/2007	7/16/2007	< 0.010	0.016	+/- 0.0005
20070783	7/16/2007	7/30/2007	< 0.008	0.019	+/- 0.0006
20070847	7/30/2007	8/13/2007	< 0.009	0.030	+/- 0.0007
20070896	8/13/2007	8/27/2007	< 0.008	0.019	+/- 0.0006
20070930	8/27/2007	9/10/2007	< 0.010	0.020	+/- 0.0006
20070982	9/10/2007	9/24/2007	< 0.011	0.025	+/- 0.0007
20071079	9/24/2007	10/8/2007	< 0.011	0.028	+/- 0.0007
20071124	10/8/2007	10/22/2007	< 0.011	0.024	+/- 0.0007
20071186	10/22/2007	11/5/2007	< 0.009	0.037	+/- 0.0008
20071229	11/5/2007	11/19/2007	< 0.011	0.041	+/- 0.0009
20071263	11/19/2007	12/3/2007	< 0.009	0.035	+/- 0.0008
20071318	12/3/2007	12/18/2007	< 0.009	0.031	+/- 0.0007

Totals:

Average:	0.026
Maximum:	0.041
Minimum:	0.016

Attachment 1.2
Sample Type: **Air Particulate and Charcoal Cartridge – Indicator Location AP1**
Analysis: Gross Beta and Iodine
Units: pCi/m^3

LLD (pCi/m^3)			0.07	0.01	
LAB ID	**START DATE**	**END DATE**	**I-131**	**GROSS BETA**	
20070001	12/18/2006	1/2/2007	< 0.006	0.024	+/- 0.0006
20070046	1/2/2007	1/15/2007	< 0.006	0.019	+/- 0.0006
20070096	1/15/2007	1/29/2007	< 0.007	0.030	+/- 0.0007
20070147	1/29/2007	2/12/2007	< 0.009	0.031	+/- 0.0007
20070184	2/12/2007	2/26/2007	< 0.009	0.023	+/- 0.0006
20070229	2/26/2007	3/12/2007	< 0.010	0.027	+/- 0.0007
20070286	3/12/2007	3/26/2007	< 0.007	0.021	+/- 0.0006
20070339	3/26/2007	4/9/2007	< 0.009	0.018	+/- 0.0006
20070396	4/9/2007	4/23/2007	< 0.008	0.021	+/- 0.0006
20070457	4/23/2007	5/8/2007	< 0.009	0.018	+/- 0.0005
20070499	5/8/2007	5/21/2007	< 0.008	0.024	+/- 0.0007
20070560	5/21/2007	6/5/2007	< 0.010	0.020	+/- 0.0006
20070626	6/5/2007	6/18/2007	< 0.009	0.022	+/- 0.0007
20070689	6/18/2007	7/2/2007	< 0.009	0.021	+/- 0.0006
20070746	7/2/2007	7/16/2007	< 0.008	0.014	+/- 0.0005
20070782	7/16/2007	7/30/2007	< 0.008	0.017	+/- 0.0005
20070846	7/30/2007	8/13/2007	< 0.011	0.012	+/- 0.0005
20070895	8/13/2007	8/27/2007	< 0.008	0.017	+/- 0.0005
20070929	8/27/2007	9/10/2007	< 0.010	0.017	+/- 0.0005
20070981	9/10/2007	9/24/2007	< 0.009	0.018	+/- 0.0006
20071078	9/24/2007	10/8/2007	< 0.009	0.023	+/- 0.0006
20071123	10/8/2007	10/22/2007	< 0.010	0.023	+/- 0.0007
20071185	10/22/2007	11/5/2007	< 0.011	0.032	+/- 0.0008
20071228	11/5/2007	11/19/2007	< 0.008	0.033	+/- 0.0008
20071262	11/19/2007	12/3/2007	< 0.009	0.029	+/- 0.0007
20071317	12/3/2007	12/18/2007	< 0.010	0.029	+/- 0.0007
Totals:					
Average:					0.022
Maximum:					0.033
Minimum:					0.012

Attachment 1.3
Sample Type: **Air Particulate and Charcoal Cartridge – Indicator Location AQS2**
Analysis: Gross Beta and Iodine
Units: pCi/m^3

LLD (pCi/m^3)			0.07	0.01	
LAB ID	**START DATE**	**END DATE**	**I-131**	**GROSS BETA**	
20070003	12/18/2006	1/2/2007	< 0.008	0.023	+/- 0.0006
20070048	1/2/2007	1/15/2007	< 0.007	0.019	+/- 0.0006
20070098	1/15/2007	1/29/2007	< 0.007	0.029	+/- 0.0007
20070149	1/29/2007	2/12/2007	< 0.008	0.033	+/- 0.0007
20070186	2/12/2007	2/26/2007	< 0.008	0.025	+/- 0.0006
20070231	2/26/2007	3/12/2007	< 0.008	0.028	+/- 0.0006
20070288	3/12/2007	3/26/2007	< 0.007	0.019	+/- 0.0006
20070341	3/26/2007	4/9/2007	< 0.010	0.019	+/- 0.0006
20070398	4/9/2007	4/23/2007	< 0.007	0.021	+/- 0.0006
20070459	4/23/2007	5/8/2007	< 0.009	0.020	+/- 0.0005
20070501	5/8/2007	5/21/2007	< 0.010	0.023	+/- 0.0006
20070562	5/21/2007	6/5/2007	< 0.009	0.020	+/- 0.0006
20070628	6/5/2007	6/18/2007	< 0.009	0.023	+/- 0.0007
20070691	6/18/2007	7/2/2007	< 0.009	0.020	+/- 0.0006
20070748	7/2/2007	7/16/2007	< 0.010	0.015	+/- 0.0005
20070784	7/16/2007	7/30/2007	< 0.007	0.018	+/- 0.0005
20070848	7/30/2007	8/13/2007	< 0.009	0.028	+/- 0.0007
20070897	8/13/2007	8/27/2007	< 0.008	0.022	+/- 0.0006
20070931	8/27/2007	9/10/2007	< 0.009	0.021	+/- 0.0006
20070983	9/10/2007	9/24/2007	< 0.008	0.023	+/- 0.0006
20071080	9/24/2007	10/8/2007	< 0.008	0.024	+/- 0.0006
20071125	10/8/2007	10/22/2007	< 0.010	0.024	+/- 0.0006
20071187	10/22/2007	11/5/2007	< 0.007	0.034	+/- 0.0007
20071230	11/5/2007	11/19/2007	< 0.006	0.038	+/- 0.0008
20071264	11/19/2007	12/3/2007	< 0.008	0.034	+/- 0.0008
20071319	12/3/2007	12/18/2007	< 0.008	0.028	+/- 0.0007
Totals:					
Average:				0.024	
Maximum:				0.038	
Minimum:				0.015	

Attachment 1.4
Sample Type: **Air Particulate and Charcoal Cartridge – Control Location AGC**
Analysis: Gross Beta and Iodine
Units: pCi/m^3

LLD (pCi/m^3)			0.07	0.01	
LAB ID	**START DATE**	**END DATE**	**I-131**	**GROSS BETA**	
20070004	12/18/2006	1/2/2007	< 0.007	0.023	+/- 0.0006
20070049	1/2/2007	1/15/2007	< 0.007	0.017	+/- 0.0005
20070099	1/15/2007	1/29/2007	< 0.007	0.025	+/- 0.0006
20070150	1/29/2007	2/12/2007	< 0.010	0.035	+/- 0.0008
20070187	2/12/2007	2/26/2007	< 0.007	0.024	+/- 0.0006
20070232	2/26/2007	3/12/2007	< 0.008	0.027	+/- 0.0007
20070289	3/12/2007	3/26/2007	< 0.007	0.020	+/- 0.0006
20070342	3/26/2007	4/9/2007	< 0.007	0.018	+/- 0.0006
20070399	4/9/2007	4/23/2007	< 0.009	0.019	+/- 0.0006
20070460	4/23/2007	5/8/2007	< 0.008	0.018	+/- 0.0005
20070502	5/8/2007	5/21/2007	< 0.010	0.022	+/- 0.0006
20070563	5/21/2007	6/5/2007	< 0.008	0.020	+/- 0.0006
20070629	6/5/2007	6/18/2007	< 0.009	0.020	+/- 0.0006
20070692	6/18/2007	7/2/2007	< 0.008	0.018	+/- 0.0006
20070749	7/2/2007	7/16/2007	< 0.009	0.013	+/- 0.0005
20070785	7/16/2007	7/30/2007	< 0.008	0.017	+/- 0.0005
20070849	7/30/2007	8/13/2007	< 0.008	0.027	+/- 0.0007
20070898	8/13/2007	8/27/2007	< 0.008	0.023	+/- 0.0006
20070932	8/27/2007	9/10/2007	< 0.008	0.019	+/- 0.0006
20070984	9/10/2007	9/24/2007	< 0.007	0.020	+/- 0.0006
20071081	9/24/2007	10/8/2007	< 0.009	0.024	+/- 0.0006
20071126	10/8/2007	10/22/2007	< 0.008	0.022	+/- 0.0006
20071188	10/22/2007	11/5/2007	< 0.008	0.031	+/- 0.0007
20071231	11/5/2007	11/19/2007	< 0.008	0.038	+/- 0.0008
20071265	11/19/2007	12/3/2007	< 0.007	0.031	+/- 0.0007
20071320	12/3/2007	12/18/2007	< 0.007	0.032	+/- 0.0007
Totals:					
Average:				0.023	
Maximum:				0.038	
Minimum:				0.013	

Attachment 2.1
Sample Type: **Thermoluminescent Dosimeters (TLD)**
Analysis: mR Exposure
Units: mR/Qtr

INDICATORS	1ST QTR	2ND QTR	3RD QTR	4TH QTR	MEAN
TA1	11.01	15.75	11.92	10.50	12.30
TB1	16.53	20.27	17.22	14.85	17.22
TC1	15.80	20.07	16.03	14.91	16.70
TD1	15.26	20.19	17.43	14.86	16.93
TE1	14.59	18.51	16.03	13.86	15.75
TF1	13.53	17.38	15.19	12.71	14.70
TG1	15.74	19.46	17.38	15.94	17.13
TH1	12.78	16.23	13.63	12.05	13.67
TJ1	13.93	17.34	15.17	12.98	14.85
TK1	14.72	19.38	15.68	13.66	15.86
TL1	14.61	0.00	16.06	14.34	11.25
TM1	12.68	16.62	13.66	12.03	13.75
TN1	12.48	16.73	13.93	11.97	13.78
TP1	13.16	17.24	14.38	12.26	14.26
TQ1	11.10	15.80	12.47	10.43	12.45
TR1	11.53	15.48	11.77	10.52	12.33
MAX	16.53	20.27	17.43	15.94	17.22
AVG	13.71	16.65	14.87	12.99	14.56
MIN	11.01	0.00	11.77	10.43	11.25

SPECIAL INTEREST	1ST QTR	2ND QTR	3RD QTR	4TH QTR	MEAN
TCS	12.34	17.54	13.23	11.88	13.75
TGS	16.55	19.60	17.17	15.52	17.21
TNS	12.34	17.94	14.28	12.76	14.33
TRS	16.55	18.91	16.35	14.29	16.52
TQS1	12.34	19.85	16.64	14.99	15.95
TQS2	16.55	16.72	13.53	12.68	14.87
MAX	16.55	19.85	17.17	15.52	17.21
AVG	14.44	18.43	15.20	13.68	15.44
MIN	12.34	16.72	13.23	11.88	13.75

CONTROLS	1ST QTR	2ND QTR	3RD QTR	4TH QTR	MEAN
TAC	16.24	20.02	17.17	15.70	17.28
TEC	15.08	18.95	16.06	14.46	16.14
MAX	16.24	20.02	17.17	15.70	17.28
AVG	15.66	19.48	16.61	15.08	16.71
MIN	15.08	18.95	16.06	14.46	16.14

	INDICATOR	CONTROL	SPECIAL
MAX	20.27	20.02	19.85
AVG	14.56	16.71	15.44
MIN	0.00	14.46	11.88

Attachment 3.1
Sample Type: **Surface Water**
Analysis: Gamma Isotopic and Tritium
Units: pCi/l

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	**LOCATION**	**DATE**	**MN-54**	**C0-58**	**FE-59**	**CO-60**	**ZN-65**	**NB-95**	**ZR-95**	**I-131**	**CS-134**	**CS-137**	**BA-140**	**LA-140**
20070032	SWU	1/10/2007	< 6.48	< 5.58	< 9.54	< 5.90	< 8.75	< 5.29	< 8.45	< 4.81	< 5.66	< 5.32	< 17.84	< 5.30
20070033	SWD	1/10/2007	< 4.67	< 5.25	< 8.13	< 4.51	< 12.25	< 2.63	< 7.50	< 5.21	< 5.46	< 5.26	< 16.61	< 4.91
20070375	SWU	4/12/2007	< 5.00	< 5.53	< 8.10	< 5.72	< 12.99	< 6.81	< 7.26	< 5.64	< 5.61	< 4.83	< 22.82	< 7.30
20070376	SWD	4/12/2007	< 5.95	< 3.97	< 9.50	< 5.22	< 8.54	< 6.32	< 9.36	< 5.64	< 6.00	< 3.47	< 20.40	< 7.81
20070727	SWU	7/10/2007	< 6.06	< 6.27	< 9.66	< 4.62	< 8.63	< 5.83	< 10.29	< 6.42	< 6.08	< 5.27	< 20.05	< 6.59
20070728	SWD	7/10/2007	< 5.15	< 5.27	< 7.54	< 4.83	< 12.39	< 6.46	< 9.74	< 5.75	< 5.93	< 5.77	< 16.57	< 5.55
20071099	SWU	10/11/2007	< 6.35	< 5.92	< 11.41	< 4.97	< 9.81	< 5.30	< 10.55	< 4.99	< 6.05	< 5.64	< 19.24	< 8.51
20071101	SWD	10/11/2007	< 4.24	< 3.99	< 7.59	< 3.06	< 11.32	< 4.61	< 10.30	< 5.80	< 5.16	< 5.31	< 18.53	< 5.69

LLD (pCi/l)			3000
LAB ID	**LOCATION**	**DATE**	**TRITIUM**
20070032	SWU	1/10/2007	< 552.12
20070033	SWD	1/10/2007	< 559.91
20070375	SWU	4/12/2007	< 529.66
20070376	SWD	4/12/2007	< 533.78
20070727	SWU	7/10/2007	< 554.43
20070728	SWD	7/10/2007	< 543.84
20071099	SWU	10/11/2007	< 514.00
20071101	SWD	10/11/2007	< 515.94

Attachment 4.1
Sample Type: **Groundwater**
Analysis: Gamma Isotopic and Tritium
Units: pCi/l

LLD (pCi/l)			15	15	30	15	30	15	30	15	15	18	60	15
LAB ID	**LOCATION**	**DATE**	**MN-54**	**C0-58**	**FE-59**	**CO-60**	**ZN-65**	**NB-95**	**ZR-95**	**I-131**	**CS-134**	**CS-137**	**BA-140**	**LA-140**
20070596	GWU	6/13/2007	< 8.19	< 8.82	< 17.00	< 7.61	< 18.80	< 10.88	< 14.83	< 8.45	< 9.86	< 9.08	< 35.20	< 11.60
20070597	GWD	6/13/2007	< 8.77	< 8.60	< 15.77	< 7.58	< 18.54	< 13.02	< 10.41	< 8.55	< 9.53	< 7.91	< 27.42	< 12.42
20071303	GWD	12/12/2007	< 5.54	< 7.34	< 10.25	< 5.88	< 11.62	< 7.12	< 11.30	< 7.10	< 4.76	< 6.21	< 23.08	< 6.72
20071304	GWU	12/12/2007	< 4.98	< 6.16	< 11.74	< 8.10	< 11.30	< 9.83	< 8.50	< 6.77	< 7.32	< 5.63	< 20.71	< 7.47

LLD (pCi/l)			3000
LAB ID	**LOCATION**	**DATE**	**TRITIUM**
20070596	GWU	6/13/2007	< 517
20070597	GWD	6/13/2007	< 524
20071303	GWD	12/12/2007	< 579
20071304	GWU	12/12/2007	< 598

Attachment 5.1
Sample Type: **Shoreline Sediment SEDD**
Analysis: Gamma Isotopic
Units: pCi/kg, dry

LLD (pCi/kg)		150	180
LAB ID	DATE	CS-134	CS-137
20070467	5/10/2007	< 25.98	< 21.03

Sample Type: **Shoreline Sediment SEDU**
Analysis: Gamma Isotopic
Units: pCi/kg, dry

LLD (pCi/kg)		150	180
LAB ID	DATE	CS-134	CS-137
20070466	5/10/2007	< 20.22	< 15.90

Attachment 6.1
Sample Type: **Food Products**
Analysis: Gamma Isotopic
Units: pCi/kg, wet

LLD(pCi/kg, wet)			60	60	80
LAB ID	**LOCATION**	**DATE**	**I-131**	**CS-134**	**CS-137**
20070050	GN1	1/23/2007	< 42.85	< 53.59	< 45.40
20070213	GQC	3/5/2007	< 33.40	< 43.53	< 26.13
20070405	GN1	4/24/2007	< 47.51	< 59.92	< 49.09
20070565	GQC	6/6/2007	< 58.32	< 51.51	< 40.50
20070765	GN1	7/24/2007	< 53.38	< 57.04	< 57.35
20070980	GQC	9/21/2007	< 37.10	< 31.90	< 35.80
20071151	GN1	10/30/2007	< 33.05	< 59.45	< 51.59
20071362	GQC	12/26/2007	< 32.80	< 40.81	< 31.91

Attachment 7.1
Sample Type: **Fish**
Analysis: Gamma Isotopic
Units: pCi/kg, wet

LLD (pCi/kg)			130	130	260	130	260	130	150
LAB	**LOCATION**	**DATE**	**MN-54**	**C0-58**	**FE-59**	**CO-60**	**ZN-65**	**CS-134**	**CS-137**
20070912	FISHUP	8/30/2007	< 22.15	< 26.54	< 53.75	< 21.66	< 54.44	< 25.37	< 18.03
20070913	FISHDO	8/30/2007	< 17.25	< 21.95	< 49.58	< 26.64	< 50.22	< 21.58	< 15.27

Attachment 8.1
Sample Type: **Interlaboratory Comparison**
Analysis: Gross Beta, Iodine-131, Tritium, and Gamma Isotopic

RIVER BEND STATION

ENVIRONMENTAL (CROSS-CHECK) PROGRAM PARTICIPATION RESULTS

Sample Type (units)	Analytics #	Date	Analysis	Known Value[a]	RBS Value	RBS N-DEV[b]	RBS N-RANGE[c]
I-131Cartridge	E5390-125	6/14/2007	I-131	7.91E+01	7.97E+01	0.13	0.01
Gross Beta Water	E5389-125	6/14/2007	BETA	1.99E+02	2.25E+02	1.49	0.06
Gamma Water	E5388-125	6/14/2007	Cr-51	4.11E+02	4.20E+02	0.75	0.20
(pCi/liter)			Mn-54	1.33E+02	1.48E+02	3.89[d]	0.04
			Co-58	1.59E+02	1.64E+02	1.01	0.06
			Fe-59	1.34E+02	1.45E+02	2.83	0.16
			Co-60	1.91E+02	1.95E+02	0.75	0.09
			Zn-65	2.68E+02	2.82E+02	0.87	0.13
			I-131	1.02E+02	1.02E+02	-0.02	0.16
			Cs-134	1.94E+02	1.93E+02	-0.11	0.24
			Cs-137	1.35E+02	1.40E+02	1.21	0.32
			Ce-141	1.60E+02	1.63E+02	0.57	0.38
Tritium Water	E5467-125	9/13/2007	H-3	1.20E+04	1.11E+04	-1.26	0.06
Gross Beta Filter	E5468-125	9/13/2007	BETA	3.23E+01	2.81E+01	-1.46	0.03
Gamma Filter	E5469-125	9/13/07	Cr-51	1.25E+02	1.22E+02	-0.09	0.03
(pCi/filter)			Mn-54	7.26E+01	7.82E+01	1.93	0.14
			Co-58	4.94E+01	4.87E+01	-0.23	0.19
			Fe-59	4.79E+01	5.17E+01	1.33	0.04
			Co-60	6.41E+01	6.48E+01	0.26	0.03
			Zn-65	8.76E+01	9.96E+01	2.38	0.09
			Cs-134	6.38E+01	6.12E+01	-0.89	0.08
			Cs-137	5.65E+01	5.85E+01	0.69	0.11
			Ce-141	9.14E+01	9.12E+01	-0.06	0.12
Gamma Soil	E5470-125	9/13/2007	Cr-51	3.91E-01	3.83E-01	-0.07	0.03
(pCi/gram)			Mn-54	2.27E-01	2.43E-01	0.24	0.01
			Co-58	1.54E-01	1.38E-01	-0.36	0.04
			Fe-59	1.49E-01	1.48E-01	-0.03	0.02
			Co-60	2.00E-01	1.94E-01	-0.11	0.01
			Zn-65	2.73E-01	3.00E-01	1.74	0.09
			Cs-134	1.99E-01	2.03E-01	0.07	0.02
			Cs-137	2.73E-01	2.99E-01	0.33	0.02
			Ce-141	2.85E-01	2.81E-01	-0.05	0.03

RIVER BEND STATION							
ENVIRONMENTAL (CROSS-CHECK) PROGRAM PARTICIPATION RESULTS							
Sample Type (units)	**Analytics #**	Date	**Analysis**	**Known Value[a]**	**RBS Value**	**RBS N-DEV[b]**	**RBS N-RANGE[c]**
Gamma Milk	E5391-125	6/12/2007	**Cr-51**	5.12E+02	5.17E+02	0.12	0.06
(pCi/liter)			**Mn-54**	1.66E+02	1.82E+02	1.14	0.11
			Co-58	1.98E+02	2.02E+02	0.24	0.05
			Fe-59	1.67E+02	1.85E+02	1.23	0.09
			Co-60	2.38E+02	2.37E+02	-0.03	0.02
			Zn-65	3.34E+02	3.72E+02	1.98	0.07
			I-131	7.01E+01	7.03E+01	0.05	0.20
			Cs-134	2.42E+02	2.42E+02	0.02	0.07
			Cs-137	1.69E+02	1.70E+02	0.06	0.03
			Ce-141	2.00E+02	2.03E+02	0.16	0.05
			NOTES:				

(a) The known value as determined by Analytics.

(b) The normalized deviation from the "known" value is computed from the deviation and the standard error of the mean; ±2.00 is the warning limit and ±3.00 is the control limit. This is a measure of accuracy of the analytical methods.

(c) The normalized range is computed from the mean range, the control limit, and the standard error of the range; +2.000 is the warning limit and +3.000 is the control limit. This is a measure of precision of the analytical methods.

(d) Results reported were outside Control Limits.

Exceptions:

There was one result outside the control limits for accuracy in the 2007 Interlaboratory Comparison program participation study performed as required by TRM 3.12.3. The RBS normalized-deviation for nuclide Mn-54 in a gamma isotopic water analysis, Analytics sample number E5388-125 of 6/14/2007, was +3.89, which is outside the control limit of ±3.00 for accuracy. This high bias result is considered conservative and is considered as having no impact on past results of the program. The results for Mn-54 in all other program samples were within control limits for the year 2007; with normalized-deviations of 0.24 in sediment sample analysis; 1.93 in an air filter sample analysis; and 1.14 in a milk sample analysis. Reanalysis of the 2007 water sample produced results very similar to the original averaged result.

A review concerning the high bias was performed with no obvious issues associated with the counting of the water samples. Analytics was contacted concerning this result. A possible explanation offered from Analytics was that the effect of coincidence summing in calibration sources containing Y-88 and Co-60 may cause a lower efficiency for energies associated with Mn-54. The lower efficiency will result in a higher concentration for Mn-54. This phenomenon can sometimes also be seen with energies associated with Fe-59 and Zn-65.

There is no impact assessed on previously reported data due to these results. Environmental samples are analyzed and reported with a ninety-five percent confidence level. A known standard is counted with each group of samples and must read within 10 percent of the decay corrected activity. Ninety-eight percent of RBS environmental crosscheck results were within control limits for accuracy and 100% for precision during 2007.