VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

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VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
NORTH ANNA POWER STATION UNIT NOS. 1 AND 2
INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

In accordance with North Anna Units 1 and 2 Technical Specification 5.6.2 and North Anna Independent Spent Fuel Storage Installation Technical Specification 5.5.2b, enclosed is the 2006 Annual Radiological Environmental Operating Report.

If you have any questions or require additional information, please contact Page Kemp at (540) 894-2295.

Very truly yours,

Dan Stoddard

D. G. Stoddard
Site Vice President

Enclosure

Commitments made in this letter: None

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Dominion℠

North Anna Power Station

2006 Annual Radiological Environmental Operating Report

Dominion

North Anna Power Station

Radiological Environmental Monitoring Program

January 1, 2006 to December 31, 2006

Prepared by

Dominion, North Anna Power Station

Annual Radiological Environmental Operating Report

North Anna Power Station

January 1, 2006 to December 31, 2006

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1. EXECUTIVE SUMMARY

This document is a detailed report of the 2006 North Anna Nuclear Power Station Radiological Environmental Monitoring Program (REMP). It is submitted in accordance with North Anna Unit 1 and 2 Technical Specification 5.6.2 and North Anna Independent Spent Fuel Storage Installation (ISFSI) Technical Specification 5.5.2b. Radioactivity levels from January 1 through December 31, 2006, in water, silt, shoreline sediment, milk, aquatic biota, food products, vegetation, and direct exposure pathways have been analyzed, evaluated and summarized. The REMP is designed to confirm that radiological effluent releases are As Low As is Reasonably Achievable (ALARA), no undue environmental effects occur and the health and safety of the public are protected. The program also detects any unexpected environmental processes that could allow radiation accumulations in the environment or food pathway chains.

Radiation and radioactivity in the environment is monitored within a 25-mile radius of the station. North Anna Power Station personnel collect a variety of samples within this area. A number of sampling locations for each medium are selected using available meteorological, land use, and water use data. Two types of samples are obtained. The first type, control samples, are collected from areas that are beyond the measurable influence of North Anna Power Station or any other nuclear facility. These samples are used as reference data. Normal background radiation levels, or radiation present due to causes other than North Anna Power Station, can be compared to the environment surrounding the station. Indicator samples are the second sample type obtained. These samples show how much radiation is contributed to the environment by the station. Indicator samples are taken from areas close to the station where any station contribution will be at the highest concentration.

Prior to station operation, samples were collected and analyzed to determine the amount of radioactivity present in the area. The resulting values are used as a "pre-operational baseline." Analysis results from the indicator samples are compared to both current control sample values and the pre-operational baseline to determine if changes in radioactivity levels are attributable to station operations, or causes such as the Chernobyl accident or natural variation.

Global Dosimetry Solutions provided thermoluminescent dosimetry (TLD) services and AREVA Environmental Laboratory provided radioanalytical services. Participation in an Interlaboratory Comparison Program provides an independent check of sample measurement precision and accuracy. Typically, radioactivity levels in the environment are so low that analysis values frequently fall below the minimum detection limits of state-of-the-art measurement methods. Because of this, the Nuclear Regulatory Commission (NRC) requires that equipment used for

radiological environmental monitoring must be able to detect specified minimum Lower Limits of Detection (LLDs). This ensures that analyses are as accurate as possible. The NRC also mandates a reporting level for certain radionuclides. Licensed nuclear facilities must report the radionuclide activities in those environmental samples that are equal to or greater than the specified reporting level. Environmental radiation levels are sometimes referred to as a percent of the reporting level.

Analytical results are reported for all possible radiation exposure pathways to man. These pathways include airborne, water, aquatic, terrestrial, and direct radiation exposure. The airborne exposure pathway includes radioactive airborne iodine and particulates, and precipitation. The 2006 airborne results were similar to previous years. No plant related radioactivity was detected and fallout or natural radioactivity levels remained at levels consistent with past years' results.

Water and aquatic exposure pathway samples include surface, river and well water, silt and shoreline sediments, and fish. No plant related isotopes were detected in Lake Anna surface water except for tritium. The average tritium activity in surface water for 2006 was 3625 pCi/liter. Naturally occurring potassium-40 was detected at average environmental levels. River water collected from the North Anna River, 5.8 miles downstream of the site had an average tritium level of 3283 pCi/liter. No plant related radioisotopes were detected in well water. This trend is consistent throughout the environmental operational monitoring program. Both silt samples indicated the presence of naturally occurring thorium-228 at levels consistent with the natural background. Shoreline sediment, which may provide a direct exposure pathway, indicated the presence of Th-228 also at levels consistent with natural levels. Cs-137 was detected in only one sediment sample at 153 pCi/kg. No Cs-137 was detected in shoreline soil. This Cs-137 level is consistent with historic levels. The terrestrial exposure pathway includes milk and food/vegetation products. Iodine-131 was not detected in any 2006 milk samples and has not been detected in milk prior to or since the 1986 Chernobyl accident. No plant related radioisotopes were detected in any milk samples. A ten-year activity trend continues to indicate the slow decrease in Sr-90 activity. Naturally occurring potassium-40 was detected at evironmental levels consistent with historical data. Cs-137 was detected in one vegetation sample at 88 pCi/kg. This level is consistent with low levels of Cs-137 detected intermittently in past years. The direct exposure pathway measures environmental radiation doses by use of thermoluminescent dosimeters (TLDs). TLD results have remained essentially constant over the years.

During 2006, as in previous years, operation of the North Anna Power Station and the Independent Spent Fuel Storage Installation (ISFSI) created no adverse environmental effects or health hazards. The maximum dose calculated for a

hypothetical individual at the station site boundary due to liquid and gaseous effluents released from the station during 2006 was 0.32 millirem. For reference, this dose may be compared to the 360 millirem average annual exposure to every person in the United States from natural and man-made sources. Natural sources in the environment provide approximately 82% of radiation exposure to man, while nuclear power contributes less than 0.1%. These results demonstrate not only compliance with federal and state regulations but also demonstrate the adequacy of radioactive effluent control at North Anna Power Station.

2. PROGRAM DESCRIPTION

2.1 Introduction

This report documents the 2006 North Anna Power Station operational Radiological Environmental Monitoring Program (REMP).

The North Anna Power Station of Dominion Virginia Power Company is located on Lake Anna in Mineral, Virginia, approximately 35 miles southwest of Fredericksburg, Virginia. The site consists of two units, each with a pressurized water reactor (PWR) nuclear steam supply system and turbine generator furnished by Westinghouse Electric Corporation. Each unit was designed with a gross electrical output of 979 megawatts electric (MWe). Unit 1 achieved commercial operation on June 6, 1978 and Unit 2 on December 14, 1980. An independent spent fuel storage facility was licensed for dry cask storage of spent fuel in 1998.

The United States Nuclear Regulatory Commission (USNRC) regulations require that nuclear power plants be designed, constructed, and operated to keep levels of radioactive material in effluents to unrestricted areas as low as is reasonably achievable (ALARA). To ensure these criteria are met, the operating license for North Anna Power Station includes Technical Specifications, which address the release of radioactive effluents. In-plant monitoring is used to ensure release limits are not exceeded. As a precaution against unexpected or undefined environmental processes which might allow undue accumulation of radioactivity in the environment, a program for monitoring the plant environs is also included in North Anna Power Station Offsite Dose Calculation Manual (ODCM).

North Anna Power Station is responsible for collecting the various indicator and control environmental samples. Global Dosimetry Solutions is responsible for processing the TLDs. AREVA Environmental Laboratory is responsible for sample analyses. The results of the analyses are used to determine if changes in radioactivity levels may be attributable to station operations. Measured values are compared with control levels, which vary with time due to external events, such as cosmic ray bombardment, nuclear weapons test fallout and seasonal variations of naturally occurring radioisotopes. Data collected prior to station operation is used to indicate the degree of natural variation to be expected. This pre-operational data is compared with data collected during the operational phase to assist in evaluating any radiological impact of station operation.

Occasional samples of environment media show the presence of man-made isotopes. As a method of referencing the measured radionuclide concentrations in the sample media to a dose consequence to man, the data is compared to the reporting level concentrations listed in the USNRC Regulatory Guide 4.8 and

North Anna's ODCM. These concentrations are based upon the annual dose commitment recommended by 10CFR50, Appendix I, to meet the criterion of "As Low As Is Reasonably Achievable".

This report documents the results of the Radiological Environmental Monitoring Program for 2006 and satisfies the following objectives of the program:

- To provide measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides that lead to the highest potential radiation exposure of the maximum exposed member of the public resulting from station operations.

- To supplement the radiological effluent monitoring program by verifying that radioactive effluents are within allowable limits.

- To identify changes in radioactivity in the environment.

- To verify that station operations have no detrimental effect on the health and safety of the public.

2.2 Sampling and Analysis Program

Table 2-1 summarizes the 2006 sampling program for North Anna Power Station. All samples listed in Table 2-1 are taken at indicator locations except those labeled "control." The North Anna Radiological Monitoring Locations maps denote sample locations for North Anna Power Station. The locations are color coded to designate sample types. Table 2-2 summarizes the analysis program conducted by AREVA Environmental Laboratory for North Anna Power Station during the year 2006.

Samples of various subsurface waters were taken as part of the Nuclear Energy Institute, NEI, Ground Water Protection Initiative. The results of these analyses are included in Appendix C of this report as part of that initiative.

TABLE 2-1

North Anna Power Station - 2006
RADIOLOGICAL SAMPLING STATION
DISTANCE AND DIRECTION FROM UNIT NO. 1

Sample Media	Location	Station	Distance	Direction	Degrees	Collection Frequency	Remarks
Environmental	NAPS Sewage Treatment Plant	01	0.20	NE	42°	Quarterly & Annually	
Thermoluminescent	Fredericks Hall	02	5.30	SSW	203°	Quarterly & Annually	
Dosimetry (TLD)	Mineral, Va	03	7.10	WSW	243°	Quarterly & Annually	
	Wares Crossroads	04	5.10	WNW	287°	Quarterly & Annually	
	Route 752	05	4.20	NNE	20°	Quarterly & Annually	
	Sturgeon's Creek Marina	05A	2.04	N	11°	Quarterly & Annually	
	Levy, VA	06	4.70	ESE	115°	Quarterly & Annually	
	Bumpass, VA	07	7.30	SSE	167°	Quarterly & Annually	
	End of Route 685	21	1.00	WNW	301°	Quarterly & Annually	
	Route 700	22	1.00	WSW	242°	Quarterly & Annually	
	"Aspen Hills"	23	0.93	SSE	158°	Quarterly & Annually	
	Orange, VA	24	22.00	NW	325°	Quarterly & Annually	Control
	Bearing Cooling Tower	N-1/33	0.06	N	10°	Quarterly	
	Sturgeon's Creek Marina	N-2/34	2.04	N	11°	Quarterly	
	Parking Lot "C" (on-site)	NNE-3/35	0.24	NNE	32°	Quarterly	
	Good Hope Church	NNE-4/36	3.77	NNE	25°	Quarterly	
	Parking Lot "B"	NE-5/37	0.20	NE	42°	Quarterly	
	Lake Anna Marina (Bogg's Dr)	NE-6/38	1.46	NE	34°	Quarterly	
	Weather Tower Fence	ENE-7/39	0.36	ENE	74°	Quarterly	
	Route 689	ENE-8/40	2.43	ENE	65°	Quarterly	
	Near Training Facility	E-9/41	0.30	E	91°	Quarterly	
	"Morning Glory Hill"	E-10/42	2.85	E	93°	Quarterly	
	Island Dike	ESE-11/43	0.12	ESE	103°	Quarterly	
	Route 622	ESE-12/44	4.70	ESE	115°	Quarterly	
	DVP Biology Lab	SE-13/45	0.64	SE	138°	Quarterly	
	Route 701 (Dam Entrance)	SE-14/46	5.88	SE	137°	Quarterly	
	"Aspen Hills"	SSE-15/47	0.93	SSE	158°	Quarterly	
	Elk Creek	SSE-16/48	2.33	SSE	165°	Quarterly	
	NAPS Access Rd.	S-17/49	0.47	S	173°	Quarterly	

* In October 1991 the Surface Water Sample location at station 09 was moved to 09A.
** Shoreline soil was changed from station 09 to 08 effective with the August 1996 sample.

TABLE 2-1

North Anna Power Station - 2006
RADIOLOGICAL SAMPLING STATION
DISTANCE AND DIRECTION FROM UNIT NO. 1

Sample Media	Location	Station	Distance	Direction	Degrees	Collection Frequency	Remarks
Environmental Thermoluminescent Dosimetry (TLD)	Elk Creek Church	S-18/50	1.55	S	178°	Quarterly	
	NAPS Access Rd.	SSW-19/51	0.42	SSW	197°	Quarterly	
	Route 618	SSW-20/52	5.30	SSW	205°	Quarterly	
	500kv Tower	SW-21/53	0.6	SW	218°	Quarterly	
	Route 700	SW-22/54	3.96	SW	232°	Quarterly	
	NAPS Radio Tower	WSW-23/55	0.38	WSW	237°	Quarterly	
	Route 700 (Exclusion Boundary)	WSW-24/56	1.00	WSW	242°	Quarterly	
	South Gate Switchyard	W-25/57	0.32	W	279°	Quarterly	
	Route 685	W-26/58	1.55	W	274°	Quarterly	
	End of Route 685	WNW-27/59	1.00	WNW	301°	Quarterly	
	Route 685	WNW-28/60	1.40	WNW	303°	Quarterly	
	North Gate - Construction Side Laydown Area	NW-29/61	0.45	NW	321°	Quarterly	
	Lake Anna Campground	NW-30/62	2.54	NW	319°	Quarterly	
	#1/#2 Intake	NNW-31/63	0.07	NNW	349°	Quarterly	
	Route 208	NNW-32/64	2.21	NNW	344°	Quarterly	
	Bumpass Post Office	C-1/2	7.30	SSE	167°	Quarterly	Control
	Orange, VA	C-3/4	22.00	NW	325°	Quarterly	Control
	Mineral, VA	C-5/6	7.10	WSW	243°	Quarterly	Control
	Louisa, VA	C-7/8	11.54	WSW	257°	Quarterly	Control
Airborne Particulate and Radioiodine	NAPS Sewage Treatment Plant	01	0.20	NE	42°	Weekly	
	Fredericks Hall	02	5.30	SSW	203°	Weekly	
	Mineral, VA	03	7.10	WSW	243°	Weekly	
	Wares Crossroads	04	5.10	WNW	287°	Weekly	
	Route 752	05	4.20	NNE	20°	Weekly	
	Sturgeon's Creek Marina	05A	2.04	N	11°	Weekly	
	Levy, VA	06	4.70	ESE	115°	Weekly	
	Bumpass, VA	07	7.30	SSE	167°	Weekly	

* In October 1991 the Surface Water Sample location at station 09 was moved to 09A.
** Shoreline soil was changed from station 09 to 08 effective with the August 1996 sample.

TABLE 2-1

North Anna Power Station - 2006
RADIOLOGICAL SAMPLING STATION
DISTANCE AND DIRECTION FROM UNIT NO. 1

Sample Media	Location	Station	Distance	Direction	Degrees	Collection Frequency	Remarks
Airborne Particulate and Radioiodine	End of Route 685	21	1.00	WNW	301°	Weekly	
	Route 700	22	1.00	WSW	242°	Weekly	
	"Aspen Hills"	23	0.93	SSE	158°	Weekly	
	Orange, VA	24	22.00	NW	325°	Weekly	Control
Surface Water	Waste Heat Treatment Facility (Second Cooling Lagoon)	08	3.37	SSE	148°	Monthly	
	*Lake Anna (upstream) (Route 669 Bridge)	09A	12.90	WNW	295°	Monthly	Control
River Water	North Anna River (downstream)	11	5.80	SE	128°	Monthly	
Ground Water (Well Water)	Biology Lab	01A	0.64	SE	138°	Quarterly	
Precipitation	Biology Lab	01A	0.64	SE	138°	Monthly	
Aquatic Sediment	Waste Heat Treatment Facility (Second Cooling Lagoon)	08	3.37	SSE	148°	Semi-Annually	
	Lake Anna (upstream) (Route 669 Bridge)	09A	12.90	WNW	295°	Semi-Annually	Control
	North Anna River (downstream)	11	5.80	SE	128°	Semi-Annually	
Shoreline Soil	Waste Heat Treatment Facility (Second Cooling Lagoon)	08 **	3.37	SSE	148°	Semi-Annually	
Soil	NAPS Sewage Treatment Plant	01	0.20	NE	42°	Once/3 years	
	Fredericks Hall	02	5.30	SSW	203°	Once/3 years	
	Mineral, VA	03	7.10	WSW	243°	Once/3 years	
	Wares Crossroads	04	5.10	WNW	287°	Once/3 years	

* In October 1991 the Surface Water Sample location at station 09 was moved to 09A.
** Shoreline soil was changed from station 09 to 08 effective with the August 1996 sample.

TABLE 2-1

North Anna Power Station - 2006

RADIOLOGICAL SAMPLING STATION

DISTANCE AND DIRECTION FROM UNIT NO. 1

Sample Media	Location	Station	Distance	Direction	Degrees	Collection Frequency	Remarks
Soil	Route 752	05	4.20	NNE	20°	Once/3 years	
	Sturgeon's Creek Marina	05A	2.04	N	11°	Once/3 years	
	Levy, VA	06	4.70	ESE	115°	Once/3 years	
	Bumpass, VA	07	7.30	SSE	167°	Once/3 years	
	End of Route 685	21	1.00	WNW	301°	Once/3 years	
	Route 700 (Exclusion Boundary)	22	1.00	WSW	242°	Once/3 years	
	"Aspen Hills"	23	0.93	SSE	158°	Once/3 years	
	Orange, VA	24	22.00	NW	325°	Once/3 years	Control
Milk	Holladay Dairy (R.C. Goodwin)	12	8.30	NW	310°	Monthly	
	Terrell's Dairy (Fredericks Hall)	13	5.60	SSW	205°	Monthly	
	Anderson's Farm	27	2.49	ENE	66°	Monthly	
Fish	Waste Heat Treatment Facility (Second Cooling Lagoon)	08	3.37	SSE	148°	Semi-Annually	
	Lake Orange	25	16.5	NW	312°	Semi-Annually	Control
Food Products (Broadleaf Vegetation)	Bel Aire Plantation	14	1.20	NE	43°	Monthly if available or at harvest	
	Route 614	15	1.37	SE	133°	Monthly if available or at harvest	
	Route 629/522	16	12.60	NW	314°	Monthly if available or at harvest	Control
	Aspen Hills	23	0.93	SSE	158°	Monthly if available or at harvest	
	"Historic Lane"	26	1.15	S	172°	Monthly if available or at harvest	

* In October 1991 the Surface Water Sample location at station 09 was moved to 09A.

** Shoreline soil was changed from station 09 to 08 effective with the August 1996 sample.

TABLE 2-2
North Anna Power Station
SAMPLE ANALYSIS PROGRAM

SAMPLE MEDIA	FREQUENCY	ANALYSIS	LLD	REPORT UNITS
Thermoluminescent Dosimetry (TLD)				
(84 TLDs)	Quarterly	Gamma Dose	2 mR±2mR	mR/std. Month
(12 TLDs)	Annually	Gamma Dose	2 mR±2mR	mR/std. Month
Airborne Radioiodine	Weekly	I-131	0.07	pCi/m^3
Airborne Particulate	Weekly	Gross Beta	0.01	pCi/m^3
	Quarterly (a)	Gamma Isotopic		pCi/m^3
		Cs-134	0.05	
		Cs-137	0.06	
	2nd Quarter	Sr-89	(b)	pCi/m^3
	Composite	Sr-90	(b)	
Surface Water	Monthly	I-131	1(c)	pCi/L
		Gamma Isotopic		pCi/L
		Mn-54	15	
		Fe-59	30	
		Co-58	15	
		Co-60	15	
		Zn-65	30	
		Zr-95	30	
		Nb-95	15	
		Cs-134	15	
		Cs-137	18	
		Ba-140	60	
		La-140	15	
	Quarterly(a)	Tritium (H-3)	2000	pCi/L
	2nd Quarter	Sr-89	(b)	pCi/L
	Composite	Sr-90	(b)	
River Water	Monthly	I-131	1(c)	pCi/L
		Gamma Isotopic		pCi/L
		Mn-54	15	
		Fe-59	30	
		Co-58	15	
		Co-60	15	
		Zn-65	30	
		Zr-95	30	
		Nb-95	15	
		Cs-134	15	
		Cs-137	18	
		Ba-140	60	
		La-140	15	

*LLDs indicate those levels to which environmental samples are required to be analyzed. Actual analysis of samples may be lower than the listed values.
(a) Quarterly composite of each location's samples are used for the required analysis
(b) There are no required LLDs for Sr-89/90
(c) LLD for non-drinking water is 10 pCi/liter.

TABLE 2-2
North Anna Power Station
SAMPLE ANALYSIS PROGRAM

SAMPLE MEDIA	FREQUENCY	ANALYSIS	LLD	REPORT UNITS
River Water	Quarterly(a)	Tritium (H-3)	2000	pCi/L
	2nd Quarter	Sr-89	(b)	pCi/L
	Composite	Sr-90	(b)	
Ground Water (Well Water)	Quarterly	Gamma Isotopic		pCi/L
		Mn-54	15	
		Fe-59	30	
		Co-58	15	
		Co-60	15	
		Zn-65	30	
		Zr-95	30	
		Nb-95	15	
		I-131	1(c)	
		Cs-134	15	
		Cs-137	18	
		Ba-140	60	
		La-140	15	
	Quarterly(a)	Tritium (H-3)	2000	pCi/L
	2nd Quarter	Sr-89	(b)	pCi/L
		Sr-90	(b)	
Aquatic Sediment	Semi-Annually	Gamma Isotopic		pCi/kg (dry)
		Cs-134	150	
		Cs-137	180	
	Annually	Sr-89	(b)	pCi/kg (dry)
		Sr-90	(b)	
Precipitation	Monthly	Gross Beta	4	pCi/L
	Semi-Annual	Gamma Isotopic		pCi/L
	Composite	Mn-54	15	
		Fe-59	30	
		Co-58	15	
		Co-60	15	
		Zn-65	30	
		Zr-95	30	
		Nb-95	15	
		I-131	1(c)	
		Cs-134	15	
		Cs-137	18	
		Ba-140	60	
		La-140	15	
Shoreline Soil	Semi-Annually	Gamma Isotopic		pCi/kg (dry)
		Cs-134	150	
		Cs-137	180	
	Annually	Sr-89	(b)	pCi/kg (dry)
		Sr-90	(b)	

*LLDs indicate those levels to which environmental samples are required to be analyzed. Actual analysis of samples may be lower than the listed values.

(a) Quarterly composite of each location's samples are used for the required analysis
(b) There are no required LLDs for Sr-89/90
(c) LLD for non-drinking water is 10 pCi/liter.

TABLE 2-2
North Anna Power Station
SAMPLE ANALYSIS PROGRAM

SAMPLE MEDIA	FREQUENCY	ANALYSIS	LLD	REPORT UNITS
Soil	Once per 3 years	Gamma Isotopic		pCi/kg (dry)
		Cs-134	150	
		Cs-137	180	
		Sr-89	(b)	pCi/kg (dry)
		Sr-90	(b)	
Milk	Monthly	I-131	1	pCi/L
	Monthly	Gamma Isotopic		
		Cs-134	15	
		Cs-137	18	
		Ba-140	60	
		La-140	15	
	Quarterly	Sr-89	(b)	pCi/L
		Sr-90	(b)	
Fish	Semi-Annually	Gamma Isotopic		pCi/kg (wet)
		Mn-54	130	
		Fe-59	260	
		Co-58	130	
		Co-60	130	
		Zn-65	260	
		Cs-134	130	
		Cs-137	150	
Food Products (Broadleaf Vegetation)	Monthly if available or	Gamma Isotopic		pCi/kg (wet)
		Cs-134	60	
	at harvest	Cs-137	80	
		I-131	60	

*LLDs indicate those levels to which environmental samples are required to be analyzed. Actual analysis of samples may be lower than the listed values.
(a) Quarterly composite of each location's samples are used for the required analysis
(b) There are no required LLDs for Sr-89/90
(c) LLD for non-drinking water is 10 pCi/liter.

Legend For The North Anna Power Station Environmental Monitoring Stations Overview Maps

Map Designation		Environmental Station Identification	Map Designation	Environmental Station
1	(a)	01,NE-5/37	27	27-Milk
1A		01A,SE-13/45	7/8	C-7/8
2	(a)	02,SSW-20/52	1/33	N-1/33
3	(a)	03,C-5/6	31/63	NNW-31/63
4	(a)	04	29/61	NW-29/61
5	(a)	05	3/35	NNE-3/35
5A	(a)	05A,N-2/34	7/39	ENE-7/39
6	(a)	06,ESE-12/44	9/41	E-9/41
7	(a)	07,C-1/2	11/43	ESE-11/43
8		08-Water, Fish Sediment,	17/49	S-17/49
		Shoreline Soil	19/51	SSW-19/51
9A		09A-Water sample, sediment	21/53	SW-21/53
11		11-River Water, Sediment	23/55	WSW-23/55
12		12-Milk	25/57	W-25/57
13		13-Milk	16/48	SSE-16/48
14		14-Vegetation, NE-6/38	18/50	S-18/50
15		Vegetation	14/46	SE-14/46
16		Vegetation	22/54	SW-22/54
21	(a)	21,WNW-27/59	26/58	W-26/58
22	(a)	22,WSW-24/56	28/60	WNW-28/60
23	(a)	23-SSE-15/47	32/64	NNW-32/64
24	(a)(b)	24,C-3/4	8/40	ENE-8/40
25	(c)	25-Fish	4/36	NNE-4/36
26		26-Vegetation	10/42	E-10/42

(a) Indicates air sample station, annual and quarterly TLD, Triennial soil.
(b) In Orange
(c) In Lake Orange

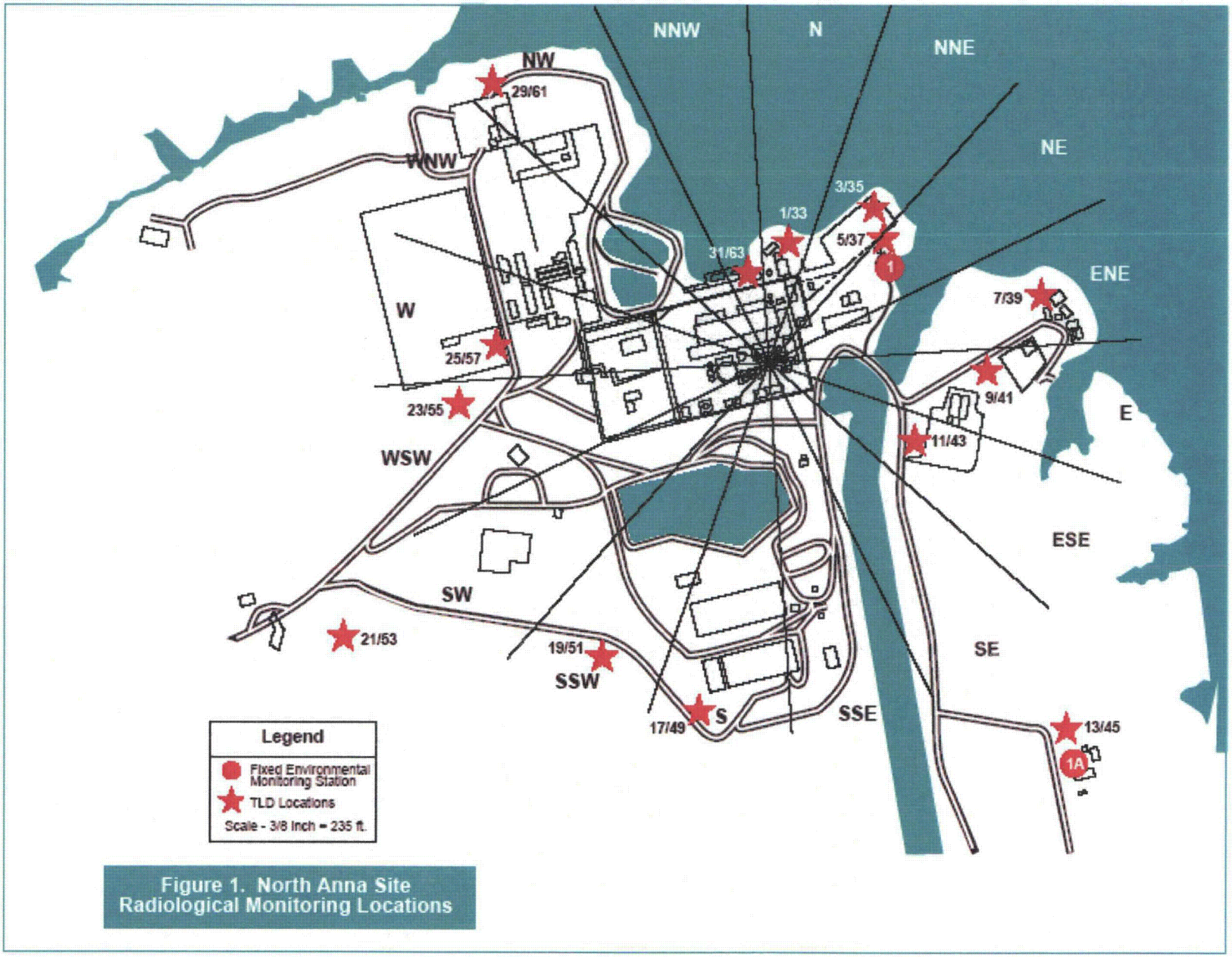
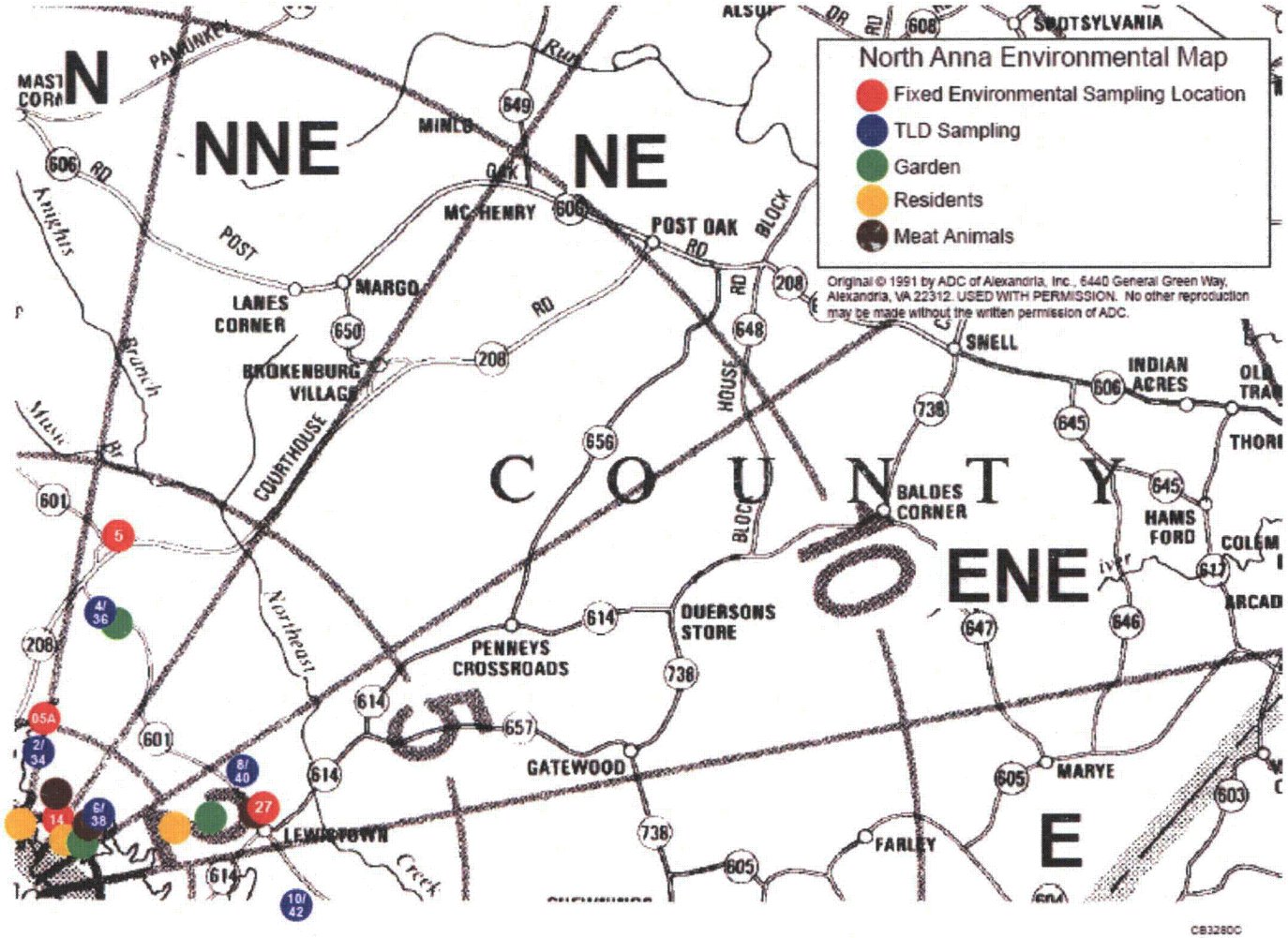
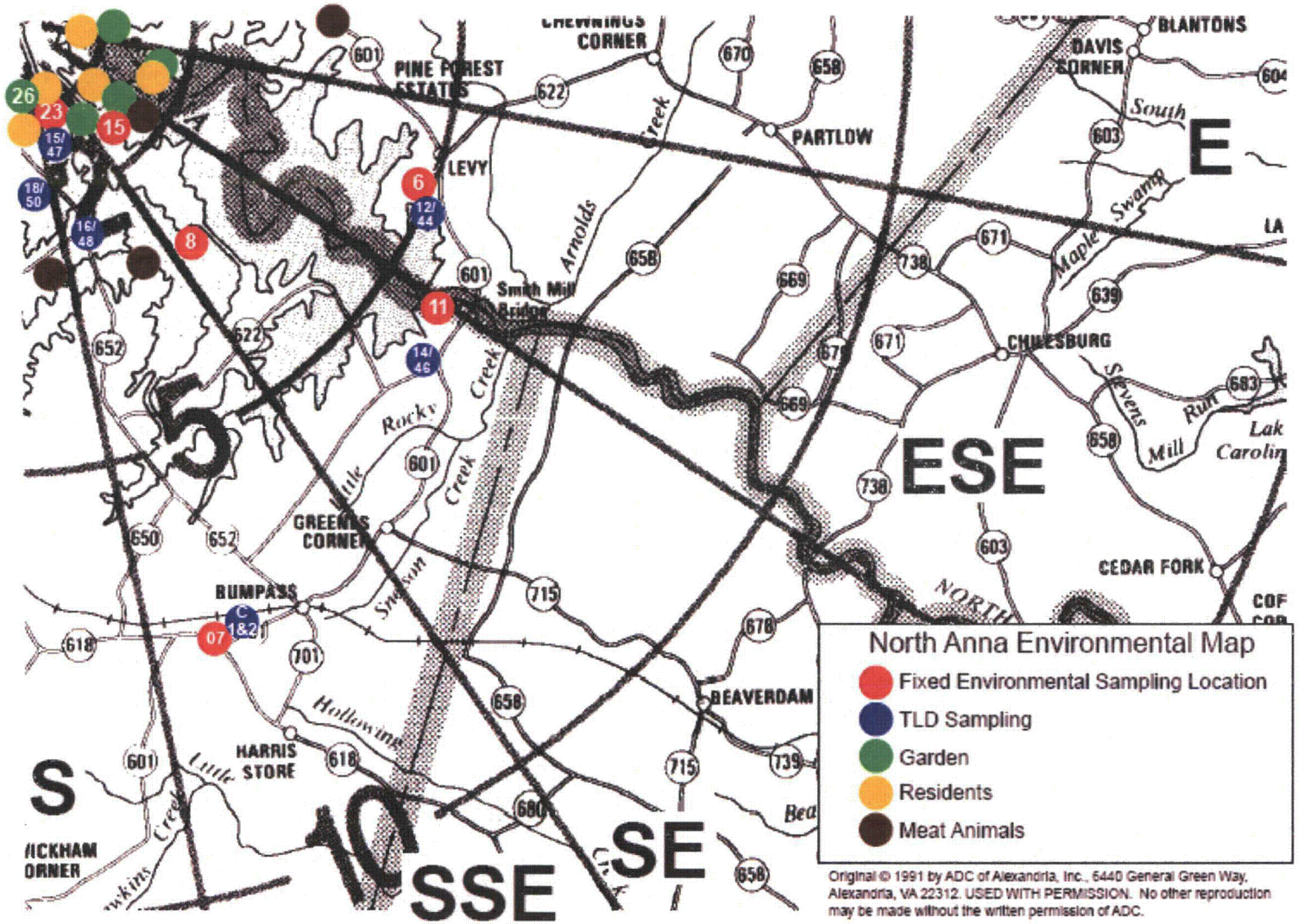
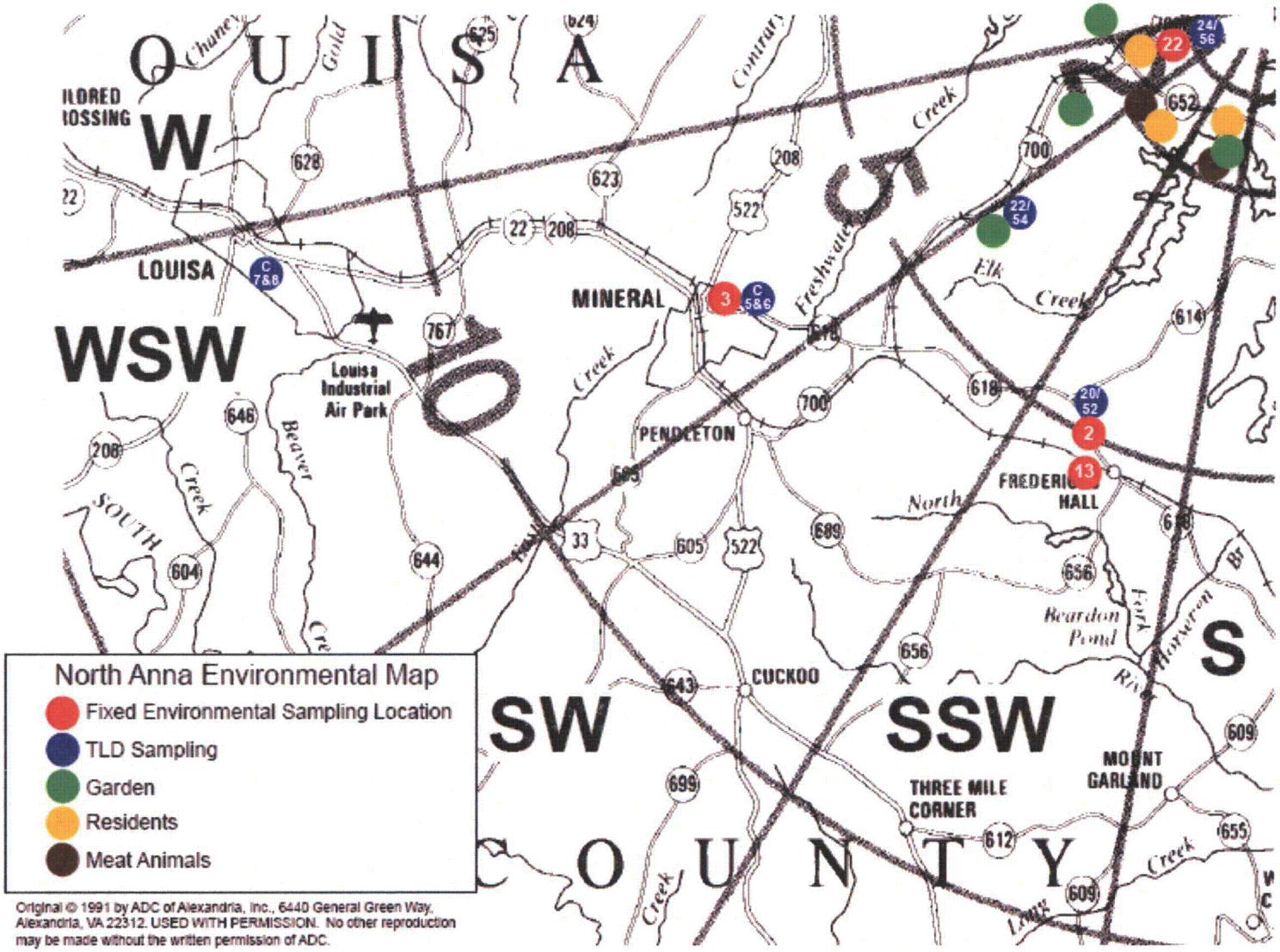


Figure 1. North Anna Site Radiological Monitoring Locations

SV6441


North Anna Environmental Map
Fixed Environmental Sampling Location
TLD Sampling
Garden
Residents
Meat Animals
Original © 1991 by ADC of Alexandria, Inc., 6440 General Green Way, Alexandria, VA 22312. USED WITH PERMISSION. No other reproduction may be made without the written permission of ADC.
N
NNE
NE
ENE
E
COUNTY
MARGO
LANES CORNER
BROKENBURG VILLAGE
COURTHOUSE
MC HENRY
POST OAK
SNELL
INDIAN ACRES
BALDES CORNER
HAMS FORD
DUERSONS STORE
PENNEYS CROSSROADS
GATEWOOD
LEWISTOWN
MARYE
FARLEY
SPOTSYLVANIA
CB3280C


North Anna Environmental Map
Fixed Environmental Sampling Location
TLD Sampling
Garden
Residents
Meat Animals
Original © 1991 by ADC of Alexandria, Inc., 6440 General Green Way, Alexandria, VA 22312. USED WITH PERMISSION. No other reproduction may be made without the written permission of ADC.
CB3282E
PINE FOREST ESTATES
LEVY
Smith Mill Bridge
PARTLOW
DAVIS CORNER
BLANTONS
CHULESBURG
CEDAR FORK
GREENES CORNER
BUMPASS
HARRIS STORE
BEAVERDAM
Arnolds Creek
Rocky Creek
Little Creek
Hollowing
South
Maple Swamp
Stevens Mill Run
E
ESE
SE
SSE
S
5
10
26
23
15
15/47
18/50
16/48
8
6
12/44
11
14/46
C 1&2
07


North Anna Environmental Map
Fixed Environmental Sampling Location
TLD Sampling
Garden
Residents
Meat Animals
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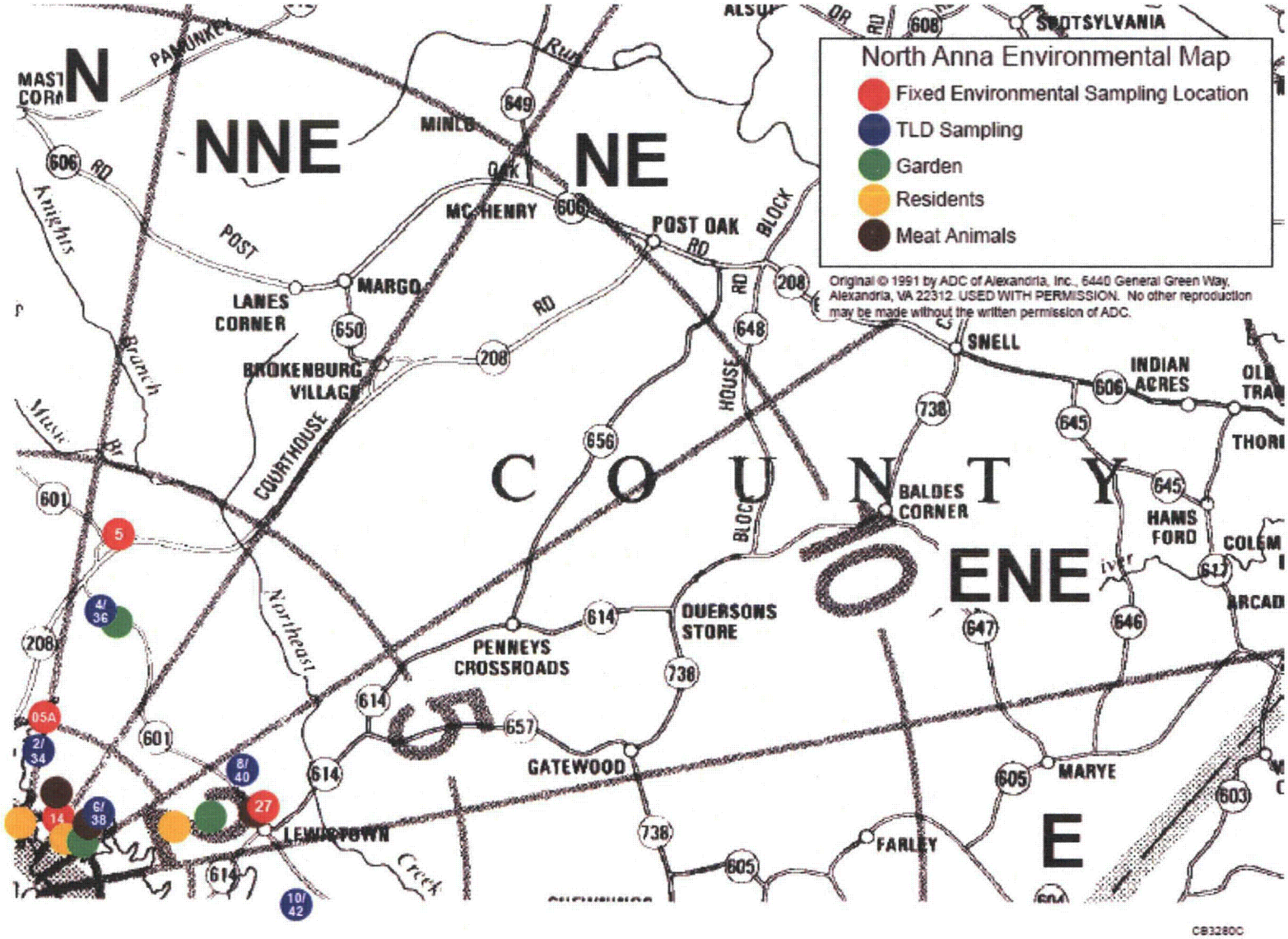
LOUISA
MINERAL
PENDLETON
CUCKOO
THREE MILE CORNER
MOUNT GARLAND
Louisa Industrial Air Park
WSW
SW
SSW
S
COUNTY
Elk Creek
Beaver Creek
Beardon Pond
CB3285D


North Anna Environmental Map
Fixed Environmental Sampling Location
TLD Sampling
Garden
Residents
Meat Animals
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N
NNE
NE
ENE
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COUNTY
LANES CORNER
MARGO
BROKENBURG VILLAGE
COURTHOUSE
MC HENRY
POST OAK
SNELL
INDIAN ACRES
BALDES CORNER
HAMS FORD
DUERSONS STORE
PENNEYS CROSSROADS
GATEWOOD
LEWISTOWN
MARYE
FARLEY
CB3280C

3. ANALYTICAL RESULTS

3.1 Summary of Results

In accordance with the North Anna Offsite Dose Calculation Manual (ODCM), a summary table of the analytical results has been prepared and is presented in Table 3-1. This data is presented in accordance with the format of the USNRC Branch Technical Position, "Acceptable Radiological Environmental Monitoring Program", Rev. 1, November 1979. The LLD listed value is taken from the ODCM.

A more detailed analysis of the data is given in Section 4 where a discussion of the variations in the data explains many aspects that are not evident in the Summary Table because of the basic limitation of data summaries.

TABLE 3-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

North Anna Nuclear Power Station, Louisa County, Virginia – 2006
Docket No. 50-338/339

Medium or Pathway Sampled (Unit)	Analysis		LLD (pCi/unit)	All Indicator Locations	Location with Highest Mean			Control Location	Non-routine Reported Measure-ments
	Type	Total No.		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Air Iodine (pCi/m^3)	I-131	624	0.07	(0/572)	N/A	N/A	N/A	(0/52)	0
Airborne Particulates (1E-03 pCi/m^3)	Gross Beta	624	0.01	24.9(572/572) (9.0-55.5)	01	0.20 mi. NE	29.6(52/52) (12.2-55.5)	25.7(52/52) (13.4-46.7)	0
	Gamma	48							
	Be-7	48	-	131.7 (44/44) (40-200)	01	0.20 mi. NE	155.5(4/4) (110-200)	127(4/4) (92-142)	0
	Cs-134	48	0.05	(0/44)	N/A	N/A	N/A	(0/4)	0
	Cs-137	48	0.06	(0/44)	N/A	N/A	N/A	(0/4)	0
	Sr-89	12	-	(0/11)	N/A	N/A	N/A	(0/1)	0
	Sr-90	12	-	(0/11)	N/A	N/A	N/A	(0/1)	0
Ground Well Water (pCi/liter)	Tritium	4	2000	(0/4)	01A	0.75 mi. SE	N/A	N/A	0
	Gamma	4							
	Mn-54	4	15	(0/4)	N/A	N/A	N/A	N/A	0
	Fe-59	4	30	(0/4)	N/A	N/A	N/A	N/A	0
	Co-58	4	15	(0/4)	N/A	N/A	N/A	N/A	0
	Co-60	4	15	(0/4)	N/A	N/A	N/A	N/A	0

TABLE 3-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY
North Anna Nuclear Power Station, Louisa County, Virginia – 2006
Docket No. 50-338/339

Medium or Pathway Sampled (Unit)	Analysis		LLD (pCi/unit)	All Indicator Locations	Location with Highest Mean			Control Location	Non-routine Reported Measure-ments
	Type	Total No.		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Ground Well Water (pCi/liter)	Zn-65	4	30	(0/4)	N/A	N/A	N/A	N/A	0
	Zr-95	4	30	(0/4)	N/A	N/A	N/A	N/A	0
	Nb-95	4	15	(0/4)	N/A	N/A	N/A	N/A	0
	I-131	4	10	(0/4)	N/A	N/A	N/A	N/A	0
	Cs-134	4	15	(0/4)	N/A	N/A	N/A	N/A	0
	Cs-137	4	18	(0/4)	N/A	N/A	N/A	N/A	0
	Ba-140	4	60	(0/4)	N/A	N/A	N/A	N/A	0
	La-140	4	15	(0/4)	N/A	N/A	N/A	N/A	0
	Sr-89	1	-	(0/1)	N/A	N/A	N/A	N/A	0
	Sr-90	1	-	(0/1)	N/A	N/A	N/A	N/A	0
River Water (pCi/liter)	Tritium	4	2000	3283(4/4) (2130-4300)	11	5.80 mi. SE	3283(4/4) (2130-4300)	N/A	0
	Gamma	12							
	Mn-54	12	15	(0/12)	N/A	N/A	N/A	N/A	0
	Fe-59	12	30	(0/12)	N/A	N/A	N/A	N/A	0

TABLE 3-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

North Anna Nuclear Power Station, Louisa County, Virginia – 2006

Docket No. 50-338/339

Medium or Pathway Sampled (Unit)	Analysis		LLD (pCi/unit)	All Indicator Locations	Location with Highest Mean			Control Location	Non-routine Reported Measure-ments
	Type	Total No.		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
River Water (pCi/liter)	Co-58	12	15	(0/12)	N/A	N/A	N/A	N/A	0
	Co-60	12	15	(0/12)	N/A	N/A	N/A	N/A	0
	Zn-65	12	30	(0/12)	N/A	N/A	N/A	N/A	0
	Zr-95	12	30	(0/12)	N/A	N/A	N/A	N/A	0
	Nb-95	12	15	(0/12)	N/A	N/A	N/A	N/A	0
	I-131	12	1	(0/12)	N/A	N/A	N/A	N/A	0
	Cs-134	12	15	(0/12)	N/A	N/A	N/A	N/A	0
	Cs-137	12	18	(0/12)	N/A	N/A	N/A	N/A	0
	Ba-140	12	60	(0/12)	N/A	N/A	N/A	N/A	0
	La-140	12	15	(0/12)	N/A	N/A	N/A	N/A	0
	Sr-89	1	-	(0/1)	N/A	N/A	N/A	N/A	0
	Sr-90	1	-	(0/1)	N/A	N/A	N/A	N/A	0
Surface Water (pCi/liter)	Tritium	8	2000	3625(4/4) (2900-4100)	08	3.37 mi. SSE	3625(4/4) (2900-4100)	(0/4)	0
	Gamma	24							

TABLE 3-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

North Anna Nuclear Power Station, Louisa County, Virginia – 2006

Docket No. 50-338/339

Medium or Pathway Sampled (Unit)	Analysis		LLD (pCi/unit)	All Indicator Locations	Location with Highest Mean			Control Location	Non-routine Reported Measure-ments
	Type	Total No.		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Surface Water (pCi/liter)	Mn-54	24	15	(0/12)	N/A	N/A	N/A	(0/12)	0
	Fe-59	24	30	(0/12)	N/A	N/A	N/A	(0/12)	0
	Co-58	24	15	(0/12)	N/A	N/A	N/A	(0/12)	0
	Co-60	24	15	(0/12)	N/A	N/A	N/A	(0/12)	0
	Zn-65	24	30	(0/12)	N/A	N/A	N/A	(0/12)	0
	Zr-95	24	30	(0/12)	N/A	N/A	N/A	(0/12)	0
	Nb-95	24	15	(0/12)	N/A	N/A	N/A	(0/12)	0
	I-131	24	1	(0/12)	N/A	N/A	N/A	(0/12)	0
	Cs-134	24	15	(0/12)	N/A	N/A	N/A	(0/12)	0
	Cs-137	24	18	(0/12)	N/A	N/A	N/A	(0/12)	0
	Ba-140	24	60	(0/12)	N/A	N/A	N/A	(0/12)	0
	La-140	24	15	(0/12)	N/A	N/A	N/A	(0/12)	0
	Sr-89	1	-	(0/1)	N/A	N/A	N/A	(0/1)	0
	Sr-90	1	-	(0/1)	N/A	N/A	N/A	(0/1)	0

TABLE 3-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

North Anna Nuclear Power Station, Louisa County, Virginia – 2006

Docket No. 50-338/339

Medium or Pathway Sampled (Unit)	Analysis		LLD (pCi/unit)	All Indicator Locations	Location with Highest Mean			Control Location	Non-routine Reported Measure-ments
	Type	Total No.		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Precipitation (pCi/liter)	Monthly								
	Gross Beta	10	4	7.1(9/12) (3.3-13.4)	01A	0.75 mi. SE	7.1(9/12) (3.3-13.4)	(0/0)	0
	Semiannually								
	Gamma	2							
	Mn-54	2	15	(0/2)	N/A	N/A	N/A	N/A	0
	Fe-59	2	30	(0/2)	N/A	N/A	N/A	N/A	0
	Co-58	2	15	(0/2)	N/A	N/A	N/A	N/A	0
	Co-60	2	15	(0/2)	N/A	N/A	N/A	N/A	0
	Zn-65	2	30	(0/2)	N/A	N/A	N/A	N/A	0
	Zr-95	2	30	(0/2)	N/A	N/A	N/A	N/A	0
	Nb-95	2	15	(0/2)	N/A	N/A	N/A	N/A	0
	I-131	2	10	(0/2)	N/A	N/A	N/A	N/A	0
	Cs-134	2	15	(0/2)	N/A	N/A	N/A	N/A	0
	Cs-137	2	18	(0/2)	N/A	N/A	N/A	N/A	0
	Ba-140	2	60	(0/2)	N/A	N/A	N/A	N/A	0

TABLE 3-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

North Anna Nuclear Power Station, Louisa County, Virginia – 2006
Docket No. 50-338/339

Medium or Pathway Sampled (Unit)	Analysis		LLD (pCi/unit)	All Indicator Locations	Location with Highest Mean			Control Location	Non-routine Reported Measure-ments
	Type	Total No.		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Precipitation (pCi/liter)	La-140	2	15	(0/2)	N/A	N/A	N/A	N/A	0
Sediment Silt (pCi/kg) (dry)	Gamma	6							
	K-40	6	-	12178(4/4) (3010-16200)	11	5.80 mi. SSE	14900(2/2) (13600-16200)	9515(2/2) (7200-11830)	0
	Cs-134	6	150	(0/4)	N/A	N/A	N/A	(0/2)	0
	Cs-137	6	180	153(1/4) (153)	08	3.37 mi. SSE	153(1/2) (153)	(0/2)	0
	Th-228	6	-	1208(4/4) (370-1880)	11	5.80 mi. SSE	1290(2/2) (1230-1350)	505(2/2) (420-590)	0
	Sr-89 (Annually)	3	-	(0/2)	N/A	N/A	N/A	(0/1)	0
	Sr-90 (Annually)	3	-	(0/2)	N/A	N/A	N/A	(0/1)	0
Soil (pCi/Kg) (dry)	Triennial Gamma	12			Soil samples not required in 2006				
	Cs-134	12	150	N/A	N/A	N/A	N/A	N/A	N/A
	Cs-137	12	180	N/A	N/A	N/A	N/A	N/A	N/A
	Th-228	12	-	N/A	N/A	N/A	N/A	N/A	N/A
	Sr-89	12	-	N/A	N/A	N/A	N/A	N/A	N/A
	Sr-90	12	-	N/A	N/A	N/A	N/A	N/A	N/A

TABLE 3-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

North Anna Nuclear Power Station, Louisa County, Virginia – 2006
Docket No. 50-338/339 Page 7 of 9

Medium or Pathway Sampled (Unit)	Analysis		LLD (pCi/unit)	All Indicator Locations	Location with Highest Mean			Control Location	Non-routine Reported Measure-ments
	Type	Total No.		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Shoreline Soil (pCi/kg) (dry)	Gamma	2							
	K-40	2	-	5055(2/2) (2200-7910)	8	3.37 mi. SSE	5055(2/2) (2200-7910)	N/A	0
	Th-228	2	-	1210(1/2) (1210)	8	3.37 mi. SSE	1210(1/2) (1210)	N/A	0
	Cs-134	2	150	(0/2)	N/A	N/A	N/A	N/A	0
	Cs-137	2	180	(0/2) (N/A)	N/A	N/A	N/A	N/A	0
	Sr-89 (Annually)	1	-	(0/1)	N/A	N/A	N/A	N/A	0
	Sr-90 (Annually)	1	-	(0/1)	N/A	N/A	N/A	N/A	0
Milk (pCi/liter)	Gamma	24							
	K-40	24	-	1355(24/24) (1210-1440)	12	8.3 mi. NW	1357(12/12) (1230-1430)	N/A	0
	I-131	24	1	(0/24)	N/A	N/A	N/A	N/A	0
	Cs-134	24	15	(0/24)	N/A	N/A	N/A	N/A	0
	Cs-137	24	18	(0/24)	N/A	N/A	N/A	N/A	0
	Ba-140	24	60	(0/24)	N/A	N/A	N/A	N/A	0

TABLE 3-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

North Anna Nuclear Power Station, Louisa County, Virginia – 2006
Docket No. 50-338/339

Medium or Pathway Sampled (Unit)	Analysis		LLD (pCi/unit)	All Indicator Locations	Location with Highest Mean			Control Location	Non-routine Reported Measure-ments
	Type	Total No.		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Milk (pCi/liter)	La-140	24	15	(0/24)	N/A	N/A	N/A	N/A	0
	Sr-89 (Quarterly)	8	-	(0/8)	N/A	N/A	N/A	N/A	0
	Sr-90 (Quarterly)	8	-	(0/8)	N/A	N/A	N/A	N/A	0
Fish (pCi/kg) (wet)	Gamma	8							
	K-40	8	-	1313(4/4) (1010-1460)	08	3.37 mi. SSE	1313(4/4) (1010-1460)	1773(4/4) (1460-2050)	0
	Mn-54	8	130	(0/4)	N/A	N/A	N/A	(0/4)	0
	Fe-59	8	260	(0/4)	N/A	N/A	N/A	(0/4)	0
	Co-58	8	130	(0/4)	N/A	N/A	N/A	(0/4)	0
	Co-60	8	130	(0/4)	N/A	N/A	N/A	(0/4)	0
	Zn-65	8	260	(0/4)	N/A	N/A	N/A	(0/4)	0
	Cs-134	8	130	(0/4)	N/A	N/A	N/A	(0/4)	0
	Cs-137	8	150	(0/4)	N/A	N/A	N/A	(0/4)	0

TABLE 3-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

North Anna Nuclear Power Station, Louisa County, Virginia – 2006
Docket No. 50-338/339 Page 9 of 9

Medium or Pathway Sampled (Unit)	Analysis		LLD (pCi/unit)	All Indicator Locations	Location with Highest Mean			Control Location	Non-routine Reported Measure-ments
	Type	Total No.		Mean Range	Name	Distance Direction	Mean Range	Mean Range	
Food	Gamma	20							
Vegetation (pCi/kg) (wet)	Be-7	20	-	2510(23/24) (550-8030)	14	varies NE	3102(6/6) (910-7180)	2758(5/6) (970-6670)	0
	K-40	20	-	12583(24/24) (2870-27700)	14	varies NE	3102(6/6) (910-7180)	2758(5/6) (970-6670)	0
	I-131	20	60	(0/24)	N/A	N/A	N/A	(0/6)	0
	Cs-134	20	60	(0/24)	N/A	N/A	N/A	(0/6)	0
	Cs-137	20	80	88(1/24) (88)	15	varies SE	88(1/6) (88)	(0/6)	0
	Th-228	20	-	267(4/24) (147-440)	26	varies S	294(2/6) (147-440)	(0/6)	0
Direct Radiation (mR/std. month) (Environmental TLDs)	Gamma Dose	48	2	3.8(44/44) (2.3-6.1)	23	0.93 mi. SSE	5.6(4/4) (5.1-6.1)	3.5(4/4) (3.1-4.6)	0
Direct Radiation (mR/std. Month) (Annual TLDs)	Gamma Dose	12	2	3.4(11/11) (1.9-5.1)	23	0.93 mi. SSE	5.1(1/1) (5.1)	3.6(1/1) (3.6)	0
Direct Radiation (mR/std. Month) (Sector TLDs)	Gamma Dose	256	2	5.5(256/256) (1.6-38.3)	19/51[1]	0.42 mi. SSW	27.8(8/8) (16.0-38.3)	3.4(32/32) (1.9-4.8)	0

(1) 19/51 located onsite near ISFSI.

3.2 Analytical Results of 2006 REMP Samples

Radiological analyses of environmental media characteristically approach and frequently fall below the detection limits of state-of-the-art measurement methods. The data reported in the following tables are strictly counting statistics. The reported error is two times the standard deviation (2σ) of the net activity. Unless otherwise noted, the overall error (counting, sample size, chemistry, errors, etc.) is estimated to be 2 to 5 times that listed. Results are considered positive when the measured value exceeds 1.5 times the listed 2σ error (i.e., the measured value exceeds 3σ).

Because of counting statistics, negative values, zeros and numbers below the Minimum Detectable Level (MDL) are statistically valid pieces of data[1]. For the purposes of this report all valid data are presented in order to indicate any background biases. AREVA Environmental Laboratory's analytical methods meet the Lower Limit of Detection (LLD) requirements given in Table 2 of the USNRC Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program", (November 1979, Revision 1) and the North Anna ODCM.

Data are given according to sample type as indicated below.

1. Gamma Exposure Rate
2. Air Particulates, Gross Beta Radioactivity
3. Air Particulates, Weekly I-131
4. Air Particulates, Quantitative Gamma Spectra
5. Air Particulate Strontium
6. Soil
7. Precipitation
8. Cow Milk
9. Food Products and Vegetation
10. Well Water
11. River Water
12. Surface Water
13. Bottom Sediment/Silt
14. Shoreline Soil
15. Fish

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[1] Analytical results are handled as recommended by HASL (*"Reporting of Analytical Results from HASL,"* letter by Leo B. Higginbotham) and NUREG/CR-4007 (Sept. 1984).

TABLE #3-2
DIRECT RADIATION MEASURMENTS - SECTOR QUARTERLY TLD RESULTS

mR/Std. Month (30.4 days) ± 2 Sigma

Station Name	First Quarter 01/05/2006 04/06/2006	Second Quarter 04/06/2006 06/29/2006	Third Quarter 06/29/2006 09/28/2006	Fourth Quarter 09/28/2006 01/05/2007	Quarterly Average
N-1	5.4	4.0	4.3	4.5	4.6 ± 1.2
N-33	5.7	5.2	4.4	5.8	5.3 ± 1.3
N-2	4.0	3.4	3.1	3.7	3.6 ± 0.8
N-34	3.7	2.7	3.1	4.5	3.5 ± 1.6
NNE-3	7.3	6.9	5.5	8.8	7.1 ± 2.7
NNE-35	7.1	5.7	7.6	8.6	7.3 ± 2.4
NNE-4	4.9	4.4	4.6	5.4	4.8 ± 0.9
NNE 36	4.5	4.5	4.9	5.4	4.8 ± 0.9
NE-5	6.2	4.9	4.1	4.6	5.0 ± 1.8
NE-37	5.9	4.8	3.1	6.2	5.0 ± 2.8
NE-6	3.6	4.0	3.7	4.1	3.9 ± 0.5
NE-38	3.9	2.8	3.4	4.2	3.6 ± 1.2
ENE-7	4.9	4.6	5.6	7.2	5.6 ± 2.3
ENE-39	5.1	4.1	4.9	6.9	5.3 ± 2.4
ENE-8	4.7	3.4	3.2	3.1	3.6 ± 1.5
ENE-40	3.4	3.3	3.3	4.0	3.5 ± 0.7
E-9	5.9	4.9	4.4	6.2	5.4 ± 1.7
E-41	5.9	4.8	5.1	6.0	5.5 ± 1.2
E-10	6.1	4.7	4.2	4.9	5.0 ± 1.6
E-42	5.0	4.6	5.3	5.6	5.1 ± 0.9
ESE-11	4.4	4.2	4.3	5.0	4.5 ± 0.7
ESE-43	4.6	4.1	4.2	5.7	4.7 ± 1.5
ESE-12	6.4	4.7	4.8	5.4	5.3 ± 1.6
ESE-44	4.6	4.6	4.4	5.6	4.8 ± 1.1
SE-13	4.9	3.7	4.6	4.9	4.5 ± 1.1
SE-45	5.4	4.4	4.3	5.7	5.0 ± 1.4
SE-14	7.8	7.0	6.1	7.4	7.1 ± 1.5
SE-46	6.7	6.5	6.8	8.0	7.0 ± 1.4
SSE-15	5.7	5.2	5.2	6.5	5.7 ± 1.2
SSE-47	5.5	5.1	5.3	6.4	5.6 ± 1.1
SSE-16	4.3	3.4	2.1	3.7	3.4 ± 1.9
SSE-48	3.4	3.2	3.0	3.8	3.4 ± 0.7

TABLE #3-2
DIRECT RADIATION MEASURMENTS - SECTOR QUARTERLY TLD RESULTS

mR/Std. Month (30.4 days) ± 2 Sigma

Station Name	**First Quarter** 01/05/2006 04/06/2006	**Second Quarter** 04/06/2006 06/29/2006	**Third Quarter** 06/29/2006 09/28/2006	**Fourth Quarter** 09/28/2006 01/05/2007	**Quarterly Average**
S-17	8.6	7.1	7.5	8.3	7.9 ± 1.4
S-49	7.6	7.4	7.1	8.8	7.7 ± 1.5
S-18	3.3	2.0	2.4	3.0	2.7 ± 1.2
S-50	3.4	2.6	2.6	2.9	2.9 ± 0.8
SSW-19	21.8	36.8	27.9	22.3	27.2 ± 13.9
SSW-51	21.9	16.0	37.3	38.3	28.4 ± 22.3
SSW-20	2.8	2.7	2.4	2.4	2.6 ± 0.4
SSW-52	3.3	2.6	2.4	3.3	2.9 ± 0.9
SW-21	5.6	3.8	5.0	6.4	5.2 ± 2.2
SW-53	6.3	4.6	4.4	6.1	5.4 ± 2.0
SW-22	5.0	4.5	3.9	5.5	4.7 ± 1.4
SW-54	4.7	4.8	4.6	5.2	4.8 ± 0.5
WSW-23	5.3	5.7	4.5	5.3	5.2 ± 1.0
WSW-55	6.0	5.6	5.5	6.9	6.0 ± 1.3
WSW-24	4.9	4.7	4.7	5.4	4.9 ± 0.7
WSW-56	5.0	4.6	4.5	5.8	5.0 ± 1.2
W-25	7.4	6.8	5.7	8.6	7.1 ± 2.4
W-57	7.3	6.0	6.6	9.2	7.3 ± 2.8
W-26	3.4	3.2	3.1	3.6	3.3 ± 0.4
W-58	2.7	2.3	2.3	3.9	2.8 ± 1.5
WNW-27	3.1	3.3	3.7	3.7	3.5 ± 0.6
WNW-59	3.3	2.5	3.4	3.5	3.2 ± 0.9
WNW-28	3.2	3.1	3.2	3.6	3.3 ± 0.4
WNW-60	3.0	3.3	3.2	3.8	3.3 ± 0.7
NW-29	7.2	6.6	5.8	7.5	6.8 ± 1.5
NW-61	6.9	6.1	6.4	7.8	6.8 ± 1.5
NW-30	2.3	2.4	1.6	2.9	2.3 ± 1.1
NW-62	2.5	1.8	2.3	3.0	2.4 ± 1.0
NNW-31	4.4	2.8	2.7	4.3	3.6 ± 1.9
NNW-63	4.6	2.8	3.8	4.8	4.0 ± 1.8
NNW-32	4.7	4.1	3.9	4.7	4.4 ± 0.8
NNW-64	4.0	3.9	4.2	4.8	4.2 ± 0.8

TABLE #3-2
DIRECT RADIATION MEASURMENTS - SECTOR QUARTERLY TLD RESULTS

mR/Std. Month (30.4 days) ± 2 Sigma

Station Name	**First Quarter** 01/05/2006 04/06/2006	**Second Quarter** 04/06/2006 06/29/2006	**Third Quarter** 06/29/2006 09/28/2006	**Fourth Quarter** 09/28/2006 01/05/2007	**Quarterly Average**
C-1	3.3	3.1	3.5	4.1	3.5 +/- 0.9
C-2	3.0	3.4	3.1	4.0	3.4 +/- 0.9
C-3	3.6	3.4	3.3	3.9	3.6 +/- 0.5
C-4	3.8	2.6	3.3	3.9	3.4 +/- 1.2
C-5	2.9	1.9	2.4	3.0	2.6 +/- 1.0
C-6	2.2	2.6	2.6	3.5	2.7 +/- 1.1
C-7	3.7	4.0	3.6	4.8	4.0 +/- 1.1
C-8	4.3	4.0	3.7	4.7	4.2 +/- 0.9
EPSA-01**	5.1	3.8	4.9	6.5	5.1 +/- 2.2
EPSA-02**	5.6	4.0	4.9	6.4	5.2 +/- 2.0
EPSF-03**	5.3	4.8	4.6	6.1	5.2 +/- 1.3
EPSF-04**	5.2	4.3	4.6	5.7	5.0 +/- 1.2
EPSR-05**	5.2	4.7	5.1	5.8	5.2 +/- 0.9
EPSR-06**	5.0	4.8	3.8	5.8	4.9 +/- 1.6
EPSJ-07**	4.1	4.1	4.2	4.9	4.3 +/- 0.8
EPSJ-08**	4.3	3.2	3.6	5.1	4.1 +/- 1.7
EPSP-09**	8.5	7.7	7.4	9.4	8.3 +/- 1.8
EPSP-10**	8.3	7.7	7.5	9.1	8.2 +/- 1.4

** Emergency Plan TLDs. Included for informational purposes only.

TABLE #3-2

DIRECT RADIATION MEASURMENTS - SECTOR QUARTERLY TLD RESULTS

mR/Std. Month (30.4 days) ± 2 Sigma

Station Name	**First Quarter** 01/05/2006 04/06/2006	**Second Quarter** 04/06/2006 06/29/2006	**Third Quarter** 06/29/2006 09/28/2006	**Fourth Quarter** 09/28/2006 01/05/2007	**Quarterly Average**	**Annual TLD**
STA-01	4.9	4.0	3.9	4.1	4.2 ± 0.9	3.7
STA-02	2.4	2.5	3.0	3.3	2.8 ± 0.8	2.1
STA-03	2.6	2.3	2.5	3.0	2.6 ± 0.6	2.0
STA-04	2.8	2.7	2.6	3.0	2.8 ± 0.3	1.9
STA-05	3.7	3.2	3.6	3.9	3.6 ± 0.6	3.6
STA-05A	3.6	2.4	2.6	4.4	3.3 ± 1.9	2.6
STA-06	5.1	4.6	4.2	5.1	4.8 ± 0.9	4.6
STA-07	3.6	3.2	3.7	4.1	3.7 ± 0.7	3.5
STA-21	3.3	3.1	3.2	3.9	3.4 ± 0.7	3.3
STA-22	4.6	5.0	4.6	5.3	4.9 ± 0.7	4.7
STA-23	5.7	5.1	5.3	6.1	5.6 ± 0.9	5.1
STA-24	3.2	3.2	3.1	4.6	3.5 ± 1.4	3.6
Average ± 2 s.d.	3.8 ± 2.1	3.4 ± 2.0	3.5 ± 1.7	4.2 ± 1.9	3.7 ± 1.7	3.4 ± 2.2

Table 3-3
Air Particulate
Gross Beta Radioactivity
[pCi x 10^{-3}/m3]

Period Ending	Station 01	Station 02	Station 03	Station 04	Station 05	Station 05A	Station 06
01/04/06	20.2 +/- 4.6	19.0 +/- 4.6	13.3 +/- 4.2	22.2 +/- 4.6	25.6 +/- 4.8	21.5 +/- 4.6	20.9 +/- 4.5
01/11/06	19.1 +/- 4.4	21.6 +/- 4.5	23.9 +/- 4.7	22.0 +/- 4.5	25.0 +/- 4.7	23.6 +/- 4.6	25.4 +/- 4.7
01/18/06	17.1 +/- 2.3	12.8 +/- 2.2	18.9 +/- 2.4	18.2 +/- 2.4	17.6 +/- 2.4	16.5 +/- 2.4	16.2 +/- 2.4
01/25/06	14.6 +/- 4.1	11.4 +/- 3.8	9.0 +/- 3.6	16.3 +/- 4.1	17.9 +/- 4.2	16.9 +/- 4.2	11.7 +/- 3.8
02/01/06	21.8 +/- 4.3	15.4 +/- 3.9	22.5 +/- 4.4	21.1 +/- 4.3	20.0 +/- 4.2	21.5 +/- 4.3	20.8 +/- 4.3
02/08/06	22.7 +/- 4.3	18.6 +/- 4.2	24.3 +/- 4.4	24.5 +/- 4.4	25.8 +/- 4.5	22.6 +/- 4.3	24.3 +/- 4.4
02/15/06	25.3 +/- 4.7	20.2 +/- 4.4	20.2 +/- 4.4	27.2 +/- 4.8	20.0 +/- 4.5	15.8 +/- 4.2	22.9 +/- 4.6
02/22/06	27.0 +/- 4.8	26.2 +/- 4.8	26.4 +/- 4.8	27.6 +/- 4.8	32.3 +/- 5.1	30.9 +/- 5.0	25.5 +/- 4.8
03/01/06	29.4 +/- 4.7	9.7 +/- 3.6	29.4 +/- 4.7	24.5 +/- 4.5	36.2 +/- 5.0	28.6 +/- 4.7	26.9 +/- 4.6
03/08/06	25.3 +/- 4.7	-0.1 +/- 3.3	13.0 +/- 4.1	16.6 +/- 4.3	21.4 +/- 4.6	20.1 +/- 4.5	15.6 +/- 4.3
03/16/06	25.3 +/- 3.9	0.9 +/- 2.3	24.3 +/- 3.9	22.6 +/- 3.9	24.1 +/- 3.9	22.4 +/- 3.8	23.5 +/- 3.9
03/22/06	23.2 +/- 5.1	25.4 +/- 5.3	20.4 +/- 5.0	29.0 +/- 5.5	29.3 +/- 5.5	17.4 +/- 4.8	22.2 +/- 5.1
03/29/06	12.2 +/- 4.1	11.0 +/- 4.0	11.0 +/- 4.0	11.1 +/- 4.1	13.9 +/- 4.2	12.0 +/- 4.1	9.0 +/- 3.9
04/05/06	28.4 +/- 4.5	22.9 +/- 4.3	11.3 +/- 3.6	25.8 +/- 4.4	27.7 +/- 4.5	23.4 +/- 4.4	22.4 +/- 4.2
04/12/06	16.3 +/- 5.1	15.4 +/- 3.9	23.3 +/- 4.3	16.2 +/- 3.9	21.7 +/- 4.2	20.7 +/- 4.1	22.5 +/- 4.3
04/19/06	29.5 +/- 5.7	22.6 +/- 4.3	20.8 +/- 4.2	22.0 +/- 4.3	20.4 +/- 4.2	20.7 +/- 4.2	18.8 +/- 4.1
04/26/06	25.9 +/- 5.9	19.5 +/- 4.4	18.5 +/- 4.4	18.4 +/- 4.4	18.7 +/- 4.4	18.3 +/- 4.4	15.0 +/- 4.2
05/04/06	25.1 +/- 3.8	20.4 +/- 2.9	21.4 +/- 2.9	18.5 +/- 2.8	19.4 +/- 2.9	16.2 +/- 3.7	16.4 +/- 2.8
05/11/06	24.5 +/- 5.6	19.1 +/- 4.3	16.7 +/- 4.2	20.1 +/- 4.3	16.3 +/- 4.2	17.2 +/- 4.3	19.1 +/- 4.3
05/17/06	15.1 +/- 4.5	15.1 +/- 3.4	14.2 +/- 3.4	13.1 +/- 3.4	16.1 +/- 3.4	10.9 +/- 4.2	13.1 +/- 3.4
05/25/06	25.1 +/- 2.8	20.0 +/- 2.1	18.3 +/- 2.1	17.5 +/- 2.0	17.0 +/- 2.0	19.0 +/- 4.8	16.0 +/- 2.0
05/31/06	35.2 +/- 7.1	34.7 +/- 5.9	33.0 +/- 5.6	30.7 +/- 5.5	29.6 +/- 5.4	37.1 +/- 5.8	30.0 +/- 5.5
06/07/06	31.6 +/- 6.2	27.1 +/- 4.8	28.1 +/- 4.8	25.1 +/- 4.7	19.9 +/- 4.4	23.0 +/- 4.6	20.8 +/- 4.4
06/14/06	29.3 +/- 6.1	24.5 +/- 4.7	23.3 +/- 4.6	20.3 +/- 4.4	20.0 +/- 4.5	23.9 +/- 4.7	20.0 +/- 4.5
06/21/06	31.7 +/- 5.7	28.5 +/- 5.4	27.2 +/- 4.5	17.5 +/- 3.9	20.8 +/- 4.1	24.1 +/- 4.3	23.1 +/- 4.2
06/28/06	24.9 +/- 5.4	18.6 +/- 4.4	22.5 +/- 4.5	18.9 +/- 4.4	20.7 +/- 4.3	18.6 +/- 4.2	16.7 +/- 4.1

Table 3-3
Air Particulate
Gross Beta Radioactivity
[pCi x 10^{-3}/m3]

Period Ending	Station 07			Station 21			Station 22			Station 23			Station 24		
01/04/06	20.3	+/-	4.6	18.9	+/-	4.5	20.9	+/-	4.6	15.9	+/-	4.5	23.2	+/-	4.7
01/11/06	19.8	+/-	4.4	19.7	+/-	4.4	21.2	+/-	4.5	22.6	+/-	4.6	20.1	+/-	4.4
01/18/06	13.8	+/-	2.3	31.0	+/-	6.8	15.0	+/-	2.3	18.9	+/-	2.4	21.4	+/-	2.5
01/25/06	11.2	+/-	3.8	14.6	+/-	4.0	15.2	+/-	4.1	14.9	+/-	4.1	14.3	+/-	4.0
02/01/06	16.3	+/-	4.0	20.4	+/-	4.3	19.3	+/-	4.2	17.4	+/-	4.0	20.5	+/-	4.3
02/08/06	19.4	+/-	4.2	16.8	+/-	4.0	21.0	+/-	4.2	20.2	+/-	4.1	19.6	+/-	4.1
02/15/06	19.2	+/-	4.3	22.8	+/-	4.6	22.4	+/-	4.5	18.2	+/-	4.3	23.7	+/-	4.6
02/22/06	21.2	+/-	4.6	28.7	+/-	4.9	29.7	+/-	4.9	23.4	+/-	4.7	31.7	+/-	5.1
03/01/06	25.4	+/-	4.6	29.4	+/-	4.7	32.4	+/-	4.9	32.3	+/-	4.9	31.2	+/-	4.8
03/08/06	18.0	+/-	4.4	18.5	+/-	4.4	21.9	+/-	4.6	21.1	+/-	4.5	18.5	+/-	4.4
03/16/06	19.2	+/-	3.6	23.4	+/-	3.9	24.6	+/-	3.9	23.5	+/-	3.9	27.2	+/-	4.1
03/22/06	20.3	+/-	5.0	24.5	+/-	5.2	22.5	+/-	5.1	20.2	+/-	5.0	21.7	+/-	5.0
03/29/06	8.9	+/-	3.9	11.2	+/-	4.1	15.0	+/-	4.2	12.3	+/-	4.1	13.4	+/-	4.2
04/05/06	18.1	+/-	4.0	22.8	+/-	4.3	25.2	+/-	4.4	21.5	+/-	4.2	23.4	+/-	4.3
04/12/06	15.3	+/-	3.8	21.9	+/-	4.4	25.2	+/-	4.4	14.8	+/-	3.8	15.1	+/-	3.9
04/19/06	14.9	+/-	3.8	18.5	+/-	4.1	20.0	+/-	4.1	23.6	+/-	4.3	16.0	+/-	3.9
04/26/06	16.3	+/-	4.2	18.3	+/-	4.4	14.9	+/-	4.2	21.3	+/-	4.5	17.1	+/-	4.3
05/04/06	16.7	+/-	2.8	15.9	+/-	2.7	22.4	+/-	3.0	20.0	+/-	2.9	23.9	+/-	3.3
05/11/06*	11.0	+/-	3.8	16.5	+/-	4.1	13.5	+/-	3.9	13.3	+/-	4.0	15.4	+/-	4.5
05/17/06	9.8	+/-	3.2	14.3	+/-	3.5	14.5	+/-	3.5	13.3	+/-	3.3	16.0	+/-	3.1
05/25/06	14.5	+/-	1.9	14.8	+/-	2.0	17.0	+/-	2.0	18.1	+/-	2.1	18.4	+/-	2.1
05/31/06	28.5	+/-	5.4	32.1	+/-	5.6	37.2	+/-	5.8	34.3	+/-	5.7	33.4	+/-	5.6
06/07/06	13.2	+/-	4.1	23.4	+/-	4.6	20.8	+/-	4.4	30.2	+/-	4.9	14.7	+/-	4.2
06/14/06	15.3	+/-	4.2	16.0	+/-	4.2	19.1	+/-	4.4	21.5	+/-	4.6	17.5	+/-	4.3
06/21/06	16.3	+/-	3.8	20.5	+/-	4.1	24.3	+/-	4.3	14.0	+/-	3.7	22.9	+/-	4.2
06/28/06	14.7	+/-	4.0	17.9	+/-	4.2	21.5	+/-	4.3	20.8	+/-	4.4	18.3	+/-	4.2

* Station 24 collected on 05/10/06

Table 3-3
Air Particulate
Gross Beta Radioactivity
[pCi x 10^{-3}/m3]

Period Ending	Station 01	Station 02	Station 03	Station 04	Station 05	Station 05A	Station 06
07/05/06	43.2 +/- 6.7	37.3 +/- 5.4	35.5 +/- 5.3	30.3 +/- 5.1	29.7 +/- 5.1	33.4 +/- 5.2	22.1 +/- 4.7
07/12/06	30.5 +/- 6.3	23.7 +/- 4.7	22.5 +/- 4.5	24.6 +/- 4.6	22.1 +/- 4.6	27.1 +/- 4.8	22.3 +/- 4.5
07/19/06	34.6 +/- 6.3	33.2 +/- 5.1	28.6 +/- 4.9	25.4 +/- 4.7	28.4 +/- 4.9	28.6 +/- 4.8	23.5 +/- 4.6
07/26/06	19.5 +/- 5.8	22.6 +/- 4.7	21.6 +/- 4.7	21.8 +/- 4.8	22.7 +/- 4.8	19.0 +/- 4.6	12.1 +/- 4.2
08/02/06	46.3 +/- 7.0	37.3 +/- 5.3	37.7 +/- 5.3	36.7 +/- 5.3	37.1 +/- 5.3	36.6 +/- 5.3	34.1 +/- 5.1
08/09/06	53.2 +/- 6.8	37.7 +/- 5.1	42.4 +/- 5.3	30.1 +/- 4.7	37.7 +/- 5.1	39.6 +/- 5.1	38.1 +/- 5.1
08/16/06	36.5 +/- 6.1	24.8 +/- 4.5	27.8 +/- 4.6	29.5 +/- 4.7	20.6 +/- 4.3	28.5 +/- 4.7	29.2 +/- 4.8
08/23/06	30.9 +/- 6.1	24.3 +/- 4.7	30.0 +/- 5.0	27.3 +/- 4.8	22.2 +/- 4.6	27.9 +/- 4.8	23.4 +/- 4.6
08/30/06	47.8 +/- 7.1	40.0 +/- 5.5	45.6 +/- 5.7	39.7 +/- 5.5	31.3 +/- 5.1	44.5 +/- 5.7	41.4 +/- 5.5
09/06/06	14.7 +/- 5.1	10.8 +/- 3.8	7.7 +/- 3.6	9.7 +/- 3.8	10.5 +/- 3.8	11.4 +/- 3.9	7.5 +/- 3.5
09/13/06	55.5 +/- 7.3	32.6 +/- 5.2	28.8 +/- 4.9	31.2 +/- 5.0	37.9 +/- 5.3	32.1 +/- 5.1	30.6 +/- 5.0
09/20/06	23.4 +/- 4.5	24.8 +/- 4.6	17.0 +/- 4.2	26.7 +/- 4.7	18.1 +/- 4.3	21.0 +/- 4.4	15.6 +/- 4.2
09/27/06	24.3 +/- 4.7	25.8 +/- 4.8	19.7 +/- 4.5	26.7 +/- 4.9	22.1 +/- 4.7	24.7 +/- 4.8	18.4 +/- 4.5
10/04/06	38.2 +/- 5.3	26.7 +/- 4.8	23.8 +/- 4.6	34.1 +/- 5.1	26.6 +/- 4.7	23.5 +/- 4.6	25.6 +/- 4.7
10/11/06	35.7 +/- 5.1	26.1 +/- 4.6	22.9 +/- 4.6	30.3 +/- 4.9	26.2 +/- 4.7	29.3 +/- 4.8	26.5 +/- 4.7
10/18/06	37.5 +/- 4.9	29.9 +/- 4.7	29.2 +/- 4.6	38.8 +/- 5.0	28.5 +/- 4.6	33.2 +/- 4.9	38.5 +/- 5.1
10/26/06	24.5 +/- 4.2	25.0 +/- 4.2	20.4 +/- 4.0	28.6 +/- 4.4	22.1 +/- 4.1	22.3 +/- 4.1	23.9 +/- 4.2
11/01/06	27.1 +/- 5.4	29.3 +/- 5.5	26.8 +/- 5.3	31.6 +/- 5.6	30.2 +/- 5.5	31.2 +/- 5.5	31.2 +/- 5.5
11/09/06	32.2 +/- 4.4	29.4 +/- 4.2	19.7 +/- 3.7	22.1 +/- 3.9	28.1 +/- 4.1	23.9 +/- 3.9	27.1 +/- 4.1
11/15/06	29.5 +/- 5.4	27.4 +/- 5.3	29.9 +/- 5.5	24.7 +/- 5.2	26.6 +/- 5.2	27.9 +/- 5.3	23.6 +/- 5.1
11/21/06	28.8 +/- 5.5	27.4 +/- 5.4	30.0 +/- 5.5	22.4 +/- 5.1	25.0 +/- 5.3	27.6 +/- 5.5	29.6 +/- 5.5
11/29/06	34.9 +/- 4.8	27.7 +/- 4.5	22.4 +/- 4.2	32.5 +/- 4.7	32.6 +/- 4.6	30.6 +/- 4.6	32.3 +/- 4.6
12/07/06	47.4 +/- 5.3	40.5 +/- 5.0	36.2 +/- 4.8	42.6 +/- 5.1	40.0 +/- 5.0	32.5 +/- 4.7	45.5 +/- 5.2
12/13/06	45.9 +/- 6.4	41.4 +/- 6.1	46.3 +/- 6.4	47.4 +/- 6.4	34.3 +/- 5.8	39.2 +/- 6.0	42.2 +/- 6.2
12/20/06	43.5 +/- 5.5	43.9 +/- 5.4	40.1 +/- 5.4	44.4 +/- 5.5	39.9 +/- 5.3	36.5 +/- 5.2	39.5 +/- 5.3
12/27/06	29.9 +/- 5.1	27.1 +/- 5.0	26.0 +/- 4.9	26.3 +/- 5.0	20.6 +/- 4.7	25.3 +/- 4.9	28.4 +/- 5.0

Table 3-3
Air Particulate
Gross Beta Radioactivity
[pCi x 10^{-3}/m3]

Period Ending	Station 07			Station 21			Station 22			Station 23			Station 24		
07/05/06	27.2	+/-	4.9	30.2	+/-	5.1	30.8	+/-	5.1	27.1	+/-	5.0	33.6	+/-	5.3
07/12/06	19.1	+/-	4.4	24.5	+/-	4.5	22.9	+/-	4.7	18.8	+/-	4.4	24.1	+/-	4.6
07/19/06	23.5	+/-	4.6	24.5	+/-	4.9	27.9	+/-	4.8	25.5	+/-	4.7	29.5	+/-	4.9
07/26/06	23.9	+/-	4.8	19.0	+/-	4.6	26.0	+/-	4.9	24.0	+/-	4.8	20.6	+/-	4.7
08/02/06	26.4	+/-	4.8	39.7	+/-	5.4	35.6	+/-	5.2	37.2	+/-	5.3	36.9	+/-	5.3
08/09/06	30.4	+/-	4.7	33.3	+/-	4.8	37.6	+/-	5.0	37.2	+/-	5.1	33.8	+/-	4.8
08/16/06	21.7	+/-	4.3	28.5	+/-	4.7	24.6	+/-	4.5	34.1	+/-	4.9	31.9	+/-	4.8
08/23/06	21.3	+/-	4.5	22.6	+/-	4.6	28.5	+/-	5.0	22.7	+/-	4.6	14.0	+/-	4.1
08/30/06	25.8	+/-	4.9	41.0	+/-	5.5	46.6	+/-	5.7	44.8	+/-	5.7	46.7	+/-	5.8
09/06/06	7.2	+/-	3.6	8.8	+/-	3.7	10.4	+/-	3.8	9.8	+/-	3.7	10.4	+/-	3.8
09/13/06	32.4	+/-	5.2	30.2	+/-	5.0	34.2	+/-	5.2	35.6	+/-	5.3	40.1	+/-	5.4
09/20/06	27.8	+/-	4.7	22.6	+/-	4.5	20.7	+/-	4.4	22.4	+/-	4.5	23.3	+/-	4.5
09/27/06	24.0	+/-	4.8	24.0	+/-	4.8	30.4	+/-	5.1	22.2	+/-	4.7	23.9	+/-	4.7
10/04/06	33.6	+/-	5.1	30.0	+/-	4.9	27.1	+/-	4.8	27.2	+/-	4.8	27.1	+/-	4.7
10/11/06	28.2	+/-	4.7	26.6	+/-	4.7	26.3	+/-	4.7	34.2	+/-	4.9	31.9	+/-	5.0
10/18/06	37.8	+/-	5.1	31.4	+/-	4.7	34.8	+/-	4.9	32.9	+/-	4.9	39.0	+/-	5.1
10/26/05	23.8	+/-	4.2	20.0	+/-	4.0	20.7	+/-	4.0	18.5	+/-	3.9	23.6	+/-	4.2
11/01/06	29.3	+/-	5.4	28.2	+/-	5.4	27.8	+/-	5.4	35.1	+/-	5.7	29.1	+/-	5.4
11/09/06	29.2	+/-	4.2	26.5	+/-	4.1	24.5	+/-	4.0	26.3	+/-	4.1	26.0	+/-	4.1
11/15/06	27.3	+/-	5.3	23.1	+/-	5.0	18.9	+/-	4.8	26.6	+/-	5.2	27.8	+/-	5.3
11/21/06	26.6	+/-	5.3	18.7	+/-	5.0	25.8	+/-	5.3	30.9	+/-	5.6	27.3	+/-	5.4
11/29/06	31.8	+/-	4.6	31.5	+/-	4.7	30.8	+/-	4.6	25.6	+/-	4.4	38.6	+/-	5.0
12/07/06	6.8	+/-	3.4	37.0	+/-	4.8	41.4	+/-	5.0	40.7	+/-	5.0	42.2	+/-	5.0
12/13/06	49.5	+/-	7.1	35.8	+/-	5.9	40.8	+/-	6.1	47.2	+/-	6.3	39.0	+/-	6.0
12/20/06	39.4	+/-	5.1	38.9	+/-	5.3	40.9	+/-	5.4	42.7	+/-	5.4	42.9	+/-	5.5
12/27/06	26.2	+/-	5.0	25.9	+/-	4.9	22.6	+/-	4.9	28.5	+/-	5.1	32.0	+/-	5.2

Table 3-4
Airborne Iodine
I - 131
[pCi x 10^{-3}/m3]

Period Ending	Station 01			Station 02			Station 03			Station 04			Station 05			Station 05A			Station 06		
01/04/06	-2.0	+/-	19.0	-24.0	+/-	21.0	-3.0	+/-	19.0	2.0	+/-	19.0	7.0	+/-	19.0	-2.0	+/-	16.0	12.0	+/-	19.0
01/11/06	0.0	+/-	15.0	9.0	+/-	16.0	2.0	+/-	16.0	-2.0	+/-	17.0	-12.0	+/-	16.0	-11.0	+/-	16.0	16.0	+/-	18.0
01/18/06	7.0	+/-	14.0	1.0	+/-	12.0	1.0	+/-	12.0	-9.0	+/-	15.0	9.0	+/-	16.0	3.0	+/-	11.0	6.0	+/-	13.0
01/25/06	5.0	+/-	15.0	-3.0	+/-	16.0	0.0	+/-	18.0	12.0	+/-	16.0	2.0	+/-	16.0	-2.0	+/-	19.0	0.0	+/-	18.0
02/01/06	-5.0	+/-	18.0	-11.0	+/-	16.0	8.0	+/-	14.0	-17.0	+/-	16.0	11.0	+/-	17.0	22.0	+/-	17.0	-12.0	+/-	18.0
02/08/06	-4.0	+/-	14.0	10.0	+/-	14.0	-11.0	+/-	14.0	3.0	+/-	14.0	6.0	+/-	13.0	-1.0	+/-	13.0	-6.0	+/-	15.0
02/15/06	10.0	+/-	18.0	-3.0	+/-	18.0	19.0	+/-	17.0	-12.0	+/-	16.0	7.0	+/-	14.0	-8.0	+/-	17.0	-5.0	+/-	16.0
02/22/06	-26.0	+/-	21.0	0.0	+/-	19.0	0.0	+/-	17.0	-7.0	+/-	18.0	11.0	+/-	16.0	-2.0	+/-	14.0	-9.0	+/-	17.0
03/01/06	0.0	+/-	15.0	6.0	+/-	15.0	5.0	+/-	15.0	-8.0	+/-	14.0	-5.0	+/-	13.0	-5.0	+/-	16.0	-5.0	+/-	14.0
03/08/06	0.0	+/-	15.0	8.0	+/-	17.0	5.0	+/-	12.0	-8.0	+/-	16.0	-9.0	+/-	14.0	16.0	+/-	15.0	-11.0	+/-	16.0
03/16/06	11.0	+/-	29.0	10.0	+/-	28.0	7.0	+/-	18.0	13.0	+/-	23.0	10.0	+/-	23.0	-25.0	+/-	23.0	17.0	+/-	24.0
03/22/06	6.0	+/-	13.0	11.0	+/-	12.0	0.0	+/-	14.0	0.0	+/-	16.0	-11.0	+/-	15.0	-10.0	+/-	17.0	3.0	+/-	14.0
03/29/06	-15.0	+/-	15.0	-7.0	+/-	16.0	-3.0	+/-	15.0	-2.0	+/-	13.0	5.0	+/-	14.0	-17.0	+/-	16.0	-7.0	+/-	15.0
04/05/06	5.0	+/-	15.0	1.0	+/-	16.0	0.0	+/-	17.0	18.0	+/-	19.0	8.0	+/-	13.0	7.0	+/-	15.0	3.0	+/-	17.0
04/12/06	13.0	+/-	20.0	-2.0	+/-	11.0	-5.0	+/-	14.0	-5.0	+/-	15.0	-5.0	+/-	15.0	0.0	+/-	13.0	5.0	+/-	13.0
04/19/06	-2.0	+/-	17.0	0.0	+/-	15.0	-3.0	+/-	13.0	11.0	+/-	17.0	2.0	+/-	16.0	-3.0	+/-	13.0	-24.0	+/-	17.0
04/26/06	-8.0	+/-	17.0	1.0	+/-	11.0	-9.0	+/-	12.0	3.0	+/-	15.0	6.0	+/-	11.0	-1.0	+/-	12.0	3.0	+/-	13.0
05/04/06	9.0	+/-	14.0	-8.0	+/-	15.0	-3.0	+/-	10.0	-1.0	+/-	11.0	-1.0	+/-	13.0	-8.0	+/-	16.0	3.0	+/-	11.0
05/11/06	-9.0	+/-	15.0	-10.0	+/-	14.0	3.0	+/-	14.0	0.0	+/-	12.0	9.0	+/-	12.0	0.0	+/-	14.0	0.0	+/-	16.0
05/17/06	2.0	+/-	23.0	-3.0	+/-	18.0	-5.0	+/-	16.0	9.0	+/-	15.0	-2.0	+/-	20.0	-18.0	+/-	23.0	-7.0	+/-	16.0
05/25/06	-9.0	+/-	18.0	-3.0	+/-	13.0	7.0	+/-	16.0	-10.0	+/-	14.0	-7.0	+/-	14.0	-7.0	+/-	20.0	-14.0	+/-	13.0
05/31/06	7.0	+/-	27.0	-14.0	+/-	20.0	2.0	+/-	17.0	-9.0	+/-	18.0	3.0	+/-	17.0	12.0	+/-	17.0	0.0	+/-	20.0
06/07/06	-6.0	+/-	20.0	3.0	+/-	11.0	-8.0	+/-	14.0	-2.0	+/-	15.0	5.0	+/-	15.0	-8.0	+/-	17.0	-5.0	+/-	14.0
06/14/06	18.0	+/-	20.0	-12.0	+/-	16.0	7.0	+/-	15.0	17.0	+/-	17.0	-3.0	+/-	17.0	-3.0	+/-	18.0	7.0	+/-	20.0
06/21/06	13.0	+/-	22.0	2.0	+/-	21.0	-2.0	+/-	17.0	3.0	+/-	16.0	-5.0	+/-	15.0	-7.0	+/-	17.0	-7.0	+/-	13.0
06/28/06	8.0	+/-	19.0	-8.0	+/-	18.0	17.0	+/-	17.0	6.0	+/-	14.0	-5.0	+/-	14.0	-2.0	+/-	16.0	-2.0	+/-	18.0

Table 3-4
Airborne Iodine
I - 131
[pCi x 10^{-3}/m3]

Period Ending	Station 07			Station 21			Station 22			Station 23			Station 24		
01/04/06	-2.0	+/-	14.0	-11.0	+/-	16.0	-11.0	+/-	22.0	7.0	+/-	20.0	-5.0	+/-	17.0
01/11/06	-5.0	+/-	12.0	-5.0	+/-	16.0	5.0	+/-	15.0	-6.0	+/-	13.0	-3.0	+/-	15.0
01/18/06	0.0	+/-	13.0	-4.0	+/-	23.0	-1.0	+/-	14.0	-3.0	+/-	15.0	6.0	+/-	14.0
01/25/06	-2.0	+/-	18.0	4.0	+/-	15.0	-29.0	+/-	19.0	5.0	+/-	15.0	-2.0	+/-	18.0
02/01/06	6.0	+/-	15.0	-11.0	+/-	17.0	8.0	+/-	16.0	3.0	+/-	15.0	16.0	+/-	16.0
02/08/06	4.0	+/-	15.0	4.0	+/-	18.0	6.0	+/-	15.0	-12.0	+/-	15.0	3.0	+/-	15.0
02/15/06	-10.0	+/-	15.0	-3.0	+/-	18.0	-5.0	+/-	18.0	-3.0	+/-	19.0	0.0	+/-	18.0
02/22/06	4.0	+/-	15.0	-2.0	+/-	11.0	-8.0	+/-	19.0	-2.0	+/-	16.0	0.0	+/-	15.0
03/01/06	-13.0	+/-	17.0	3.0	+/-	17.0	-8.0	+/-	15.0	-2.0	+/-	15.0	14.0	+/-	13.0
03/08/06	-12.0	+/-	15.0	6.0	+/-	18.0	3.0	+/-	15.0	0.0	+/-	15.0	3.0	+/-	15.0
03/16/06	9.0	+/-	26.0	7.0	+/-	22.0	0.0	+/-	28.0	19.0	+/-	27.0	-4.0	+/-	23.0
03/22/06	-2.0	+/-	17.0	11.0	+/-	16.0	8.0	+/-	18.0	10.0	+/-	19.0	7.0	+/-	16.0
03/29/06	-14.0	+/-	17.0	-14.0	+/-	15.0	-3.0	+/-	14.0	-1.0	+/-	11.0	-2.0	+/-	13.0
04/05/06	4.0	+/-	16.0	-6.0	+/-	18.0	-24.0	+/-	18.0	7.0	+/-	18.0	8.0	+/-	16.0
04/12/06	-3.0	+/-	13.0	2.0	+/-	16.0	-8.0	+/-	17.0	3.0	+/-	16.0	0.0	+/-	15.0
04/19/06	6.0	+/-	13.0	-11.0	+/-	13.0	-3.0	+/-	16.0	3.0	+/-	12.0	2.0	+/-	12.0
04/26/06	-1.0	+/-	14.0	3.0	+/-	12.0	-10.0	+/-	13.0	13.0	+/-	13.0	1.0	+/-	14.0
05/04/06	1.0	+/-	16.0	-7.0	+/-	12.0	-7.0	+/-	12.0	9.0	+/-	12.0	-2.0	+/-	16.0
05/11/2006*	-2.0	+/-	12.0	-5.0	+/-	18.0	8.0	+/-	16.0	8.0	+/-	15.0	12.0	+/-	17.0
05/17/06	0.0	+/-	18.0	0.0	+/-	13.0	-5.0	+/-	18.0	5.0	+/-	18.0	-3.0	+/-	15.0
05/25/06	-1.0	+/-	14.0	4.0	+/-	10.0	6.0	+/-	16.0	4.4	+/-	9.6	14.0	+/-	15.0
05/31/06	9.0	+/-	17.0	7.0	+/-	18.0	-10.0	+/-	16.0	-4.0	+/-	15.0	9.0	+/-	18.0
06/07/06	-8.0	+/-	16.0	-5.0	+/-	17.0	6.0	+/-	14.0	5.0	+/-	12.0	-9.0	+/-	19.0
06/14/06	4.0	+/-	18.0	7.0	+/-	16.0	-10.0	+/-	14.0	-3.0	+/-	18.0	7.0	+/-	14.0
06/21/06	3.0	+/-	12.0	0.0	+/-	18.0	-3.0	+/-	14.0	-9.0	+/-	14.0	0.0	+/-	14.0
06/28/06	10.0	+/-	17.0	2.0	+/-	19.0	-2.0	+/-	17.0	0.0	+/-	17.0	3.0	+/-	14.0

*Station 24 Collected on 05/10/2006

Table 3-4
Airborne Iodine
I - 131
[pCi x 10^{-3}/m3]

Period Ending	Station 01			Station 02			Station 03			Station 04			Station 05			Station 05A			Station 06		
07/05/06	18.0	+/-	17.0	6.0	+/-	14.0	-2.0	+/-	17.0	-6.0	+/-	13.0	-5.0	+/-	14.0	0.0	+/-	14.0	9.0	+/-	15.0
07/12/06	-17.0	+/-	17.0	3.0	+/-	15.0	5.0	+/-	14.0	6.0	+/-	15.0	15.0	+/-	16.0	-11.0	+/-	16.0	-3.0	+/-	15.0
07/19/06	5.0	+/-	23.0	18.0	+/-	17.0	4.0	+/-	17.0	5.0	+/-	19.0	4.0	+/-	19.0	4.0	+/-	19.0	-17.0	+/-	19.0
07/26/06	-11.0	+/-	19.0	12.0	+/-	15.0	2.0	+/-	17.0	5.0	+/-	16.0	-8.0	+/-	15.0	-18.0	+/-	16.0	8.0	+/-	15.0
08/02/06	-2.0	+/-	17.0	3.0	+/-	14.0	-2.0	+/-	11.0	-9.0	+/-	17.0	5.0	+/-	16.0	-2.0	+/-	14.0	-17.0	+/-	18.0
08/09/06	18.0	+/-	21.0	-3.0	+/-	15.0	3.0	+/-	15.0	11.0	+/-	18.0	-11.0	+/-	15.0	-2.0	+/-	16.0	-2.0	+/-	15.0
08/16/06	13.0	+/-	17.0	1.0	+/-	15.0	-14.0	+/-	16.0	6.0	+/-	12.0	3.0	+/-	18.0	-3.0	+/-	14.0	6.0	+/-	12.0
08/23/06	2.0	+/-	16.0	7.0	+/-	15.0	13.0	+/-	14.0	-1.0	+/-	10.0	4.0	+/-	11.0	6.0	+/-	15.0	-13.0	+/-	13.0
08/30/06	-8.0	+/-	19.0	-9.0	+/-	15.0	11.0	+/-	14.0	-5.0	+/-	15.0	-16.0	+/-	16.0	13.0	+/-	15.0	6.0	+/-	16.0
09/06/06	-13.0	+/-	16.0	1.0	+/-	12.0	-7.0	+/-	15.0	0.0	+/-	14.0	-10.0	+/-	13.0	0.0	+/-	11.0	3.0	+/-	13.0
09/13/06	3.0	+/-	27.0	-10.0	+/-	15.0	-15.0	+/-	16.0	6.0	+/-	17.0	-8.0	+/-	19.0	6.0	+/-	18.0	8.0	+/-	18.0
09/20/06	3.0	+/-	16.0	7.0	+/-	16.0	15.0	+/-	17.0	-2.0	+/-	18.0	3.0	+/-	17.0	-8.0	+/-	12.0	-27.0	+/-	17.0
09/27/06	8.0	+/-	14.0	6.0	+/-	15.0	5.0	+/-	15.0	11.0	+/-	17.0	0.0	+/-	15.0	-2.0	+/-	17.0	-8.0	+/-	15.0
10/04/06	0.0	+/-	19.0	13.0	+/-	18.0	-8.0	+/-	16.0	-7.0	+/-	20.0	-2.0	+/-	15.0	-8.0	+/-	15.0	-3.0	+/-	20.0
10/11/06	-6.0	+/-	18.0	2.0	+/-	14.0	0.0	+/-	20.0	-24.0	+/-	18.0	-2.0	+/-	18.0	13.0	+/-	21.0	0.0	+/-	16.0
10/18/06	6.0	+/-	16.0	0.0	+/-	17.0	-5.0	+/-	18.0	-3.0	+/-	16.0	-2.0	+/-	17.0	7.0	+/-	16.0	-2.0	+/-	15.0
10/26/06	12.0	+/-	14.0	2.0	+/-	12.0	-3.0	+/-	16.0	-11.0	+/-	15.0	3.0	+/-	16.0	5.0	+/-	13.0	-5.0	+/-	15.0
11/01/06	-21.0	+/-	18.0	3.0	+/-	16.0	-18.0	+/-	17.0	13.0	+/-	17.0	0.0	+/-	16.0	0.0	+/-	18.0	-16.0	+/-	17.0
11/09/06	-3.0	+/-	16.0	-17.0	+/-	15.0	-1.0	+/-	14.0	3.0	+/-	17.0	14.0	+/-	16.0	5.0	+/-	14.0	8.0	+/-	12.0
11/15/06	-12.0	+/-	20.0	-5.0	+/-	13.0	11.0	+/-	16.0	5.0	+/-	19.0	0.0	+/-	14.0	2.0	+/-	14.0	9.0	+/-	20.0
11/21/06	-9.0	+/-	24.0	-14.0	+/-	22.0	14.0	+/-	25.0	-2.0	+/-	21.0	-5.0	+/-	20.0	-33.0	+/-	26.0	-12.0	+/-	21.0
11/29/06	-14.0	+/-	13.0	7.0	+/-	14.0	-1.0	+/-	13.0	-4.0	+/-	15.0	11.0	+/-	15.0	4.0	+/-	15.0	11.0	+/-	13.0
12/07/06	-5.0	+/-	12.0	-3.0	+/-	13.0	3.0	+/-	14.0	3.0	+/-	13.0	0.0	+/-	12.0	4.0	+/-	13.0	-3.0	+/-	14.0
12/13/06	-9.0	+/-	16.0	-12.0	+/-	13.0	4.0	+/-	18.0	11.0	+/-	17.0	-9.0	+/-	14.0	14.0	+/-	21.0	-11.0	+/-	16.0
12/20/06	7.0	+/-	17.0	0.0	+/-	18.0	16.0	+/-	16.0	-2.0	+/-	18.0	9.0	+/-	18.0	4.0	+/-	17.0	9.0	+/-	16.0
12/27/06	-2.0	+/-	19.0	8.0	+/-	18.0	8.0	+/-	18.0	6.0	+/-	20.0	6.0	+/-	17.0	8.0	+/-	17.0	-2.0	+/-	23.0

Table 3-4
Airborne Iodine
I - 131
[pCi x 10^{-3}/m3]

Period Ending	Station 07			Station 21			Station 22			Station 23			Station 24		
07/05/06	6.0	+/-	14.0	0.0	+/-	13.0	2.0	+/-	14.0	-19.0	+/-	14.0	3.0	+/-	14.0
07/12/06	-8.0	+/-	13.0	-13.0	+/-	15.0	-9.0	+/-	15.0	6.0	+/-	14.0	14.0	+/-	15.0
07/19/06	6.0	+/-	17.0	-10.0	+/-	18.0	-4.0	+/-	19.0	11.0	+/-	20.0	8.0	+/-	18.0
07/26/06	-3.0	+/-	18.0	-3.0	+/-	19.0	14.0	+/-	15.0	-12.0	+/-	17.0	2.0	+/-	17.0
08/02/06	2.0	+/-	12.0	0.0	+/-	15.0	-3.0	+/-	14.0	-14.0	+/-	13.0	3.0	+/-	15.0
08/09/06	-9.0	+/-	16.0	0.0	+/-	14.0	6.0	+/-	14.0	5.0	+/-	16.0	2.0	+/-	16.0
08/16/06	-7.0	+/-	15.0	-3.0	+/-	16.0	18.0	+/-	15.0	7.0	+/-	15.0	1.0	+/-	15.0
08/23/06	-6.0	+/-	12.0	-9.0	+/-	11.0	4.0	+/-	15.0	-3.0	+/-	15.0	1.0	+/-	17.0
08/30/06	-8.0	+/-	16.0	6.0	+/-	18.0	9.0	+/-	16.0	-11.0	+/-	16.0	-3.0	+/-	16.0
09/06/06	-6.0	+/-	14.0	0.0	+/-	12.0	11.0	+/-	13.0	-7.0	+/-	12.0	0.0	+/-	14.0
09/13/06	8.0	+/-	19.0	-12.0	+/-	23.0	12.0	+/-	19.0	-6.0	+/-	19.0	0.0	+/-	19.0
09/20/06	-8.0	+/-	15.0	-8.0	+/-	17.0	10.0	+/-	18.0	-2.0	+/-	17.0	7.0	+/-	20.0
09/27/06	3.0	+/-	13.0	3.0	+/-	17.0	0.0	+/-	13.0	-3.0	+/-	17.0	3.0	+/-	13.0
10/04/06	14.0	+/-	17.0	3.0	+/-	17.0	2.0	+/-	18.0	0.0	+/-	19.0	-21.0	+/-	17.0
10/11/06	-17.0	+/-	17.0	-19.0	+/-	20.0	11.0	+/-	18.0	-2.0	+/-	17.0	2.0	+/-	17.0
10/18/06	-19.0	+/-	18.0	-8.0	+/-	17.0	-5.0	+/-	16.0	-8.0	+/-	16.0	9.0	+/-	15.0
10/26/06	0.0	+/-	16.0	-6.0	+/-	15.0	-2.0	+/-	14.0	0.0	+/-	15.0	-3.0	+/-	15.0
11/01/06	-10.0	+/-	18.0	5.0	+/-	16.0	-2.0	+/-	16.0	7.0	+/-	17.0	15.0	+/-	18.0
11/09/06	8.0	+/-	13.0	-2.0	+/-	15.0	-9.0	+/-	14.0	6.0	+/-	16.0	-2.0	+/-	14.0
11/15/06	9.0	+/-	15.0	-7.0	+/-	16.0	21.0	+/-	19.0	7.0	+/-	16.0	0.0	+/-	16.0
11/21/06	12.0	+/-	20.0	0.0	+/-	22.0	5.0	+/-	23.0	-10.0	+/-	18.0	12.0	+/-	22.0
11/29/06	-4.0	+/-	12.0	-7.0	+/-	13.0	-6.0	+/-	15.0	12.0	+/-	16.0	1.0	+/-	17.0
12/07/05	1.0	+/-	14.0	8.0	+/-	14.0	11.0	+/-	13.0	3.0	+/-	11.0	-4.0	+/-	12.0
12/13/06	11.0	+/-	21.0	-2.0	+/-	17.0	2.0	+/-	16.0	-7.0	+/-	17.0	-9.0	+/-	19.0
12/20/06	6.0	+/-	15.0	1.0	+/-	18.0	4.0	+/-	18.0	-10.0	+/-	17.0	-20.0	+/-	20.0
12/27/06	0.0	+/-	20.0	-6.0	+/-	18.0	4.0	+/-	22.0	-2.0	+/-	17.0	4.0	+/-	18.0

Table 3-5
Airborne Particulate
Gamma Spectra and Strontium
[pCi x10^{-3}/m3]

Quarter 1

Sampling Location	Be-7			K-40			Cs-134			Cs-137		
01	125.0	+/-	32.0	9.0	+/-	12.0	0.0	+/-	1.2	-0.1	+/-	1.6
02	56.0	+/-	27.0	-3.0	+/-	13.0	-0.1	+/-	0.7	0.3	+/-	1.6
03	123.0	+/-	31.0	-3.0	+/-	12.0	0.2	+/-	0.7	-0.9	+/-	1.6
04	127.0	+/-	30.0	-5.1	+/-	9.7	0.2	+/-	0.9	-0.6	+/-	1.7
05	139.0	+/-	25.0	2.8	+/-	8.2	0.3	+/-	0.5	-0.4	+/-	0.4
05A	96.0	+/-	21.0	0.9	+/-	6.9	0.5	+/-	0.4	-0.3	+/-	0.6
06	76.0	+/-	21.0	-0.8	+/-	9.2	-0.1	+/-	0.7	0.1	+/-	0.6
07	83.0	+/-	21.0	-2.4	+/-	5.6	-0.1	+/-	0.5	0.0	+/-	0.5
21	96.0	+/-	22.0	-1.2	+/-	7.1	-0.1	+/-	0.1	0.3	+/-	0.4
22	109.0	+/-	22.0	2.1	+/-	6.5	0.2	+/-	0.6	0.4	+/-	0.4
23	113.0	+/-	20.0	0.1	+/-	5.1	0.3	+/-	0.4	-0.3	+/-	0.3
24	92.0	+/-	23.0	-5.4	+/-	7.5	-0.3	+/-	0.5	0.4	+/-	0.6

Quarter 2

Sampling Location	Be-7			K-40			Cs-134			Cs-137			Sr-89			Sr-90		
01	200.0	+/-	43.0	-1.0	+/-	11.0	0.1	+/-	0.8	-0.4	+/-	1.0	-2.6	+/-	8.9	0.6	+/-	0.8
02	169.0	+/-	32.0	-4.5	+/-	6.9	-0.2	+/-	0.5	-0.1	+/-	0.6	9.0	+/-	10.0	0.7	+/-	0.8
03	153.0	+/-	31.0	3.8	+/-	8.1	-0.3	+/-	0.5	0.1	+/-	0.7	7.0	+/-	10.0	0.7	+/-	0.8
04	143.0	+/-	32.0	2.7	+/-	9.3	0.1	+/-	0.7	0.1	+/-	0.1	-4.3	+/-	6.4	0.8	+/-	0.7
05	156.0	+/-	32.0	-4.4	+/-	6.8	-0.2	+/-	0.6	-0.1	+/-	0.8	2.0	+/-	9.1	0.6	+/-	0.8
05A	161.0	+/-	35.0	-10.0	+/-	10.0	-0.2	+/-	0.7	-0.5	+/-	0.7	-4.7	+/-	6.8	0.7	+/-	0.7
06	144.0	+/-	30.0	-5.9	+/-	4.9	0.4	+/-	0.8	0.1	+/-	0.7	0.6	+/-	9.5	0.0	+/-	0.8
07	129.0	+/-	22.0	-3.5	+/-	5.8	-0.4	+/-	0.5	0.0	+/-	0.3	-7.4	+/-	5.6	0.9	+/-	0.7
21	150.0	+/-	31.0	-1.4	+/-	8.8	0.4	+/-	0.8	-0.1	+/-	0.7	9.4	+/-	9.6	0.4	+/-	0.7
22	147.0	+/-	29.0	-6.9	+/-	7.7	0.2	+/-	0.6	-0.3	+/-	0.6	2.0	+/-	8.3	0.1	+/-	0.7
23	177.0	+/-	33.0	1.4	+/-	9.6	0.0	+/-	0.1	0.1	+/-	0.7	7.8	+/-	9.8	0.2	+/-	0.7
24	135.0	+/-	30.0	0.0	+/-	11.0	-0.6	+/-	0.7	0.0	+/-	0.7	0.2	+/-	8.1	1.1	+/-	0.8

Sr-89/90 sampled in 2nd Qtr.

Table 3-5
Airborne Particulate and Strontium
Gamma Spectra
[pCi x10^{-3}/m3]

Quarter 3

Sampling Location	Be-7			K-40			Cs-134			Cs-137		
01	110.0	+/-	25.0	-5.0	+/-	7.4	-0.1	+/-	0.5	0.0	+/-	0.6
02	166.0	+/-	27.0	-0.9	+/-	5.8	-0.1	+/-	0.4	0.1	+/-	0.5
03	153.0	+/-	27.0	-0.4	+/-	8.1	-0.1	+/-	0.5	0.1	+/-	0.4
04	153.0	+/-	28.0	-0.8	+/-	6.3	-0.1	+/-	0.5	-0.3	+/-	0.5
05	143.0	+/-	25.0	6.7	+/-	7.9	-0.1	+/-	0.4	0.0	+/-	0.4
05A	153.0	+/-	26.0	-3.3	+/-	7.0	0.2	+/-	0.5	0.3	+/-	0.4
06	114.0	+/-	24.0	-3.4	+/-	6.5	0.4	+/-	0.5	0.0	+/-	0.5
07	123.0	+/-	24.0	0.1	+/-	6.1	0.0	+/-	0.5	0.2	+/-	0.6
21	139.0	+/-	24.0	0.2	+/-	6.6	-0.1	+/-	0.5	0.2	+/-	0.6
22	119.0	+/-	24.0	-4.5	+/-	5.7	-0.2	+/-	0.5	-0.1	+/-	0.5
23	137.0	+/-	25.0	0.1	+/-	6.1	0.0	+/-	0.5	-0.1	+/-	0.5
24	142.0	+/-	26.0	-2.0	+/-	8.8	-0.2	+/-	0.5	-0.5	+/-	0.6

Quarter 4

Sampling Location	Be-7			K-40			Cs-134			Cs-137		
01	187.0	+/-	48.0	4.0	+/-	10.0	0.6	+/-	0.7	-0.2	+/-	0.7
02	40.0	+/-	21.0	-7.0	+/-	10.0	-0.3	+/-	0.5	0.6	+/-	0.6
03	179.0	+/-	43.0	1.6	+/-	5.9	-0.1	+/-	0.7	0.0	+/-	0.7
04	132.0	+/-	37.0	-8.7	+/-	8.5	-0.1	+/-	0.6	0.2	+/-	0.8
05	158.0	+/-	39.0	-0.7	+/-	8.7	0.4	+/-	0.8	0.2	+/-	0.5
05A	127.0	+/-	37.0	6.0	+/-	11.0	-0.7	+/-	0.8	-0.5	+/-	0.6
06	103.0	+/-	37.0	-2.2	+/-	7.3	0.2	+/-	0.8	0.0	+/-	0.7
07	112.0	+/-	39.0	3.4	+/-	9.3	0.3	+/-	0.6	-0.2	+/-	0.5
21	123.0	+/-	35.0	-3.2	+/-	9.4	0.2	+/-	0.7	0.2	+/-	0.5
22	120.0	+/-	37.0	-0.6	+/-	9.5	0.1	+/-	0.7	0.6	+/-	0.7
23	154.0	+/-	42.0	-2.1	+/-	8.2	0.2	+/-	0.7	0.3	+/-	0.7
24	139.0	+/-	37.0	-3.0	+/-	11.0	-0.3	+/-	0.9	-0.4	+/-	0.7

Table 3-6
Soil
Gamma Spectra and Strontium
[pCi/kg]

Station	Sr-89	Sr-90	Be-7	K-40	Cs-134	Cs-137	Th-228
01							
02	Soil Not Collected 2006						
03							
04							
05							
05A							
06							
07							
21							
22							
23							
24							

Table 3-7
Precipitation
Gamma Spectra
[pCi/L]

06/28/2006

Sampling Location	Be-7	K-40	Cr-51	Mn-54	Fe-59	Co-58	Co-60
01A	2.0 +/- 17.0	-13.0 +/- 23.0	6.0 +/- 19.0	-0.1 +/- 1.9	0.0 +/- 4.5	0.9 +/- 2.0	-0.3 +/- 2.0

	Zn-65	Zr-95	Nb-95	Ru-103	Ru-106	Sb-125	I-131
01A	3.3 +/- 4.5	0.4 +/- 3.2	-0.2 +/- 2.4	-3.2 +/- 2.4	0.0 +/- 14.0	2.3 +/- 5.0	0.6 +/- 5.2

	Cs-134	Cs-137	Ba-140	La-140	Th-228
01A	0.3 +/- 1.7	1.5 +/- 1.6	-3.2 +/- 4.4	-3.7 +/- 5.1	6.8 +/- 7.7

12/27/2006

Sampling Location	Be-7	K-40	Cr-51	Mn-54	Fe-59	Co-58	Co-60
01A	10.0 +/- 11.0	11.8 +/- 9.3	-14.0 +/- 19.0	0.1 +/- 0.5	0.7 +/- 2.5	-0.4 +/- 0.9	-0.2 +/- 0.7

	Zn-65	Zr-95	Nb-95	Ru-103	Ru-106	Sb-125	I-131
01A	-1.0 +/- 1.2	-0.9 +/- 1.5	1.3 +/- 1.5	-1.5 +/- 2.4	1.6 +/- 5.3	-0.2 +/- 1.4	-51.0 +/- 91.0

	Cs-134	Cs-137	Ba-140	La-140	Th-228
01A	-0.3 +/- 0.6	-0.2 +/- 0.5	-1.0 +/- 13.0	-2.0 +/- 15.0	-1.1 +/- 2.5

Table 3-7
Precipitation
Gross Beta
[pCi/L]

Sampling Date	Gross Beta			Rainfall (inches)
01/25/06	4.2	+/-	2.1	3.30
02/22/05	13.4	+/-	2.9	2.10
03/30/05	No Sample			0.25
04/28/05	No Sample			2.05
05/31/06	3.5	+/-	1.9	3.50
06/28/06	4.6	+/-	2.1	7.99
07/26/06	1.9	+/-	1.9	4.25
08/30/06	11.4	+/-	2.7	2.03
09/27/05	4.8	+/-	2.1	7.90
10/26/06	5.6	+/-	2.1	5.65
11/29/06	3.3	+/-	1.9	7.49
12/27/06	13.3	+/-	2.8	1.48
				Total = 47.99"

Table 3-8
Milk
Gamma Spectra and Strontium
[pCi/L]

Station 12

Date	K-40	Sr-89	Sr-90	I-131	Cs-134	Cs-137	Ba-140	La-140
01/18/06	1360.0 +/- 160.0	[a]	[a]	-0.04 +/- 0.26	0.7 +/- 4.2	2.2 +/- 3.6	1.2 +/- 5.1	1.3 +/- 5.8
02/15/06	1370.0 +/- 140.0	[a]	[a]	0.23 +/- 0.40	1.6 +/- 4.3	3.7 +/- 3.8	-2.4 +/- 4.9	-2.7 +/- 5.6
03/22/06	1390.0 +/- 130.0	3.0 +/- 2.9	-0.8 +/- 0.9	0.05 +/- 0.30	-4.5 +/- 4.0	-0.8 +/- 3.4	-1.0 +/- 4.4	-1.1 +/- 5.1
04/12/06	1320.0 +/- 140.0	[a]	[a]	0.01 +/- 0.19	-1.0 +/- 3.9	2.1 +/- 4.0	-3.0 +/- 4.2	-3.4 +/- 4.9
05/11/06	1350.0 +/- 130.0	[a]	[a]	0.08 +/- 0.33	-2.5 +/- 3.9	1.3 +/- 3.2	1.8 +/- 5.7	2.1 +/- 6.6
06/14/06	1230.0 +/- 130.0	2.3 +/- 4.2	-1.1 +/- 1.0	-0.13 +/- 0.05	-1.4 +/- 4.4	-1.4 +/- 3.3	-5.1 +/- 5.6	-5.8 +/- 6.5
07/12/06	1400.0 +/- 130.0	[a]	[a]	-0.21 +/- 0.09	-1.9 +/- 3.4	1.5 +/- 2.7	-0.5 +/- 4.4	-0.5 +/- 5.0
08/16/06	1420.0 +/- 130.0	[a]	[a]	0.44 +/- 0.58	3.1 +/- 3.9	-0.3 +/- 3.3	-4.9 +/- 5.7	-5.6 +/- 6.5
09/13/06	1290.0 +/- 130.0	0.9 +/- 4.8	0.4 +/- 1.0	-0.13 +/- 0.05	-1.4 +/- 3.7	-0.8 +/- 3.6	0.3 +/- 5.4	0.4 +/- 6.3
10/18/06	1415.0 +/- 91.0	[a]	[a]	0.04 +/- 0.29	0.8 +/- 2.8	-0.5 +/- 2.3	-5.3 +/- 5.7	-6.1 +/- 6.6
11/15/06	1310.0 +/- 110.0	[a]	[a]	-0.13 +/- 0.05	0.0 +/- 3.4	1.2 +/- 3.0	-0.8 +/- 4.9	-0.9 +/- 5.7
12/13/06	1430.0 +/- 120.0	0.3 +/- 3.8	1.0 +/- 0.9	-0.11 +/- 0.29	-0.3 +/- 3.8	3.1 +/- 3.2	-3.3 +/- 3.9	-3.8 +/- 4.5

Station 13

Date	K-40	Sr-89	Sr-90	I-131	Cs-134	Cs-137	Ba-140	La-140
01/18/06	1390.0 +/- 170.0	[a]	[a]	0.09 +/- 0.39	1.6 +/- 4.3	0.3 +/- 3.5	3.0 +/- 4.2	3.4 +/- 4.9
02/15/06	1360.0 +/- 130.0	[a]	[a]	-0.19 +/- 0.26	-0.9 +/- 3.8	0.3 +/- 3.7	-2.2 +/- 5.5	-2.5 +/- 6.3
03/22/06	1320.0 +/- 110.0	1.6 +/- 4.6	-0.8 +/- 1.0	0.09 +/- 0.35	-0.9 +/- 2.8	2.9 +/- 2.9	-0.8 +/- 4.6	-0.9 +/- 5.3
04/12/06	1350.0 +/- 130.0	[a]	[a]	0.09 +/- 0.26	0.2 +/- 3.7	-0.3 +/- 3.4	-1.0 +/- 4.0	-1.1 +/- 4.6
05/11/06	1280.0 +/- 130.0	[a]	[a]	-0.02 +/- 0.25	2.5 +/- 3.9	0.3 +/- 3.8	-1.5 +/- 6.7	-1.8 +/- 7.7
06/14/06	1400.0 +/- 180.0	-2.1 +/- 4.0	-0.8 +/- 1.0	0.12 +/- 0.38	0.9 +/- 4.9	4.2 +/- 4.8	1.7 +/- 6.4	2.0 +/- 7.3
07/12/06	1320.0 +/- 170.0	[a]	[a]	0.10 +/- 0.39	1.0 +/- 3.8	-0.4 +/- 3.9	5.3 +/- 7.0	6.1 +/- 8.1
08/16/06	1409.0 +/- 95.0	[a]	[a]	-0.14 +/- 0.05	1.9 +/- 2.6	1.9 +/- 2.6	2.3 +/- 3.6	2.7 +/- 4.1
09/13/06	1210.0 +/- 160.0	-0.8 +/- 3.9	-1.3 +/- 1.1	-0.15 +/- 0.05	3.2 +/- 4.3	2.7 +/- 4.2	-0.7 +/- 6.4	-0.8 +/- 7.4
10/18/06	1369.0 +/- 95.0	[a]	[a]	-0.15 +/- 0.06	0.9 +/- 2.8	0.3 +/- 2.5	-1.2 +/- 6.7	-1.4 +/- 7.7
11/15/06	1385.0 +/- 88.0	[a]	[a]	0.18 +/- 0.44	0.7 +/- 2.5	-0.5 +/- 2.1	1.1 +/- 4.0	1.3 +/- 4.6
12/13/06	1440.0 +/- 140.0	3.3 +/- 4.6	0.1 +/- 1.0	0.14 +/- 0.42	-0.2 +/- 4.0	1.3 +/- 3.6	-3.8 +/- 4.7	-4.4 +/- 5.4

[a] Sr-89/90 analyses performed on the last monthly sample of each quarter.

Table 3-9
Food and Vegetation
Gamma Spectra
[pCi/kg]

Sampling Location	Sampling Date	Be-7			K-40			I-131			Cs-134			Cs-137			Th-228		
14	05/17/07	1300.0	+/-	370.0	5610	+/-	850.0	5.0	+/-	22.0	-17.0	+/-	26.0	12.0	+/-	22.0	55.0	+/-	96.0
	06/21/06	910.0	+/-	350.0	27700	+/-	1100.0	0.0	+/-	16.0	10.0	+/-	25.0	3.0	+/-	24.0	10.0	+/-	120.0
	07/19/07	1990.0	+/-	450.0	20500	+/-	1200.0	-7.0	+/-	27.0	34.0	+/-	36.0	30.0	+/-	35.0	90.0	+/-	190.0
	08/23/06	1840.0	+/-	510.0	14400	+/-	1000.0	-5.0	+/-	22.0	41.0	+/-	35.0	5.0	+/-	35.0	100.0	+/-	210.0
	09/20/06	5390.0	+/-	600.0	11360	+/-	900.0	15.0	+/-	23.0	17.0	+/-	33.0	21.0	+/-	29.0	50.0	+/-	160.0
	10/27/06	7180.0	+/-	440.0	16300	+/-	880.0	-18.0	+/-	12.0	-8.0	+/-	27.0	6.0	+/-	18.0	140.0	+/-	100.0
		Be-7			K-40			I-131			Cs-134			Cs-137			Th-228		
15	05/17/07	920.0	+/-	340.0	10150	+/-	920.0	-11.0	+/-	17.0	5.0	+/-	23.0	-21.0	+/-	24.0	70.0	+/-	110.0
	06/21/06	320.0	+/-	260.0	6000	+/-	1000.0	-8.8	+/-	3.9	16.0	+/-	26.0	2.0	+/-	25.0	100.0	+/-	100.0
	07/19/07	900.0	+/-	280.0	13600	+/-	830.0	2.0	+/-	15.0	13.0	+/-	27.0	12.0	+/-	26.0	60.0	+/-	130.0
	08/23/06	800.0	+/-	260.0	10190	+/-	800.0	9.0	+/-	28.0	7.0	+/-	28.0	38.0	+/-	35.0	170.0	+/-	130.0
	09/20/06	3870.0	+/-	510.0	9900	+/-	800.0	9.0	+/-	25.0	2.0	+/-	28.0	40.0	+/-	40.0	120.0	+/-	130.0
	10/27/06	3260.0	+/-	390.0	16130	+/-	890.0	-1.0	+/-	22.0	-9.0	+/-	27.0	88.0	+/-	31.0	150.0	+/-	130.0
		Be-7			K-40			I-131			Cs-134			Cs-137			Th-228		
16	05/17/07	350.0	+/-	270.0	9010	+/-	860.0	-1.0	+/-	19.0	-12.0	+/-	23.0	6.0	+/-	19.0	89.0	+/-	83.0
	06/21/06	970.0	+/-	450.0	51700	+/-	1600.0	21.0	+/-	28.0	3.0	+/-	33.0	29.0	+/-	33.0	130.0	+/-	170.0
	07/19/07	1870.0	+/-	380.0	14820	+/-	910.0	-15.0	+/-	16.0	3.0	+/-	28.0	-19.0	+/-	24.0	100.0	+/-	150.0
	08/23/06	1570.0	+/-	340.0	12380	+/-	890.0	2.0	+/-	26.0	-5.0	+/-	31.0	0.0	+/-	23.0	0.0	+/-	130.0
	09/20/06	2710.0	+/-	500.0	14700	+/-	1100.0	24.0	+/-	32.0	13.0	+/-	35.0	13.0	+/-	26.0	170.0	+/-	140.0
	10/27/06	6670.0	+/-	550.0	20700	+/-	1100.0	-10.0	+/-	19.0	12.0	+/-	29.0	-11.0	+/-	28.0	230.0	+/-	250.0

Table 3-9
Food and Vegetation

Gamma Spectra
[pCi/kg]

Sampling Location	Sampling Date	Be-7			K-40			I-131			Cs-134			Cs-137			Th-228		
23	05/17/07	1260.0	+/-	170.0	9540	+/-	400.0	3.0	+/-	18.0	1.0	+/-	16.0	1.0	+/-	11.0	242.0	+/-	42.0
	06/21/06	2030.0	+/-	390.0	10830	+/-	910.0	-10.6	+/-	4.7	28.0	+/-	31.0	7.0	+/-	27.0	110.0	+/-	120.0
	07/19/07	2800.0	+/-	390.0	13770	+/-	930.0	3.0	+/-	54.0	35.0	+/-	32.0	21.0	+/-	28.0	200.0	+/-	210.0
	08/23/06	550.0	+/-	180.0	11670	+/-	750.0	22.0	+/-	30.0	29.0	+/-	25.0	43.0	+/-	31.0	170.0	+/-	120.0
	09/20/06	2610.0	+/-	440.0	10350	+/-	820.0	-1.0	+/-	19.0	41.0	+/-	34.0	1.0	+/-	29.0	240.0	+/-	110.0
	10/27/06	8030.0	+/-	480.0	20160	+/-	890.0	4.0	+/-	27.0	19.0	+/-	25.0	5.0	+/-	21.0	60.0	+/-	100.0
		Be-7			K-40			I-131			Cs-134			Cs-137			Th-228		
26	05/17/07	1860.0	+/-	300.0	10980	+/-	790.0	17.0	+/-	24.0	15.0	+/-	21.0	2.0	+/-	19.0	69.0	+/-	93.0
	06/21/06	710.0	+/-	290.0	2870	+/-	450.0	-9.3	+/-	4.1	0.0	+/-	18.0	23.0	+/-	18.0	147.0	+/-	67.0
	07/19/07	1930.0	+/-	360.0	16400	+/-	1000.0	-32.0	+/-	53.0	25.0	+/-	33.0	30.0	+/-	27.0	150.0	+/-	160.0
	08/23/06	600.0	+/-	360.0	21170	+/-	990.0	2.0	+/-	27.0	20.0	+/-	30.0	37.0	+/-	30.0	440.0	+/-	110.0
	09/20/06	4320.0	+/-	440.0	8590	+/-	750.0	8.0	+/-	25.0	-8.0	+/-	29.0	-1.0	+/-	21.0	123.0	+/-	99.0
	10/27/06	2660.0	+/-	180.0	3810	+/-	270.0	-12.0	+/-	18.0	-2.0	+/-	9.9	10.3	+/-	8.5	28.0	+/-	39.0

Table 3-10
Well Water
Gamma Spectra, Strontium, and Tritium
[pCi/L]

Sampling Date	H-3	Be-7	K-40	Sr-89	Sr-90	I-131	Ba-140	Station 01A Th-228
03/29/06	-710.0 +/- 910.0	-14.0 +/- 21.0	14.0 +/- 34.0	[a]	[a]	-3.3 +/- 5.2	0.0 +/- 4.7	1.2 +/- 9.3
06/28/06	-230.0 +/- 880.0	-11.0 +/- 14.0	-9.0 +/- 24.0	1.3 +/- 3.6	-0.2 +/- 1.0	-4.4 +/- 5.2	-1.4 +/- 3.7	3.6 +/- 7.0
09/27/06	-1140.0 +/- 920.0	29.0 +/- 20.0	53.0 +/- 26.0	[a]	[a]	3.4 +/- 5.7	1.4 +/- 4.1	2.0 +/- 7.6
12/28/06	-730.0 +/- 870.0	-4.0 +/- 17.0	10.0 +/- 23.0	[a]	[a]	1.4 +/- 3.7	-0.4 +/- 2.4	2.1 +/- 6.0

[a] Sr-89/90 analyses performed on the second quarter sample.

Table 3-11
River Water
Gamma Spectra, Strontium, and Tritium
[pCi/L]

Sampling Date	H-3	Be-7	K-40	Sr-89	Sr-90	I-131	Cs-137	Ba-140	Station 11 Th-228
01/13/06	[b]	6.0 +/- 11.0	-8.0 +/- 20.0	[a]	[a]	-0.2 +/- 0.1	-0.3 +/- 1.2	-1.6 +/- 2.7	-2.6 +/- 5.1
02/16/06	[b]	-1.0 +/- 21.0	-32.0 +/- 36.0	[a]	[a]	0.1 +/- 0.3	-1.1 +/- 2.3	0.3 +/- 4.1	-2.6 +/- 9.1
03/14/06	4300.0 +/- 1000.0	-4.0 +/- 15.0	37.0 +/- 29.0	[a]	[a]	-0.1 +/- 0.0	0.8 +/- 1.6	2.4 +/- 3.2	-1.5 +/- 8.3
04/13/06	[b]	1.0 +/- 20.0	-1.0 +/- 36.0	[a]	[a]	0.0 +/- 0.1	-0.5 +/- 3.0	0.0 +/- 4.4	0.3 +/- 9.6
05/15/06	[b]	-6.0 +/- 17.0	9.0 +/- 31.0	[a]	[a]	0.3 +/- 0.5	0.4 +/- 2.2	-1.2 +/- 3.9	0.6 +/- 7.1
06/15/06	3600.0 +/- 1000.0	7.0 +/- 16.0	21.0 +/- 30.0	2.0 +/- 5.3	0.1 +/- 1.0	0.3 +/- 0.5	-0.3 +/- 2.1	0.2 +/- 3.2	5.3 +/- 8.9
07/13/06	[b]	-9.0 +/- 16.0	-7.0 +/- 26.0	[a]	[a]	-0.2 +/- 0.1	0.4 +/- 2.1	-2.2 +/- 4.2	5.4 +/- 9.0
08/14/06	[b]	6.0 +/- 18.0	9.0 +/- 35.0	[a]	[a]	-0.3 +/- 0.1	1.7 +/- 2.3	-1.2 +/- 4.0	5.2 +/- 8.7
09/14/06	3100.0 +/- 1100.0	1.0 +/- 17.0	25.0 +/- 24.0	[a]	[a]	0.2 +/- 0.4	-0.8 +/- 1.6	-2.8 +/- 3.1	0.6 +/- 6.4
10/16/06	[b]	-0.4 +/- 8.4	1.0 +/- 14.0	[a]	[a]	-0.1 +/- 0.3	0.3 +/- 1.0	1.9 +/- 2.4	3.8 +/- 3.8
11/13/06	[b]	4.0 +/- 16.0	-6.0 +/- 23.0	[a]	[a]	0.1 +/- 0.5	0.3 +/- 1.8	2.3 +/- 3.7	0.5 +/- 6.4
12/15/06	2130.0 +/- 960.0	2.9 +/- 5.5	-4.0 +/- 13.0	[a]	[a]	-0.3 +/- 0.1	-0.2 +/- 0.6	-0.4 +/- 1.6	-0.3 +/- 3.5

[a] Sr-89/90 analyses performed on the second quarter sample.

[b] Tritium analyses on quarterly composite.

Table 3-12

Surface Water

Gamma Spectra, Strontium, Tritium

[pCi/L]

Station 08

Date	H-3	Sr-89	Sr-90	Be-7	K-40	I-131	Cs-137	Ba-140	Th-228
01/13/06	[b]	[a]	[a]	-1.0 +/- 14.0	0.0 +/- 28.0	0.0 +/- 0.3	0.3 +/- 1.7	-1.2 +/- 4.5	5.4 +/- 6.8
02/16/06	[b]	[a]	[a]	17.0 +/- 26.0	7.0 +/- 45.0	0.0 +/- 0.2	-0.9 +/- 3.5	-1.5 +/- 6.1	3.0 +/- 14.0
03/14/06	3700.0 +/- 1000.0	[a]	[a]	0.0 +/- 24.0	-36.0 +/- 41.0	0.0 +/- 0.3	1.9 +/- 2.3	-4.7 +/- 5.8	5.0 +/- 10.0
04/13/06	[b]	[a]	[a]	20.0 +/- 28.0	-13.0 +/- 42.0	0.0 +/- 0.1	0.6 +/- 3.0	-1.0 +/- 4.5	-2.0 +/- 13.0
05/15/07	[b]	[a]	[a]	-1.0 +/- 24.0	-14.0 +/- 38.0	-0.1 +/- 0.0	0.9 +/- 2.7	0.8 +/- 5.2	-2.5 +/- 9.8
06/15/06	3800.0 +/- 1000.0	4.2 +/- 5.6	0.0 +/- 1.0	17.0 +/- 29.0	-27.0 +/- 45.0	0.1 +/- 0.3	3.3 +/- 3.1	1.3 +/- 7.0	6.0 +/- 12.0
07/13/06	[b]	[a]	[a]	11.0 +/- 24.0	6.0 +/- 43.0	0.7 +/- 0.7	3.8 +/- 3.3	-2.6 +/- 5.9	6.0 +/- 12.0
08/14/06	[b]	[a]	[a]	-4.0 +/- 18.0	-30.0 +/- 33.0	-0.1 +/- 0.3	0.1 +/- 2.2	-5.5 +/- 4.8	-5.8 +/- 9.4
09/14/06	2900.0 +/- 1100.0	[a]	[a]	9.0 +/- 16.0	0.0 +/- 34.0	0.0 +/- 0.3	0.7 +/- 1.8	2.2 +/- 5.0	-2.1 +/- 9.1
10/16/06	[b]	[a]	[a]	11.0 +/- 15.0	2.0 +/- 24.0	-0.1 +/- 0.2	-0.4 +/- 1.4	2.1 +/- 4.6	-3.2 +/- 6.1
11/13/06	[b]	[a]	[a]	8.0 +/- 18.0	13.0 +/- 34.0	0.3 +/- 0.5	-0.9 +/- 1.6	-2.7 +/- 5.0	-2.4 +/- 6.5
12/15/06	4100.0 +/- 1000.0	[a]	[a]	-0.4 +/- 7.1	12.0 +/- 11.0	0.3 +/- 0.5	-0.1 +/- 0.7	-0.3 +/- 1.7	-1.2 +/- 2.8

Station 09A

Date	H-3	Sr-89	Sr-90	Be-7	K-40	I-131	Cs-137	Ba-140	Th-228
01/13/06	[b]	[a]	[a]	1.0 +/- 15.0	9.0 +/- 26.0	0.1 +/- 0.4	0.0 +/- 1.6	-0.3 +/- 3.8	-2.9 +/- 6.3
02/16/06	[b]	[a]	[a]	-15.0 +/- 24.0	16.0 +/- 44.0	-0.3 +/- 0.1	0.0 +/- 2.9	-4.7 +/- 6.0	2.0 +/- 11.0
03/14/06	-660.0 +/- 860.0	[a]	[a]	5.0 +/- 23.0	12.0 +/- 39.0	0.0 +/- 0.3	-0.5 +/- 2.4	1.3 +/- 4.5	3.0 +/- 12.0
04/13/06	[b]	[a]	[a]	11.0 +/- 26.0	-3.0 +/- 44.0	-0.1 +/- 0.0	0.1 +/- 3.0	3.2 +/- 4.5	0.0 +/- 12.0
05/15/07	[b]	[a]	[a]	0.0 +/- 21.0	-42.0 +/- 33.0	0.3 +/- 0.5	-1.2 +/- 2.6	1.6 +/- 5.4	-3.0 +/- 10.0
06/15/06	-610.0 +/- 840.0	-0.1 +/- 4.8	-0.2 +/- 0.9	4.0 +/- 29.0	-3.0 +/- 60.0	0.1 +/- 0.3	-1.8 +/- 3.5	-1.0 +/- 5.9	-5.0 +/- 14.0
07/13/06	[b]	[a]	[a]	-16.0 +/- 21.0	-34.0 +/- 38.0	0.4 +/- 0.6	1.2 +/- 2.5	0.8 +/- 6.9	6.0 +/- 11.0
08/14/06	[b]	[a]	[a]	-11.0 +/- 17.0	14.0 +/- 29.0	-0.1 +/- 0.3	-2.3 +/- 2.0	-1.1 +/- 3.4	2.0 +/- 11.0
09/14/06	-290.0 +/- 940.0	[a]	[a]	10.0 +/- 23.0	-10.0 +/- 39.0	-0.1 +/- 0.2	-1.0 +/- 2.2	-1.7 +/- 5.2	-3.8 +/- 8.8
10/16/06	[b]	[a]	[a]	-1.0 +/- 13.0	17.0 +/- 24.0	-0.1 +/- 0.3	-0.2 +/- 1.3	-1.7 +/- 4.3	2.7 +/- 6.7
11/13/06	[b]	[a]	[a]	-8.0 +/- 18.0	13.0 +/- 28.0	0.1 +/- 0.4	-1.8 +/- 2.2	-1.4 +/- 4.5	1.0 +/- 8.2
12/15/06	-350.0 +/- 870.0	[a]	[a]	-0.5 +/- 8.8	15.0 +/- 15.0	0.4 +/- 0.5	-0.7 +/- 0.9	2.1 +/- 3.1	-2.1 +/- 4.7

[a] Sr-89/90 analyses performed on the second quarter sample.

[b] Tritium analyses on quarterly composite.

Table 3-13
Sediment Silt
Gamma Spectra and Strontium
[pCi/Kg]

Date	Sr-89			Sr-90			Be-7			K-40			Mn-54		
03/20/2006															
Station 08	[a]			[a]			-760.0	+/-	820.0	15900.0	+/-	2700.0	-15.0	+/-	69.0
Station 09A	[a]			[a]			-60.0	+/-	540.0	7200.0	+/-	1900.0	27.0	+/-	51.0
Station 11	[a]			[a]			-340.0	+/-	670.0	13600.0	+/-	2500.0	33.0	+/-	71.0

Date	Sr-89			Sr-90			Be-7			K-40			Mn-54		
10/16/2006															
Station 08	-190.0	+/-	140.0	71.0	+/-	98.0	-100.0	+/-	310.0	3010.0	+/-	620.0	-36.0	+/-	32.0
Station 09A	-80.0	+/-	130.0	-13.0	+/-	84.0	-270.0	+/-	310.0	11830.0	+/-	990.0	3.0	+/-	28.0
Station 11	130.0	+/-	170.0	-30.0	+/-	110.0	-150.0	+/-	370.0	16200.0	+/-	1200.0	5.0	+/-	35.0

Date	Co-58			Co-60			Cs-134			Cs-137			Th-228		
03/20/2006															
Station 08	-43.0	+/-	81.0	-18.0	+/-	75.0	40.0	+/-	73.0	-69.0	+/-	80.0	1880.0	+/-	380.0
Station 09A	5.0	+/-	56.0	8.0	+/-	51.0	-22.0	+/-	50.0	14.0	+/-	63.0	420.0	+/-	200.0
Station 11	-44.0	+/-	83.0	-6.0	+/-	67.0	27.0	+/-	58.0	24.0	+/-	71.0	1350.0	+/-	310.0

Date	Co-58			Co-60			Cs-134			Cs-137			Th-228		
10/16/2006															
Station 08	-2.0	+/-	36.0	15.0	+/-	30.0	26.0	+/-	36.0	153.0	+/-	45.0	370.0	+/-	120.0
Station 09A	-5.0	+/-	37.0	-23.0	+/-	32.0	49.0	+/-	36.0	42.0	+/-	36.0	590.0	+/-	120.0
Station 11	-23.0	+/-	39.0	0.0	+/-	33.0	-15.0	+/-	45.0	-13.0	+/-	34.0	1230.0	+/-	140.0

[a] Sr-89/90 analyses performed annually.

Table 3-14
Shoreline Soil
Gamma Spectra and Strontium
[pCi/Kg]

Sample Date	Sr-89	Sr-90	Be-7	K-40	Mn-54
03/20/2006					
Station 08	[a]	[a]	110.0 +/- 510.0	2200.0 +/- 1000.0	6.0 +/- 51.0

Sample Date	Sr-89	Sr-90	Be-7	K-40	Mn-54
10/16/2006					
Station 08	190.0 +/- 160.0	-45.0 +/- 93.0	10.0 +/- 380.0	7910.0 +/- 930.0	16.0 +/- 39.0

Sample Date	Co-58	Co-60	Cs-134	Cs-137	Th-228
03/20/2006					
Station 08	24.0 +/- 53.0	-24.0 +/- 59.0	10.0 +/- 45.0	49.0 +/- 46.0	+/-

Sample Date	Co-58	Co-60	Cs-134	Cs-137	Th-228
10/16/2006					
Station 08	-16.0 +/- 40.0	2.0 +/- 32.0	-24.0 +/- 47.0	-14.0 +/- 36.0	1210.0 +/- 150.0

[a] Sr-89/90 analyses performed annually.

Table 3-15
Fish
Gamma Spectra
[pCi/Kg]

Fish [a] Station 08

Sampling Date	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Cs-134	Cs-137
03/20/06	1360.0 +/- 830.0	0.0 +/- 25.0	27.0 +/- 54.0	12.0 +/- 21.0	24.0 +/- 37.0	-3.0 +/- 94.0	3.0 +/- 29.0	6.0 +/- 32.0
10/17/06	1010.0 +/- 400.0	-3.0 +/- 20.0	4.0 +/- 44.0	0.0 +/- 20.0	-5.0 +/- 18.0	-19.0 +/- 42.0	0.0 +/- 20.0	-2.0 +/- 19.0

Fish [a] Station 25

Sampling Date	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Cs-134	Cs-137
03/20/06	1710.0 +/- 800.0	12.0 +/- 30.0	39.0 +/- 70.0	-15.0 +/- 33.0	-25.0 +/- 31.0	12.0 +/- 65.0	3.0 +/- 25.0	-22.0 +/- 26.0
10/18/06	2050.0 +/- 410.0	0.0 +/- 16.0	25.0 +/- 34.0	9.0 +/- 16.0	10.0 +/- 15.0	-27.0 +/- 34.0	0.0 +/- 17.0	2.0 +/- 16.0

Catfish [b] Station 08

Sampling Date	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Cs-134	Cs-137
03/20/06	1460.0 +/- 650.0	13.0 +/- 23.0	11.0 +/- 70.0	7.0 +/- 30.0	11.0 +/- 26.0	30.0 +/- 54.0	-11.0 +/- 31.0	9.0 +/- 33.0
10/17/06	1420.0 +/- 400.0	-9.0 +/- 17.0	-3.0 +/- 46.0	-10.0 +/- 21.0	6.0 +/- 15.0	-9.0 +/- 37.0	3.0 +/- 18.0	3.0 +/- 18.0

Catfish [b] Station 25

Sampling Date	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Cs-134	Cs-137
03/20/06	1870.0 +/- 680.0	9.0 +/- 22.0	-15.0 +/- 63.0	3.0 +/- 28.0	0.0 +/- 32.0	-22.0 +/- 56.0	6.0 +/- 19.0	-1.0 +/- 29.0
10/18/06	1460.0 +/- 250.0	6.0 +/- 10.0	-15.0 +/- 23.0	8.0 +/- 10.0	2.0 +/- 10.0	9.0 +/- 23.0	3.0 +/- 11.0	-1.0 +/- 10.0

[a] Non-bottom dwelling species of gamefish.

[b] Bottom dwelling species of fish.

4. DISCUSSION OF RESULTS

Data from the radiological analyses of environmental media collected during 2006 and tabulated in Section 3, are discussed below. Except for TLDs, AREVA Environmental Laboratory analyzed all samples throughout the year. The procedures and specifications followed for these analyses are as required in the AREVA Environmental Laboratory quality assurance manuals and laboratory procedures. In addition to internal quality control measurements performed by each laboratory, they also participate in an Interlaboratory Comparison Program. Participation in this program ensures that independent checks on the precision and accuracy of the measurements of radioactive material in environmental samples are performed. The results of the Interlaboratory Comparison Programs are provided in Appendix B.

The predominant radioactivity detected throughout 2006 was that from external sources, such as fallout from nuclear weapons tests and naturally occurring radionuclides. Naturally occurring nuclides such as Be-7, K-40, and Th-228 were detected in numerous samples. Th-228 results were variable and are generally at levels higher than plant related radionuclides.

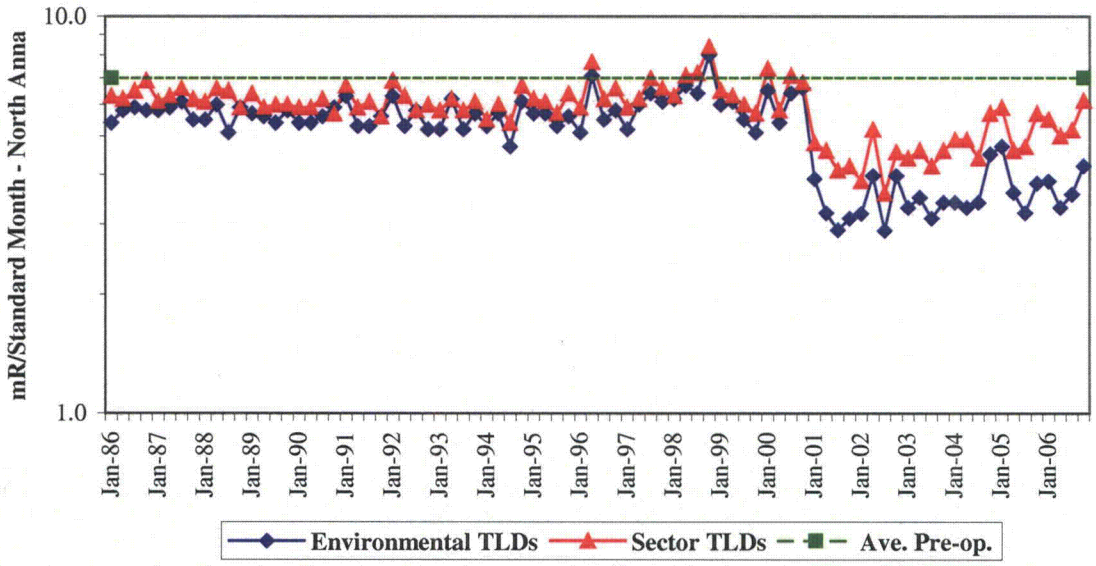
The following is a discussion and summary of the results of the environmental measurements taken during the 2006 reporting period.

4.1 Gamma Exposure Rate

A thermoluminescent dosimeter (TLD) is an inorganic crystal used to detect ambient radiation. TLDs are placed in two concentric rings around the station. The inner ring is located at the site boundary, and the outer ring is located at approximately five miles from the station. TLDs are also placed in special interest areas, such as population areas and nearby residences. Additional TLDs serve as controls. Ambient radiation comes from naturally occurring radioisotopes in the air and soil, radiation from cosmic origin, fallout from nuclear weapons testing, station effluents and direct radiation from the station.

The results of the analyses are presented in Table 3-2. Figure 4-1 shows a historical trend of TLD exposure rate measurements. Control and indicator averages indicate a steady relationship. Two dosimeters made of CaF and LiF sensitive elements are deployed at each sampling location. These TLDs replaced the previously used CaSO4:Dy in Teflon TLDs in January 2001. The dose with the replacement TLDs is lower than that of the previously used TLDs. This will continue to be monitored.

Figure 4-1: Environmental Radiation - TLDs



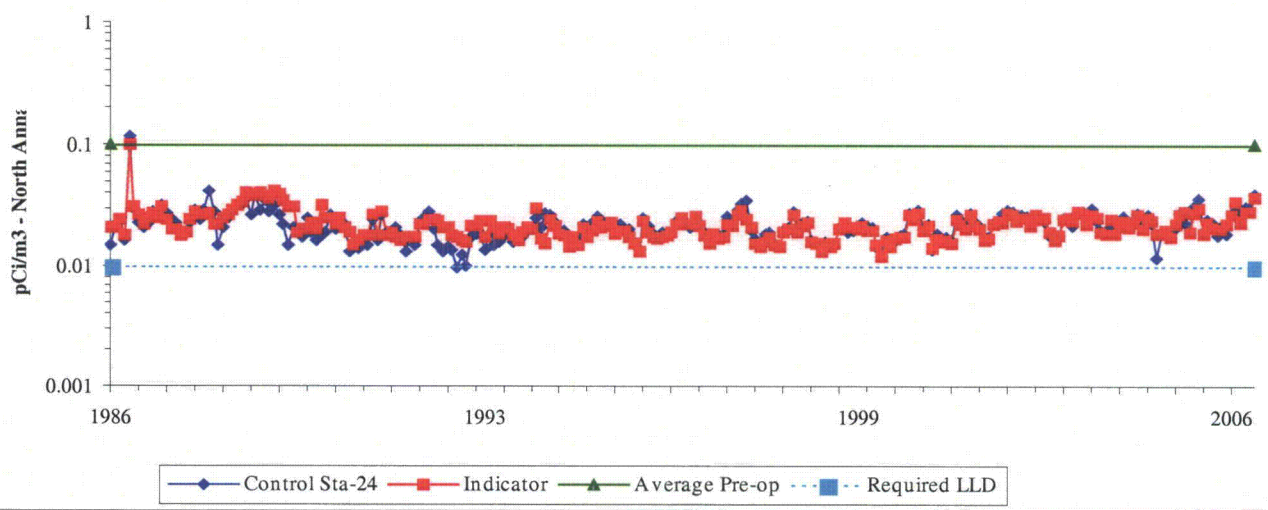
Sector TLDs are deployed quarterly at thirty-two locations in the environs of the North Anna site. Two badges are placed at each location. The average level of the 32 locations (two badges at each location) was 5.5 mR/standard month with a range of 1.6 to 38.3 mR/standard month. The highest quarterly average reading and highest single quarter average for any single location were obtained at location SSW-19/51. These values were 27.8 mR/standard month and 32.6 mR/standard month, respectively. This location is on site directly across the access road from the Independent Spent Fuel Storage Facility. The higher values can thus be attributed to the spent fuel stored in the ISFSI. Quarterly and annual TLDs are also located at each of the twelve environmental air sampling stations. For the eleven locations within 10 miles of the station the average quarterly reading was 3.8 mR/standard month with a range of 2.3 to 6.1 mR/standard month. The average annual reading for these locations was 3.4 mR/standard month with a range of from 1.9 to 5.1 mR/standard month. The control location showed a quarterly average of 3.5 mR/standard month with a range of 3.1 to 4.6 mR/standard month. Its annual reading was 3.6 mR/standard month. Eight other TLDs, designated C-1 thru C-8, were collected quarterly from four locations and showed an average reading of 3.4 mR/standard month with a range of 1.9 to 4.8 mR/standard month. During the pre-operational period (starting in 1977) the doses were measured between 4.3 and 8.8 mR/standard month.

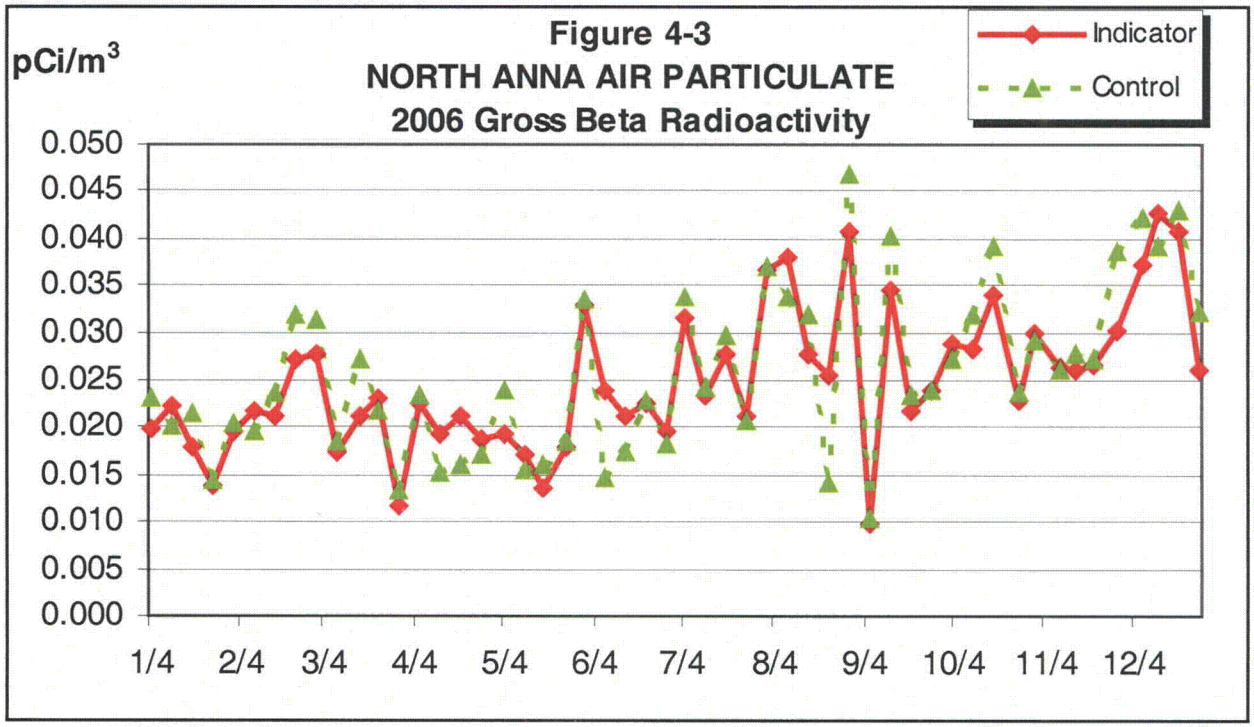
4.2 Airborne Gross Beta

Results of the weekly gross beta analyses are presented in Table 3-3. A review of the historical plot in Figure 4-2, indicates gross beta activity levels have remained relatively unchanged. Inner and outer ring monitoring locations continue to show no significant variation in measured activities (see Figure 4-3). This indicates that any station contribution is not measurable.

Gross beta activity found during the pre-operational and early operating period of North Anna Power Station was higher because of nuclear weapons testing. During that time, nearly 740 nuclear weapons were tested worldwide. In 1985 weapons testing ceased, and with the exception of the Chernobyl accident in 1986, airborne gross beta results have remained steady. During the preoperational period of July 1, 1974 through March 31, 1978 gross beta activities ranged from a low of 0.005 pCi/m^3 to a high of 0.75 pCi/m^3.

Figure 4-2: Gross Beta in Air Particulates





4.3 Airborne Radioiodine

Charcoal cartridges are used to collect airborne radioiodine. Once a week the samples are collected and analyzed. The results of the analyses are presented in Table 3-4. All results are below the lower limit of detection with no positive activity detected. These results are similar to pre-operational data and the results of samples taken prior to and after the 1986 accident in the Soviet Union at Chernobyl.

4.4 Air Particulate Gamma

The air particulate filters that are utilized for the weekly gross beta analyses are composited by location and analyzed quarterly by gamma spectrometry. The results are listed in Table 3-5. The results indicate the presence of naturally occurring Be-7, which is produced by cosmic processes. Examination of pre-operational data indicates comparable measurements of Be-7, as would be expected. No other positive results were seen. These analyses indicate the lack of station effects.

4.5 Air Particulate Strontium

Strontium-89 and 90 analyses were performed on the second quarter composites of air particulate filters from all twelve monitoring stations. The results are listed in Table 3-5. There was no detection of these fission products at any of the indicator or control stations.

4.6 Soil

Soil samples, which are collected every three years from twelve stations, were collected in 2004 and therefore not collected in 2006.

4.7 Precipitation

A sample of rain water was collected monthly at on-site station 01A and analyzed for gross beta activity. The results are presented in Table 3-7. Ten precipitation samples were obtained with no samples available for two months due to drought. Nine of the ten precipitation samples showed positive results in 2006. The average annual gross beta activity was 7.1 pCi/liter with a range from 3.3 to 13.4 pCi/liter. Semi-annual composites were prepared and analyzed for gamma emitting isotopes and tritium. No positive indications of gamma emitting radioisotopes were observed in the semi-annual composite samples for 2006. During the pre-operational period gross beta activity in rain water was expressed in nCi per square meter of the collector surface, thus a direct comparison can not be made to the 2006 period. During the pre-operational period, tritium was measured in over half of the few quarterly composites made. This tritium activity ranged from 100 to 330 pCi/liter.

4.8 Cow Milk

Analysis of milk samples is generally the most sensitive indicator of fission product existence in the terrestrial environment. This, in combination with the fact that consumption of milk is significant, results in this pathway usually being the most critical from the plant release viewpoint. This pathway also shows measurable amounts of nuclear weapons testing fallout. Therefore, this media needs to be evaluated very carefully when trying to determine if there is any plant effect.

Analysis results for cow milk are contained in Table 3-8. All results show no detectable I-131 above the LLD of 1 pCi/l. Results of gamma ray spectroscopy indicate no detectable plant related radioactivity in the milk samples. In years past, Cs-137 has been detected sporadically. The occurrences were attributed to residual global fallout from past atmospheric weapons testing. Cs-137 was not detected at a level above the LLD in 2006.

Once each quarter a sample from each of the two collection stations is analyzed for strontium-89 and strontium-90. Neither Sr-89 not Sr-90 were detected. Sr-90 has been observed in the past. Pre-operational levels of 2.2 to 5.4 pCi/liter were measured for Sr-90. There has been a long-term activity trend for Sr-90 showing a continuous decline. It should be noted that strontium-90 is not a part of station effluents. Its detection is the product of nuclear weapons testing fallout. This conclusion can be made based upon the fact that Sr-89 and Sr-90 have not been detected in effluents released from the station in many years, and the trend of consistent declining levels since the pre-operational period.

4.9 Food Products and Vegetation

Twenty-four food/vegetation samples were collected from five locations and analyzed by gamma spectrometry. The results of the analyses are presented in Table 3-9. Cs-137 was detected at 88 pCi/kg in one sample, as has occurred intermittently in previous years. As expected, naturally occurring potassium-40 was detected in all samples, cosmogenic beryllium-7 was detected in most samples, and thorium-228 was detected in some samples.

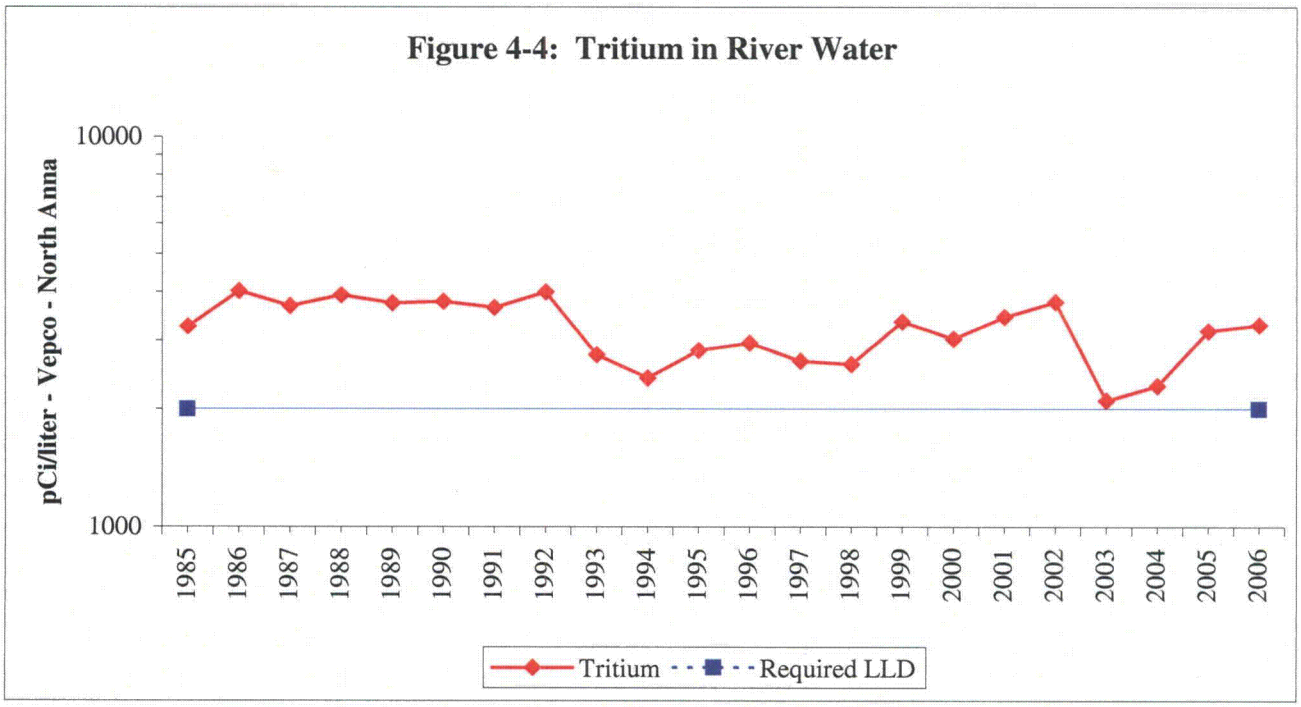
4.10 Well Water

Water was sampled quarterly from the on site well at the metrology laboratory. These samples were analyzed for gamma radiation and for tritium. The second quarter sample was analyzed for strontium-89 and strontium-90. The results of these analyses are presented in Table 3-10. Consistent with past monitoring, no plant related radioactivity was detected. No gamma emitting isotopes were detected during the pre-operational period.

4.11 River Water

A sample of water from the North Anna River was collected monthly, the analyses are presented in Table 3-11. All monthly samples are analyzed by gamma spectroscopy. The monthly samples were composited quarterly and analyzed for tritium, the second quarter samples were additionally analyzed for strontium-89 and strontium-90. No gamma emitting radioisotopes were detected in any of the samples. There was no measured activity of strontium-89 or strontium-90. Tritium was measured in all four samples with an average annual concentration of 3283 pCi/liter and a range of 2130 to 4300 pCi/liter. These levels are comparable to those observed in previous years, see Figure 4-4. No river water samples were

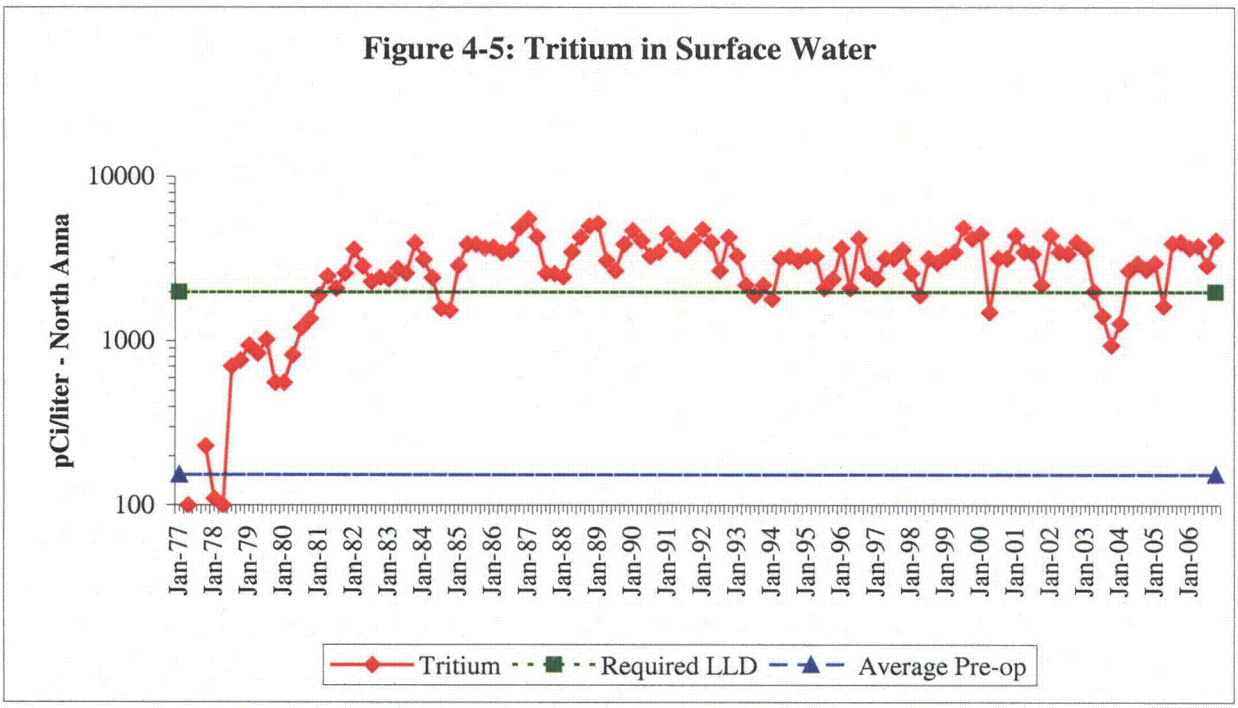
collected during the pre-operational period.



4.12 Surface Water

Samples of surface water were collected monthly from two stations, an indicator station located at the discharge lagoon and a control station located 12.9 miles WNW. The samples were analyzed by gamma ray spectrometry and for iodine-131 by radiochemical separation. A quarterly composite from each station was prepared and analyzed for tritium, and the second quarter samples were additionally analyzed for strontium-89 and strontium-90. The results are presented in Table 3-12.

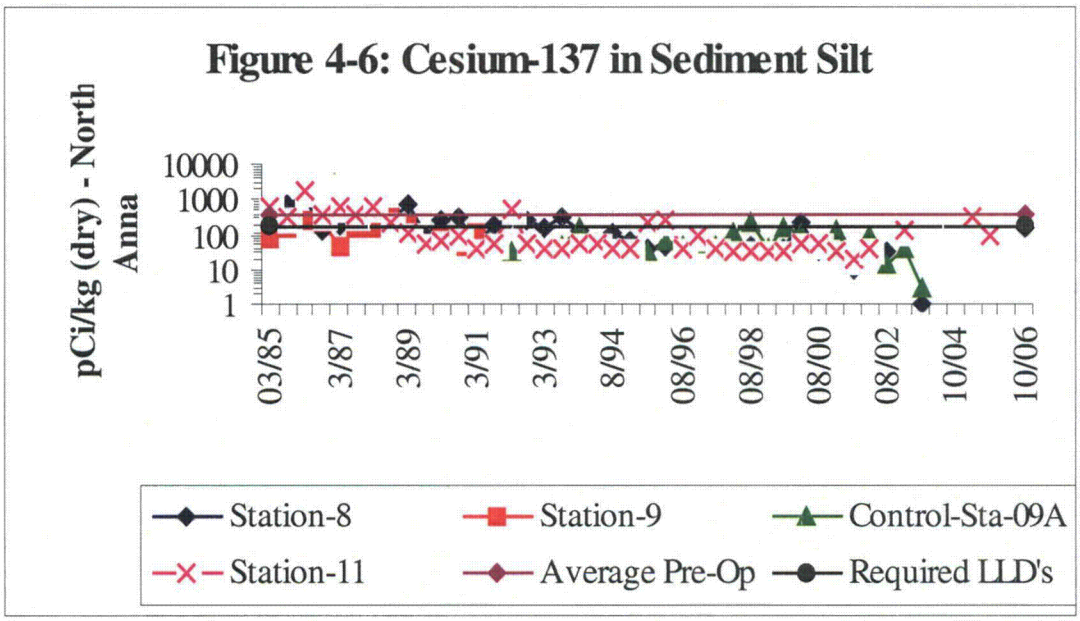
Neither gamma emitting radioisotopes nor iodine were detected in any of the samples. The average level of tritium activity at the indicator station was 3625 pCi/liter with a range of 2900 to 4100 pCi/liter. Levels of tritium have been increasing since 1978 when the average level was below 300 pCi/liter. Levels measured at the indicator location (Station 8) are comparable to those measured since 1986, see Figure 4-5. During the pre-operational period tritium was measured in several samples with concentrations between 90 and 250 pCi/liter.



4.13 Bottom Sediment

Bottom sediment or silt is sampled to evaluate any buildup of radionuclides in the environment due to the operation of the station. Buildup of radionuclides in bottom sediment could indirectly lead to increasing radioactivity levels in fish.

Sediment samples were collected during March and October from each of three locations and were analyzed by gamma spectrometry. The October samples were analyzed for strontium-89 and strontium-90. The results are presented in Table 3-13. Figure 4-6 shows the historical trend of Cs-137 in sediments.



Cesium-137 was detected in the one sediment sample in 2006 at a level of 153 pCi/kg. This level is consistent with the historical trend. The detection of Cs-137 in bottom sediment is historically common with positive indications usually apparent in both indicator and control samples. The detection of Cs-137 is the result of accumulation and runoff into the lake of residual weapons testing fallout; its global presence has been well documented. During the pre-operational period sediment samples were analyzed by gamma ray spectroscopy.

There was no measurable amount of strontium-89 or 90 in aquatic sediment/silt. A number of naturally occurring radioisotopes were detected in these samples at background levels.

4.14 Shoreline Soil

Shoreline soil/sediment, unlike bottom sediment, may provide a direct dose to humans. Buildup of radioisotopes along the shoreline may provide a source of direct exposure for those using the area for commercial and recreational uses. A sample of shoreline sediment was collected in March and October from indicator station 08. The samples were analyzed by gamma ray spectrometry. The September sample was analyzed for strontium-89 and strontium-90. The results are presented in Table 3-14.

Naturally occurring radioisotopes were detected at concentrations equivalent to normal background activities. The activities of these radioisotopes indicate a

steady trend. Cesium-137 was not detected in 2006, but has been detected intermittently in the past. No Strontium was detected. Strontium-90 is normally detected in this media, however as discussed previously, the presence of Sr-90 and Cs-137 is attributed to accumulation of residual global fallout from past atmospheric weapons testing.

4.15 Fish

Four sample sets of fish, two from Lake Anna and two from the control station, Lake Orange, were collected during 2006 and analyzed by gamma spectroscopy. Each sample set consisted of a sample of game species and a sample of bottom-dwelling species, which were analyzed separately. The results are presented in Table 3-15. Except for naturally occurring K-40, no other nuclide was observed in this media in 2006. Only Cs-137 was measured in pre-operational environmental fish samples.

5. PROGRAM EXCEPTIONS

REMP Exceptions for Scheduled Sampling and Analysis During 2006 – North Anna

Location	Description	Date of Sampling	Reason(s) for Loss/Exception
Sta. 21	Air Iodine and Particulate	01/18/06	Low Volume - pump stopped. LLD achieved.
Sta. 27	Milk	01/18/06	Milk animal no longer present
Sta. 14-16, 23, 26	Vegetation	01/25/06	Seasonal Unavailability.
Sta. 27	Milk	02/15/06	Milk animal no longer present.
Sta. 14-16, 23, 26	Vegetation	02/22/06	Seasonal Unavailability.
Sta. 14-16, 23, 26	Vegetation	03/16/06	Seasonal Unavailability.
Sta. 27	Milk	03/22/06	Milk animal no longer present.
Sta. 01A	Precipitation	03/29/06	No sample, lack of precipitation
Sta. 27	Milk	04/12/06	Milk animal no longer present..
Sta. 14-16, 23, 26	Vegetation	04/19/06	Seasonal Unavailability.
Sta. 01A	Precipitation	04/26/06	Insufficient volume, lack of precipitation.
Sta. 05A	Air Particulate and Iodine	05/04/06	Low Volume – GFIC tripped & reset. LLD achieved.
Sta. 27	Milk	05/11/06	Milk animal no longer present.
Sta. 05A	Air Particulate and Iodine	05/17/06	Low Volume – GFIC tripped & reset. LLD achieved.
Sta. 05A	Air Particulate and Iodine	05/25/06	Low Volume – GFIC tripped & reset. LLD achieved.
Sta. 24	Air Particulate and Iodine	06/07/06	Motor running no flow indicated. LLD achieved.
Sta. 27	Milk	06/14/06	Milk animal no longer present.
Sta. 02	Air Iodine and Particulate	06/21/06	Low Volume – power loss. LLD achieved.
Sta. 27	Milk	07/12/06	Milk animal no longer present.
Sta. 27	Milk	08/16/06	Milk animal no longer present.
Sta. 27	Milk	09/13/06	Milk animal no longer present.
Sta. 01	Air Particulate and Iodine	09/28/06	Air sampler failed calibration. Notified vendor of corrected volume. All values recalculated and LLDs were achieved.
Sta. 14-16, 23, 24		10/10/06	Seasonal Unavailability.

Location	Description	Date of Sampling	Reason(s) for Loss/Exception
Sta. 27	Milk	10/24/06	Milk animal no longer present
Sta. 27	Milk	11/21/06	Milk animal no longer present
Sta. 14-16, 23, 26	Vegetation	11/22/06	Seasonal Unavailability.
Sta. 27	Milk	12/19/06	Milk animal no longer present
Sta. 14-16, 23, 26	Vegetation	12/20/06	Seasonal Unavailability.
Station 01A	Precipitation	12/27/06	LLD not met for I-131 and La-140 due to delay in vendor analysis (CR-07-07 submitted by vendor)

REMP Exceptions for 2005 – North Anna

Several typographical errors were identified in the 2005 North Anna REMP following distribution.

- Table 3-3 Gross Beta Air Particulate:
  03/16/2005 Station 05 the value should be 17.8 vice 17.6
  08/17/05 Station 21 the error should be ± 4.6 vice ± 4.4
  08/24/05 Station 21 the error should be ± 4.7 vice ± 4.3
- Table 3-4 Airborne Iodine:
  09/14/05 Station 24 the error should be ± 32 vice ± 3.2
- Table 3-5 Airborne Particulate Gamma Spectra and Strontium:
  2nd Quarter Station 01 the Sr-90 value should be 3.4 vice 0.3
  2nd Quarter Station 24 the Sr-89 error should be ± 9.4 vice ± 2.4
  3rd Quarter Station 01 the Cs-137 error should be ± 0.75 vice ± 0.7
- Table 3-7 Precipitation Gamma Spectra:
  06/28/05 Station 01A I-131 value should be – 5.4 ± 4.0 vice – 0.9 ± 2.5
  06/28/05 Station 01A Cs-134 value should be 0.2 vice – 0.2
- Table 3-8 Milk
  09/14/2005 Station 13 Sr-89 value should be – 0.9 vice 0.9
- Table 3-11 River Water Gamma Spectra, Strontium, and Tritium
  01/13/05 Station 11 Cs-137 value should be 0.1 vice – 0.1
- Table 3-12 Surface Water Gamma Spectra, Strontium, and Tritium
  Station 08 sample date should be 01/13/05 vice 01/19/05
  Station 09A sample should be 01/13/05 vice 01/19/05
- Table 3-14 Shoreline Soil Gamma Spectra and Strontium
  10/19/05 Station 08 Sr-89 value should be –10 ± 360 vice blank
  Sr-90 value should be 80 ± 150 vice 41 ± 98

REFERENCES

References

1. Dominion, North Anna Power Station Technical Specifications, Units 1 and 2.

2. Dominion, North Anna Power Station Independent Spent Fuel Storage Installation Technical Specifications.

3. Dominion, Station Administrative Procedure, VPAP-2103N, "Offsite Dose Calculation Manual".

4. Virginia Electric and Power Company, North Anna Technical Procedure, HP-3051.010, "Radiological Environmental Monitoring Program".

5. Title 10 Code of Federal Regulation, Part 50 (10CFR50), "Domestic Licensing of Production and Utilization Facilities".

6. United States Nuclear Regulatory Commission Regulatory Guide 1.109, Rev. 1, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10CFR50, Appendix I", October, 1977.

7. United States Nuclear Regulatory Commission, Regulatory Guide 4.8 "Environmental Technical Specifications for Nuclear Power Plants", December 1975.

8. USNRC Branch Technical Position, "Acceptable Radiological Environmental Monitoring Program", Rev. 1, November 1979.

9. NUREG 0472, "Radiological Effluent Technical Specifications for PWRs", Rev. 3, March 1982.

10. "Technical Specifications for North Anna Independent Spent Fuel Storage Installation (ISFSI)".

11. HASL-300, Environmental Measurements Laboratory, "EML Procedures Manual," 27th Edition, Volume 1, February 1992.

12. NUREG/CR-4007, "Lower Limit of Detection: Definition and Elaboration of a Proposed Position for Radiological Effluent and Environmental Measurements," September 1984.

APPENDICES

APPENDIX A: LAND USE CENSUS

Year 2006

LAND USE CENSUS

North Anna Power Station
North Anna County, Virginia

January 1 to December 31, 2006

Direction	Distance *(miles)*					
	Nearest Site Boundary	Nearest Resident	Nearest Garden (> 50m^2)	Nearest Meat Animal	Nearest Milch Cow	Nearest Milch Goat
N	0.9	1.5	1.8	*None*	*None*	*None*
NNE	0.9	0.9	3.4	1.5	*None*	*None*
NE	0.8	0.9	0.9	1.5	*None*	*None*
ENE	0.8	2.1	2.1	2.5	*None*	*None*
E	0.8	1.3	1.3	3.5	*None*	*None*
ESE	0.9	1.7	1.7	*None*	*None*	*None*
SE	0.9	1.4	1.4	1.5	*None*	*None*
SSE	0.9	1.0	1.0	2.8	*None*	*None*
S	0.9	1.1	1.2	2.8	*None*	*None*
SSW	1.0	1.4	1.4	1.9	*None*	*None*
SW	1.1	1.7	3.9	*None*	*None*	*None*
WSW	1.1	1.6	2.7	1.6	*None*	*None*
W	1.1	1.5	2.0	None	*None*	*None*
WNW	1.0	1.1	1.7	3.9	*None*	*None*
NW	1.0	1.0	1.1	*None*	*None*	*None*
NNW	0.9	1.0	1.1	*None*	*None*	*None*

2005 to 2006 Land Use Census Changes			
Nearest	**Direction**	**2005 Distance**	**2006 Distance**
Site Boundary	*None*		
Resident			
	SW	3.1	1.7
Garden			
	N	1.5	1.8
	NNE	1.4	3.4
	SSW	*None*	1.4
	SW	3.1	3.9
	WSW	1.6	2.7
	W	1.5	2.0
	WNW	2.5	1.7
Meat Animal	*None*		
Milch Cow	*None*		
Milch Goat			
	ENE	2.5	*None*

APPENDIX B: SUMMARY OF INTERLABORATORY COMPARISONS

YEAR 2006

INTRODUCTION

This appendix covers the Intercomparison Program of the AREVA ANP Environmental Laboratory as required by technical specifications for the Radiological Environmental Monitoring Program (REMP). Framatome uses QA/QC samples provided by Analytics, Inc to monitor the quality of analytical processing associated with the REMP. The suite of Analytics QA/QC samples are designed to be comparable with the pre-1996 US EPA Interlaboratory Cross-Check Program in terms of sample number, matrices, and nuclides. It was modified to more closely match the media mix presently being processed by Framatome and includes:

- milk for gamma (10 nuclides) and low-level (LL) Iodine-131 analyses once per quarter,
- milk for Sr-89 and Sr-90 analyses during the 1st and 3rd quarters,
- water for gamma (10 nuclides) and low-level (LL) Iodine-131 analyses during the 1st and 3rd quarters,
- water for Sr-89 and Sr-90 analyses during the 4th quarter,
- water tritium analysis during the 2nd and 4th quarters,
- air filter for gamma (9 nuclides) analyses during the 2nd quarter, and
- air filter for gross beta analysis during the 1st and 3rd quarters.

In addition to the Analytics Intercomparison Program, AREVA ANP also participates in other intercomparsion programs which include radionuclides and media similar to those required by the REMP. These programs are the National Institute of Standards and Technology (NIST) Measurement Assurance Program (MAP), the Environmental Resource Associates (ERA) Proficiency Test (PT) Program, the Department of Energy (DOE) Quality Assessment Program (QAP), and the Mixed Analyte Performance Evaluation Program (MAPEP).

RESULTS

Intercomparison program results are evaluated using AREVA ANP's internal bias acceptance criterion. The criterion is defined as within 25% of the known strontium value for samples containing both Sr-89 and Sr-90 and within 15% of the known value for other radionuclides, or within two sigma of the known value. Any sample analysis result that does not pass the criteria is investigated by AREVA ANP.

Analytics Intercomparison Program results are included on pages 79 through 82 for the first quarter of 2006 through the third quarter of 2006. A total of 95 analysis results were obtained with 93 passing acceptance criteria, a 97.9% success rate. 2 result in the Analytics program were not in agreement. Condition Reports 06-08 and 06-16 were generated. No cause was identified in the 06-08, but the based on the fact that the instrument calibration was verified and subsequent samples were in agreement, the cause must be attributed to sample

subsequent samples were in agreement, the cause must be attributed to sample preparation, since no other cause could be identified. CR 06-16 was re-eluted and acceptable results were obtained. However, the CR is still open pending finalization of actions to be taken to enhance the scintillation vial background process. In the DOE program received 6 results received a warning, and 6 results were not in agreement. Condition Reports 06-19, 06-20, and 06-21 were generated. Additional samples have been ordered for the DOE disagreements and warnings. These CR's are still open, as results are currently not available.

In addition to the above, the third quarter Sr-89/-90 in milk was delayed until the fourth quarter. Results from the fourth quarter analyses are not yet available. The results of the any open corrective actions will be reported in the 2007 report.

AREVA 2006 ENVIRONMENTAL LABORATORY
ANALYTICS RADIOLOGICAL ENVIRONMENTAL CROSS-CHECK
PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	Ratio E-LAB/ Analytics	Evaluation
E4884-162	1st/2006	Water	Gross Alpha	pCi/L	38.7	38.1	1.02	Agreement
E4884-162	1st/2006	Water	Gross Beta	pCi/L	265	262	1.01	Agreement
E4885-162	1st/2006	Water	I-131LL	pCi/L	65.8	67.4	0.98	Agreement
E4885-162	1st/2006	Water	I-131	pCi/L	66.3	67.4	0.98	Agreement
E4885-162	1st/2006	Water	Ce-141	pCi/L	83.0	86.8	0.96	Agreement
E4885-162	1st/2006	Water	Cr-51	pCi/L	217	234	0.93	Agreement
E4885-162	1st/2006	Water	Cs-134	pCi/L	91.9	101	0.91	Agreement
E4885-162	1st/2006	Water	Cs-137	pCi/L	73.3	74.3	0.99	Agreement
E4885-162	1st/2006	Water	Co-58	pCi/L	84.7	87.5	0.97	Agreement
E4885-162	1st/2006	Water	Mn-54	pCi/L	74.7	78.1	0.96	Agreement
E4885-162	1st/2006	Water	Fe-59	pCi/L	73.2	72.4	1.01	Agreement
E4885-162	1st/2006	Water	Zn-65	pCi/L	146.7	148	0.99	Agreement
E4885-162	1st/2006	Water	Co-60	pCi/L	102.5	107	0.96	Agreement
E4886-162	1st/2006	Water	Sr-89	pCi/L	82.0	99.4	0.82	Agreement
E4886-162	1st/2006	Water	Sr-90	pCi/L	10.2	10.8	0.94	Agreement
E4887-162	1st/2006	Charcoal	I-131	pCi	84.3	84.8	0.99	Agreement
E4888-162	1st/2006	Filter	Gross Alpha	pCi	13.5	14.2	0.95	Agreement
E4888-162	1st/2006	Filter	Gross Beta	pCi	104.5	97.3	1.07	Agreement
E4889-162	1st/2006	Milk	I-131LL	pCi/L	81.8	78.0	1.05	Agreement
E4889-162	1st/2006	Milk	I-131	pCi/L	77.4	78.8	0.98	Agreement
E4889-162	1st/2006	Milk	Ce-141	pCi/L	101	104	0.97	Agreement
E4889-162	1st/2006	Milk	Cr-51	pCi/L	277	280	0.99	Agreement
E4889-162	1st/2006	Milk	Cs-134	pCi/L	113.8	121	0.94	Agreement
E4889-162	1st/2006	Milk	Cs-137	pCi/L	86.7	88.8	0.98	Agreement
E4889-162	1st/2006	Milk	Co-58	pCi/L	100	105	0.95	Agreement
E4889-162	1st/2006	Milk	Mn-54	pCi/L	94.6	93.3	1.01	Agreement
E4889-162	1st/2006	Milk	Fe-59	pCi/L	90.7	86.6	1.05	Agreement
E4889-162	1st/2006	Milk	Zn-65	pCi/L	172.2	176	0.98	Agreement
E4889-162	1st/2006	Milk	Co-60	pCi/L	125.0	128	0.98	Agreement
E4890-162	1st/2006	Milk	Sr-89	pCi/L	79.7	99.2	0.80	Agreement
E4890-162	1st/2006	Milk	Sr-90	pCi/L	10.6	10.8	0.98	Agreement

AREVA 2006 ENVIRONMENTAL LABORATORY
ANALYTICS ENVIRONMENTAL CROSS CHECK PROGRAM
PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	Ratio E-LAB/ Analytics	Evaluation
E5013-162	2nd/2006	Water	H-3	pCi/L	5830	6000	0.97	Agreement
E5014-162	2nd/2006	Filter	Gross Alpha	pCi	31.8	36.6	0.87	Agreement
E5014-162	2nd/2006	Filter	Gross Beta	pCi	103.8	96.8	1.07	Agreement
E5015-162	2nd/2006	Filter	Ce-141	pCi/L	91.6	92.8	0.99	Agreement
E5015-162	2nd/2006	Filter	Cr-51	pCi/L	131.7	131	1.01	Agreement
E5015-162	2nd/2006	Filter	Cs-134	pCi/L	60.5	63.9	0.95	Agreement
E5015-162	2nd/2006	Filter	Cs-137	pCi/L	62.9	59.3	1.06	Agreement
E5015-162	2nd/2006	Filter	Co-58	pCi/L	52.0	50.6	1.03	Agreement
E5015-162	2nd/2006	Filter	Mn-54	pCi/L	74.5	73.9	1.01	Agreement
E5015-162	2nd/2006	Filter	Fe-59	pCi/L	46.4	47.3	0.98	Agreement
E5015-162	2nd/2006	Filter	Zn-65	pCi/L	93.4	93.6	1.00	Agreement
E5015-162	2nd/2006	Filter	Co-60	pCi/L	63.0	65.0	0.97	Agreement
E5016-162	2nd/2006	Filter	Sr-89	pCi/L	146.6	163	0.90	Agreement
E5016-162	2nd/2006	Filter	Sr-90	pCi/L	7.01	12.3	0.57	Non-Agreement
E5017-162	2nd/2006	Milk	I-131LL	pCi/L	67.0	63.2	1.06	Agreement
E5017-162	2nd/2006	Milk	I-131	pCi/L	62.0	63.2	0.98	Agreement
E5017-162	2nd/2006	Milk	Ce-141	pCi/L	180.8	184	0.98	Agreement
E5017-162	2nd/2006	Milk	Cr-51	pCi/L	248.0	259	0.96	Agreement
E5017-162	2nd/2006	Milk	Cs-134	pCi/L	120.1	127	0.95	Agreement
E5017-162	2nd/2006	Milk	Cs-137	pCi/L	117.3	117	1.00	Agreement
E5017-162	2nd/2006	Milk	Co-58	pCi/L	97.3	100	0.97	Agreement
E5017-162	2nd/2006	Milk	Mn-54	pCi/L	150.5	146	1.03	Agreement
E5017-162	2nd/2006	Milk	Fe-59	pCi/L	95.4	93.6	1.02	Agreement
E5017-162	2nd/2006	Milk	Zn-65	pCi/L	183.9	185	0.99	Agreement
E5017-162	2nd/2006	Milk	Co-60	pCi/L	126.2	129	0.98	Agreement

AREVA 2006 ENVIRONMENTAL LABORATORY
ANALYTICS RADIOLOGICAL ENVIRONMENTAL CROSS-CHECK
PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	Ratio E-LAB/ Analytics	Evaluation
E5090-162	3rd /2006	Water	Gross Alpha	pCi/L	71.5	69.4	1.03	Agreement
E5090-162	3rd /2006	Water	Gross Beta	pCi/L	253	273	0.93	Agreement
E5091-162	3rd /2006	Water	I-131LL	pCi/L	84.4	79.9	1.06	Agreement
E5091-162	3rd /2006	Water	I-131	pCi/L	77.3	79.9	0.97	Agreement
E5091-162	3rd /2006	Water	Ce-141	pCi/L	84.5	88.0	0.96	Agreement
E5091-162	3rd /2006	Water	Cr-51	pCi/L	287	288	1.00	Agreement
E5091-162	3rd /2006	Water	Cs-134	pCi/L	85.6	87.0	0.98	Agreement
E5091-162	3rd /2006	Water	Cs-137	pCi/L	174	179	0.97	Agreement
E5091-162	3rd /2006	Water	Co-58	pCi/L	108	112	0.96	Agreement
E5091-162	3rd /2006	Water	Mn-54	pCi/L	116	115	1.01	Agreement
E5091-162	3rd /2006	Water	Fe-59	pCi/L	47.0	44.7	1.05	Agreement
E5091-162	3rd /2006	Water	Zn-65	pCi/L	146	148	0.99	Agreement
E5091-162	3rd /2006	Water	Co-60	pCi/L	130	137	0.95	Agreement
E5092-162	3rd /2006	Charcoal	I-131	pCi	88.3	91.1	0.97	Agreement
E5093-162	3rd /2006	Filter	Gross Alpha	pCi	36.9	37.3	0.99	Agreement
E5093-162	3rd /2006	Filter	Gross Beta	pCi	142	147	0.97	Agreement
E5094-162	3rd /2006	Milk	I-131LL	pCi/L	79.9	73.8	1.08	Agreement
E5094-162	3rd /2006	Milk	I-131	pCi/L	72.5	73.8	0.98	Agreement
E5094-162	3rd /2006	Milk	Ce-141	pCi/L	85.5	86.0	0.99	Agreement
E5094-162	3rd /2006	Milk	Cr-51	pCi/L	288	282	1.02	Agreement
E5094-162	3rd /2006	Milk	Cs-134	pCi/L	84.8	85.0	1.00	Agreement
E5094-162	3rd /2006	Milk	Cs-137	pCi/L	171	175	0.98	Agreement
E5094-162	3rd /2006	Milk	Co-58	pCi/L	106	109	0.97	Agreement
E5094-162	3rd /2006	Milk	Mn-54	pCi/L	112	113	0.99	Agreement
E5094-162	3rd /2006	Milk	Fe-59	pCi/L	45.3	43.7	1.04	Agreement
E5094-162	3rd /2006	Milk	Zn-65	pCi/L	146	145	1.01	Agreement
E5094-162	3rd /2006	Milk	Co-60	pCi/L	129	134	0.96	Agreement

DEPARTMENT OF ENERGY MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP-05-14)

SAMPLE ID	MATRIX/ UNITS	REFERENCE DATE	RADIO-NUCLIDE	REPORTED MEAN VALUE Bq/Units	MAPEP VALUE Bq/Units	% Bias	EVALUATION
MAPEP-06-RdF16	Filter (Bq/filter)	1-Jul-06	Am-241	0.13	0.142	-8.5	Agreement
MAPEP-06-RdF16	Filter (Bq/filter)	1-Jul-06	Cs-134	3.268	3.147	3.8	Agreement
MAPEP-06-RdF16	Filter (Bq/filter)	1-Jul-06	Cs-137	2.016	1.805	11.6	Agreement
MAPEP-06-RdF16	Filter (Bq/filter)	1-Jul-06	Co-57	2.834	2.582	9.8	Agreement
MAPEP-06-RdF16	Filter (Bq/filter)	1-Jul-06	Co-60	1.622	1.577	2.9	Agreement
MAPEP-06-RdF16	Filter (Bq/filter)	1-Jul-06	Mn-54	2.118	1.92	10.3	Agreement
MAPEP-06-RdF16	Filter (Bq/filter)	1-Jul-06	Pu-238	0.123	0.118	4.2	Agreement
MAPEP-06-RdF16	Filter (Bq/filter)	1-Jul-06	Pu-239/240	0.0016 +/- 0.0012	False Positive Test	N/A	Agreement
MAPEP-06-RdF16	Filter (Bq/filter)	1-Jul-06	Sr-90	0.473	0.62	-23.7	Warning (1)
MAPEP-06-RdF16	Filter (Bq/filter)	1-Jul-06	Zn-65	-0.004 +/- 0.044	False Positive Test	N/A	Agreement
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	Am-241	96.8	105.47	-8.2	Agreement
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	Cs-134	595.7	452.13	31.8	Not Acceptable (2)
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	Cs-137	691.3	525.73	31.5	Not Acceptable (2)
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	Co-57	913.2	676.33	35.0	Not Acceptable (2)
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	Co-60	2.56 +/- 0.53	1.98	N/A	Agreement (3)
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	Mn-54	793.3	594.25	33.5	Not Acceptable (2)
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	Pu-238	80.9	82	-1.3	Agreement
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	Pu-239/240	0.48 +/- 0.4	0.93	N/A	Agreement (3)
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	K-40	790	604	30.8	Not Acceptable (2)
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	Tc-99	210	218.01	-3.7	Agreement
MAPEP-06-MaS16	Soil (Bq/kg)	1-Jul-06	Zn-65	1196.7	903.81	32.4	Not Acceptable (2)
MAPEP-06-RdV16	Vegetation (Bq/sample)	1-Jul-06	Am-241	0.0052 +/- 0.0029	False Positive Test	N/A	Agreement
MAPEP-06-RdV16	Vegetation (Bq/sample)	1-Jul-06	Cs-134	5.747	7.487	-23.2	Warning (4)
MAPEP-06-RdV16	Vegetation (Bq/sample)	1-Jul-06	Cs-137	4.303	5.495	-21.7	Warning (4)
MAPEP-06-RdV16	Vegetation (Bq/sample)	1-Jul-06	Co-57	0.0009 +/-0.009	False Positive Test	N/A	Agreement
MAPEP-06-RdV16	Vegetation (Bq/sample)	1-Jul-06	Co-60	4.317	5.808	-25.6	Warning (4)
MAPEP-06-RdV16	Vegetation (Bq/sample)	1-Jul-06	Mn-54	6.344	8.351	-24.0	Warning (4)
MAPEP-06-RdV16	Vegetation (Bq/sample)	1-Jul-06	Pu-238	0.144	0.151	-4.6	Agreement
MAPEP-06-RdV16	Vegetation (Bq/sample)	1-Jul-06	Pu-239/240	0.0036 +/- 0.0023	False Positive Test	N/A	Agreement
MAPEP-06-RdV16	Vegetation (Bq/sample)	1-Jul-06	Sr-90	1.089	1.095	-0.5	Agreement
MAPEP-06-RdV16	Vegetation (Bq/sample)	1-Jul-06	Zn-65	4.738	5.984	-20.8	Warning (4)
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Am-241	2.092	2.31	-9.4	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Cs-134	109.92	112.92	-3.5	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Cs-137	187.44	196.14	-4.4	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Co-57	203.41	213.08	-4.5	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Co-60	45.56	47.5	-4.1	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	H-3	445	428.85	3.8	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Fe-55	169	166.4	2.2	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Mn-54	-0.16 +/- 0.15	False Positive Test	N/A	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Ni-63	95.3	118.82	-19.7	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Pu-239	1.363	1.39	-1.9	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Pu-239/240	1.799	1.94	-7.3	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Tc-99	27	27.15	-0.6	Agreement
MAPEP-06-MaW16	Water (Bq/L)	1-Jul-06	Zn-65	174.89	176.37	-0.8	Agreement

(1) - See CR 06-21. Backup sample requested for re-analysis and evaluation.
(2) - See CR 06-20. Backup sample requested for re-analysis and evaluation.
(3) - Sensitivity evaluations in agreement as result +- 2-sigma cross the known value.
(4) - See CR 06-19. Non-homogeneity of container causing Warnings. Backup sample requested for re-analysis and re-calibration.

AREVA ENVIRONMENTAL LABORATORY
ANALYTICS RADIOCHEMISTRY CROSS CHECK
PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Mean Reported Value	Known Value	Ratio E-LAB/ Analytics	Evaluation
A20050-162	1st/2006	Liquid	Fe-55	uCi/cc	5.48E-04	5.11E-04	1.07	Agreement
A20051-162	1st/2006	Liquid	Sr-89	uCi/cc	3.83E-03	3.98E-03	0.96	Agreement
A20051-162	1st/2006	Liquid	Sr-90	uCi/cc	2.54E-04	3.01E-04	0.84	Non-Agreement (1)
A20427-162	2nd/2006	Liquid	Fe-55	uCi/cc	3.14E-04	3.00E-04	1.05	Agreement
A20428-162	2nd/2006	Liquid	Sr-89	uCi/cc	4.71E-03	5.20E-03	0.91	Agreement
A20428-162	2nd/2006	Liquid	Sr-90	uCi/cc	2.51E-04	2.71E-04	0.93	Agreement

(1) - CR 06-08 generated

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Mean Reported Value	Known Value	Ratio E-LAB/ Analytics	Evaluation
A20538-162	3rd/2006	Liquid	Fe-55	uCi/cc	2.28E-04	1.99E-04	1.15	Agreement
A20539-162	3rd/2006	Liquid	Sr-89	uCi/cc	1.74E-03	1.57E-03	1.11	Agreement
A20539-162	3rd/2006	Liquid	Sr-90	uCi/cc	1.57E-04	1.51E-04	1.04	Agreement
A21012-162	4th/2006	Liquid	Fe-55	uCi/cc	6.80E-04	6.15E-04	1.11	Agreement
A21013-162	4th/2006	Liquid	Sr-89	uCi/cc	3.47E-03	3.60E-03	0.97	Agreement
A21013-162	4th/2006	Liquid	Sr-90	uCi/cc	1.83E-04	2.03E-04	0.90	Agreement

APPENDIX C: SUMMARY OF GOUNDWATER PROTECTION ANALYSES

YEAR 2006

INTRODUCTION

This appendix covers the ground water protection sampling undertaken at North Anna to voluntarily comply with the Nuclear Energy Institute, NEI, Ground Water Protection Initiative. In addition to the well, river, and surface water samples included as part of the Radiological Environmental Monitoring Program, North Anna obtained subsurface water samples and soil samples from various locations on the site.

The industry groundwater protection initiative was prompted as a result of elevated levels of tritium being detected at an Illinois plant in November 2005. It was determined that these elevated levels of tritium were the result of a spill incident that occurred in 1998. The tritium, which migrated into the groundwater both on and off site, posed negligible health or safety hazard to the public. There were no regulatory requirements for the notification of State/local officials when the release occurred in 1998. In response to this event and several others in the nuclear industry, the Nuclear Energy Institute (NEI) developed an industry groundwater protection initiative to improve the reporting of spills/leaks of radioactive contaminants (including tritium) into groundwater to State/local officials. In addition, the Nuclear Regulatory Commission has formed a Lessons-Learned Task Force to evaluate the regulatory processes to identify areas of improvement.

RESULTS

The results of these samples are displayed in the table on the following page. Though some tritium has been detected in some samples, the levels detected are less than the surface water samples obtained from Lake Anna. The average for positive subsurface water samples was 1113 pCi/L. The values ranged from <166 pCi/L to 2080 pCi/L. In approximately 60% of all samples counted, no tritium was detected above the minimum detectable concentration. Two samples from the ISFSI were analyzed for Sr-89/-90 and gamma emitters in addition to H-3 and no licensed material was detected above the minimum detectable concentration.

These results are indicative of lake to ground water communication and not indicative of a leak from a radioactive system.

Sample	Date	Sample Media	Nuclide	Value	Units
Domestic Water	05/10/06	Water	H-3	<166	pCi/L
Subsurface Drains	05/10/06	Water	H-3	1110	pCi/L
ISFSI Well #1	06/22/06	Water	H-3	<1300	pCi/L
ISFSI Well #1	06/22/06	Water	Gamma Emitters	< MDC	pCi/L
ISFSI Well #1	06/22/06	Water	Sr-89/-90	<MDC	pCi/L
ISFSI Well #4	06/22/06	Water	H-3	<1300	pCi/L
ISFSI Well #4	06/22/06	Water	Gamma Emitters	< MDC	pCi/L
ISFSI Well #4	06/22/06	Water	Sr-89/-90	<MDC	pCi/L
U-1 Mat Sump East	06/27/06	Water	H-3	<725	pCi/L
U-1 Mat Sump South	06/27/06	Water	H-3	<725	pCi/L
U-2 Mat Sump East	06/27/06	Water	H-3	1740	pCi/L
U-2 Mat Sump South	06/27/06	Water	H-3	<726	pCi/L
Discharge Canal Storm Drain	07/11/06	Water	H-3	<417	pCi/L
U-1 Storm Drain	07/11/06	Water	H-3	1120	pCi/L
U-2 Storm Drain	07/11/06	Water	H-3	<417	pCi/L
U-1 Mat Sump East	07/13/06	Water	H-3	476	pCi/L
U-1 Mat Sump South	07/13/06	Water	H-3	1060	pCi/L
U-2 Mat Sump East	07/13/06	Water	H-3	1210	pCi/L
U-2 Mat Sump South	07/13/06	Water	H-3	1180	pCi/L
Subsurface Drains	07/13/06	Water	H-3	689	pCi/L
NANIC Well	07/19/06	Water	H-3	<465	pCi/L
Security Training Well	07/19/06	Water	H-3	<465	pCi/L
Station 01A Well	07/19/06	Water	H-3	<465	pCi/L
Manhole #10	08/31/06	Water	H-3	1320	pCi/L
Manhole #23	09/01/06	Water	H-3	560	pCi/L
Manhole #1	09/01/06	Water	H-3	<471	pCi/L
Manhole #30	09/01/06	Water	H-3	<471	pCi/L
Manhole #31	09/01/06	Water	H-3	<471	pCi/L
Manhole #33	09/01/06	Water	H-3	<471	pCi/L
Manhole # 46	09/01/06	Water	H-3	<471	pCi/L

Sample	Date	Sample Media	Nuclide	Value	Units
Manhole # 41	09/01/06	Water	H-3	520	pCi/L
Manhole # 42	09/01/06	Water	H-3	<463	pCi/L
Manhole # 47	09/01/06	Water	H-3	<463	pCi/L
Manhole # 40	09/01/06	Water	H-3	<469	pCi/L
Soil Sample from U-3 Boring	09/03/06	Soil	Gamma Emitters	<MDC	µCi/kg or Bq/g
WS-2-ISI-Q3	09/15/06	Water	H-3	<469	pCi/L
WS-3-ISI-Q3	09/15/06	Water	H-3	<469	pCi/L
Service Water Vault	10/17/06	Water	H-3	1260	pCi/L
Service Water #4	10/17/06	Water	H-3	<490	pCi/L
Subsurface Drains	11/03/06	Water	H-3	<483	pCi/L
Discharge Canal Storm Drain Outfall	11/09/06	Water	H-3	1740	pCi/L
U-1 Storm Drain Outfall	11/09/06	Water	H-3	<497	pCi/L
U-2 Storm Drain Outfall	11/09/06	Water	H-3	<497	pCi/L
U-1 Mat Sump East	11/10/06	Water	H-3	701	pCi/L
U-1 Mat Sump South	11/10/06	Water	H-3	697	pCi/L
U-2 Mat Sump East	11/11/06	Water	H-3	1430	pCi/L
U-2 Mat Sump South	11/11/06	Water	H-3	764	pCi/L
Aux Bldg GW Monitoring Well	11/11/06	Water	H-3	846	pCi/L
U-2 Valve Pit Ground water	11/13/06	Water	H-3	1880	pCi/L
U-3 Well #901	11/22/06	Water	H-3	<461	pCi/L
U-3 Well #945	11/22/06	Water	H-3	<461	pCi/L
U-3 Well #947	11/22/06	Water	H-3	<461	pCi/L
U-3 Well #950	11/22/06	Water	H-3	<461	pCi/L
U-2 Valve Pit Ground water	11/30/06	Water	H-3	2080	pCi/L
U-1 AFW Tunnel	12/08/06	Water	H-3	<477	pCi/L
U-3 Well #946	11/22/06	Water	H-3	1610	pCi/L
U-3 Well #949	11/22/06	Water	H-3	<477	pCi/L
U-3 Well #951	11/22/06	Water	H-3	500	pCi/L