FPL Energy Point Beach, LLC, 6610 Nuclear Road, Two Rivers, WI 54241

FPL Energy
Point Beach Nuclear Plant

December 19, 2008

NRC 2008-0098
10 CFR 50.36a
10 CFR 72.44

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266, 50-301, and 72-005
Renewed License Nos. DPR-24 and DPR-27

2007 Annual Monitoring Report (Revised)

In accordance with Point Beach Nuclear Plant (PBNP) Technical Specification 5.6.2, enclosed is the revised Annual Monitoring Report for PBNP, Units 1 and 2, for the period January 1 through December 31, 2007.

The revised Annual Monitoring Report contains additional information in regard to the effluent impact upon the public as well as previously submitted information regarding plant releases, solid waste shipments, results from the radiological environmental monitoring program and miscellaneous reportable items during 2007. The report also covers the results of radiological monitoring of the PBNP Independent Spent Fuel Storage Installation (ISFSI) as required by 10 CFR 72.44.

This letter contains no new commitments and no revisions to existing commitments.

Very truly yours,

FPL Energy Point Beach, LLC

Larry Meyer
Site Vice President

Enclosure

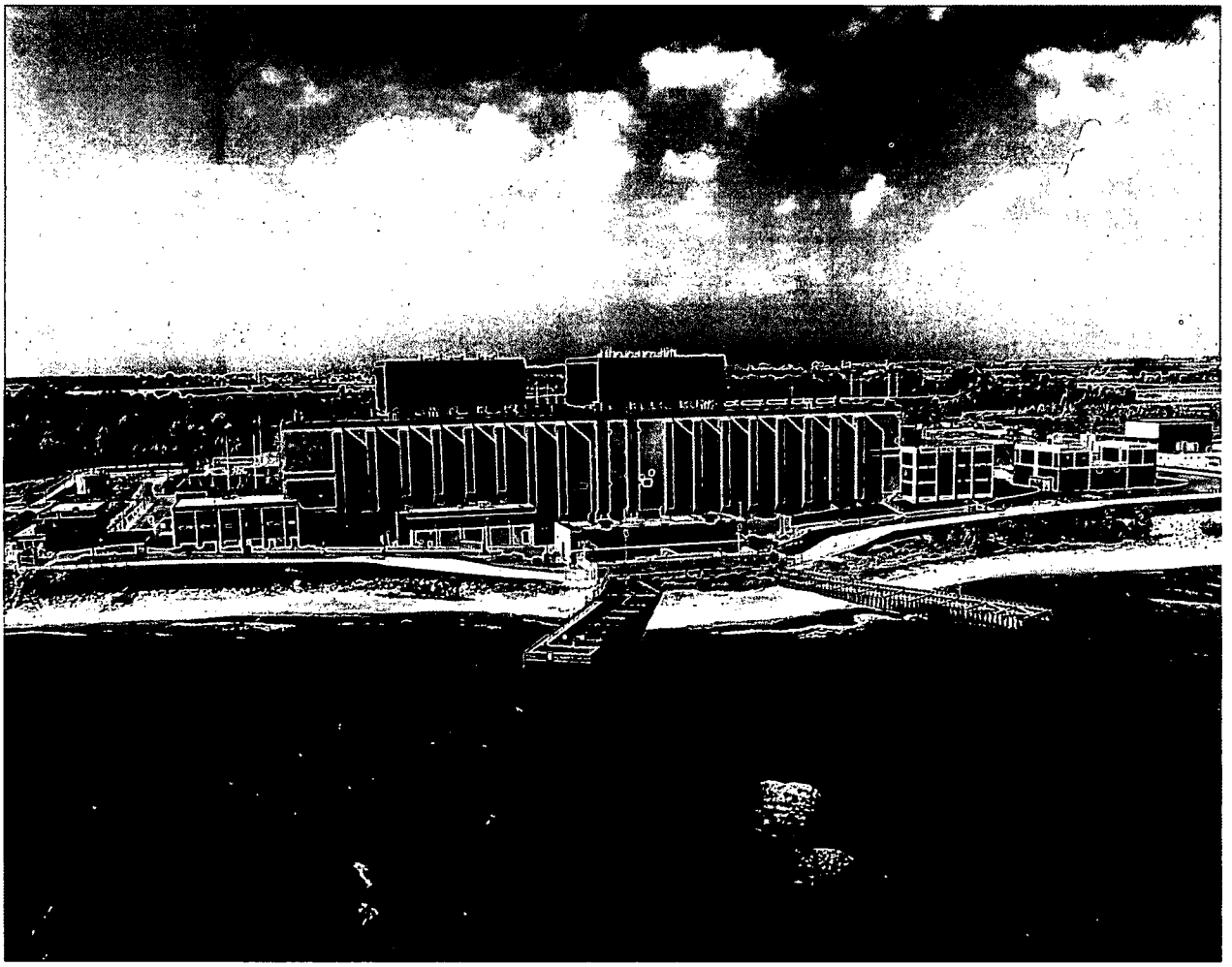
cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW
American Nuclear Insurers
WI Division of Public Health, Radiation Protection Section

IE48
IE25
NMSS01

ANNUAL MONITORING REPORT 2007 (REVISED)

FPL ENERGY POINT BEACH, LLC
POINT BEACH NUCLEAR PLANT

DOCKETS 50-266 (UNIT 1), 50-301 (UNIT 2), 72-005 (ISFSI)
RENEWED LICENSE DPR-24 and DPR-27



January 1, 2007, through December 31, 2007

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SUMMARY

The Annual Monitoring Report for the period from January 1, 2007 through December 31, 2007, is submitted in accordance with Point Beach Nuclear Plant (PBNP) Units 1 and 2, Technical Specification 5.6.2 and filed under Dockets 50-266 and 50-301 for Facility Operating Licenses DPR-24 and DPR-27, respectively. It also contains results of monitoring in support of the Independent Spent Fuel Storage Installation (ISFSI) Docket 72-005. The report presents the results of effluent and environmental monitoring programs, solid waste shipments, nonradioactive chemical releases, and circulating water system operation.

During 2007, the following Curies (Ci) of radioactive material were released via the liquid and atmospheric pathways:

	Liquid	Atmospheric
Tritium (Ci)	588	86.2
[1]Particulate (Ci)	0.081	0.00003
Noble Gas (Ci)	(-)	0.656

(-)Noble gases in the liquids are added to the atmospheric release totals.

[1]Atmospheric particulate includes radioiodine (i-131, i-133).

For the purpose of compliance with the effluent design objectives of Appendix I to 10 CFR 50, doses from effluents are calculated for the hypothetical maximally exposed individual (MEI) for each age group and compared to the Appendix I objectives. Doses less than or equal to the Appendix I values are considered to be evidence that PBNP releases are as low as reasonably achievable (ALARA). The maximum annual calculated doses in millirem (mrem) or millirad (mrad) are shown below and compared to the corresponding design objectives of 10 CFR 50, Appendix I.

LIQUID RELEASES

Dose Category	Calculated Dose	Appendix I Dose
Whole body dose	0.0062 mrem	6 mrem
Organ dose	0.0063 mrem	20 mrem

ATMOSPHERIC RELEASES

Dose Category	Calculated Dose	Appendix I Dose
Organ dose	0.0344 mrem	30 mrem
Noble gas beta air dose	0.00009 mrad	40 mrad
Noble gas gamma ray air dose	0.00025 mrad	20 mrad
Noble gas dose to the skin	0.00035 mrem	30 mrem
Noble gas dose to the whole body	0.00023 mrem	10 mrem

The results show that during 2007, the doses from PBNP effluents were a small percentage (0.11% at the most) of the Appendix I design objectives. Therefore, operation of PBNP continues to be ALARA.

A survey of land use with respect to the location of dairy cattle was made pursuant to Section 2.5 of the PBNP Environmental Manual. As in previous years, no dairy cattle were found to be grazing at the site boundary. Therefore, the assumption that cattle graze at the site boundary used in the evaluation of doses from PBNP effluents remains conservative.

The 2007 Radiological Environmental Monitoring Program (REMP) collected 823 samples for radiological analyses and 116 sets of thermoluminescent dosimeters (TLDs) to measure ambient radiation in the vicinity of PBNP and the ISFSI. Air monitoring from six different sites showed only background radioactivity from naturally occurring radionuclides. Terrestrial monitoring consisting of soil, vegetation, and milk found no influence from PBNP. Similarly, samples from the aquatic environment, consisting of lake and well water, fish, and algae, revealed no buildup of PBNP radionuclides released in liquid effluents. Therefore, the data show no plant effect on its environs.

There were no dry storage units added to the ISFSI in 2007. The total number remains at 25 dry storage casks. Sixteen are the ventilated, vertical storage casks (VSC-24) and nine are the NUHOMS, horizontally stacked storage modules. The subset of the PBNP REMP samples used to evaluate the environmental impact of the PBNP ISFSI showed no environmental impact from its operation.

The environmental monitoring conducted during 2007 confirmed that the effluent control program at PBNP ensured a minimal impact on the environment.

Part A
EFFLUENT MONITORING

1.0 INTRODUCTION

The PBNP effluent monitoring program is designed to comply with federal regulations for ensuring the safe operation of PBNP with respect to releases of radioactive material to the environment and its subsequent impact on the public. Pursuant to 10 CFR 50.34a, operations should be conducted to keep the levels of radioactive material in effluents to unrestricted areas ALARA. In 10 CFR 50, Appendix I, the Nuclear Regulatory Commission (NRC) provides the numerical values for what it considers to be the appropriate ALARA design objectives to which the licensee's calculated effluent doses may be compared. These doses are a small fraction of the dose limits specified by 10 CFR 20.1301 and lower than the Environmental Protection Agency (EPA) limits specified in 40 CFR 190.

10 CFR 20.1302 directs PBNP to make the appropriate surveys of radioactive materials in effluents released to unrestricted and controlled areas. Liquid wastes are monitored by inline radiation monitors as well as by isotopic analyses of samples of the waste stream prior to discharge from PBNP. Airborne releases of radioactive wastes are monitored in a similar manner. Furthermore, for both liquid and atmospheric releases, the appropriate portions of the radwaste treatment systems are used as required to keep releases ALARA. Prior to release, results of isotopic analyses are used to adjust the release rate of discrete volumes of liquid and atmospheric wastes (from liquid waste holdup tanks and from gas decay tanks) such that the concentrations of radioactive material in the air and water beyond PBNP are below the PBNP Technical Specification concentration limits for liquid effluents and release rate limits for gaseous effluents.

Solid wastes are shipped offsite for disposal at NRC licensed facilities. The amount of radioactivity in the solid waste is determined prior to shipment in order to determine the proper shipping configuration as regulated by the Department of Transportation and the NRC.

Under the General License granted pursuant to 10 CFR 72.210, is an ISFSI. The release of radioactive materials from the operation of the ISFSI must also comply with the limits of Part 20 and Part 50 Appendix I design objectives. Per 10 CFR 72.44(d)(3), the results of radiological effluent monitoring are to be reported annually.* The dose criteria for effluents and direct radiation specified by 10 CFR 72.104 states that during normal operations and anticipated occurrences, the annual dose equivalent to any real individual beyond the controlled area must not exceed 25 mrem to the whole body, 75 mrem to the thyroid, and 25 mrem to any other organ. The dose from naturally occurring radon and its decay products are exempt. Because the loading of the storage casks occurs within the primary auxiliary building of PBNP, the doses from effluents due to the loading process will be assessed and quantified as part of the PBNP Radiological Effluent Control Program.

* Holders of a Part 72 license are allowed to submit the report required by 72.44(d)(3) concurrent with the effluent report required by 10 CFR 50.36a (a)(2). (Reference: 64 FR 33178)

will be assessed and quantified as part of the PBNP Radiological Effluent Control Program.

2.0 RADIOACTIVE LIQUID RELEASES

The radioactive liquid release path to the environment is via the circulating water discharge. A liquid waste treatment system in conjunction with administrative controls is used to minimize the impact on the environment and maintain doses to the public ALARA from the liquid releases.

2.1 Doses From Liquid Effluent

Doses from liquid effluent are calculated using the methodology of the Offsite Dose Calculation Manual (ODCM). These calculated doses use parameters such as the amount of radioactive material released, the total volume of liquid, the total volume of dilution water, and usage factors (e.g., water and fish consumption, shoreline and swimming factors). These calculations produce a conservative estimation of the dose. For compliance with 10 CFR 50, Appendix I design objectives, the annual dose is calculated to the hypothetical maximally exposed individual (MEI). The MEI is assumed to reside at the site boundary in the highest χ/Q sector and is maximized with respect to occupancy, food consumption, and other uses of this area. As such, the MEI represents an individual with reasonable deviations from the average for the general population in the vicinity of PBNP. A comparison of the calculated doses to the 10 CFR 50, Appendix I design objectives is presented in Table 2-1. The conservatively calculated dose to the MEI is a very small fraction of the Appendix I design objective.

Table 2-1
Comparison of 2007 Liquid Effluent Calculated Doses to 10 CFR 50 Appendix I Design Objectives

Annual Limit [mrem]	Highest Total Calculated Dose [mrem]	% of Design Objective
6 (whole body)	0.0062	0.10 %
20 (any organ)	0.0063	0.03 %

2.2 2007 Circulating Water Radionuclide Release Summary

Radioactive liquid releases via the circulating water discharge are summarized by individual source and total curies released on a monthly basis and presented in Table 2-2. These releases are composed of processed waste, wastewater effluent, and blowdown from Units 1 and 2. The wastewater effluent consists of liquid from turbine hall sumps, plant well house backwashes, sewage treatment plant effluent, water treatment plant backwashes, and the Unit 1 and 2 facade sumps.

2.3 2007 Isotopic Composition of Circulating Water Discharges

The isotopic composition of circulating water discharges during the current reporting period is presented in Table 2-3. The noble gases released in liquids are reported with the airborne releases in Section 3. The isotopic distribution shows little change from 2006, with tritium down slightly from 2006 and close to 2005 value. Tritium continues to be the major radionuclide released via liquid discharges.

2.4 Beach Drain System Releases Tritium Summary

The quarterly results of monitoring the beach drains are presented in Table 2-4. These six drains are sampled once a month. The total monthly flow is calculated assuming that the flow rate at the time of sampling persists for the whole month. During 2007, no tritium was observed in any of the beach drains at the effluent LLDs used to detect and quantify tritium released from discreet volumes such as hold up tanks and waste distillate tanks. However, these drains are subject to ground water inleakage so they are sampled as part of the ground water monitoring program. Results range from not detected (46 ± 104 pCi/l) to a high of 683 ± 102 pCi/l. Most results are in the 200 - 300 pCi/l range. Based on these environmental analyses of beach drain discharges and the associated monthly flows, 2.12 Ci of tritium would be added to the 588 Ci released via discharges for which permits are used. All of the ground water monitoring results are presented in Part D of this Annual Monitoring Report.

2.5 Changes to the Waste Liquid Treatment System in 2007

The wastewater treatment system serving the radiologically controlled area of the plant was modified by replacing the evaporator system with ion exchange system. The Advanced Liquid Processing System (ALPS) was added to the liquid waste treatment system in 2007. The ODCM (Figure 2-1) has been revised to reflect this change.

Table 2-2
Summary of Circulating Water Discharge
January 1, 2007, through December 31, 2007

	Jan	Feb	Mar	Apr	May	Jun	Total Jan-Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
Total Activity Released (Ci)														
Gamma Scan (+Fe-55)	5.55E-03	3.82E-04	2.17E-02	1.83E-02	7.33E-03	1.17E-02	6.50E-02	2.72E-03	2.25E-04	1.32E-03	2.15E-04	3.38E-03	7.68E-03	8.05E-02
Gross Alpha	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.51E-06	3.51E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.51E-06
Tritium	8.03E+01	6.44E+00	1.09E+02	2.60E+01	3.84E+01	3.44E+01	2.94E+02	2.71E+01	1.56E+01	8.58E+01	9.78E+00	5.82E+01	9.65E+01	5.88E+02
Strontium (89/90/92)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.36E-05	0.00E+00	9.36E-05
Total Vol Released (gal)														
Processed Waste	5.63E+04	1.72E+04	1.06E+05	1.06E+05	1.06E+05	4.42E+04	4.36E+05	6.39E+04	2.61E+04	4.24E+04	8.23E+03	3.16E+04	4.17E+04	6.50E+05
Waste Water Effluent*	4.55E+06	3.46E+06	4.71E+06	3.61E+06	3.66E+06	2.75E+06	2.27E+07	2.96E+06	3.79E+06	3.99E+06	4.67E+06	5.01E+06	5.23E+06	4.84E+07
U1 SG Blowdown	1.57E+06	1.54E+06	1.70E+06	8.80E+03	2.39E+06	1.88E+06	9.09e+06	2.68E+06	2.66E+06	2.33E+06	2.68E+06	2.46E+06	2.66E+06	2.46E+07
U2 SG Blowdown	2.62E+06	2.40E+06	2.14E+06	1.58E+06	2.63E+06	2.07E+06	1.34E+07	2.12E+06	2.58E+06	2.08E+06	2.49E+06	2.46E+06	2.61E+06	2.78E+07
Total Gallons	8.80E+06	7.42E+06	8.66E+06	5.31E+06	8.78E+06	6.74E+06	4.57E+07	7.83E+06	9.07E+06	8.45E+06	9.85E+06	9.97E+06	1.05E+07	1.01E+08
Total cc	3.33E+10	2.81E+10	3.28E+10	2.01E+10	3.32E+10	2.55E+10	1.73E+11	2.96E+10	3.43E+10	3.20E+10	3.73E+10	3.77E+10	3.97E+10	3.84E+11
Vol of dilution water (cc)**	6.62E+13	5.98E+13	8.06E+13	5.74E+13	1.04E+14	1.00E+14	4.68E+14	1.15E+14	1.15E+14	1.11E+14	1.13E+14	1.08E+14	6.68E+13	1.10E+15
Avg diluted discharge conc (µCi/cc)														
Gamma Scan (+Fe-55)	8.38E-11	6.39E-12	2.69E-10	3.19E-10	7.05E-11	1.17E-10		2.37E-11	1.96E-12	1.19E-11	1.90E-12	3.13E-11	1.15E-10	
Gross Alpha	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.51E-14		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Tritium	1.21E-06	1.08E-07	1.35E-06	4.53E-07	3.69E-07	3.44E-07		2.36E-07	1.36E-07	7.73E-07	8.65E-08	5.39E-07	1.44E-06	
Strontium (89/90/92)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.67E-13	0.00E+00	
Max Batch Discharge Conc (µCi/cc)														
Tritium	4.62E-05	8.45E-06	3.66E-05	1.22E-05	1.78E-05	1.46E-05		1.02E-05	9.98E-06	1.54E-05	7.90E-06	1.27E-05	2.00E-05	
Gamma Scan	5.57E-09	2.32E-10	8.32E-09	1.01E-08	4.18E-09	1.64E-08		3.23E-09	2.04E-10	2.16E-10	6.46E-12	8.98E-10	1.97E-09	

* The waste water effluent system replaced the Retention Pond which was taken out of service in September 2002.
** Circulating water discharge from both units.
Note: Dissolved noble gases detected in liquid effluents (e.g., Xe-133, Xe-135, etc.) are added to the atmospheric release summaries.

Table 2-3
Isotopic Composition of Circulating Water Discharges (Ci)
January, 2007 through December 31, 2007

							Total							Total
Nuclide	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jan-Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan-Dec**
H-3	8.03E+01	6.44+00	1.09E+02	2.60E+01	3.84E+01	3.44E+01	2.94E+02	2.71E+01	1.56E+01	8.58E+01	9.78E+00	5.82E+01	9.65E+01	5.88E+02
F-18	1.53E-04	2.12E-04	3.11E-04	1.71E-04	3.11E-04	1.45E-04	1.30E-03	5.53E-04	4.62E-05	1.16E-04	2.07E-04	0.00E+00	2.29E-04	2.45E-03
Cr-51	4.11E-04	0.00E+00	7.19E-04	6.67E-04	4.43E-04	5.33E-04	2.77E-03	9.02E-05	0.00E+00	0.00E+00	0.00E+00	9.62E-05	1.46E-04	3.10E-03
Mn-54	3.34E-05	0.00E+00	2.36E-05	7.65E-06	7.90E-06	8.90E-05	8.14E-05	2.87E-05	0.00E+00	0.00E+00	0.00E+00	3.09E-06	1.11E-05	1.24E-04
Fe-55	0.00E+00	0.00E+00	4.43E-04	0.00E+00	3.06E-04	5.02E-03	5.77E-03	1.96E-04	0.00E+00	2.57E-04	0.00E+00	0.00E+00	0.00E+00	6.22E-03
Fe-59	0.00E+00	0.00E+00	0.00E+00	9.57E-05	2.29E-05	7.42E-05	1.93E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.93E-04
Co-57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	2.21E-04	4.14E-05	7.51E-04	8.29E-04	3.12E-03	9.23E-04	5.88E-03	1.91E-04	8.37E-06	5.30E-05	0.00E+00	2.71E-05	9.99E-05	6.26E-03
Co-60	6.53E-04	8.20E-05	7.03E-04	8.39E-04	4.05E-04	1.18E-03	3.86E-03	5.92E-04	1.10E-04	1.38E-04	6.39E-06	2.01E-04	5.40E-04	5.45E-03
Zn-65	0.00E+00	0.00E+00	4.62E-06	0.00E+00	0.00E+00	0.00E+00	4.62E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.62E-06
As-76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.99E-05	0.00E+00	1.99E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.99E-05
Sr-89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.36E-05	0.00E+00	9.36E-05
Nb-95	8.04E-05	0.00E+00	3.00E-05	3.06E-05	8.79E-05	2.34E-05	2.52E-04	0.00E+00	0.00E+00	3.71E-08	0.00E+00	0.00E+00	1.86E-05	2.71E-04
Nb-97	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.83E-06
Zr-95	3.30E-05	0.00E+00	0.00E+00	3.12E-06	9.21E-06	0.00E+00	4.53E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.53E-05
Ag-110m	1.52E-04	3.21E-05	2.15E-04	1.75E-04	1.63E-04	2.68E-03	3.42E-03	1.00E-03	6.05E-05	9.92E-05	1.60E-06	8.23E-05	7.89E-05	4.74E-03
Sn-113	1.21E-05	0.00E+00	6.76E-06	1.01E-05	3.36E-05	5.32E-05	1.16E-04	0.00E+00	0.00E+00	1.16E-06	0.00E+00	0.00E+00	0.00E+00	1.17E-04
Sn-117m	1.46E-04	0.00E+00	5.20E-05	1.19E-04	1.49E-03	2.90E-04	2.10E-03	1.41E-04	0.00E+00	2.35E-05	0.00E+00	1.23E-06	6.53E-06	2.27E-03
Sb-122	0.00E+00	0.00E+00	0.00E+00	1.27E-06	0.00E+00	0.00E+00	1.27E-06	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E-05
Sb-124	0.00E+00	0.00E+00	1.36E-04	0.00E+00	3.19E-06	1.16E-04	2.55E-04	3.48E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.90E-04
Sb-125	3.63E-03	4.42E-06	1.83E-02	1.53E-02	9.00E-04	5.82E-04	3.87E-02	1.29E-04	0.00E+00	6.12E-04	0.00E+00	2.86E-03	6.54E-03	4.88E-02
I-131	0.00E+00	0.00E+00	1.40E-05	0.00E+00	0.00E+00	0.00E+00	1.40E-05	0.00E+00	0.00E+00	2.34E-05	0.00E+00	0.00E+00	0.00E+00	3.74E-05
I-133	2.06E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.06E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.06E-05
Te-132	0.00E+00	0.00E+00	1.05E-05	3.66E-06	0.00E+00	0.00E+00	1.42E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.04E+06	2.32E-05
Cs-137	1.11E-05	1.00E-05	4.39E-06	4.66E-05	8.99E-06	1.94E-05	1.00E-04	3.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.81E-07	1.04E-04
Ru-103	0.00E+00	0.00E+00	0.00E+00	2.68E-06	0.00E+00	0.00E+00	2.68E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E-06
Ru-106	0.00E-00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.49E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.49E-04
Ba-140	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.79E-05	0.00E+00	1.79E-05
W-187	0.00E-00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Te-131	0.00E-00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Note: The dissolved noble gases detected in liquid effluents (e.g., Xe-133, Xe-135, etc.) are added to the atmospheric release summaries.

Table 2-4
Subsoil System Drains - Tritium Summary
January 1, 2007, through December 31, 2007

	S-1	S-3	S-7	S-8	S-9	S-10
1st Qtr						
H-3 (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flow (gal)	2.15E+06	5.23E+05	0.00E+00	6.70E+04	0.00E+00	0.00E+00
2nd Qtr						
H-3 (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flow (gal)	3.50E+05	1.97E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3rd Qtr						
H-3 (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flow (gal)	3.13E+05	1.44E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4th Qtr						
H-3 (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Flow (gal)	2.35E+05	1.00E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00

2.6 Land Application of Sewage Sludge

The Wisconsin Department of Natural Resources has approved the disposal of PBNP sewage by land application on various FPL Energy Point Beach, LLC properties surrounding the plant. This sewage sludge, which may contain trace amounts of radionuclides, is to be applied in accordance with methodologies approved by the NRC on January 13, 1988, pursuant to 10 CFR 20.302(a). The approved methodology requires analyses prior to every disposal. Based upon an investigation of the source of the radionuclides, a combination of engineering modifications and administrative controls has eliminated plant generated radiological inputs to the sewage. This was verified by sludge analyses using the environmental lower level of detection (LLD) criteria. No byproduct radionuclides were found in the sludge after the controls and modifications were completed. Sludge is routinely monitored and no radionuclides attributable to PBNP have been found.

There was no disposal of sewage by land application during 2007. All disposals were done at the Manitowoc Sewage Treatment Plant.

3.0 RADIOACTIVE AIRBORNE RELEASES

The release paths to the environment contributing to radioactive airborne release totals during this reporting period were the Auxiliary Building Vent Stack, the Drumming Area Vent Stack, the Letdown Gas Stripper, the Unit 1 Containment Purge Stack, and the Unit 2 Containment Purge Stack. A gaseous radioactive effluent treatment system in conjunction with administrative controls is used to minimize the impact on the environment from the airborne releases and maintain doses to the public ALARA.

3.1 Doses From Airborne Effluent

Doses from airborne effluent are calculated for the MEI following the methodology contained in the PBNP ODCM. These calculated doses use parameters such as the amount of radioactive material released, the concentration at and beyond the site boundary, the average site weather conditions, the locations of the exposure pathways (e.g., cow milk, vegetable gardens and residences), and usage factors (e.g., breathing rates, food consumption). In addition to the MEI doses, the energy deposited in the air by noble gas beta particles and gamma rays is calculated and compared to the corresponding Appendix I design objectives. A comparison of the annual Appendix I design objectives for atmospheric effluents to the highest organ dose and the noble gas doses calculated using ODCM methodology is listed in Table 3-1. The doses demonstrate that releases from PBNP to the atmosphere continue to be ALARA.

3.2 Radioactive Airborne Release Summary

Radioactivity released in airborne effluents for 2007 are summarized in Table 3-2.

3.3 Isotopic Airborne Releases

The monthly isotopic airborne releases for 2007, from which the airborne doses were calculated, are presented in Table 3-3. When both the equipment hatch and the Elevation 66' hatch are open during an outage, there is a measurable, convective flow out the upper hatch. Because this air is not filtered, whatever is measured in containment air is assumed to be carried out the hatch, through the façade, and into the environment thereby contributing to the particulate effluent and the calculated dose.

3.4 Corrections to Tables 3-2 and 3-3 (2000 through 2005)

During the years 2000 through 2005, F-18 was reported in Table 3-3 "Isotopic Composition of Airborne Releases," and used to calculate the total particulate curies released in Table 3-2, "Radioactive Airborne Effluent Release Summary." Because particulate F-18 does not have to be used for dose calculations due to its short half-life, it should not have been reported in either table during those years. The curies of airborne particulates released have been recalculated. The originally reported values and the corrected particulate values are presented in Table 3-4.

Table 3-1
Comparison of 2007 Airborne Effluent Calculated Doses to 10 CFR 50 Appendix I Design Objectives

Category	Annual Appendix I Design Objective	January-December Calculated Dose	Percent of Appendix I Design Objective
Particulate	30 mrem/organ	0.0344 mrem	0.115
Noble gas	40 mrad (beta air)	0.00009 mrad	0.000225
Noble gas	20 mrad (gamma air)	0.00025 mrad	0.00125
Noble gas	30 mrem/skin	0.00035 mrem	0.00117
Noble gas	10 mrem (whole body)	0.00023 mrem	0.0023

Table 3-2
Radioactive Airborne Effluent Release Summary
January 1, 2007, through December 31, 2007

							Total							
	Jan	Feb	Mar	Apr	May	Jun	J-Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total NG from Liq (Ci)	5.38E-05	0.00E+00	2.04E-03	1.33E-03	2.56E-03	1.89E-03	7.87E-03	2.07E-04	0.00E+00	3.48E-04	0.00E+00	2.30E-04	3.89E-04	9.05E-03
Total Noble Gas (Ci)1	4.15E-02	5.00E-02	5.15E-02	4.17E-02	5.36E-02	6.60E-02	3.04E-01	5.80E-02	4.12E-02	4.37E-02	5.72E-02	8.66E-02	6.53E-02	6.56E-01
Total Radioiodines (Ci)	1.08E-05	0.00E+00	0.00E+00	5.16E-06	0.00E+00	0.00E+00	1.60E-05	0.00E+00	0.00E+00	1.44E-05	0.00E+00	0.00E+00	0.00E+00	3.04E-05
Total Particulate (Ci)2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-10	0.00E+00	1.65E-10
Alpha (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Strontium(Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
All other beta + gamma (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-10	0.00E+00	1.65E-10
Total Tritium (Ci)	1.01E+01	6.05E+00	6.87E+00	9.36E+00	6.41E+00	4.56E+00	4.34E+01	4.73E+00	5.59E+00	6.43E+00	9.18E+00	8.60E+00	8.29E+00	8.62E+01
Max NG H'rly Rel.(Ci/sec)	4.08E-08	4.14E-08	4.07E-08	3.67E-08	7.12E-10	7.65E-08		6.63E-08	3.76E-08	3.95E-08	5.87E-08	2.85E-07	5.07E-08	

[1] Total noble gas (airborne + liquid releases).
[2] Total Particulate is the sum of alpha, strontium, and others. It does not include radioiodines or F-18. F-18 and other airborne particulates with half-lives <8 days do not to be considered for dose calculations. Airborne radioiodines only include I-131 and I-133.

TABLE 3-3
Isotopic Composition of Airborne Releases
January 1, 2007 through December 31, 2007

	Jan	Feb	Mar	Apr	May	Jun	Semi-	Jul	Aug	Sep	Oct	Nov	Dec	Total
Nuclide	(Ci)	(Ci)	(Ci)	(Ci)	(Ci)	(Ci)	Annual	(Ci)	(Ci)	(Ci)	(Ci)	(Ci)	(Ci)	(Ci)
H-3	1.01E+01	6.05E+00	6.87E+00	9.36E+00	6.41E+00	4.56E+00	4.34E+01	4.73E+00	5.59E+00	6.43E+00	9.18E+00	8.60E+00	8.29E+00	8.62E+01
Ar-41	4.14E-02	4.92E-02	4.72E-02	3.83E-02	4.24E-02	4.31E-02	2.62E-01	4.60E-02	4.03E-02	4.05E-02	5.04E-02	5.21E-02	5.50E-02	5.46E-01
Kr-85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85m	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.07E-04	0.00E+00	2.07E-04
Kr-87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.64E-04	0.00E+00	4.64E-04
Kr-88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.02E-03	0.00E+00	2.02E-03
Xe-133	1.73E-04	8.28E-04	3.55E-03	3.38E-03	1.02E-02	2.27E-02	4.08E-02	1.20E-02	8.14E-04	2.75E-03	6.71E-03	2.65E-02	9.90E-03	9.95E-02
Xe-133m	0.00E+00	0.00E+00	2.86E-05	0.00E+00	3.47E-05	0.00E+00	6.33E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.11E-04	0.00E+00	3.74E-04
Xe-135	0.00E+00	0.00E+00	6.45E-04	1.46E-05	9.52E-04	1.79E-04	1.79E-03	2.43E-05	1.07E-04	4.23E-04	1.19E-04	1.95E-03	3.79E-04	4.79E-03
Xe-135m	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.20E-05	0.00E+00	9.01E-04	0.00E+00	9.53E-04
Xe-138	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.17E-03	0.00E+00	2.17E-03
Cr-51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ag-110m	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sn-113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sb-124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sb-125	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	7.08E-07	0.00E+00	0.00E+00	5.16E-06	0.00E+00	0.00E+00	5.87E-06	0.00E+00	0.00E+00	1.55E-06	0.00E+00	0.00E+00	0.00E+00	7.42E-06
I-133	1.01E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-05	0.00E+00	0.00E+00	1.29E-05	0.00E+00	0.00E+00	0.00E+00	2.30E-05
Cs-137	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-10	0.00E+00	1.65E-10

Note: The Noble Gases listed above include the liquid contribution.

Table 3-4
Total Particulate Curies Reported in Table 3-2 in Years 2000 - 2005 Corrected for F-18

2000	Jan (Ci)	Feb (Ci)	Mar (Ci)	Apr (Ci)	May (Ci)	Jun (Ci)	Annual (Ci)	Jul (Ci)	Aug (Ci)	Sep (Ci)	Oct (Ci)	Nov (Ci)	Dec (Ci)	Total (Ci)
Total Particulates[2](Ci)	2.91E-05	4.34E-06	2.06E-06	0.00E+00	0.00E+00	1.10E-08	NR	0.00E+00	0.00E+00	6.35E-11	2.33E-05	8.67E-06	6.38E-11	6.68E-05
2000 Corrected	2.91E-05	4.34E-06	1.01E-06	0.00E+00	0.00E+00	1.10E-08		0.00E+00	0.00E+00	6.35E-11	2.33E-05	8.67E-06	6.38E-11	6.64E-05
2001														
Total Particulates[2](Ci)	5.66E-11	9.49E-04	0.00E+00	0.00E+00	0.00E+00	5.08E-14	NR	2.85E-09	6.22E-04	1.03E-06	7.58E-08	2.50E-09	0.00E+00	1.57E-03
2001 Corrected	5.66E-11	1.13E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	1.03E-06	0.00E+00	4.07E-10	0.00E+00	1.23E-05
2002														
Total Particulates[2](Ci)	0.00E+00	0.00E+00	0.00E+00	5.50E-06	4.08E-06	2.09E-10	NR	0.00E+00	0.00E+00	1.25E-07	3.77E-06	3.04E-07	0.00E+00	1.38E-05
2002 Corrected	0.00E+00	0.00E+00	0.00E+00	5.50E-06	1.25E-10	0.00E+00		0.00E+00	0.00E+00	1.25E-07	3.77E-06	3.04E-07	0.00E+00	9.70E-06
2003														
Total Particulates[2](Ci)	0.00E+00	0.00E+00	0.00E+00	3.12E-05	1.10E-05	3.62E-05	NR	8.57E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.80E-05
2003 Corrected	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		8.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.56E-06
2004														
Total Particulates[2](Ci)	0.00E+00	1.28E-10	1.17E-06	1.84E-08	1.39E-08	8.94E-12	1.20E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-06
2004 Corrected	0.00E+00	0.00E+00	0.00E+00	1.84E-08	1.39E-08	8.94E-12	3.23E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.23E-08
2005														
Total Particulates[2](Ci)	0.00E+00	1.27E-07	0.00E+00	0.00E+00	8.89E-10	1.13E-05	1.14E-05	6.95E-05	5.00E-01	1.01E-07	2.60E-04	3.95E-08	5.35E-04	5.01E-01
2005 Corrected	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.15E-06	3.15E-06	6.96E-07	8.98E-07	7.86E-08	6.59E-05	3.95E-08	0.00E+00	7.08E-05

[2] Total is the sum of alpha, strontium, and others

NR = not reported in Table 3-2 those years.

4.0 RADIOACTIVE SOLID WASTE SHIPMENTS

4.1 Types, Volumes, and Activity of Shipped Solid Waste

The following types, volumes, and activity of solid waste were shipped from PBNP for offsite disposal or burial during 2007. No types C or D were shipped. No irradiated fuel was shipped offsite. The volume, activity, and type of waste are listed in Table 4-1.

Table 4-1
Quantities and Types of Waste Shipped from PBNP

Type of Waste	Quantity	Activity
A. Spent resins, filter sludge, evaporator bottoms, etc.	4.100 m^3	30.122 Ci
	145.00 ft^3	
B. Dry compressible waste, contaminated equipment, etc	248 m^3	0.235 Ci
	8752 ft^3	
C. Irradiated components, control rods, etc.	0.00 m^3	N/A Ci
	0.00 ft^3	
D. Other	0.00 m^3	N/A Ci
	0.00 ft^3	

4.2 Major Nuclide Composition (by Type of Waste)

The major radionuclide content of the 2007 solid waste was determined by gamma isotopic analysis and the application of scaling factors for certain indicator radionuclides based on the measured isotopic content of representative waste stream samples. The estimated isotopic content is presented in Table 4-2.

Table 4-2
2007 Estimated Solid Waste Major Radionuclide Composition

TYPE A		TYPE B		TYPE C		TYPE D	
	Percent		Percent		Percent		Percent
Nuclide	Abundance	Nuclide	Abundance	Nuclide	Abundance	Nuclide	Abundance
Ni-63	73.7%	Ni-63	23.7%				
Co-60	14.5%	Co-58	15.8%				
Cs-137	5.9%	Fe-55	15.0%				
Fe-55	3.0%	Co-60	13.0%				
Ni-59	0.8%	Nb-95	12.7%				
Sb-125	0.6%	Ag-110m	5.3%				
Co-57	0.5%	Zr-95	4.3%				
Cs-134	0.5%	Sb-125	4.2%				
Mn-54	0.1%	Cr-51	1.9%				
Ag-110m	0.1%	Ru-106	1.8%				
Sr-90	0.1%	Mn-54	1.8%				
Pu-241	0.1%	H-3	0.2%				
Ce-144	0.1%	Cs-137	0.2%				
Co-58	0.1%	Tc-99	0.0%				
Am-241	0.0%	Zn-65	0.0%				
Pu-238	0.0%	Pu-241	0.0%				
Cm-243	0.0%	Ce-144	0.0%				
H-3	0.0%	Sr-90	0.0%				
Cm-244	0.0%	Am-241	0.0%				
Tc-99	0.0%	Cm-242	0.0%				
Pu-239	0.0%	Cm-243	0.0%				
Pu-240	0.0%	Cm-244	0.0%				
Sr-89	0.0%	Pu-238	0.0%				
I-129	0.0%	Pu-239	0.0%				
Cm-242	0.0%	Pu-240	0.0%				

4.3 Solid Waste Disposition

There were nine solid waste shipments from PBNP during 2007. The dates and destinations are shown in Table 4-3.

Table 4-3
2007 PBNP Radioactive Waste Shipments

Date	Destination
1/9/2007	Oak Ridge, TN
2/19/2007	Erwin, TN
4/10/2007	Oak Ridge, TN
4/10/2007	Oak Ridge, TN
4/29/2007	Oak Ridge, TN
5/3/2007	Oak Ridge, TN
5/14/2007	Memphis, TN
7/17/2007	Oak Ridge, TN
11/28/2007	Erwin, TN

5.0 NONRADIOACTIVE CHEMICAL RELEASES

5.1 Scheduled Chemical Waste Releases

Scheduled chemical waste releases to the circulating water system from January 1, 2007, to June 30, 2007, included 5.96E+05 gallons of neutralized wastewater. The wastewater contained 4.06E+00 pounds of suspended solids and 2.86E+02 pounds of dissolved solids.

Scheduled chemical waste releases to the circulating water system from July 1, 2007, to December 31, 2007, included 7.53E+05 gallons of neutralized wastewater. The wastewater contained 1.32E+01 pounds of suspended solids and 2.62E+04 pounds of dissolved solids.

Scheduled chemical waste releases are based on the average analytical results obtained from sampling a representative number of neutralizing tanks.

5.2 Miscellaneous Chemical Waste Releases

Miscellaneous chemical waste releases from the wastewater effluent (based on effluent analyses) to the circulating water for January 1, 2007, to June 30, 2007, included 2.36E+07 gallons of clarified wastewater. The wastewater contained 2.34E+03 pounds of suspended solids.

Miscellaneous chemical waste releases from the Wastewater Effluent (based on effluent analyses) to the circulating water for July 1, 2007, to December 31, 2007, included 2.59E+07 gallons of clarified wastewater. The wastewater contained 2.68E+03 pounds of suspended solids.

Miscellaneous chemical waste released directly to the circulating water, based on amount of chemicals used from January 1, 2007, to June 30, 2007, included 2.57E+05 pounds of sodium bisulfite and 2.40E+05 pounds of sodium hypochlorite.

Miscellaneous chemical waste released directly to the circulating water, based on amount of chemicals used from July 1, 2007, to December 31, 2007, included 4.39E+05 pounds of sodium bisulfite and 4.21E+05 pounds of sodium hypochlorite.

6.0 CIRCULATING WATER SYSTEM OPERATION

The circulating water system operation during this reporting period for periods of plant operation is described in Table 6-1.

Table 6-1
Circulating Water System Operation for 2007

	UNIT	JAN	FEB	MAR	APR*	MAY	JUN
Average Volume Cooling Water Discharge [million gal/day]**	1	282.2	282.2	350.9	156.2	425.6	390.5
	2	282.2	282.2	336.5	494.4	468.3	490.4
Average Cooling Water Intake Temperature [°F]	1	37.0	37.6	38.4	42.8	48.0	48.3
	2	37.0	37.6	38.2	41.1	47.5	48.9
Average Cooling Water Discharge Temperature [°F]	1	69.3	70.0	67.0	43.7	63.5	60.1
	2	70.1	70.7	66.7	60.3	67.0	68.1
Average Ambient Lake Temperature [°F]		35.0	36.5	36.9	40.6	46.1	46.1

* Unit 1 outage 4/2 - 5/5.
** For days with cooling water discharge flow.

Table 6-1(continued)
Circulating Water System Operation for 2007

	UNIT	JUL	AUG	SEP	OCT	NOV	DEC
Average Volume Cooling Water Discharge [million gal/day]**	1	489.6	489.6	489.6	485.9	456.0	281.9
	2	489.6	489.6	489.6	479.4	490.5	286.8
Average Cooling Water Intake Temperature [°F]	1	55.1	65.3	52.8	53.5	43.1	36.9
	2	55.7	65.9	53.2	53.9	43.1	37.3
Average Cooling Water Discharge Temperature [°F]	1	73.9	84.4	71.7	72.8	63.8	69.0
	2	74.6	85.4	72.3	73.6	62.3	70.6
Average Ambient Lake Temperature [°F]		52.4	60.7	48.6	50.8	40.2	34.0

** For days with cooling water discharge flow.

Part B
Miscellaneous Reporting Requirements

7.0 ADDITIONAL REPORTING REQUIREMENTS

7.1 Revisions to the PBNP Effluent and Environmental Programs

The ODCM was revised in 2007 to include the modification (ALPS - Advanced Liquid Processing System) to the liquid waste treatment system. The wastewater treatment system that serves the radiologically controlled area of the plant has been modified by replacing the evaporator system with an ion exchange system.

7.2 Interlaboratory Comparison Program

Environmental, Inc, Midwest Laboratory, the analytical laboratory contracted to perform the radioanalyses of the PBNP environmental samples, participated in the Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP) as well as in the interlaboratory comparison studies administered by Environmental Resources Associates (ERA) during 2007. The ERA environmental crosscheck program replaces the Environmental Measurements Laboratory (EML) Quality Assessment Program which was discontinued. The results of these comparisons can be found in Appendix A of the AMR.

7.3 Special Circumstances

No special circumstances report regarding operation of the explosive gas monitor for the waste gas holdup system was needed during 2007.

Part C
RADIOLOGICAL ENVIRONMENTAL MONITORING

8.0 INTRODUCTION

The objective of the PBNP REMP is to determine whether the operation of PBNP or the ISFSI has radiologically impacted the environment. To this end, the REMP collects and analyzes air, water, milk, soil, vegetation, and fish samples for radionuclides and uses TLDs to determine the ambient radiation background. These measurements also serve as a check of the efficacy of PBNP effluent controls. The REMP fulfills the requirements of 10 CFR 20.1302, PBNP General Design Criterion (GDC) 17, GDC 64 of Appendix A to 10 CFR 50, and
Sections IV.B.2 and IV.B.3 of Appendix I to 10 CFR 50 for the operation of the plant. Therefore, the REMP collects samples from various environmental media in order to provide data on measurable levels of radiation and radioactive materials in the principal pathways of environmental exposure.

A subset of the PBNP REMP samples, consisting of air, soil, and vegetation, also fulfills 10 CFR 72.44(d)(2) for operation of the ISFSI. Additionally, TLDs provide the means to measure changes in the ambient environmental radiation levels at sites near the ISFSI and at the PBNP site boundary to ensure that radiation levels from the ISFSI are maintained within the dose limits of 10 CFR 72.104. Because the ISFSI is within the PBNP site boundary, radiation doses from PBNP and the ISFSI, combined, must be used to assess compliance with 10 CFR 72.122 and 40 CFR 190. Therefore, radiological environmental monitoring for the ISFSI is provided by selected sampling sites, which are part of the PBNP REMP.

For the aquatic environment, the samples include water as well as the biological integrators, such as fish and filamentous algae. Because of their migratory behavior, fish are wide area integrators. In contrast, the filamentous algae periphyton is attached to shoreline rocks and concentrate nuclides from the water flowing by their point of attachment. Grab samples of lake water provide a snapshot of radionuclide concentrations at the time the sample is taken; whereas analysis of fish and filamentous algae yield concentrations integrated over time.

The air-grass-cow-milk exposure pathway unites the terrestrial and atmospheric environments. This pathway is important because of the many dairy farms around PBNP. Therefore, the REMP includes samples of air, general grasses, and milk from the PBNP environs. An annual land use survey is made to determine whether the assumptions on the location of dairy cattle remain conservative with respect to dose calculations for PBNP effluents. The dose calculations assume that the dairy cattle are located at the south site boundary, the highest depositional sector. In addition, soil samples are collected and analyzed in order to monitor the potential for long-term buildup of radionuclides in the vicinity of PBNP.

For the measurement of ambient environmental radiation levels that may be affected by direct radiation from PBNP or by noble gas effluents, the REMP employs a series of TLDs situated around PBNP and the ISFSI.

9.0 PROGRAM DESCRIPTION

9.1 Results Reporting Convention

The vendor used by PBNP to analyze the environmental samples is directed to report analysis results as measured by a detector, which can meet the required LLD as specified in Table 2-2 of the Environmental Manual for each sample. The report provided by the vendor (see Appendix 1) contains values, which can be either negative, positive or zero plus/minus the two sigma counting uncertainty, which provides the 95% confidence level for the measured value.

The LLD is an *a priori* concentration value that specifies the performance capability of the counting system used in the analyses of the REMP samples. The parameters for the *a priori* LLD are chosen such that only a five percent chance exists of falsely concluding a specific radionuclide is present when it is not present at the specified LLD. Based on detector efficiency and average background activity, the time needed to count the sample in order to achieve the desired LLD depends upon the sample size. Hence, the desired LLD may be achieved by adjusting various parameters. When a suite of radionuclides are required to be quantified in an environmental sample such as lake water, the count time used is that required to achieve the LLD for the radionuclide with the longest counting time. Therefore, in fulfilling the requirement for the most difficult to achieve radionuclide LLD, the probability of detecting the other radionuclides is increased because the counting time used is longer than that required to achieve the remaining radionuclide LLDs.

The REMP results in this report are reported as averages of the measurements made throughout the calendar year plus/minus the associated standard deviation. If all net sample concentrations are equal to or less than zero, the result is reported as "Not Detectable" (ND), indicating no detectable level of activity present in the sample. If any of the net sample concentrations indicate a positive result statistically greater than zero, all of the data reported are used to generate the reported statistics. Because of the statistical nature of radioactive decay, when the radionuclide of interest is not present in the sample, negative and positive results centered about zero will be seen. Excluding validly measured concentrations, whether negative or as small positive values below the LLD, artificially inflates the calculated average value. Therefore, all generated data are used to calculate the statistical values (i.e., average, standard deviation) presented in this report. The calculated average may be a negative number.

Just because a result is statistically greater than zero does not necessarily indicate that the radionuclide is present in an environmental sample. False positives may be obtained by fluctuations in background during the counting process. This phenomenon is most prevalent for concentrations at or near the LLD. Therefore, other information such as PBNP emissions records and

radionuclide half-life must be used to evaluate whether the result is real or a statistical artifact.

In interpreting the data, effects due to the plant must be distinguished from those due to other sources. A key interpretive aid in assessment of these effects is the design of the PBNP REMP, which is based upon the indicator-control concept. Most types of samples are collected at both indicator locations and at control locations. A plant effect would be indicated if the radiation level at an indicator location was significantly larger than that at the control location. The difference would have to be greater than could be accounted for by typical fluctuation in radiation levels arising from other sources.

9.2 Sampling Parameters

Samples are collected and analyzed at the frequency indicated in Table 9-1 from the locations described in Table 9-2 and shown in Figures 9-1, 9-2, and 9-3. (The latter two figures show sampling locations not shown in preceding figures due to space limitations. The location of the former retention pond, retired and remediated to NRC unrestricted access criteria, is indicated in Figure 9-3). The list of PBNP REMP sampling sites used to determine environmental impact around the ISFSI is found in Table 9-3. The minimum acceptable sample size is found in Table 9-4. In addition, Table 9-1 indicates the collection and analysis frequency of the ISFSI fence TLDs.

9.3 Deviations from Required Collection Frequency

Deviations from the collection frequency given in Table 9-1 are allowed because of hazardous conditions, automatic sampler malfunction, seasonal unavailability, and other legitimate reasons (Section 2.2.6 of the Environmental Manual). Table 9-5 lists the deviations from the scheduled sampling frequency that occurred during the reporting period.

9.4 Assistance to the State of Wisconsin

The Radiation Protection Unit of the Wisconsin Department of Health and Family Services maintains a radiological environmental monitoring program to confirm the results from the PBNP REMP. As a courtesy to the State of Wisconsin, PBNP personnel also collect certain environmental samples (Table 9-6) for the State from sites that are near PBNP sampling sites, or are co-located.

9.5 Program Modifications

No changes were made to the REMP during 2007. Changes to the Ground Water Monitoring Program are discussed in Part D.

Table 9-1
PBNP REMP Sample Analysis and Frequency

Sample Type	Sample Codes	Analyses	Frequency
Environmental Radiation Exposure	E-01, -02, -03, -04, -05 -06, -07, -08, -09, -12 -14, -15, -16, -17, -18, -20, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -38, -39, -TC	TLD	Quarterly
Vegetation	E-01, -02, -03, -04, -06, -08, -09, -20,	Gross Beta	3x/yr as available Gamma Isotopic Analysis
Algae	E-05, -12	Gross Beta Gamma Isotopic Analysis	3x/yr as available
Fish	E-13	Gross Beta Gamma Isotopic Analysis (Analysis of edible portions only)	3x/yr as available
Well Water	E-10	Gross Beta, H-3 Sr-89, 90, I-131 Gamma Isotopic Analysis (on total solids)	Quarterly
Lake Water	E-01, -05, -06, -33	Gross Beta I-131 Gamma Isotopic Analysis (on total solids)	Monthly / Quarterly composite of monthly collections Monthly Monthly
Milk	E-11, -40, -21	Sr-89, 90 I-131 Gamma Isotopic Analysis	Monthly
Air Filters	E-01, -02, -03, -04, -08, -20	Gross Beta I-131 Gamma Isotopic Analysis	Weekly (particulate) Weekly (charcoal) Quarterly (on composite particulate filters)
Soil	E-01, -02, -03, -04, -06, -08, -09, -20,	Gross Beta Gamma Isotopic Analysis	2x/yr
Shoreline Sediment	E-01, -05, -06, -12, -33,	Gross Beta Gamma Isotopic Analysis	2x/yr
ISFSI Ambient Radiation Exposure	North, East, South, West Fence Sections	TLD	Quarterly

Table 9-2
PBNP REMP Sampling Locations

Location Code	Location Description
E-01	Primary Meteorological Tower South of the Plant
E-02	Site Boundary Control Center - East Side of Building
E-03	Tapawingo Road, about 0.4 Miles West of Lakeshore Road
E-04	North Boundary
E-05	Two Creeks Park
E-06	Point Beach State Park - Coast Guard Station; TLD located South of the Lighthouse on Telephone pole
E-07	WPSC Substation on County V, about 0.5 Miles West of Hwy 42
E-08	G.J. Francar Property at Southeast Corner of the Intersection of Cty. B and Zander Road
E-09	Nature Conservancy
E-10	PBNP Site Well
E-11	Dairy Farm about 3.75 Miles West of Site
E-12	Discharge Flume/Pier
E-13	Pumphouse
E-14	South Boundary, about 0.2 miles East of Site Boundary Control Center
E-15	Southwest Corner of Site
E-16	WSW, Hwy 42, a residence about 0.25 miles North of Nuclear Road
E-17	North of Mishicot, Cty. B and Assman Road, Northeast Corner of Intersection
E-18	Northwest of Two Creeks at Zander and Tannery Roads
E-20	Reference Location, 17 miles Southwest, at Silver Lake College
E-21	Local Dairy Farm just South of Site on Lakeshore and Irish Roads
E-22	West Side of Hwy 42, about 0.25 miles North of Johanek Road
E-23	Greenfield Lane, about 4.5 Miles South of Site, 0.5 Miles East of Hwy 42
E-24	North Side of County Rt. V, near intersection of Saxonburg Road
E-25	South Side of County Rt. BB, about 0.5 miles West of Norman Road
E-26	804 Tapawingo Road, about 0.4 miles East of Cty. B, North Side of Road
E-27	Intersection of Saxonburg and Nuclear Roads, Southwest Corner, about 4 Miles WSW
E-28	TLD site on western most pole between the 2nd and 3rd parking lots.
E-29	Area of North Meteorological Tower.
E-30	NE corner at Intersection of Tapawingo and Lakeshore Roads.
E-31	On utility pole North side of Tapawingo Road closest to the gate at the West property line.
E-32	On a tree located at the junction of property lines, as indicated by trees and shrubs, about 500 feet east of the west gate on Tapawingo Road and about 1200 feet south of Tapawingo Road. The location is almost under the power lines between the blue and gray transmission towers.
E-33	Lake Michigan shoreline accessed from the SE corner of KNPP parking lot. Sample South of creek.
E-38	Tree located at the West end of the area previously containing the Retention Pond.
E-39	Tree located at the East end of the area previously containing the Retention Pond.
E-40	Local Dairy Farm, W side of Hwy 42, about 1.8 miles north of the Nuclear Rd intersection
E-TC	Transportation Control; Reserved for TLDs

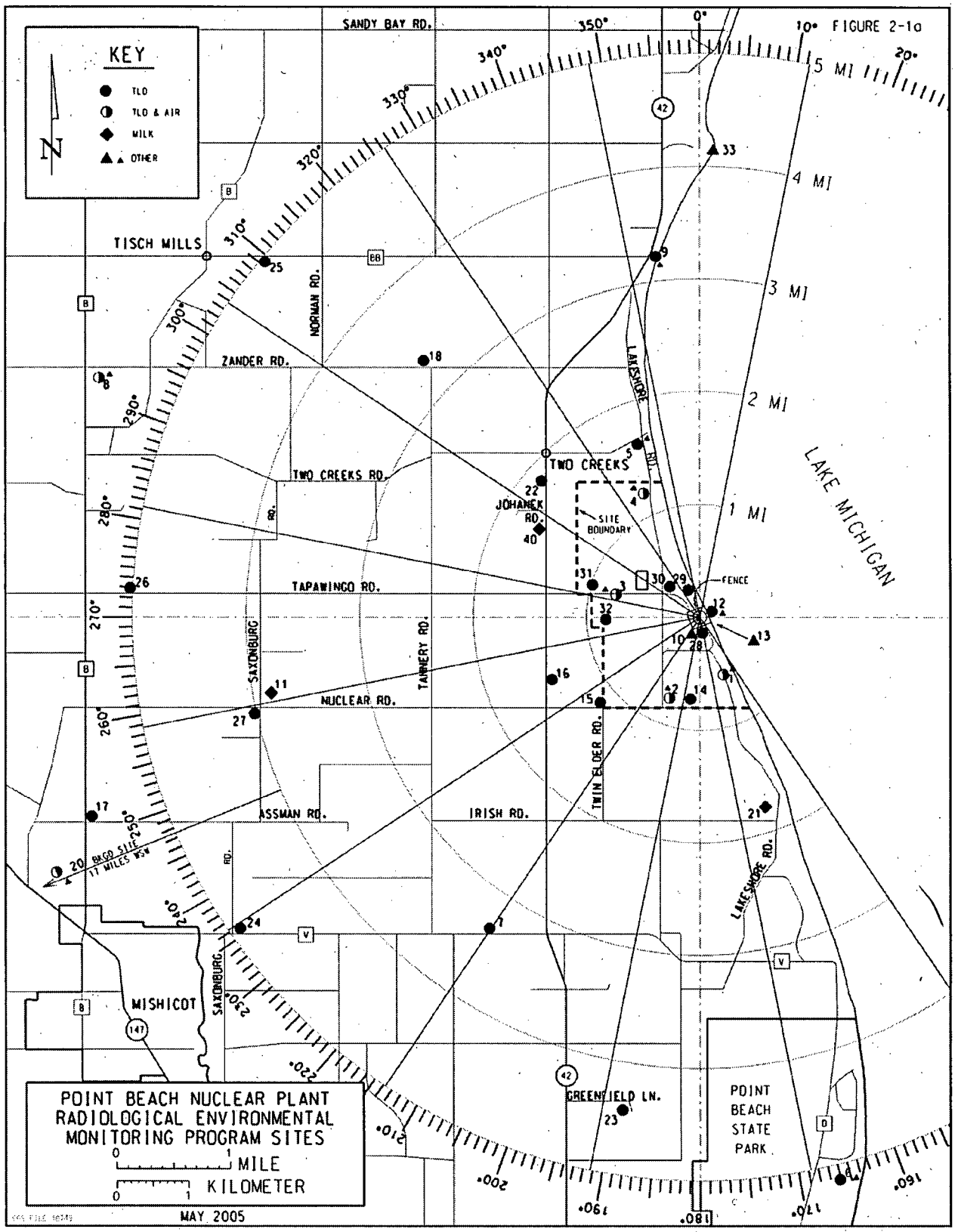


Figure 9-1
PBNP REMP Sampling Sites

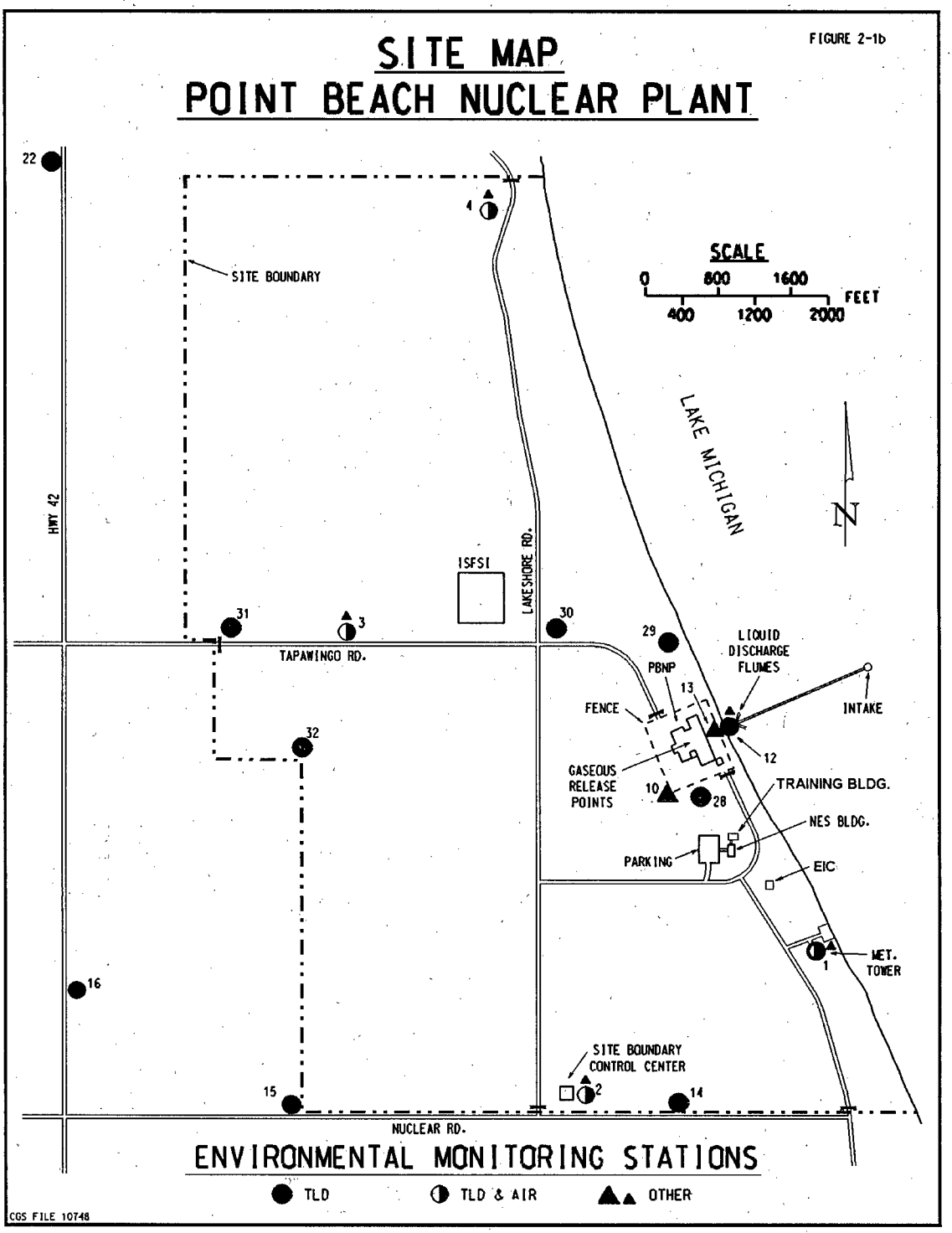


Figure 9-2
Map of REMP Sampling Sites Located Around PBNP

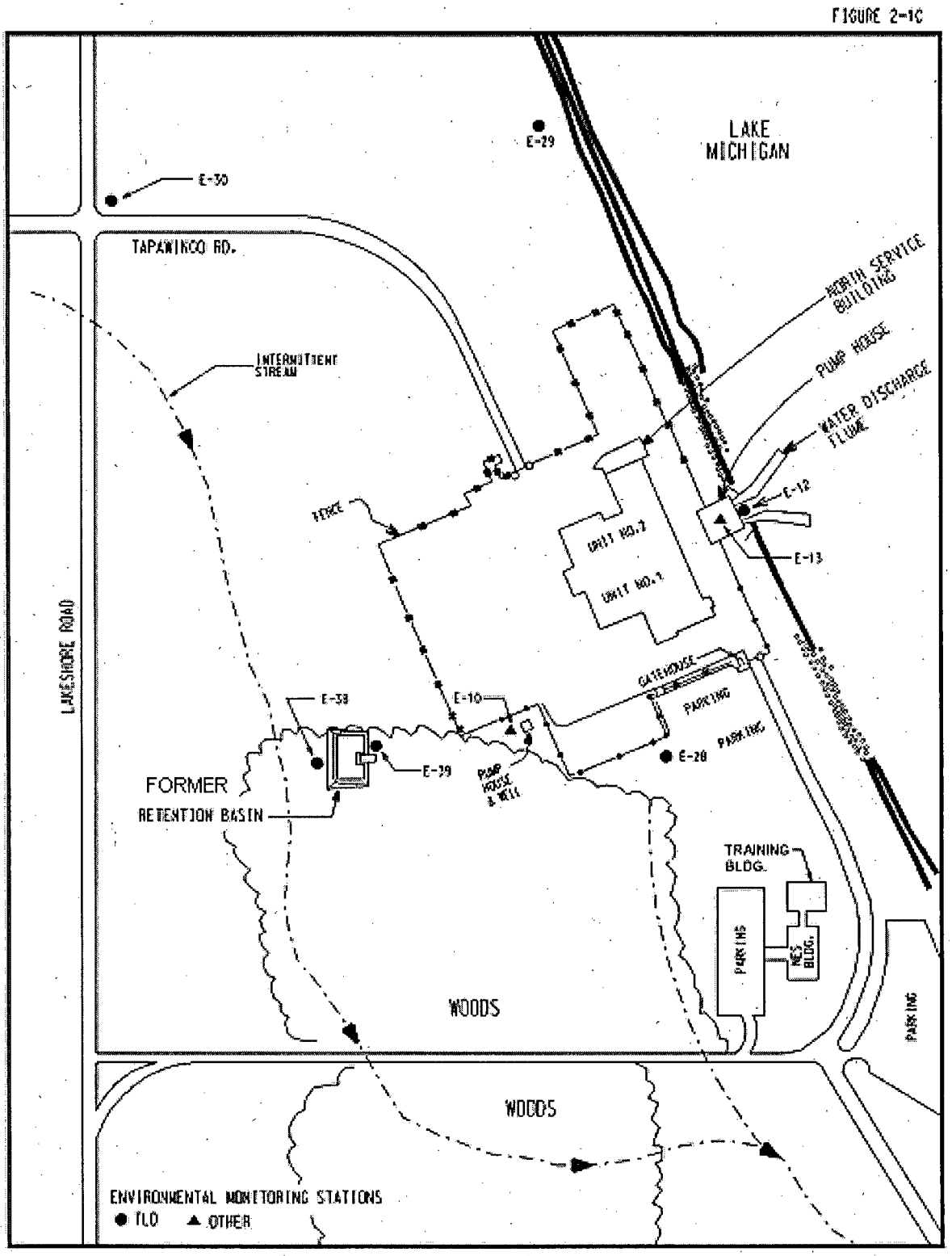


Figure 9-3
Enhanced Map Showing REMP Sampling Sites Closest to PBNP

Table 9-3
ISFSI Sampling Sites

Ambient Radiation Monitoring (TLD)	Soil, Vegetation, and Airborne Monitoring
E-03	E-02
E-28	E-03
E-29	E-04
E-30	
E-31	
E-32	

Table 9-4
Minimum Acceptable Sample Size

Sample Type	Size
Vegetation	100-1000 grams
Lake Water	8 liters
Air Filters	250 m3 (volume of air)
Well Water	8 liters
Milk	8 liters
Algae	100-1000 grams
Fish (edible portions)	1000 grams
Soil	500-1000 grams
Shoreline Sediment	500-1000 grams

Table 9-5
Deviations from Scheduled Sampling and Frequency

Sample Type	Location	Collection Date	Reason for not conducting REMP as required	Plans for Preventing Recurrence
AP/AI	E-02 E-02	10/25/2007, 10/31/2007	Pump Not Running Pump Not Running	Unknown Reason Unknown Reason
Lake Water	E-05 E-06	2/15/07 2/15/07	Lake Frozen Lake Frozen	Samples Collected Next Month After Thaw Samples Collected Next Month After Thaw

Table 9-6
Sample Collections for State of Wisconsin

Sample Type	Location	Frequency
Lake Water	E-01	Weekly, Composited Monthly
Air Filters	E-07 E-08	Weekly
Fish	E-13	Quarterly, As Available
Precipitation	E-04 E-08	Twice a month, As Available
Milk	E-11 E-19	Monthly
Well Water	E-10	Twice per year

9.6 Analytical Parameters

The types of analyses and their frequencies are given in Table 9-1. The LLDs for the various analyses are found in the Section 10 (Table 10-1) with the summary of the REMP results. All environmental LLDs listed in Table 2-2 of the Environmental Manual (also in Table 10-1) were achieved during 2007.

9.7 Description of Analytical Parameters in Table 9-1

9.7.1 Gamma isotopic analysis

Gamma isotopic analysis consists of a computerized scan of the gamma ray spectrum from 80 keV to 2048 keV. Specifically included in the scan are Mn-54, Fe-59, Co-58, Co-60, Zr-95, Nb-95, Ru-103, Ru-106, I-131, Ba-La-140, Cs-134, Cs-137, Ce-141, and Ce-144. However, other detected nuclear power plant produced radionuclides also are noted. The above radionuclides detected by gamma isotopic analysis are decay corrected to the time of collection. Frequently detected, but not normally reported in this Annual Monitoring Report, are the naturally occurring radionuclides Ra-226, Bi-214, Pb-212, Tl-208, Ac-228, Be-7, and K-40.

9.7.2 Gross Beta Analysis

Gross beta analysis is a non-specific analysis that consists of measuring the total beta activity of the sample. No individual radionuclides are identifiable by this method. Gross beta analysis is a quick method of screening samples for the presence of elevated activity that may require additional, immediate analyses.

9.7.3 Water Samples

Water samples include both Lake Michigan and well water. The Lake Michigan samples are collected along the shoreline at two locations north and two locations south of PBNP. The well water is sampled from the on-site PBNP well. Gross beta and gamma isotopic analytical results for water are obtained by measurements on the solids remaining after evaporation of the unfiltered sample to dryness. Hence, the results are indicated as "on total solids" in Table 10-1.

9.7.4 Air Samples

Particulate air filters are allowed to decay at least 72 hours before gross beta measurements are made in order for naturally occurring radionuclides to become a negligible part of the total activity. Gross beta measurements serve as a quick check for any unexpected activity that may require immediate investigation. Quarterly composites of the particulate air filters are analyzed for long-lived radionuclides such as Cs-134 and Cs-137. Charcoal canisters for radioiodine are counted as soon as possible so the I-131 will undergo only minimal decay prior to analyses. The weekly charcoal canisters are screened for I-131 by

counting them at the same time to achieve a lower LLD. If a positive result is obtained, each canister is counted individually.

In order to ensure that the air sampling pumps are operating satisfactorily, a gross leak check is performed weekly. The pumps are changed out annually for calibration and maintenance beyond what can be accomplished in the field.

9.7.5 Vegetation

Vegetation samples consist predominantly of green, growing plant material (grasses and weeds most likely to be eaten by cattle if they were present at the sampling site). Care is taken not to include dirt associated with roots by cutting the vegetation off above the soil line.

9.7.6 Environmental Radiation Exposure

The 2007 environmental radiation exposure measurements were made using TLD cards. The TLD card is a small passive detector, which integrates radiation exposure. Each TLD consists of a Teflon sheet coated with a crystalline, phosphorus material (calcium sulfate containing dysprosium) which absorbs the gamma ray energy deposited in them. Each TLD is read in four distinct areas to yield four exposure values which are averaged. Prior to the third quarter of 2001, exposure data were obtained using three lithium fluoride (LiF) TLD chips sealed in black plastic. The difference in material types can impact the amount of exposure measured. As seen in 2001, the Environmental Inc. TLD cards typically produce a slightly higher measured exposure value, although within the uncertainty of that value recorded by the TLD chips.

The reported field exposure is the arithmetic average of the four exposure values obtained minus the exposure received while the field TLD is in storage and transit.

The gamma rays may originate from PBNP produced radionuclides or from naturally occurring radionuclides. The TLDs remain at the monitoring site for roughly three months prior to analyses and the results are reported as mrem per seven days. Because the TLDs are constantly bombarded by naturally occurring gamma radiation, even during shipment to and from PBNP, the amount of exposure during transportation is measured using transportation controls with each shipment of TLDs to and from the laboratory. The doses recorded on the transportation controls are subtracted from the monitoring TLDs in order to obtain the net *in situ* dose.

9.7.7 ISFSI Ambient Radiation Exposure

Although the ISFSI fence TLDs are not considered part of the REMP because of their location directly on site, their results can be used indirectly to determine whether the operation of the ISFSI is having an impact on the ambient environmental radiation beyond the site boundary. Impacts are determined by comparison of fence TLD results to the results of the monitoring at PBNP site boundary and other selected locations.

10.0 RESULTS

Summary of 2007 REMP Results

Radiological environmental monitoring conducted at PBNP from January 1, 2007, through December 31, 2007, consisted of analysis of air filters, milk, lake water, well water, soil, fish, shoreline sediments, algae, and vegetation as well as TLDs. The results are summarized in Table 10-1.

Table 10-1 contains the following information:

Sample: Type of the sample medium
Description: Type of measurement
LLD: *a priori* lower limit of detection
N: Number of samples analyzed
Average: Average value ± the standard deviation of N samples
High: Highest measured value ± it's associated 2 sigma counting error
Units: Units of measurement

For certain analyses, an LLD, which is lower than that required by REMP, is used because the lower value derives from the counting time required to obtain the LLDs for radionuclides that are more difficult to detect. For these analyses, both LLDs are listed with the REMP LLD given in parentheses. The results are discussed in the narrative portion of this report (Section 11). Blank values have not been subtracted from the results presented in Table 10-1. A complete listing of all the individual results obtained from the contracted analytical laboratory and the laboratory's radioanalytical quality assurance results and Interlaboratory Crosscheck Program results are presented in the Appendix.

In Table 10-1, no results are reported as <LLD. A ND radionuclide is one for which none of the individual measurements was statistically different from zero. When one or more of the measured radionuclide concentrations was positive and statistically different from zero, the average reported in Table 10-1 is the average ± one standard deviation. Both the positive and negative results were used to calculate the average and standard deviation. Some of the reported averages are negative because many of the measured concentrations for that sample category were negative. The highest positive value and its 2-sigma error are reported only when one or more measured values are statistically greater than zero based on counting statistics.

The method of determining averages follows the recommendation made in NUREG-0475 (1978) "Radiological Environmental Monitoring by NRC Licensees for Routine Operations of Nuclear Facilities Task Force Report," and in Health Physics Society Committee Report HPSR-1 (1980) "Upgrading Environmental Radiation Data" released as document EPA 520/1-80-012 and in more recent documents such as ANSI N42.23-1996, "Instrument Quality Assurance for Radioassay Laboratories;" ANSI N13.30-1996, "Performance Criteria for Radiobioassay;" DE91-013607, "Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance" and NUREG-1576 "Multi-Agency Radiological Laboratory Analytical Protocols Manual."

Table 10-2 contains the ISFSI fence TLD results.

Table 10-1
Summary of Radiological Environmental Monitoring Results for 2007

Sample	Description	N	LLD (a)	Average ± Standard Deviation (b)	High ± 2 sigma	Units
TLD	Environmental Radiation	112	1 mrem	1.08 ± 0.20	1.68 ± 0.09	mR/7days
	Control (E-20)	4	1 mrem	1.05 ± 0.15	1.21 ± 0.10	mR/7days
Air	Gross Beta	263	0.01	0.025 ± 0.009	0.054 ± 0.004	pCi/m3
	Control (E-20) Gross beta	53	0.01	0.026 ± 0.009	0.057 ± 0.004	pCi/m3
	I-131	263	0.030 (0.07)	ND	-	pCi/m3
	Control (E-20) I-131	53	0.030 (0.07)	ND	-	pCi/m3
	Cs-134	20	0.05	ND	-	pCi/m3
	Control (E-20) Cs-134	4	0.05	ND	-	pCi/m3
	Cs-137	20	0.06	0.0000 ± 0.0003	0.0007 ± 0.0006	pCi/m3
	Control (E-20) Cs-137	4	0.06	ND	-	pCi/m3
	Other gamma emitters	20	0.1	0.0001 ± 0.0004	0.0005 ± 0.0004	pCi/m3
	Control (E-20) Other	4	0.1	0.0003 ± 0.0004	0.0007 ± 0.0004	pCi/m3
Milk	Sr-89	36	5	ND	-	pCi/L
	Sr-90	36	1	0.8 ± 0.4	2.0 ± 0.5	pCi/L
	I-131	36	0.5	ND	-	pCi/L
	Cs-134	36	5 (15)	ND	-	pCi/L
	Cs-137	36	5 (15)	ND	-	pCi/L
	Ba-La-140	36	5 (15)	ND	-	pCi/L
	Other gamma emitters	36	15	ND	-	pCi/L
Well	Gross beta	4	4	1.4 ± 1.4	2.9 ± 1.4	pCi/L
Water	H-3	4	500 (3000)	ND	-	pCi/L
	Sr-89	4	10	0.1 ± 0.3	0.5 ± 0.4	pCi/L
	Sr-90	4	1 (2)	ND	-	pCi/L
	I-131	4	0.5 (2)	ND	-	pCi/L
	Mn-54	4	10 (15)	ND	-	pCi/L
	Fe-59	4	30	ND	-	pCi/L
	Co-58	4	15	ND	-	pCi/L
	Co-60	4	15	ND	-	pCi/L
	Zn-65	4	30	ND	-	pCi/L
	Zr-Nb-95	4	15	ND	-	pCi/L
	Cs-134	4	15	ND	-	pCi/L
	Cs-137	4	18	ND	-	pCi/L
	Ba-La-140	4	15	ND	-	pCi/L
	Other gamma emitters	4	30	ND	-	pCi/L
Algae	Gross beta	6	0.25	6.35 ± 2.44	9.58 ± 0.71	pCi/g
	Co-58	6	0.25	-0.010 ± 0.018	0.019 ± 0.014	pCi/g
	Co-60	6	0.25	0.007 ± 0.011	0.017 ± 0.012	pCi/g
	Cs-134	6	0.25	ND	-	pCi/g
	Cs-137	6	0.25	0.014 ± 0.013	0.026 ± 0.018	pCi/g

(a) The required LLD per the PBNP REMP is enclosed in the parentheses.
(b) "ND" indicates that the sample result is Not Detectable, i.e., sample concentrations were statistically equivalent to zero.

Table 10-1 (continued)
Summary of Radiological Environmental Monitoring Results for 2007

Sample	Description	N	LLD (a)	Average ± Standard Deviation (b)	High ± 2 sigma	Units
Lake Water	Gross beta	46	4	2.9 ± 1.5	9.7 ± 1.3	pCi/L
	I-131	46	0.5 (2)	ND	-	pCi/L
	Mn-54	46	10 (15)	0.2 ± 1.3	2.7 ± 2.0	pCi/L
	Fe-59	46	30	-0.3 ± 2.7	9.4 ± 6.5	pCi/L
	Co-58	46	15	0.3 ± 1.5	3.2 ± 2.5	pCi/L
	Co-60	46	15	ND	-	pCi/L
	Zn-65	46	30	ND	-	pCi/L
	Zr-Nb-95	46	15	0.2 ± 1.5	3.3 ± 2.2	pCi/L
	Cs-134	46	10 (15)	ND	-	pCi/L
	Cs-137	46	10 (18)	0.1 ± 1.6	3.4 ± 2.5	pCi/L
	Ba-La-140	46	15	0.0 ± 3	8.3 ± 4.5	pCi/L
	Ru-103 (Other gamma)	46	30	ND	-	pCi/L
	Sr-89	16	5	0.00 ± 0.56	1.34 ± 0.99	pCi/L
	Sr-90	16	1 (2)	0.29 ± 0.19	0.56 ± 0.41	pCi/L
	H-3	16	500 (3000)	17 ± 82	171 ± 96	pCi/L
Fish	Gross beta	9	0.5	4.18 ± 0.80	5.29 ± 0.11	pCi/g
	Mn-54	9	0.13	ND	-	pCi/g
	Fe-59	9	0.26	ND	-	pCi/g
	Co-58	9	0.13	0.004 ± 0.007	0.016 ± 0.008	pCi/g
	Co-60	9	0.13	ND	-	pCi/g
	Zn-65	9	0.26	0.000 ± 0.019	0.027 ± 0.015	pCi/g
	Cs-134	9	0.13	-0.002 ± 0.005	0.007 ± 0.006	pCi/g
	Cs-137	9	0.15	0.029 ± 0.013	0.049 ± 0.014	pCi/g
	Other gamma emitters	9	0.5	ND	-	pCi/g
Shoreline Sediment	Gross beta	10	2	14.27 ± 3.62	19.90 ± 1.51	pCi/g
	Cs-137	10	0.15	0.020 ± 0.012	0.041 ± 0.020	pCi/g
Soil	Gross beta	16	2	31.00 ± 5.41	38.35 ± 2.87	pCi/g
	Cs-137	16	0.15	0.20 ± 0.08	0.35 ± 0.04	pCi/g
Vegetation	Gross beta	24	0.25	8.00 ± 1.79	11.72 ± 0.33	pCi/g
	I-131	24	0.06	0.000 ± 0.013	0.029 ± 0.011	pCi/g
	Cs-134	24	0.06	ND	-	pCi/g
	Cs-137	24	0.08	0.011 ± 0.025	0.110 ± 0.030	pCi/g
	Other gamma emitters	24	0.06	ND	-	pCi/g

(a) The required LLD per the PBNP REMP is enclosed in the parentheses.
(b) "ND" indicates that the sample result is Not Detectable, i.e., sample concentrations were statistically equal to zero.

Other gamma emitters typically refer to Co-60 if not specifically called out in the analyses. See explanation on page 1 of the Environmental Inc report which is Appendix A of this Annual Monitoring Report.

Table 10-2
ISFSI Fence TLD Results for 2007

Fence Location	Average ±	Standard Deviation
North	2.72 ±	0.39 mR/7 days
East	2.23 ±	0.32 mR/7 days
South	1.34 ±	0.14 mR/7 days
West	5.47 ±	0.55 mR/7 days

11.0 DISCUSSION

11.1 TLD Cards

The ambient radiation was measured in the general area of the site boundary, at an outer ring four – five miles from the plant, at special interest areas, and at one control location, roughly 17 miles southwest of the plant. The average of the indicator TLD cards is 1.08 mR/7-days and 1.05 mR/7-days at the control location. These results are not significantly different from each other nor from those observed from 2001 through 2006 (tabulated below in Table 11-1). The change in TLD types in 2001 accounts for the increase in average TLD readings (i.e., prior to third quarter 2001 TLD LiF chips were used versus the TLD cards – see Section 9.7.6 for additional information) from 2000 to 2001. Therefore, the operation of the plant has had no effect on the ambient gamma radiation.

Table 11-1
Average Indicator TLD Results from 1993 – 2007

Year	Average ±	St. Dev*	Units
1993	0.82 ±	0.15	mR/7 days
1994	0.90 ±	0.12	mR/7 days
1995	0.87 ±	0.13	mR/7 days
1996	0.85 ±	0.12	mR/7 days
1997	0.87 ±	0.11	mR/7 days
1998	0.79 ±	0.13	mR/7 days
1999	0.79 ±	0.21	mR/7 days
2000	0.91 ±	0.15	mR/7 days
2001	1.06 ±	0.19	mR/7 days
2002	1.17 ±	0.21	mR/7 days
2003	1.10 ±	0.20	mR/7 days
2004	1.10 ±	0.22	mR/7 days
2005	1.04 ±	0.21	mR/7 days
2006	1.14 ±	0.21	mR/7 days
2007	1.08 ±	0.20	mR/7 days

*St. Dev = Standard Deviation

There were no new cask additions in 2007 with no significant change in the average annual ISFSI fence TLD results (Table 11-2) The North and West fence TLDs continue to record higher doses than the South and East fence TLDs (Table 11-2) corresponding to the location of the storage units at the NW corner of the site. Compared to the background site (E-20), most of the indicator sites

for the ISFSI (Table 11-3) show increases with the placement of casks at the ISFSI with the highest values at E-03 which is the closest to the ISFSI [see Figs. 9-1 and 9-2 for locations]. The results near the site boundary (E-31, E-32) are comparable to the background site E-20, within the associated measurement error, indicating no measurable increase in ambient gamma radiation at the site boundary due to the operation of the ISFSI.

Table 11-2
Average ISFSI Fence TLD Results (mR/7 days)

	TLD FENCE LOCATION			
	North	East	South	West
1995	1.29	1.28	1.10	1.26
1996	2.12	1.39	1.10	1.68
1997	2.05	1.28	1.00	1.66
1998	2.08	1.37	1.02	1.86
1999	2.57	1.84	1.11	3.26
2000	2.72	2.28	1.25	5.05
2001	2.78	2.54	1.36	6.08
2002	2.79	2.74	1.42	6.46
2003	2.70	2.60	1.50	6.88
2004	2.61	2.12	1.41	6.50
2005	2.54	2.05	1.44	5.63
2006	2.73	2.35	1.38	5.80
2007	2.72	2.73	1.34	5.47

Table 11-3
Average TLD Results Surrounding the ISFSI (mR/7 days)

	Sampling Site						
	E-03	E-28	E-29	E-30	E-31**	E-32**	E-20***
Pre-Operation*	0.93	0.87	0.87	0.81	0.93	0.98	0.88
1996	0.87	0.78	0.81	0.79	0.93	1.00	0.78
1997	0.91	0.89	0.84	0.84	0.89	0.97	0.79
1998	0.82	0.68	0.80	0.82	0.91	0.85	0.77
1999	0.88	0.83	0.76	0.80	0.90	0.99	0.78
2000	0.98	0.88	0.92	0.99	0.98	1.06	0.90
2001	1.31	0.95	1.07	1.02	1.10	1.04	1.03
2002	1.45	0.91	1.22	1.10	1.26	1.25	1.14
2003	1.29	0.82	0.94	1.02	1.20	1.15	0.99
2004	1.35	0.80	0.96	1.05	1.23	1.18	1.06
2005	1.30	0.72	0.96	0.98	1.15	1.04	1.00
2006	1.44	0.80	1.19	1.07	1.21	1.07	1.11
2007	1.37	0.78	1.07	1.05	1.18	0.97	1.05

*Pre-Operation data are the averages of the years 1992 through 3d quarter of 1995.
**Sites E-31 and E-32 are located at the Site Boundary to the West and South-West of the ISFSI.
***E-20 is located approximately 17 miles WSW of the ISFSI.

11.2 Milk

Except for Sr-90, the annual average radionuclide concentrations in milk continue to be statistically not different from zero. These results are not statistically different from previous years going back to 1997. The Sr-90 in milk results of the cycling in the biosphere after the atmospheric weapons tests of the '50s, '60s, and '70s and the Chernobyl accident. Although these tests also introduced Cs-137 into the environment, Cs-137 binds more strongly to soils and therefore less likely to get into cows and milk. As summarized in Table 3-2, the only 2007 airborne release of Sr-90 from PBNP occurred in November. There were no airborne Sr-90 releases in 2005 and 2006. The 2007 average Sr-90 (0.8 ± 0.4) is equivalent to previous years: 0.9 ± 0.3 pCi/L in 2006, 0.9 ± 0.4 pCi/L in 2005, 1.1 ± 0.4 in 2004, 1.1 ± 0.4 in 2003, 1.1 ± 0.7 in 2002, 1.2 ± 0.5 in 2001, 1.2 ± 0.6 in 2000, 1.0 ± 0.3 in 1999, 1.1 ± 0.5 in 1998, and 1.2 ± 0.5 in 1997. These results are common throughout the Great Lakes region and North America. Therefore, it is concluded that the milk data for 2007 show no radiological effects of the plant operation.

11.3 Air

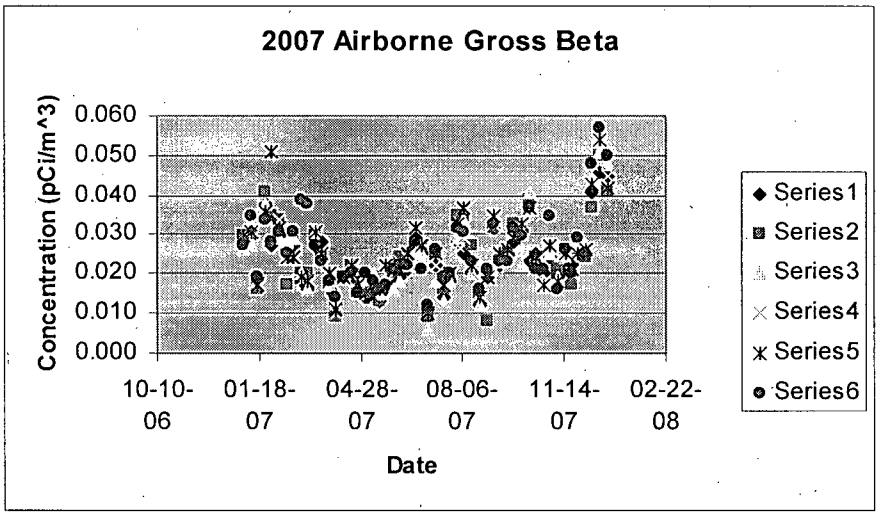
The average annual gross beta concentrations (plus/minus the one-sigma uncertainty) in weekly airborne particulates at the indicator and control locations were 0.025 ± 0.009 pCi/m^3 and 0.026 ± 0.009 pCi/m^3, respectively, and are similar to levels observed from 1993 through 2006 (Table 11-4).

Table 11-4
Average Gross Beta Measurements in Air

Year	Average (pCi/m3)
1993	0.022
1994	0.022
1995	0.021
1996	0.021
1997	0.021
1998	0.022
1999	0.024
2000	0.022
2001	0.023
2002	0.023
2003	0.023
2004	0.021
2005	0.024
2006	0.021
2007	0.025

The gross beta concentration variation over the year usually reveals higher concentrations in the fall and winter as compared to the spring and summer. This is present again during 2007. However, for 2007 as in 2006, another high period during July-September also is apparent (Figure 11-1). This pattern will be checked for reoccurrence during 2008. Similarly to 2005 and 2006, there is more scatter in the data for the spring and summer months.

Figure 11-1
2007 Airborne Gross Beta Concentration (pCi/m^3) vs. Time



In 2005, the new method of evaluating airborne I-131 was instituted. Instead of counting each charcoal cartridge separately, all six cartridges for the week are counted as one sample in a predetermined geometry to screen the samples for I-131. If any airborne radioiodine were detected, each sample cartridge is counted individually. With no detectable I-131, the reported analytical result is the minimum detectable activity (MDA) conservatively calculated using the smallest of the six sample volumes. The reported MDAs ranged from 0.003 to 0.029 pCi/m^3. Because the analysis LLD is based on counting only one cartridge, the use of six cartridges or roughly six times the sample volume with the same count time as would be needed to achieve the desired LLD for only one sample, the actual LLD is about six times lower than the programmatic value given in Table 10-1. Similarly, the actual MDA is about one-sixth of that reported, or in the range of 0.0005 to 0.005 pCi/m^3. Therefore, because no I-131 was detected, it is concluded that the release of small amounts of radioiodine during January, April, and September (Table 3-2) had no measurable impact on the environment.

Gamma spectroscopic analysis of quarterly composites of air particulate filters yielded similar results for indicator and control locations. Neither the indicator nor the control locations show results which, on average, are significantly different than zero. The two small, positive values for Cs-137 occurred for the second and third quarter composites. Because PBNP released no Cs-137 until November of 2007 (Table 3-2), these results are false positives. Similarly, the three positive Co-60 ("other" category) results also are determined to be false positives because no airborne Co-60 was released during 2007. Be-7 was measured in quarterly composites of all indicator samples with an average of 0.075 pCi/m^3. This is comparable to the average of 0.074 pCi/m^3 at the control site. Be-7 is not required to be measured by the PBNP REMP; however, it serves as a means to monitor the internal consistency of the vendor's analytical program and for comparisons to radionuclides that may be in PBNP airborne effluent.

In summary, the air data for 2007 demonstrate the operation of PBNP did not have an impact on the surrounding environment.

11.4 Lake Water

For the suite of REMP-specified gamma emitting radionuclides listed in Table 10-1, reported concentrations continue to occur as small negative and positive values scattered around zero, indicating no radiological impact from the operation of PBNP. Only 46 lake water samples were collected because environmental conditions precluded sample collection at site E-05 and E-06 during February. Of the 46 lake water samples analyzed during 2007, 1 of 46 was statistically greater than zero for Fe-59 and Cs-137; 2 of 46 were positive for Mn-54, Co-58, and Zr/Nb-95; and finally, 5 of 46 for Ba/La-140. No Ba/La-140, Zr-Nb-95, Fe-59 or Mn-54 were released by PBNP during the months they were detected. Additionally, most of these results were north of PBNP which is upstream of the local lake current direction. Hence it is concluded that these are false positives. Although both Co-58 and Cs-137 were released during the months they were detected in Lake Michigan, both occurrences were north of the plant. Therefore, based on these results and their occurrences, it is concluded that the discharge of these radionuclides has a minimal impact.

Aliquots of the monthly samples are composted quarterly and analyzed for Sr-89/90 and for tritium. Sr-90 still persists in Lake Michigan from radioactive fallout. Therefore it is not surprising that positive results still occur. Tritium, in addition to being produced by water-cooled reactors such as PBNP, also is a naturally occurring radionuclide. The quarterly composite lake water samples collected and analyzed for H-3 in 2007 range from ND to 171 pCi/l. This concentration is close to the MDA and occurred at a site several miles north of PBNP. As stated above, the lake current in this area is from the north to the south. Finally, there was one occurrence of Sr-89. Because no Sr-89 was released by PBNP and it occurred north of the plant, it is concluded that the result is a false positive. These results indicate a minimal impact upon the waters of Lake Michigan from PBNP liquid discharges.

11.5 Algae

Filamentous algae attached to rocks along the Lake Michigan shoreline are known to concentrate radionuclides from the water with concentration factor over a thousand for certain radionuclides. Three of the six samples had small, positive concentrations of Co-58 (1 of 6), Co-60 (1 of 6), and Cs-137 (3 of 6). One occurrence of Cs-137 and the single occurrence of the cobalts were near the PBNP discharge and therefore may be related to PBNP discharges. Because the Cs-137 also occurred north of the plant, the Cs-137 could easily be Cs-137 remaining in the lake from atmospheric weapons tests. Typically, the only fission product observed in algae is Cs-137 with averages over years 1995–2004 of 0.034, 0.050, 0.030, 0.027, 0.031, 0.027, 0.019, 0.019, 0.010,

and 0.018 pCi/g; all of which are less than the LLD (0.25 pCi/g). This year's average Cs-137 of 0.014 pCi/g is consistent with previous results which show a

slowly decreasing concentration. The concentrations of naturally occurring Be-7 and K-40 are higher: 0.65 and 2.97 pCi/g, respectively. These results indicate only a minor, if any, effect by PBNP upon the environs.

11.6 Fish

No specified fission/corrosion radionuclide concentrations in fish greater than the required LLD were found in 2007. Statistically positive Cs-137 concentrations were found in 8 of the 9 fish. The highest Cs-137 value of 0.049 is comparable to the 0.055 pCi/g found in 2006 but is lower than the high of 0.172 pCi/g in 2005. But, all three of these values are considerably less than the high of 2.8 pCi/g as seen in PBNP samples obtained in the mid-1970s during the Chinese weapons tests. However, the Cs-137 results in fish are consistent with accumulation due to the recycling of atmospheric weapons testing fallout Cs-137 in Lake Michigan. Again, the aforementioned resuspension events make the Cs-137 more readily available to be associated with items eaten by the fish. By comparison, the concentration of naturally occurring K-40 (1.58–4.41 pCi/g) is about 30-80 times higher than the highest Cs-137 concentration. The small, positive values of Zn-65, Co-58, and Cs-134 may be false positives. PBNP did not discharge any Cs-134 in 2007. Therefore, the fish may have picked this radionuclide anywhere in the lake as there are other nuclear plants on Lake Michigan. Therefore, it is concluded that there is no indication of a plant effect.

11.7 Well Water

There was only one well water result statistically greater than zero. In the second quarter, Sr-89 was statistically above zero. This result is concluded to be a false positive. First, PBNP discharged no Sr-89 in either liquid or airborne effluent during 2007. Second, the impermeability of the clay layer which separates the surface ground water from the aquifer from which the PBNP well water is obtained and the relatively short Sr-89 half-life precludes surface water from reaching the lower aquifer. Finally, the most likely effluent radionuclide to be able to reach the drinking water aquifer is H-3 and it was not detected. As previously mentioned, small, positive results may occur due to the statistical nature of radioactive decay, when there is no radionuclide present. Therefore, it is concluded that the one Sr-89 result does not indicate that PBNP effluents are getting into the aquifer supplying drinking water to PBNP.

11.8 Soil

Cs-137 is present in the soils throughout North America and the world. The main contributor to this worldwide distribution is the weapons testing in the 1950s and 1960s with lesser amounts from Chinese atmospheric nuclear tests in the 1970s and the 1986 Chernobyl accident. Soil is an integrating sample media in that it is a better indicator of long term buildup of Cs-137 as opposed to current deposition for local sources. The main modifiers of soil Cs-137 concentration levels are erosion and radioactive decay. The PBNP REMP results indicate that low levels of Cs-137 from fallout continue to be present in soil samples at about

1% of the levels of naturally occurring K-40. All of the 16 samples have Cs-137 concentrations statistically greater than zero ranging from 0.04 ± 0.03 to 0.35 ± 0.04 pCi/g. Although higher that the averages from the 1990s, the current gross beta results also are consistent with the last few years (Table 11-5). Also, the results are quite uniform with the result close to the plant (E-01: 33.23 ± 2.91) not being different from the background site some 17 miles away in the lowest χ/Q sector (E-20: 35.15 ± 2.96). Therefore, there is no indication of a plant effect.

Table 11-5
Average Gross Beta Concentrations in Soil

Year	Activity (pCi/g)
1993	23.6
1994	19.4
1995	18.0
1996	19.4
1997	22.8
1998	20.0
1999	23.1
2000	22.1
2001	23.5
2002	21.9
2003	22.5
2004	24.3
2005	29.1
2006	27.4
2007	31.0

11.9 Shoreline Sediment

Shoreline sediment consists of sand and other sediments washed up on the Lake Michigan shore. As in soil samples, the only non-naturally occurring radionuclide found in these samples is Cs-137. Eight of the ten samples have Cs-137 concentrations statistically different from zero. The Cs-137 concentrations of the shoreline sediment are about one-tenth of that found in soils. This is expected because Cs-137 in the geological media is bound to clay as opposed to the sand found on the beach. Wave action winnows clay particles from the beach leaving the heavier sand; hence the lower Cs-137 concentrations in beach samples. In contrast to K-40 which is actually part of the minerals making up the clay and sand, Cs-137 is attached to soil/sand particle surfaces. Therefore it is not surprising that Cs-137 is present at concentrations 1% or less of the naturally occurring concentrations of K-40. Because Lake Michigan sediments are a known reservoir of fallout Cs-137, the shoreline sediment data indicate no radiological effects from plant operation.

11.10 Vegetation

The naturally occurring radionuclides Be-7 and K-40 are found in all of the vegetation samples. In contrast, of the three programmatically specified radionuclide I-131, Cs-134, and Cs-137, only Cs-137 was detected in 6 of the 24 samples. Three of the occurrences were at site E-06. All the positive Cs-137 results were below the required LLD at concentrations about 100 times lower than Be-7 and K-40 concentrations. The source of Be-7 is atmospheric deposition. It is continuously formed in the atmosphere by cosmic ray spallation of oxygen, carbon, and nitrogen atoms. In contrast, K-40 is a primordial radionuclide which is incorporated into vegetation from the soil during the growing process. Cs-137 can represent both pathways. Fresh Cs-137 fallout is associated, like Be-7, with deposition on the plant surface. Old fallout from the '50s and '60s is now being incorporated into growing plants in the same manner as potassium because it is in the same chemical family as potassium. Cs-137 has been consistently present in vegetation from E-06, a campground area in the Point Beach State Forest. As has been demonstrated at other sites in the United States which are far from any nuclear plants, 1950s and 1960s fallout Cs-137 is present in the ash produced by burning the wood in fireplaces. Typically, campground fires are put out using water and the ashes are spread on the ground. The ash acts as a fertilizer, releasing the cesium and potassium into the soil where they are available for uptake by growing plants and trees. Hence, the Cs-137 results from E-06 demonstrate that Cs-137 fallout from the Chernobyl accident and from atmospheric weapons tests continues to be recycled in the environment by the spreading of wood ash at camp sites.

Based on the 2007 vegetation sampling results, it is concluded that no effect from PBNP effluents are indicated.

11.11 Land Use Census

In accordance with the requirements of Section 2.5 of the Environmental Manual, a visual verification of animals grazing in the vicinity of the PBNP site boundary was completed in 2007. No significant change in the use of pasturelands or grazing herds was noted. Therefore, the existing milk-sampling program continues to be acceptable. It continues to be conservative for the purpose of calculating doses via the grass-cow-milk pathway to ensure that the milk sampling locations remain as conservative as practicable.

12.0 REMP CONCLUSION

Based on the analytical results from the 823 environmental samples and from 116 sets of TLDs that comprised the PBNP REMP for 2007, PBNP effluents had no discernable, permanent effect on the surrounding environs. These results demonstrate that PBNP continues to have good controls on fuel integrity and on effluent releases. The control of effluents from PBNP continues to be acceptable pursuant to the ALARA criteria of 10 CFR 50.34a.

Part D
GROUNDWATER MONITORING

13.0 Program Description

The PBNP monitors groundwater for tritium. During 2007 the sampling program consisted of six beach drains, five intermittent creek and bog locations, four drinking water wells, four façade wells, nine yard electrical manholes, six new ground water monitoring wells, and 15 manholes for the subsurface drainage (SSD) system under the plant and along the outside of the foundation walls.

In the 1980s, the beach drains entering Lake Michigan were found to contain tritium. The beach drains are the discharge points for yard drainage system which carries storm water runoff and are known to be infiltrated by groundwater as observed by discharges even when no rain has occurred. In the 1980s, the source of H-3 for this pathway was postulated to be spent fuel pool leakage into the groundwater under the plant based on the observation that after modifications were made to the pool, the tritium concentrations decreased below delectability. Beach drain effluents continue to be monitored and are accounted for in the monthly effluent quantification process. Because the beach drains are susceptible to groundwater in-leakage from other sources such as the area around the former retention pond which is known to contain H-3, the beach drains are monitored as part of the groundwater monitoring program.

The intermittent streams and the Energy Information Center (EIC) well were added to the groundwater monitoring program in the late 1990s when it was discovered that tritium diffusion from the then operable, earthen retention pond was observable in the intermittent streams which transverse the site in a NW to SE direction. These streams pass on the east and west sides of the former retention pond and empty into Lake Michigan about half a mile south of the plant near the site's meteorological tower. The intermittent stream samples track H-3 in the surface groundwater.

The groundwater monitoring program also includes two bogs or ponds on site. One is located about 400 feet SSE of the former retention pond; the other, about 1500 feet N.

In addition to the main plant well, three other drinking water wells also are monitored. The Site Boundary Control Center well located at the plant entrance, the Warehouse 6 well on the north side of the plant, and the EIC well located south of the plant. These wells do not draw water from the top 20 - 30 feet of soil which is known to contain H-3. These wells monitor the deeper (200 - 350 feet), drinking water aquifer from which the main plant well draws its water. The two soil layers are separated by a gray, very dense till layer of low permeability identified by hydrological studies.

Manholes in the plant yard and for the subsurface drainage SSD system under the plant are available for obtaining ground water samples. The plant yard manholes for accessing electrical conduits are susceptible to ground water in-leakage. Therefore, a number of

number of these were sampled. The SSD were designed to control the flow of water under the plant and around the perimeter of the foundation walls. Where possible, water in the SSD manholes was sampled. The SSD system flows to a sump in the Unit 2 façade. A monthly composite from this sump is analyzed as well as part of the program.

In the 1990s, two wells were sunk in each units façade to monitor the groundwater levels and look evidence of concrete integrity as part of the ISI IWE Containment Inspection Program required by 10 CFR 50.65. These wells are stand pipes which are sampled periodically for chemical analyses. Beginning in 2007, samples for the groundwater program were drawn as well. These wells are sample at least three times a year.

The groundwater sampling sites (other than the beach drains, SSDs and manholes) are shown in Figure 13.1.

14.0 Results

14.1 Streams and Bogs

The results from the groundwater monitoring associated with the former retention pond are presented in Table 14-1. For the most part, the creek results are barely above the detection level. There are more positive values for the East Creek than for the West Creek or for the confluence of the two creeks south of the plant near Lake Michigan. GW-08 is a bog near the former retention pond.

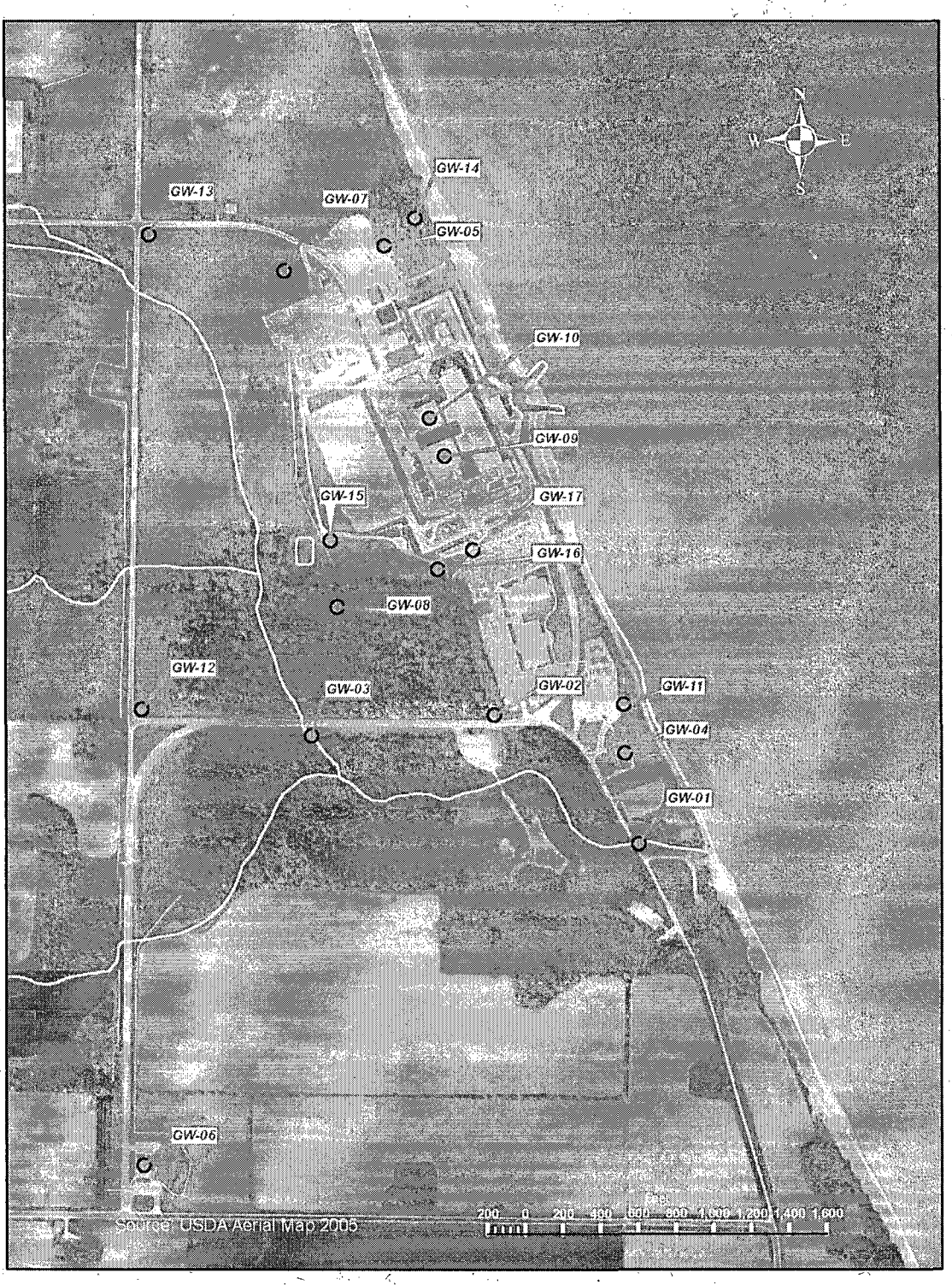
Table 14-1 Intermittent Streams and Bogs

H-3 Concentration (pCi/l)

Month	GW-01(E-01) Creek Confluence	GW-02 East Creek	GW-03 West Creek	BOGS GW-07	BOGS GW-08	MDA
Jan	±	±	±			
Feb	±	±	±			
Mar	87 ± 92	225 ± 98	116 ± 94	±	±	169
Apr	-79 ± 79	93 ± 87	-77 ± 79	±	±	157
May	98 ± 80	102 ± 88	72 ± 87	223 ± 94	398 ± 101	169
Jun	-1 ± 75	73 ± 79	129 ± 82	±	±	143
Jul	126 ± 107	103 ± 107	30 ± 104	±	±	153
Aug	88 ± 86	103 ± 87	164 ± 90	±	±	166
Sep	±	±	±	±	±	
Oct	±	±	±	±	±	
Nov	±	±	±	±	±	
Dec	±	±	±	±	±	

A blank indicates no sample was available. Streams are sampled monthly; bogs, annually.
Values are presented as the measured value and the 95% confidence level counting error.
ND = not statistically different from zero at the 95% confidence level.

Figure 13-1 Groundwater Monitoring Locations



The value H-3 concentration for 2007 is about an order of magnitude lower than the 2000 - 3300 pCi/l obtained before the retention pond was remediated. The creek values are generally lower as well. In the late '90s, the East Creek H-3 concentrations would reach 300 - 350 pCi/l. Only the two bog results and the March GW-02 sample are above the MDA.

14.2 Beach Drains and SSD Sump

The results for the beach drains (Table 14-2) show low H-3 concentrations with a few in the 300 - 700 pCi/l range. The southern drain, S-3, exhibits the most consistent and uniform H-3 concentration. Based on the flow direction of the intermittent streams around the former retention pond, this is the drain most susceptible to contain tritiated groundwater in-leakage from the area around the former retention pond. The northern most beach drain is S-1. This drain is connected to the SSD sump and also is impacted by groundwater in-leakage. The monthly SSD sump composite results show little correlation to the S-1 results (Table 14-3). Except for the November S-1 result, the SSD sump tritium concentrations are usually higher than the S-1 results for the same period. This could be the result of groundwater in-leakage to the S-1 drain lines which would dilute any SSD sump contributions to this drain line. Beach drains S-7 and S-10 are fed by runoff from the Unit 2 and Unit 1 roofs respectively. Hence, no flow is expected unless there is precipitation. S-8 and S-9 drain the small yard area between the plant and the lake. It is not know why the only occurrence of water flow from either S-8 or S-9 should have a measurable amount of H-3. However, it may be associated with groundwater in-leakage as electrical manholes M-1 and M-2 in the area have been found to contain low concentrations of H-3.

Table 14-2

2007 BEACH DRAIN TRITIUM

H-3 Concentration (pCi/l)

Month	S-1	S-7	S-8	S-9	S-10	S-3
Jan	168 ± 90	NF ±	NF ±	NF ±	NF ±	174 ± 90
Feb	NF ±	NF ±	NF ±	NF ±	NF ±	NF ±
Mar	683 ± 102	NF ±	443 ± 96	NF ±	NF ±	269 ± 89
Apr	174 ± 90	NF ±	NF ±	NF ±	NF ±	120 ± 88
May	208 ± 102	NF ±	NF ±	NF ±	NF ±	165 ± 100
Jun	NF ±	NF ±	NF ±	NF ±	NF ±	336 ± 98
Jul	243 ± 103	NF ±	NF ±	NF ±	NF ±	270 ± 88
Aug	246 ± 91	NF ±	NF ±	NF ±	NF ±	358 ± 96
Sep	NF ±	NF ±	NF ±	NF ±	NF ±	299 ± 96
Oct	112 ± 107	NF ±	NF ±	NF ±	NF ±	46 ± 104
Nov	588 ± 104	NF ±	NF ±	NF ±	NF ±	234 ± 90
Dec	321 ± 91	NF ±	NF ±	NF ±	NF ±	238 ± 87
Average=	305					228
Std dev =	198					76

NF = no sample due to no flow

Table 14-3

U2 FAÇADE SUBSURFACE DRAIN SUMP
H-3[1]
H-3 Concentration (pCi/l)

Month	pCi/l		2σ
Jan		±	
Feb		±	
Mar		±	
Apr		±	
May		±	
Jun	491	±	120
Jul	708	±	127
Aug	519	±	120
Sep	529	±	105
Oct	288	±	109
Nov	363	±	108
Dec	489	±	110

[1]Sampling began in June 2007
Samples are monthly composites

14.3 Electrical Manholes

Manholes for access to below ground electrical facilities are susceptible to groundwater in-leakage as is evident by very low concentrations of H-3 (Table 14-4). MH-1 and MH-2 are located in the area drained by beach drains S-8

Table 14-4
YARD MANHOLE TRITIUM
Activity (pCi/l)

Man Hole	pCi/l	±	2σ
MH-1	157	±	101
MH-2	148	±	101
MH-3	145	±	100
MH-4	52	±	86
MH-5	150	±	101
MH-9	127	±	100
MH-10	304	±	106
MH-14	121	±	100
MH-19	165	±	91
Average =	152	±	122

and S-9. MH-10 is located on the west side of the plant and more in line with groundwater flow from the area of the former retention pond. Conduit in this

manhole runs to the southwest in the direction of the former retention pond and the area which groundwater testing for the pond remediation effort found H-3 concentrations up to 14,000 pCi/l. As shown below, the groundwater monitoring well in this area (GW-15, Fig. 13-1) also has the highest H-3 concentration of any of the monitoring wells.

14.4 Subsurface Drainage System and Façade Wells

Samples of groundwater under the plant are obtained via SSD system manholes and via the façade wells (Table 14-5). The sampling locations are identified by the plant's column locations designations.

Table 14-5

2007 SUBSURFACE DRAINAGE SYSTEM TRITIUM

Turbine Bldg[1]			
SSD Location	Activity		
Col #	pCi/l		2σ
F5.1	309	±	97
A12.1	809	±	116
E9.5	411	±	102
EF1[3]	1501	±	140
F13.1	451	±	111
E13.1	558	±	114
F6	242	±	104
F7	382	±	109
F9.9	363	±	108
F8	432	±	110
B6.1[4]	317	±	98
EXTERNAL[2]			
SSD Location	pCi/l		2σ
SW corner U1 façade	317	±	98
NW corner U2 façade	405	±	101
NE NSB	221	±	94
Near LIN Tank	213	±	93

[1] 8 SSD manholes were dry, 1 was welded shut, 4 could not be accessed due to electrical concerns, and one could not be lifted due to equipment malfunction.

[2] 3 were dry and 3 could not be opened due unavailability of lifting equipment

[3] This sample was analyzed for Fe-55, Sr-89/90, and gamma scanned. No activity was found.

[4] Gamma scan of manhole debris revealed Cs-137(1.75 ± 0.15 pCi/g) and Co-60 (0.26 ± 0.05 pCi/g). No other radionuclides were found

The alphanumeric IDs run from A - S (east to west) and 1 - 22 (south to north) in the plant. The internal SSD system is designed to channel groundwater away from the foundation periphery to a central sump for each unit. The external SSD system drains to the lake. As indicated in the Table 14-5 notes, some of the SSD manholes were dry. In others, the upstream manholes contained higher H-3 concentrations than the downstream manholes. The sample with the highest H-3 concentration was analyzed for Fe-55, Sr-90, and gamma emitters. None was found. Additionally, one of the manholes contained organic debris. The debris contained low levels of Co-60 and Cs-137. No other gamma emitters were found.

Although there are SSD manholes in each unit's façade, no samples were obtained from them because these manholes were sealed due to flooding concerns. Instead, groundwater under the façades is obtained from the façade wells which are part of the containment inspection program. These results are found in Table 14-6.

Table 14-6

2007 FACADE WELL WATER TRITIUM

H-3 Concentration (pCi/l)

	UNIT 1		UNIT 2	
Month	1Z-361A	1Z-361B	2Z-361A	2Z-361B
Jan				
Feb				
Mar	1019±133		-20±93	4207±213
Apr				
May		168±101		
Jun	1381±143			2678±177
Jul		183±100	47±94	
Aug				
Sep	1525±144	223±107		
Oct				
Nov				
Dec	1356±134	194±93	77±94	407±107

Based on the current knowledge of the condition of the SSD system it is not possible to come to a conclusive interpretation concerning the tritiated water under the plant other than to say that there are areas of groundwater that have higher H-3 concentrations than others. This is especially evident in the facades where the façade well results can vary by one to two orders of magnitude from one side of the containment to the other. The data suggest that the water in the SSD system may not be flowing as designed and, because only long-lived gamma emitters were found, the activity is not of recent origin but indicative of the 1970s when spent fuel pool leakage was known to exist.

14.5 Potable Water and Monitoring Wells

In addition to the main plant well (Section 11.7), nine other wells are monitored for H-3. These consist of three potable water wells, GW-04, GW-05, and GW-06, and six H-3 groundwater monitoring wells, GW-11 through GW-16 installed in 2007 (Figure 13-1). The monitoring wells are located at the periphery of the area affected by diffusion from the former retention pond and known spent fuel pool leakage during the 1970s. Two of the potable water wells are for buildings close to the plant (GW-04 and GW-05) whereas the other (GW-06) is at the Site Boundary Control Center some 3200 feet from the former retention pond. The potable water wells are from the deep aquifer whereas the monitoring wells are in the shallow (< 30 feet), surface water aquifer above the thick, impermeable clay layer separating the two.

The EIC well is sampled monthly and the other two potable wells, quarterly. The potable water wells have no H-3. Although there are several results for which the measured concentrations meet the detected

Table 14-7

2007 WELL WATER TRITIUM

H-3 Concentration (pCi/l)

Month	EIC WELL GW-04	Warehouse 6 Well GW-05	SBCC Well GW-06	MW-01 GW-11	MW-02 GW-12	MW-06 GW-13	MW-05 GW-14	MW-04 GW-15	MW-03 GW-16
Jan									
Feb	31±88								
Mar	76±92	21±90	-89±85						
Apr	-156±75	64±86	100±87						
May	185±92								
Jun	43±77								
Jul	-9±80	21±78	56±79						
Aug	124±88			248±102	93±96	136±98	189±100		
Sep	36±101							224±101	15±92
Oct	65±81	65±81	39±80						
Nov	-70±79								
Dec	-107±97			116±96	-19±90	85±95	75±94	329±104	186±99

April gamma scans, I-131, and Sr analyses of GW-05 and GW-06 found no activity
July gamma scans, I-131, and Sr analyses of GW-05 and GW-06 found no activity

criterion, they are not high enough to satisfy the criterion for meeting the determination limit because the error is a significant fraction of the net value. Analyses for gamma emitters, I-131, and Sr-90 did not find any of these radionuclides in GW-05 and GW-06 well water.

The monitoring wells were sampled only twice during 2007. The results are from samples taken during well installation and then again during the final month the wells were bailed to remove the clay sediment in-leakage before the wells were put on their monthly sampling schedule. The highest H-3 concentration occurred

in the well nearest the location of the former retention pond. This well is near the area where the pond pre-remediation groundwater survey found a tritium concentration of 14,000 pCi/l.

14.6 Miscellaneous Sampling

In addition to groundwater, analyses have been made of rainwater. Rainwater H-3 measurements were undertaken in order to obtain information on potential background levels of tritium. Another reason for sampling the rainwater is to determine whether it is possible to see the outwash of atmospheric H-3 releases from Point Beach. Therefore, a sampler was placed at the Site Boundary Control Center (E-04), which is located in the highest χ/Q sector. Only the sample collected early in October is statistically greater than zero at the 95% confidence level (Table 14-8).

Table 14-8
Precipitation H-3

Date	TU		1 σ	pCi/l		1 σ
6/6/2007	14	±	8	44.1	±	25.8
8/9/2007	<6	±	8	<19.2	±	25.8
9/5/2007	9	±	8	29.0	±	25.8
10/3/2007	17	±	8	56.0	±	25.8
10/18/2007	14	±	8	44.8	±	25.8

TU = tritium unit = 3.221 pCi/l

15.0 Groundwater Summary

Groundwater monitoring indicates that low levels of tritium continue to occur in the upper soil layer but not in the deep, drinking water aquifer. These results also indicate that the low levels of tritium are restricted to a small, well defined area close to the plant. The façade wells have the highest results followed by the SSD system. The beach drains appear to be slightly lower than the SSD system. Except for the monitoring well in the vicinity of the former retention pond, the monitoring well tritium concentrations are not different from zero.

Results will continue to be evaluated to determine whether additional groundwater monitoring sites are needed.

APPENDIX 1

Environmental, Inc. Midwest Laboratory
Final Report for the Point Beach Nuclear Plant
Reporting Period: January – December 2007

Environmental, Inc.
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an Allegheny Technologies Co.

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FINAL REPORT
TO
FPL ENERGY

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)
FOR
THE POINT BEACH NUCLEAR PLANT
TWO RIVERS, WISCONSIN

PREPARED AND SUBMITTED
BY
ENVIRONMENTAL INCORPORATED MIDWEST LABORATORY

Project Number: 8006

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Reviewed and
Approved by _____ Date 02-08-2008
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POINT BEACH NUCLEAR PLANT

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1.0 INTRODUCTION

The following constitutes the final 2007 Monthly Progress Report for the Environmental Radiological Monitoring Program conducted at the Point Beach Nuclear Plant, Two Rivers, Wisconsin. Results of analyses are presented in the attached tables. Data tables reflect sample analysis results for both Technical Specification requirements and Special Interest locations and samples are randomly selected within the Program monitoring area to provide additional data for cross-comparisons.

For gamma isotopic analyses, the spectrum covers an energy range from 80 to 2048 KeV. Specifically included are Mn-54, Fe-59, Co-58, Co-60, Zn-65, Zr-95, Nb-95, Ru-103, Ru-106, I-131, Ba-La-140, Cs-134, Cs-137, Ce-141, and Ce-144. Naturally occurring gamma-emitters, such as K-40 and Ra daughters, are frequently detected in soil and sediment samples. Specific isotopes listed are K-40, Tl-208, Pb-212, Bi-214, Ra-226 and Ac-228. Unless noted otherwise, the results reported under "Other Gammas" are for Co-60 and may be higher or lower for other radionuclides.

All concentrations, except gross beta, are decay corrected to the time of collection.

All samples were collected within the scheduled period unless noted otherwise in the Listing of Missed Samples.

POINT BEACH NUCLEAR PLANT

2.0 LISTING OF MISSED SAMPLES

Sample Type	Location	Expected Collection Date	Reason
LW	E-05	02-15-07	Water frozen.
LW	E-06	02-15-07	Water frozen.
AP/AI	E-02	10-25-07	Pump not running.
AP/AI	E-02	10-31-07	Pump not running.

NOTE: Page 3 is intentionally left out.

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-01, Meteorological Tower
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-07	351	0.028 ± 0.003	< 0.014
01-10-07	254	0.031 ± 0.004	< 0.021
01-17-07	304	0.019 ± 0.003	< 0.018
01-24-07	302	0.038 ± 0.004	< 0.008
01-31-07	301	0.027 ± 0.004	< 0.018
02-07-07	304	0.030 ± 0.004	< 0.023
02-14-07	303	0.026 ± 0.004	< 0.013
02-20-07	257	0.027 ± 0.004	< 0.011
02-28-07	346	0.018 ± 0.003	< 0.013
03-07-07	302	0.016 ± 0.003	< 0.010
03-14-07	306	0.027 ± 0.004	< 0.010
03-21-07	300	0.028 ± 0.004	< 0.013
03-28-07	302	0.016 ± 0.003	< 0.019
1st Quarter Mean ± s.d.		0.025 ± 0.006	< 0.015
04-04-07	302	0.012 ± 0.003	< 0.007
04-11-07	313	0.019 ± 0.003	< 0.014
04-19-07	337	0.021 ± 0.003	< 0.010
04-25-07	259	0.018 ± 0.004	< 0.011
05-02-07	302	0.014 ± 0.003	< 0.009
05-08-07	279	0.016 ± 0.004	< 0.010
05-17-07	404	0.013 ± 0.003	< 0.022
05-23-07	286	0.017 ± 0.004	< 0.011
05-30-07	335	0.017 ± 0.003	< 0.009
06-06-07	331	0.019 ± 0.003	< 0.020
06-13-07	365	0.021 ± 0.003	< 0.013
06-20-07	330	0.029 ± 0.004	< 0.011
06-27-07	329	0.025 ± 0.003	< 0.011
07-03-07	286	0.011 ± 0.003	< 0.019
2nd Quarter Mean ± s.d.		0.018 ± 0.005	< 0.013

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-11-07	386	0.022 ± 0.003	< 0.006
07-18-07	328	0.014 ± 0.003	< 0.012
07-25-07	334	0.018 ± 0.003	< 0.008
08-01-07	332	0.028 ± 0.004	< 0.010
08-08-07	336	0.025 ± 0.003	< 0.014
08-15-07	330	0.020 ± 0.003	< 0.007
08-22-07	321	0.012 ± 0.003	< 0.011
08-28-07	258	0.019 ± 0.003	< 0.017
09-05-07	368	0.032 ± 0.004	< 0.007
09-12-07	322	0.022 ± 0.003	< 0.008
09-19-07	314	0.025 ± 0.003	< 0.012
09-26-07	313	0.028 ± 0.004	< 0.018
10-03-07	305	0.031 ± 0.004	< 0.014
3rd Quarter Mean ± s.d.		0.023 ± 0.006	< 0.011
10-11-07	356	0.023 ± 0.003	< 0.009
10-18-07	303	0.025 ± 0.004	< 0.015
10-25-07	349	0.020 ± 0.003	< 0.007
10-31-07	258	0.024 ± 0.004	< 0.012
11-07-07	308	0.019 ± 0.003	< 0.008
11-15-07	344	0.021 ± 0.003	< 0.021
11-21-07	259	0.022 ± 0.004	< 0.017
11-28-07	303	0.027 ± 0.004	< 0.007
12-05-07	308	0.025 ± 0.004	< 0.005
12-12-07	307	0.041 ± 0.004	< 0.003
12-19-07	311	0.046 ± 0.004	< 0.016
12-26-07	314	0.045 ± 0.004	< 0.014
01-03-08	358	0.034 ± 0.003	< 0.007
4th Quarter Mean ± s.d.		0.029 ± 0.010	< 0.011
Cumulative Average		0.024 ± 0.008	< 0.012

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-02, Site Boundary Control Center
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-07	341	0.030 ± 0.004	< 0.015
01-10-07	351	0.030 ± 0.004	< 0.021
01-17-07	305	0.016 ± 0.003	< 0.018
01-24-07	292	0.041 ± 0.004	< 0.008
01-31-07	293	0.035 ± 0.004	< 0.018
02-07-07	295	0.034 ± 0.004	< 0.024
02-14-07	290	0.017 ± 0.004	< 0.014
02-20-07	253	0.028 ± 0.004	< 0.011
02-28-07	336	0.020 ± 0.003	< 0.013
03-07-07	292	0.020 ± 0.004	< 0.010
03-14-07	297	0.030 ± 0.004	< 0.010
03-21-07	290	0.024 ± 0.004	< 0.013
03-28-07	293	0.017 ± 0.004	< 0.019
1st Quarter Mean ± s.d.		0.026 ± 0.008	< 0.015
04-04-07	293	0.009 ± 0.003	< 0.008
04-11-07	304	0.019 ± 0.004	< 0.014
04-19-07	326	0.022 ± 0.003	< 0.010
04-25-07	252	0.015 ± 0.004	< 0.012
05-02-07	293	0.015 ± 0.003	< 0.010
05-09-07	315	0.019 ± 0.003	< 0.008
05-17-07	323	0.013 ± 0.003	< 0.015
05-23-07	260	0.016 ± 0.004	< 0.012
05-30-07	305	0.020 ± 0.004	< 0.010
06-06-07	300	0.024 ± 0.004	< 0.022
06-13-07	307	0.023 ± 0.004	< 0.016
06-20-07	300	0.027 ± 0.004	< 0.013
06-27-07	300	0.027 ± 0.004	< 0.012
07-03-07	260	0.009 ± 0.003	< 0.021
2nd Quarter Mean ± s.d.		0.018 ± 0.006	< 0.013

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-11-07	351	0.025 ± 0.003	< 0.007
07-18-07	298	0.016 ± 0.003	< 0.013
07-25-07	303	0.019 ± 0.003	< 0.009
08-01-07	302	0.035 ± 0.004	< 0.012
08-08-07	305	0.034 ± 0.004	< 0.016
08-15-07	300	0.027 ± 0.004	< 0.008
08-22-07	302	0.015 ± 0.003	< 0.012
08-28-07	254	0.008 ± 0.003	< 0.017
09-05-07	341	0.032 ± 0.004	< 0.008
09-12-07	301	0.023 ± 0.004	< 0.009
09-19-07	304	0.025 ± 0.004	< 0.013
09-26-07	303	0.033 ± 0.004	< 0.019
10-03-07	296	0.031 ± 0.004	< 0.014
3rd Quarter Mean ± s.d.		0.025 ± 0.008	< 0.012
10-11-07	191	0.039 ± 0.005	< 0.017
10-18-07	293	0.022 ± 0.004	< 0.016
10-25-07		NS[a]	
10-31-07		NS[a]	
11-07-07	303	0.021 ± 0.003	< 0.008
11-15-07	345	0.026 ± 0.003	< 0.021
11-21-07	259	0.017 ± 0.004	< 0.017
11-28-07	303	0.026 ± 0.004	< 0.007
12-05-07	302	0.024 ± 0.004	< 0.005
12-12-07	303	0.037 ± 0.004	< 0.003
12-19-07	301	0.050 ± 0.004	< 0.016
12-26-07	304	0.041 ± 0.004	< 0.015
01-03-08	346	0.030 ± 0.003	< 0.007
4th Quarter Mean ± s.d.		0.030 ± 0.010	< 0.012
Cumulative Average		0.025 ± 0.009	< 0.013

[a] "NS" = No sample; see Table 2.0, Listing of Missed Samples.

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-03, West Boundary
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-07	340	0.026 ± 0.003	< 0.015
01-10-07	247	0.027 ± 0.004	< 0.021
01-17-07	300	0.018 ± 0.003	< 0.018
01-24-07	297	0.038 ± 0.004	< 0.008
01-31-07	292	0.029 ± 0.004	< 0.018
02-07-07	295	0.029 ± 0.004	< 0.024
02-14-07	290	0.028 ± 0.004	< 0.014
02-20-07	253	0.029 ± 0.004	< 0.011
02-28-07	336	0.020 ± 0.003	< 0.013
03-07-07	293	0.016 ± 0.003	< 0.010
03-14-07	297	0.031 ± 0.004	< 0.010
03-21-07	290	0.024 ± 0.004	< 0.013
03-28-07	294	0.017 ± 0.003	< 0.019
1st Quarter Mean ± s.d.		0.026 ± 0.006	< 0.015
04-04-07	293	0.013 ± 0.003	< 0.008
04-11-07	301	0.020 ± 0.004	< 0.014
04-19-07	328	0.021 ± 0.003	< 0.010
04-25-07	251	0.015 ± 0.004	< 0.012
05-02-07	293	0.019 ± 0.004	< 0.010
05-08-07	269	0.020 ± 0.004	< 0.010
05-17-07	369	0.015 ± 0.003	< 0.029
05-23-07	260	0.018 ± 0.004	< 0.012
05-30-07	305	0.016 ± 0.003	< 0.010
06-06-07	301	0.018 ± 0.003	< 0.022
06-13-07	307	0.022 ± 0.004	< 0.016
06-20-07	300	0.026 ± 0.004	< 0.013
06-27-07	300	0.025 ± 0.004	< 0.012
07-03-07	260	0.006 ± 0.003	< 0.021
2nd Quarter Mean ± s.d.		0.018 ± 0.005	< 0.014

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-11-07	350	0.018 ± 0.003	< 0.007
07-18-07	299	0.013 ± 0.003	< 0.013
07-25-07	303	0.018 ± 0.003	< 0.009
08-01-07	302	0.029 ± 0.004	< 0.012
08-08-07	305	0.034 ± 0.004	< 0.016
08-15-07	301	0.020 ± 0.003	< 0.008
08-22-07	301	0.012 ± 0.003	< 0.012
08-28-07	259	0.021 ± 0.004	< 0.016
09-05-07	337	0.034 ± 0.004	< 0.008
09-12-07	302	0.023 ± 0.004	< 0.009
09-19-07	303	0.025 ± 0.004	< 0.013
09-26-07	303	0.031 ± 0.004	< 0.019
10-03-07	319	0.022 ± 0.003	< 0.013
3rd Quarter Mean ± s.d.		0.023 ± 0.007	< 0.012
10-11-07	190	0.041 ± 0.005	< 0.017
10-18-07	294	0.022 ± 0.004	< 0.016
10-25-07	305	0.018 ± 0.003	< 0.008
10-31-07	255	0.025 ± 0.004	< 0.012
11-07-07	303	0.019 ± 0.003	< 0.008
11-15-07	345	0.025 ± 0.003	< 0.022
11-21-07	259	0.027 ± 0.004	< 0.017
11-28-07	303	0.028 ± 0.004	< 0.007
12-05-07	303	0.027 ± 0.004	< 0.005
12-12-07	303	0.044 ± 0.005	< 0.003
12-19-07	301	0.051 ± 0.004	< 0.016
12-26-07	304	0.048 ± 0.005	< 0.015
01-03-08	345	0.036 ± 0.004	< 0.007
4th Quarter Mean ± s.d.		0.032 ± 0.011	< 0.012
Cumulative Average		0.024 ± 0.009	< 0.013

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-04, North Boundary
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-07	360	0.027 ± 0.003	< 0.014
01-10-07	261	0.029 ± 0.004	< 0.020
01-17-07	308	0.018 ± 0.003	< 0.018
01-24-07	325	0.038 ± 0.004	< 0.008
01-31-07	320	0.029 ± 0.004	< 0.017
02-07-07	312	0.034 ± 0.004	< 0.022
02-14-07	320	0.025 ± 0.004	< 0.012
02-20-07	286	0.024 ± 0.004	< 0.010
02-28-07	381	0.018 ± 0.003	< 0.012
03-07-07	332	0.012 ± 0.003	< 0.009
03-14-07	325	0.024 ± 0.003	< 0.010
03-21-07	307	0.020 ± 0.003	< 0.012
03-28-07	334	0.017 ± 0.003	< 0.017
1st Quarter Mean ± s.d.		0.024 ± 0.007	< 0.014
04-04-07	335	0.010 ± 0.003	< 0.007
04-11-07	316	0.021 ± 0.004	< 0.014
04-19-07	347	0.023 ± 0.003	< 0.009
04-25-07	276	0.018 ± 0.004	< 0.011
05-02-07	332	0.015 ± 0.003	< 0.009
05-09-07	353	0.017 ± 0.003	< 0.007
05-17-07	357	0.016 ± 0.003	< 0.015
05-23-07	286	0.018 ± 0.004	< 0.011
05-30-07	335	0.021 ± 0.003	< 0.009
06-06-07	331	0.023 ± 0.003	< 0.020
06-13-07	338	0.024 ± 0.003	< 0.014
06-20-07	330	0.037 ± 0.004	< 0.011
06-27-07	330	0.028 ± 0.004	< 0.011
07-03-07	286	0.010 ± 0.003	< 0.019
2nd Quarter Mean ± s.d.		0.020 ± 0.007	< 0.012

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-11-07	385	0.022 ± 0.003	< 0.006
07-18-07	328	0.011 ± 0.003	< 0.012
07-25-07	334	0.021 ± 0.003	< 0.008
08-01-07	331	0.027 ± 0.004	< 0.010
08-08-07	336	0.029 ± 0.004	< 0.014
08-15-07	331	0.020 ± 0.003	< 0.007
08-22-07	320	0.015 ± 0.003	< 0.011
08-28-07	291	0.021 ± 0.004	< 0.015
09-05-07	382	0.033 ± 0.003	< 0.007
09-12-07	342	0.022 ± 0.003	< 0.008
09-19-07	343	0.026 ± 0.003	< 0.011
09-26-07	342	0.029 ± 0.004	< 0.017
10-03-07	338	0.032 ± 0.004	< 0.013
3rd Quarter Mean ± s.d.		0.024 ± 0.006	< 0.011
10-11-07	190	0.033 ± 0.005	< 0.017
10-18-07	333	0.018 ± 0.003	< 0.014
10-25-07	344	0.017 ± 0.003	< 0.007
10-31-07	260	0.027 ± 0.004	< 0.012
11-07-07	309	0.018 ± 0.003	< 0.008
11-15-07	350	0.024 ± 0.003	< 0.016
11-21-07	264	0.020 ± 0.004	< 0.016
11-28-07	308	0.029 ± 0.004	< 0.007
12-05-07	308	0.026 ± 0.004	< 0.005
12-12-07	308	0.048 ± 0.005	< 0.003
12-19-07	340	0.048 ± 0.004	< 0.014
12-26-07	343	0.045 ± 0.004	< 0.013
01-03-08	390	0.035 ± 0.003	< 0.006
4th Quarter Mean ± s.d.		0.030 ± 0.011	< 0.011
Cumulative Average		0.024 ± 0.009	< 0.012

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-08, G.J. Francar Residence
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-04-07	351	0.030 ± 0.004	< 0.014
01-10-07	255	0.031 ± 0.004	< 0.021
01-17-07	300	0.017 ± 0.003	< 0.018
01-24-07	305	0.036 ± 0.004	< 0.008
01-31-07	301	0.051 ± 0.005	< 0.018
02-07-07	303	0.032 ± 0.004	< 0.023
02-14-07	303	0.024 ± 0.004	< 0.013
02-20-07	257	0.024 ± 0.004	< 0.011
02-28-07	346	0.019 ± 0.003	< 0.013
03-07-07	302	0.018 ± 0.004	< 0.010
03-14-07	306	0.031 ± 0.004	< 0.010
03-21-07	299	0.025 ± 0.004	< 0.013
03-28-07	304	0.020 ± 0.004	< 0.018
1st Quarter Mean ± s.d.		0.028 ± 0.009	< 0.015
04-04-07	305	0.011 ± 0.003	< 0.007
04-11-07	302	0.019 ± 0.004	< 0.014
04-19-07	320	0.022 ± 0.004	< 0.010
04-25-07	250	0.017 ± 0.004	< 0.012
05-02-07	302	0.015 ± 0.003	< 0.009
05-11-07	407	0.014 ± 0.003	< 0.006
05-17-07	357	0.016 ± 0.003	< 0.019
05-23-07	260	0.022 ± 0.004	< 0.012
05-30-07	305	0.021 ± 0.004	< 0.010
06-06-07	302	0.021 ± 0.003	< 0.022
06-13-07	306	0.025 ± 0.004	< 0.016
06-20-07	299	0.032 ± 0.004	< 0.013
06-27-07	300	0.027 ± 0.004	< 0.012
07-03-07	261	0.010 ± 0.003	< 0.021
2nd Quarter Mean ± s.d.		0.019 ± 0.006	< 0.013

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-11-07	350	0.025 ± 0.003	< 0.007
07-18-07	299	0.017 ± 0.003	< 0.013
07-25-07	303	0.020 ± 0.003	< 0.009
08-01-07	301	0.033 ± 0.004	< 0.012
08-08-07	305	0.037 ± 0.004	< 0.016
08-15-07	301	0.022 ± 0.004	< 0.008
08-22-07	301	0.014 ± 0.003	< 0.012
08-29-07	306	0.019 ± 0.003	< 0.013
09-05-07	305	0.035 ± 0.004	< 0.009
09-12-07	311	0.025 ± 0.004	< 0.009
09-19-07	313	0.026 ± 0.004	< 0.012
09-26-07	310	0.029 ± 0.004	< 0.019
10-03-07	286	0.033 ± 0.004	< 0.015
3rd Quarter Mean ± s.d.		0.026 ± 0.007	< 0.012
10-11-07	190	0.037 ± 0.005	< 0.017
10-18-07	305	0.024 ± 0.004	< 0.015
10-25-07	310	0.017 ± 0.003	< 0.008
10-31-07	265	0.027 ± 0.004	< 0.012
11-07-07	311	0.018 ± 0.003	< 0.008
11-15-07	355	0.025 ± 0.003	< 0.024
11-21-07	267	0.021 ± 0.004	< 0.016
11-28-07	312	0.025 ± 0.004	< 0.007
12-05-07	312	0.026 ± 0.004	< 0.005
12-12-07	313	0.043 ± 0.004	< 0.003
12-19-07	310	0.054 ± 0.004	< 0.016
12-26-07	313	0.042 ± 0.004	< 0.014
01-03-08	356	0.034 ± 0.003	< 0.007
4th Quarter Mean ± s.d.		0.030 ± 0.011	< 0.012
Cumulative Average		0.026 ± 0.010	< 0.013

POINT BEACH NUCLEAR PLANT

Airborne particulates and charcoal canisters, analyses for gross beta and iodine-131.
Location: E-20, Silver Lake
Units: pCi/m^3
Collection: Continuous, weekly exchange.

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
01-03-07	303	0.027 ± 0.004	< 0.017
01-10-07	261	0.035 ± 0.004	< 0.020
01-17-07	301	0.019 ± 0.003	< 0.018
01-24-07	303	0.034 ± 0.004	< 0.008
01-31-07	305	0.028 ± 0.004	< 0.017
02-07-07	300	0.031 ± 0.004	< 0.023
02-14-07	304	0.025 ± 0.004	< 0.013
02-20-07	257	0.031 ± 0.005	< 0.011
02-28-07	345	0.039 ± 0.004	< 0.013
03-07-07	303	0.038 ± 0.004	< 0.010
03-14-07	304	0.027 ± 0.004	< 0.010
03-21-07	299	0.023 ± 0.004	< 0.013
03-28-07	304	0.018 ± 0.004	< 0.018
1st Quarter Mean ± s.d.		0.029 ± 0.007	< 0.015
04-04-07	308	0.014 ± 0.003	< 0.007
04-11-07	301	0.019 ± 0.004	< 0.014
04-19-07	343	0.020 ± 0.003	< 0.009
04-25-07	257	0.015 ± 0.004	< 0.011
05-02-07	303	0.020 ± 0.004	< 0.009
05-10-07	361	0.018 ± 0.003	< 0.007
05-17-07	284	0.016 ± 0.004	< 0.015
05-23-07	260	0.017 ± 0.004	< 0.012
05-30-07	306	0.021 ± 0.004	< 0.010
06-06-07	302	0.022 ± 0.003	< 0.022
06-13-07	308	0.022 ± 0.004	< 0.015
06-20-07	298	0.028 ± 0.004	< 0.013
06-27-07	299	0.021 ± 0.003	< 0.012
07-03-07	261	0.012 ± 0.003	< 0.021
2nd Quarter Mean ± s.d.		0.019 ± 0.004	< 0.013

Date Collected	Vol. (m^3)	Gross Beta	I-131
Required LLD		0.010	0.030
07-11-07	350	0.026 ± 0.003	< 0.007
07-18-07	301	0.019 ± 0.003	< 0.013
07-25-07	299	0.020 ± 0.003	< 0.009
08-01-07	301	0.032 ± 0.004	< 0.012
08-08-07	307	0.031 ± 0.004	< 0.015
08-15-07	299	0.023 ± 0.004	< 0.008
08-22-07	301	0.016 ± 0.003	< 0.012
08-30-07	345	0.021 ± 0.003	< 0.011
09-05-07	259	0.033 ± 0.005	< 0.010
09-12-07	303	0.023 ± 0.004	< 0.009
09-19-07	303	0.023 ± 0.003	< 0.013
09-26-07	300	0.032 ± 0.004	< 0.019
10-03-07	305	0.030 ± 0.004	< 0.014
3rd Quarter Mean ± s.d.		0.025 ± 0.006	< 0.012
10-11-07	192	0.037 ± 0.005	< 0.017
10-18-07	303	0.021 ± 0.004	< 0.015
10-25-07	300	0.021 ± 0.004	< 0.008
10-31-07	262	0.035 ± 0.005	< 0.012
11-07-07	301	0.016 ± 0.003	< 0.008
11-15-07	345	0.026 ± 0.003	< 0.017
11-21-07	258	0.020 ± 0.004	< 0.017
11-28-07	303	0.029 ± 0.004	< 0.007
12-05-07	304	0.025 ± 0.004	< 0.005
12-12-07	304	0.048 ± 0.005	< 0.003
12-19-07	300	0.057 ± 0.004	< 0.016
12-26-07	303	0.050 ± 0.005	< 0.015
01-03-08	344	0.042 ± 0.004	< 0.007
4th Quarter Mean ± s.d.		0.033 ± 0.013	< 0.011
Cumulative Average		0.026 ± 0.009	< 0.013

POINT BEACH NUCLEAR PLANT

GAMMA EMITTERS IN QUARTERLY COMPOSITES OF

AIR PARTICULATE FILTERS

(Concentration pCi/m3)

Locatior	Lab Code	Be-7	Cs-134	Cs-137	Other Gammas[a]	Volume
	Req. LLD	-	0.01	0.01	(0.10)	m^3
			1st Quarter			
E-01	EAP- 2184	0.060 ± 0.012	0.0002 ± 0.0005	-0.0001 ± 0.0005	-0.0002 ± 0.0006	3932
E-02	- 2185	0.069 ± 0.013	0.0001 ± 0.0004	-0.0001 ± 0.0005	-0.0001 ± 0.0005	3928
E-03	- 2186	0.064 ± 0.012	-0.0002 ± 0.0003	0.0001 ± 0.0003	0.0004 ± 0.0003	3824
E-04	- 2187	0.054 ± 0.011	0.0001 ± 0.0005	-0.0005 ± 0.0006	0.0002 ± 0.0004	4171
E-08	- 2188	0.066 ± 0.013	-0.0002 ± 0.0005	0.0001 ± 0.0005	0.0004 ± 0.0006	3932
E-20	- 2189	0.055 ± 0.012	-0.0003 ± 0.0004	-0.0001 ± 0.0005	-0.0004 ± 0.0005	3889
			2nd Quarter			
E-01	EAP- 4654	0.091 ± 0.016	-0.0002 ± 0.0005	-0.0005 ± 0.0005	0.0003 ± 0.0005	4458
E-02	- 4655	0.095 ± 0.016	0.0004 ± 0.0005	0.0004 ± 0.0006	0.0005 ± 0.0004	4138
E-03	- 4656,7	0.099 ± 0.011	-0.0001 ± 0.0005	-0.0001 ± 0.0006	-0.0009 ± 0.0008	4137
E-04	- 4658	0.103 ± 0.016	-0.0001 ± 0.0005	0.0007 ± 0.0006	0.0005 ± 0.0006	4552
E-08	- 4659	0.101 ± 0.019	-0.0003 ± 0.0005	-0.0003 ± 0.0005	0.0002 ± 0.0005	4276
E-20	- 4660	0.099 ± 0.016	-0.0001 ± 0.0005	-0.0002 ± 0.0005	0.0005 ± 0.0004	4191
			3rd Quarter			
E-01	EAP- 7418	0.082 ± 0.015	0.0001 ± 0.0005	0.0002 ± 0.0005	0.0003 ± 0.0005	4247
E-02	- 7419	0.078 ± 0.015	-0.0005 ± 0.0005	-0.0003 ± 0.0005	-0.0001 ± 0.0006	3960
E-03	- 7420	0.062 ± 0.013	0.0003 ± 0.0005	-0.0003 ± 0.0005	-0.0001 ± 0.0006	3984
E-04	- 7421	0.079 ± 0.016	-0.0006 ± 0.0004	-0.0001 ± 0.0005	0.0004 ± 0.0003	4403
E-08	- 7422	0.091 ± 0.016	-0.0003 ± 0.0004	0.0006 ± 0.0005	-0.0003 ± 0.0005	3991
E-20	- 7423	0.079 ± 0.018	0.0002 ± 0.0005	0.0002 ± 0.0005	0.0007 ± 0.0004	3973
			4th Quarter			
E-01	EAP- 8913	0.083 ± 0.016	-0.0004 ± 0.0005	0.0002 ± 0.0004	-0.0006 ± 0.0005	4078
E-02	- 8914	0.052 ± 0.011	-0.0001 ± 0.0003	0.0002 ± 0.0004	-0.0001 ± 0.0004	3250
E-03	- 8915	0.061 ± 0.013	-0.0004 ± 0.0005	0.0003 ± 0.0004	0.0005 ± 0.0005	3810
E-04	- 8916	0.054 ± 0.011	-0.0003 ± 0.0003	-0.0001 ± 0.0004	0.0001 ± 0.0005	4047
E-08	- 8917	0.050 ± 0.014	0.0000 ± 0.0004	0.0001 ± 0.0005	0.0004 ± 0.0005	3919
E-20	- 8918	0.061 ± 0.015	-0.0003 ± 0.0004	0.0002 ± 0.0004	0.0004 ± 0.0005	3819

[a] See Introduction

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-11 Funk Dairy Farm

Collection Date	01-09-07	02-14-07	03-14-07	Required LLD
Lab Code	EMI-85	EMI-965	EMI-1403	
Sr-89	-0.1 ± 0.9	-0.7 ± 0.8	-1.2 ± 0.8	5.0
Sr-90	0.4 ± 0.3	1.0 ± 0.3	1.2 ± 0.4	1.0
I-131	0.14 ± 0.21	-0.04 ± 0.24	-0.01 ± 0.15	0.5
K-40	1376 ± 120	1399 ± 118	1400 ± 112	
Cs-134	-0.8 ± 2.6	1.1 ± 2.4	1.3 ± 1.6	5.0
Cs-137	1.7 ± 3.0	-1.2 ± 2.7	-0.1 ± 2.0	5.0
Ba-La-140	0.3 ± 2.4	0.4 ± 2.2	0.2 ± 2.1	5.0
Other Gammas[a]	-3.3 ± 2.9	-0.8 ± 2.4	1.3 ± 2.4	15.0

Collection Date	04-11-07	05-09-07	06-13-07	Required LLD
Lab Code	EMI-1938	EMI-2678	EMI-3585	
Sr-89	-0.2 ± 1.0	0.4 ± 1.0	0.0 ± 0.7	5.0
Sr-90	1.1 ± 0.4	0.2 ± 0.3	0.6 ± 0.3	1.0
I-131	-0.11 ± 0.19	-0.01 ± 0.23	-0.19 ± 0.17	0.5
K-40	1417 ± 109	1284 ± 117	1363 ± 125	
Cs-134	-2.7 ± 2.4	0.2 ± 2.5	-2.3 ± 2.4	5.0
Cs-137	-0.3 ± 2.6	-1.3 ± 2.9	-3.0 ± 2.8	5.0
Ba-La-140	0.8 ± 2.0	2.0 ± 2.3	-1.2 ± 2.6	5.0
Other Gammas[a]	0.2 ± 2.5	0.4 ± 2.6	3.0 ± 3.1	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-11 Funk Dairy Farm

Collection Date	07-11-07	08-08-07	09-12-07	Required LLD
Lab Code	EMI-4199	EMI-5222	EMI-6028	
Sr-89	-0.8 ± 1.0	0.3 ± 0.9	-0.8 ± 0.8	5.0
Sr-90	0.8 ± 0.4	0.7 ± 0.3	0.8 ± 0.3	1.0
I-131	0.13 ± 0.21	0.12 ± 0.13	-0.18 ± 0.19	0.5
K-40	1385 ± 117	1344 ± 112	1401 ± 131	
Cs-134	0.0 ± 1.6	0.3 ± 1.4	0.7 ± 2.3	5.0
Cs-137	0.5 ± 1.8	0.0 ± 1.9	1.0 ± 2.8	5.0
Ba-La-140	0.5 ± 2.2	-0.3 ± 1.6	2.3 ± 2.5	5.0
Other Gammas[a]	-0.3 ± 2.4	-1.3 ± 2.0	-3.2 ± 3.1	15.0

Collection Date	10-10-07	11-14-07	12-12-07	Required LLD
Lab Code	EMI-6822	EMI-7850	EMI-8331	
Sr-89	0.1 ± 1.0	0.5 ± 0.8	-1.1 ± 1.1	5.0
Sr-90	0.8 ± 0.4	0.7 ± 0.3	1.6 ± 0.4	1.0
I-131	0.02 ± 0.18	-0.01 ± 0.16	0.07 ± 0.13	0.5
K-40	1373 ± 128	1250 ± 98	1294 ± 78	
Cs-134	1.5 ± 2.3	-4.5 ± 2.3	-2.4 ± 1.8	5.0
Cs-137	-1.2 ± 2.6	0.9 ± 2.4	-1.5 ± 2.0	5.0
Ba-La-140	1.4 ± 2.5	-0.5 ± 1.8	-0.4 ± 1.8	5.0
Other Gammas[a]	0.8 ± 2.8	0.3 ± 2.1	0.3 ± 1.6	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-21 Strutz Dairy Farm

Collection Date	01-09-07	02-14-07	03-14-07	Required LLD
Lab Code	EMI-86	EMI-966	EMI-1404	
Sr-89	0.9 ± 1.1	-0.2 ± 0.7	-0.1 ± 0.8	5.0
Sr-90	0.4 ± 0.4	0.5 ± 0.3	0.6 ± 0.3	1.0
I-131	0.14 ± 0.16	-0.15 ± 0.27	-0.10 ± 0.15	0.5
K-40	1186 ± 111	1499 ± 109	1414 ± 131	
Cs-134	-1.9 ± 1.9	-6.2 ± 2.5	0.4 ± 2.1	5.0
Cs-137	-0.7 ± 2.0	-0.7 ± 2.7	0.6 ± 2.7	5.0
Ba-La-140	0.7 ± 1.6	0.3 ± 1.9	-0.2 ± 1.6	5.0
Other Gammas[a]	0.6 ± 2.7	-0.5 ± 2.4	-0.4 ± 2.7	15.0

Collection Date	04-11-07	05-09-07	06-13-07	Required LLD
Lab Code	EMI-1939	EMI-2679	EMI-3586	
Sr-89	0.3 ± 0.8	0.2 ± 1.1	-0.8 ± 0.8	5.0
Sr-90	0.4 ± 0.3	0.5 ± 0.4	0.5 ± 0.3	1.0
I-131	0.16 ± 0.23	-0.05 ± 0.23	-0.09 ± 0.18	0.5
K-40	1218 ± 102	1401 ± 114	1423 ± 111	
Cs-134	-1.2 ± 1.6	-0.2 ± 1.5	0.5 ± 1.3	5.0
Cs-137	-1.4 ± 2.0	-0.4 ± 2.0	0.4 ± 1.8	5.0
Ba-La-140	1.3 ± 2.0	0.7 ± 1.2	1.1 ± 1.8	5.0
Other Gammas[a]	1.1 ± 1.8	0.1 ± 1.9	-0.2 ± 1.9	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-21 Strutz Dairy Farm

Collection Date	07-11-07	08-08-07	09-12-07	Required LLD
Lab Code	EMI-4200	EMI-5223	EMI-6029	
Sr-89	-0.6 ± 0.8	-0.6 ± 0.9	0.1 ± 0.8	5.0
Sr-90	0.8 ± 0.4	0.9 ± 0.3	0.6 ± 0.3	1.0
I-131	0.17 ± 0.22	-0.32 ± 0.17	-0.10 ± 0.21	0.5
K-40	1391 ± 129	1347 ± 119	1573 ± 128	
Cs-134	-2.7 ± 2.5	-2.1 ± 2.4	-7.4 ± 3.3	5.0
Cs-137	1.5 ± 3.0	0.7 ± 2.6	-2.5 ± 3.3	5.0
Ba-La-140	1.5 ± 2.8	0.9 ± 2.1	-2.0 ± 2.6	5.0
Other Gammas[a]	2.3 ± 2.9	1.3 ± 2.6	-1.4 ± 2.4	15.0

Collection Date	10-10-07	11-14-07	12-12-07	Required LLD
Lab Code	EMI-6823	EMI-7851	EMI-8332	
Sr-89	0.0 ± 0.8	0.2 ± 0.8	-0.9 ± 1.0	5.0
Sr-90	0.6 ± 0.3	0.5 ± 0.3	1.0 ± 0.4	1.0
I-131	0.05 ± 0.16	-0.11 ± 0.18	-0.16 ± 0.17	0.5
K-40	1383 ± 119	1387 ± 97	1358 ± 111	
Cs-134	-3.1 ± 2.5	-0.5 ± 1.4	-0.4 ± 1.6	5.0
Cs-137	-4.9 ± 3.0	0.6 ± 1.7	-0.2 ± 1.9	5.0
Ba-La-140	-1.5 ± 2.4	1.2 ± 1.9	1.0 ± 1.7	5.0
Other Gammas[a]	2.7 ± 2.3	0.1 ± 1.9	0.0 ± 2.1	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-40 Barta

Collection Date	01-09-07	02-14-07	03-14-07	Required LLD
Lab Code	EMI-87	EMI-967	EMI-1405	
Sr-89	0.5 ± 1.0	-0.6 ± 0.9	-1.5 ± 1.0	5.0
Sr-90	1.0 ± 0.4	1.0 ± 0.4	1.7 ± 0.4	1.0
I-131	-0.30 ± 0.18	-0.19 ± 0.20	-0.21 ± 0.17	0.5
K-40	1404 ± 117	1330 ± 112	1370 ± 111	
Cs-134	0.1 ± 1.6	-0.4 ± 1.4	-0.3 ± 2.9	5.0
Cs-137	0.4 ± 1.9	-0.3 ± 1.8	-1.3 ± 2.9	5.0
Ba-La-140	-2.3 ± 2.0	-0.4 ± 2.0	-1.7 ± 2.2	5.0
Other Gammas[a]	-0.5 ± 1.8	-1.7 ± 2.0	-2.7 ± 2.6	15.0

Collection Date	04-11-07	05-09-07	06-13-07	Required LLD
Lab Code	EMI-1940	EMI-2630	EMI-3587	
Sr-89	0.6 ± 0.9	0.3 ± 1.2	-0.5 ± 0.9	5.0
Sr-90	0.6 ± 0.3	0.8 ± 0.4	0.5 ± 0.3	1.0
I-131	-0.05 ± 0.20	-0.01 ± 0.19	0.13 ± 0.17	0.5
K-40	1547 ± 127	1403 ± 114	1277 ± 127	
Cs-134	-3.7 ± 2.7	-3.6 ± 2.1	-0.6 ± 2.3	5.0
Cs-137	1.5 ± 2.7	1.3 ± 2.6	-0.2 ± 2.8	5.0
Ba-La-140	-3.8 ± 2.5	-1.3 ± 1.9	1.7 ± 1.9	5.0
Other Gammas[a]	-0.2 ± 2.5	1.9 ± 2.5	-5.7 ± 3.3	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN MILK SAMPLES

(Monthly Collections)

Sample Description and Concentration (pCi/L)

E-40 Barta

Collection Date	07-11-07	08-08-07	09-12-07	Required LLD
Lab Code	EMI-4201	EMI-5224	EMI-6030,1	
Sr-89	-1.4 ± 1.0	-0.8 ± 1.0	0.0 ± 1.0	5.0
Sr-90	1.4 ± 0.5	1.1 ± 0.4	1.0 ± 0.3	1.0
I-131	-0.08 ± 0.19	-0.11 ± 0.16	-0.01 ± 0.22	0.5
K-40	1464 ± 126	1335 ± 110	1359 ± 84	
Cs-134	0.1 ± 2.5	-0.9 ± 2.4	0.4 ± 1.5	5.0
Cs-137	0.4 ± 2.5	0.9 ± 2.7	-1.7 ± 3.0	5.0
Ba-La-140	1.4 ± 1.4	-1.5 ± 1.8	0.3 ± 1.3	5.0
Other Gammas[a]	-1.3 ± 2.6	0.6 ± 2.0	-0.5 ± 2.0	15.0

Collection Date	10-10-07	11-14-07	12-12-07	Required LLD
Lab Code	EMI-6824	EMI-7852	EMI-8333	
Sr-89	-0.6 ± 0.9	-0.5 ± 0.9	-2.8 ± 1.3	5.0
Sr-90	0.8 ± 0.3	1.3 ± 0.4	2.0 ± 0.5	1.0
I-131	0.05 ± 0.20	-0.02 ± 0.20	0.12 ± 0.20	0.5
K-40	1436 ± 118	1373 ± 109	1384 ± 80	
Cs-134	0.2 ± 1.5	0.3 ± 1.8	0.0 ± 1.0	5.0
Cs-137	1.1 ± 2.1	-1.6 ± 2.3	1.0 ± 1.3	5.0
Ba-La-140	-0.2 ± 2.0	1.0 ± 1.7	-0.2 ± 1.2	5.0
Other Gammas[a]	2.3 ± 2.3	-0.3 ± 2.3	-0.7 ± 1.4	15.0

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN WELL WATER SAMPLES, E-10

(Quarterly Collections)
Units: pCi/L

	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Req. LLD
Collection Date	01-09-07	04-11-07	07-12-07	10-25-07	
Lab Code	EWW-178	EWW-2009	EWW-4298,9	EWW-7505	
Gross Beta	0.6 ± 1.8	-0.1 ± 1.8	2.0 ± 0.5	2.9 ± 1.4	4.0
H-3	76.3 ± 85.9	-3.8 ± 99.1	23,1 ± 77.7	-34.6 ± 85.3	500
Sr-89	-0.1 ± 0.6	0.5 ± 0.4	-0.1 ± 0.7	0.0 ± 0.8	5.0
Sr-90	0.0 ± 0.2	-0.1 ± 0.2	0.0 ± 0.3	0.0 ± 0.3	1.0
I-131	-0.27 ± 0.19	0.03 ± 0.18	-0.08 ± 0.22	0.16 ± 0.24	0.5
Mn-54	-2.1 ± 3.4	1.1 ± 2.2	-1.6 ± 3.2	1.2 ± 2.0	10
Fe-59	-0.3 ± 5.0	-0.2 ± 3.6	1.6 ± 7.1	2.1 ± 3.6	30
Co-58	-1.5 ± 3.1	0.4 ± 2.0	-1.2 ± 2.6	-1.0 ± 2.0	10
Co-60	0.2 ± 2.9	1.1 ± 2.0	-1.0 ± 3.8	-1.9 ± 2.2	10
Zn-65	2.6 ± 5.9	-5.2 ± 5.0	-12.8 ± 10.0	-4.6 ± 4.3	30
Zr-Nb-95	-1.2 ± 3.1	-0.8 ± 2.3	-3.5 ± 3.8	-0.7 ± 2.4	15
Cs-134	-1.6 ± 3.1	-3.5 ± 2.1	-1.1 ± 3.0	-1.7 ± 2.4	10
Cs-137	0.5 ± 3.0	-1.9 ± 2.3	2.3 ± 3.6	0.5 ± 2.4	10
Ba-La-140	-0.9 ± 3.3	-2.7 ± 2.6	-0.6 ± 4.4	-1.9 ± 2.3	15
Other Gammas[a]	-1.6 ± 3.2	-2.3 ± 2.1	-2.5 ± 3.1	-0.5 ± 2.2	30

[a] Ru-103

POINT BEACH

Lake water, analyses for gross beta, iodine-131 and gamma emitting isotopes.
Location: E-01 (Meteorological Tower)
Collection: Monthly composites Units: pCi/L

Lab Code	ELW-182	ELW-958	ELW-1395	ELW-1957	
Date Collected	01-09-07	02-15-07	03-13-07	04-11-07	Req. LLD
Gross beta	2.2 ± 0.4	2.0 ± 0.6	3.6 ± 0.7	2.1 ± 0.3	4.0
I-131	-0.22 ± 0.17	-0.02 ± 0.22	0.09 ± 0.18	-0.26 ± 0.22	0.5
Be-7	25.6 ± 23.0	50.0 ± 18.2	24.7 ± 19.1	-1.6 ± 15.7	
Mn-54	-1.2 ± 2.1	0.6 ± 1.7	1.2 ± 2.7	-1.2 ± 1.9	10
Fe-59	2.2 ± 5.9	0.2 ± 3.4	-2.0 ± 4.7	-4.7 ± 4.1	30
Co-58	0.8 ± 2.7	1.5 ± 1.7	-0.7 ± 2.4	1.2 ± 2.1	10
Co-60	0.5 ± 1.9	-0.2 ± 1.8	-2.1 ± 2.9	-1.2 ± 2.4	10
Zn-65	-1.1 ± 6.4	-0.7 ± 3.9	2.9 ± 4.7	-5.0 ± 4.3	30
Zr-Nb-95	1.1 ± 2.6	-1.1 ± 2.0	1.6 ± 2.4	0.4 ± 2.2	15
Cs-134	0.7 ± 2.3	0.2 ± 2.1	0.6 ± 1.9	-0.7 ± 1.7	10
Cs-137	3.4 ± 2.5	-3.6 ± 2.5	0.3 ± 2.4	1.5 ± 2.3	10
Ba-La-140	1.0 ± 3.0	-0.7 ± 2.0	-3.0 ± 3.6	-0.8 ± 2.3	15
Other Gammas[a]	-1.4 ± 2.5	-0.3 ± 2.1	-0.7 ± 2.3	-1.3 ± 1.9	30

Lab Code	ELW-2763	ELW-3640	ELW-4293	ELW-5464	
Date Collected	05-09-07	06-13-07	07-12-07	08-16-07	Req. LLD
Gross beta	4.7 ± 0.7	1.4 ± 0.4	2.3 ± 0.6	1.6 ± 1.1	4.0
I-131	-0.15 ± 0.24	-0.15 ± 0.20	-0.01 ± 0.21	0.14 ± 0.17	0.5
Be-7	9.6 ± 15.4	-3.5 ± 12.0	2.0 ± 24.3	-23.9 ± 24.0	
Mn-54	0.6 ± 1.4	0.9 ± 1.7	-0.6 ± 2.9	0.2 ± 3.2	10
Fe-59	-0.4 ± 3.4	-3.2 ± 3.4	3.4 ± 5.5	-2.3 ± 5.9	30
Co-58	-0.7 ± 1.9	-0.9 ± 1.6	2.6 ± 2.7	-3.0 ± 2.5	10
Co-60	0.2 ± 2.1	-0.4 ± 1.5	-1.4 ± 4.0	-3.5 ± 3.7	10
Zn-65	-4.4 ± 4.8	-1.2 ± 2.6	0.9 ± 8.2	-0.1 ± 6.5	30
Zr-Nb-95	0.2 ± 2.1	1.3 ± 1.4	1.0 ± 2.7	-3.9 ± 3.1	15
Cs-134	0.2 ± 1.9	-0.9 ± 1.7	-3.9 ± 3.4	-6.8 ± 3.4	10
Cs-137	-1.2 ± 2.2	1.8 ± 1.9	-5.3 ± 3.5	-1.0 ± 4.0	10
Ba-La-140	2.1 ± 2.6	-2.3 ± 2.3	5.2 ± 3.7	0.4 ± 4.0	15
Other Gammas[a]	0.6 ± 1.9	0.7 ± 1.4	-1.2 ± 3.1	-2.3 ± 2.7	30

Lab Code	ELW-6349	ELW-6861	ELW-7876	ELW-8373	
Date Collected	09-19-07	10-09-07	11-14-07	12-13-07	
Gross beta	1.9 ± 0.3	2.1 ± 1.0	4.1 ± 1.1	3.0 ± 0.9	4.0
I-131	0.16 ± 0.18	0.03 ± 0.23	0.08 ± 0.18	-0.14 ± 0.18	0.5
Be-7	5.7 ± 17.8	-7.4 ± 22.6	3.9 ± 14.3	-11.2 ± 15.7	
Mn-54	1.2 ± 1.8	-1.5 ± 2.4	-0.8 ± 1.5	-0.3 ± 1.5	10
Fe-59	-0.3 ± 3.9	0.9 ± 6.4	0.1 ± 3.1	-3.2 ± 3.0	30
Co-58	-1.0 ± 1.8	2.4 ± 2.6	-1.1 ± 1.6	-0.3 ± 1.7	10
Co-60	-1.2 ± 1.9	-1.4 ± 3.4	0.7 ± 1.3	-0.2 ± 1.6	10
Zn-65	-4.9 ± 4.3	2.3 ± 5.2	-0.3 ± 3.2	-1.7 ± 3.3	30
Zr-Nb-95	-0.9 ± 2.0	-1.2 ± 2.4	1.7 ± 1.9	-0.8 ± 1.8	15
Cs-134	0.9 ± 1.7	-2.0 ± 2.8	-0.6 ± 1.9	-2.0 ± 2.0	10
Cs-137	1.5 ± 2.1	2.5 ± 2.9	-3.0 ± 2.0	0.8 ± 1.9	10
Ba-La-140	0.7 ± 1.1	2.9 ± 3.2	0.5 ± 1.5	-1.7 ± 1.8	15
Other Gammas[a]	-1.6 ± 1.7	1.4 ± 2.7	-1.5 ± 1.6	-0.3 ± 1.7	30

[a] Ru-103

POINT BEACH

Lake water, analyses for gross beta, iodine-131 and gamma emitting isotopes.
Location: E-05 (Two Creeks Park)
Collection: Monthly composites Units: pCi/L

Lab Code	ELW-183	NS[b]	ELW-1396	ELW-1958	
Date Collected	01-09-07	-	03-13-07	04-11-07	Req. LLD
Gross beta	3.7 ± 0.5	-	4.3 ± 0.7	2.7 ± 0.4	4.0
I-131	-0.19 ± 0.17	-	-0.01 ± 0.14	-0.35 ± 0.21	0.5
Be-7	-6.8 ± 26.1	-	-5.6 ± 13.1	-9.1 ± 16.0	
Mn-54	1.3 ± 5.0	-	-0.9 ± 1.4	-0.3 ± 1.9	10
Fe-59	-1.5 ± 5.8	-	0.3 ± 3.1	2.8 ± 3.2	30
Co-58	0.0 ± 2.9	-	0.6 ± 1.6	-0.1 ± 1.8	10
Co-60	0.4 ± 3.3	-	0.8 ± 1.9	1.1 ± 1.6	10
Zn-65	-2.1 ± 6.5	-	-2.0 ± 3.1	-1.8 ± 3.8	30
Zr-Nb-95	1.6 ± 2.3	-	-1.4 ± 2.0	2.6 ± 1.9	15
Cs-134	0.3 ± 2.9	-	0.3 ± 1.3	-0.5 ± 1.8	10
Cs-137	-0.7 ± 3.3	-	-0.9 ± 1.6	-1.4 ± 2.2	10
Ba-La-140	-4.3 ± 3.7	-	-0.5 ± 2.0	-2.6 ± 2.3	15
Other Gammas[a]	0.5 ± 3.2	-	-0.4 ± 1.6	-0.5 ± 1.9	30

Lab Code	ELW-2764	ELW-3641	ELW-4294	ELW-5465	
Date Collected	05-09-07	06-13-07	07-12-07	08-16-07	Req. LLD
Gross beta	4.2 ± 0.7	1.4 ± 0.3	1.8 ± 0.5	3.7 ± 1.1	4.0
I-131	-0.12 ± 0.24	-0.01 ± 0.23	-0.01 ± 0.17	0.02 ± 0.20	0.5
Be-7	-9.9 ± 10.9	1.1 ± 20.0	1.5 ± 28.4	4.5 ± 18.8	
Mn-54	-0.7 ± 1.3	0.6 ± 1.9	1.4 ± 3.3	0.7 ± 1.8	10
Fe-59	0.3 ± 2.7	2.4 ± 3.8	1.4 ± 6.5	-0.8 ± 4.4	30
Co-58	-0.1 ± 1.2	1.7 ± 2.0	-1.5 ± 3.1	-2.0 ± 2.0	10
Co-60	0.1 ± 1.3	-0.2 ± 2.0	1.8 ± 4.6	0.9 ± 1.8	10
Zn-65	0.4 ± 2.7	-3.4 ± 4.2	-0.4 ± 6.5	-2.4 ± 4.4	30
Zr-Nb-95	-0.2 ± 1.5	1.4 ± 2.0	2.5 ± 3.4	-0.9 ± 2.1	15
Cs-134	0.6 ± 1.3	-2.3 ± 2.2	-0.5 ± 2.5	0.1 ± 1.9	10
Cs-137	0.6 ± 1.4	-0.2 ± 2.2	2.7 ± 2.8	1.8 ± 2.5	10
Ba-La-140	-2.7 ± 1.8	1.7 ± 2.2	-4.3 ± 4.1	0.3 ± 2.6	15
Other Gammas[a]	-1.4 ± 1.2	-1.6 ± 2.0	-2.2 ± 3.4	-0.1 ± 1.8	30

Lab Code	ELW-6053	ELW-6862	ELW-7877	ELW-8374	
Date Collected	09-11-07	10-09-07	11-14-07	12-13-07	
Gross beta	1.4 ± 0.3	2.6 ± 1.0	2.2 ± 1.0	3.2 ± 0.9	4.0
I-131	0.08 ± 0.21	0.01 ± 0.19	-0.11 ± 0.16	0.13 ± 0.16	0.5
Be-7	10.6 ± 14.5	-2.4 ± 22.7	-7.7 ± 11.3	18.2 ± 16.7	
Mn-54	2.3 ± 1.9	1.9 ± 3.3	0.9 ± 1.2	0.3 ± 1.8	10
Fe-59	-2.0 ± 3.4	0.5 ± 5.0	-1.0 ± 2.1	3.0 ± 3.8	30
Co-58	-0.3 ± 1.6	0.9 ± 2.1	0.1 ± 1.2	0.6 ± 1.8	10
Co-60	-0.5 ± 1.8	1.0 ± 2.6	1.6 ± 1.4	0.9 ± 1.8	10
Zn-65	0.6 ± 3.6	0.2 ± 7.8	-0.3 ± 2.6	-3.3 ± 3.8	30
Zr-Nb-95	-3.0 ± 1.9	1.5 ± 2.5	-1.2 ± 1.5	0.9 ± 1.8	15
Cs-134	-0.8 ± 1.3	-6.4 ± 3.7	0.1 ± 1.2	-1.0 ± 2.1	10
Cs-137	0.3 ± 1.6	-0.7 ± 3.3	0.3 ± 1.2	1.6 ± 2.0	10
Ba-La-140	0.7 ± 1.1	-3.4 ± 4.1	-2.7 ± 1.4	-4.9 ± 2.4	15
Other Gammas[a]	-2.0 ± 1.9	1.0 ± 2.5	-0.3 ± 1.4	-0.8 ± 1.8	30

[a] Ru-103

[b] "NS" = No sample; see Table 2.0, Listing of Missed Samples.

POINT BEACH

Lake water, analyses for gross beta, iodine-131 and gamma emitting isotopes.
Location: E-06 (Coast Guard Station)
Collection: Monthly composites Units: pCi/L

Lab Code	ELW-184	NS[b]	ELW-1397	ELW-1959	
Date Collected	01-09-07	-	03-13-07	04-11-07	Req. LLD
Gross beta	2.6 ± 0.4	-	3.1 ± 0.7	2.5 ± 0.4	4.0
I-131	-0.09 ± 0.15	-	-0.03 ± 0.14	-0.08 ± 0.21	0.5
Be-7	-9.6 ± 25.7	-	-3.1 ± 17.1	-1.5 ± 16.3	
Mn-54	0.8 ± 2.6	-	0.3 ± 2.1	0.3 ± 2.2	10
Fe-59	3.2 ± 5.7	-	0.4 ± 3.3	-1.0 ± 4.4	30
Co-58	3.0 ± 2.4	-	2.7 ± 2.0	-0.2 ± 2.3	10
Co-60	0.7 ± 3.3	-	0.6 ± 2.1	-1.2 ± 2.0	10
Zn-65	-4.1 ± 5.8	-	2.1 ± 3.8	-4.2 ± 4.1	30
Zr-Nb-95	1.0 ± 2.7	-	-0.2 ± 2.1	-0.4 ± 2.4	15
Cs-134	-1.5 ± 2.4	-	-3.3 ± 2.0	-1.1 ± 1.8	10
Cs-137	0.5 ± 2.9	-	0.5 ± 2.5	1.7 ± 2.0	10
Ba-La-140	-3.8 ± 2.9	-	-2.0 ± 2.5	-2.9 ± 2.5	15
Other Gammas[a]	-3.6 ± 3.1	-	0.3 ± 1.8	0.5 ± 1.9	30

Lab Code	ELW-2765	ELW-3642	ELW-4295	ELW-5466	
Date Collected	05-09-07	06-13-07	07-12-07	08-16-07	Req. LLD
Gross beta	2.5 ± 0.6	1.6 ± 0.4	1.7 ± 0.6	9.7 ± 1.3[c]	4.0
I-131	0.08 ± 0.22	-0.14 ± 0.19	0.18 ± 0.21	0.12 ± 0.26	0.5
Be-7	-33.3 ± 23.8	6.4 ± 18.4	13.8 ± 26.4	8.8 ± 19.6	
Mn-54	2.7 ± 2.8	0.4 ± 2.3	-2.7 ± 3.5	-1.0 ± 2.1	10
Fe-59	-2.4 ± 4.9	-1.3 ± 3.9	9.4 ± 6.5	-2.8 ± 3.7	30
Co-58	2.2 ± 3.2	-0.3 ± 2.1	-2.8 ± 3.5	1.5 ± 2.3	10
Co-60	0.6 ± 3.0	-1.7 ± 2.1	1.1 ± 2.4	0.8 ± 2.1	10
Zn-65	0.5 ± 6.7	-1.1 ± 4.7	2.2 ± 6.2	-3.9 ± 4.2	30
Zr-Nb-95	1.3 ± 2.2	-0.3 ± 2.4	1.6 ± 3.5	3.3 ± 2.2	15
Cs-134	0.3 ± 2.5	-0.4 ± 2.0	-0.3 ± 3.3	-2.4 ± 2.2	10
Cs-137	-1.4 ± 2.8	-0.8 ± 2.2	0.3 ± 3.6	1.0 ± 2.7	10
Ba-La-140	-2.4 ± 3.1	-1.2 ± 2.8	8.3 ± 4.5	-2.6 ± 2.5	15
Other Gammas[a]	0.7 ± 2.9	-1.2 ± 2.1	0.3 ± 3.5	-2.1 ± 2.1	30

Lab Code	ELW-6054	ELW-6863	ELW-7878	ELW-8375	
Date Collected	09-11-07	10-09-07	11-14-07	12-13-07	
Gross beta	1.5 ± 0.3	2.0 ± 1.0	2.1 ± 1.0	4.1 ± 0.9	4.0
I-131	0.02 ± 0.17	0.03 ± 0.19	0.10 ± 0.15	-0.06 ± 0.17	0.5
Be-7	-13.2 ± 23.2	6.1 ± 14.2	5.7 ± 14.3	4.1 ± 12.6	
Mn-54	-0.8 ± 2.4	2.7 ± 2.0	-0.2 ± 1.5	0.4 ± 1.6	10
Fe-59	1.2 ± 4.8	-0.7 ± 3.4	0.1 ± 2.7	-0.5 ± 2.3	30
Co-58	-0.3 ± 3.1	-1.3 ± 1.7	0.2 ± 1.7	-0.2 ± 1.4	10
Co-60	-2.0 ± 3.2	-0.5 ± 2.3	0.0 ± 1.6	1.0 ± 1.4	10
Zn-65	-1.0 ± 6.9	-6.4 ± 4.1	-4.0 ± 3.7	-0.8 ± 2.7	30
Zr-Nb-95	0.7 ± 3.2	0.8 ± 2.1	1.3 ± 1.8	-0.9 ± 1.5	15
Cs-134	-1.0 ± 3.5	-1.7 ± 1.6	0.0 ± 1.5	0.2 ± 1.3	10
Cs-137	0.4 ± 3.3	-0.2 ± 2.3	-0.7 ± 2.0	0.0 ± 1.4	10
Ba-La-140	4.6 ± 3.0	1.7 ± 2.6	-0.9 ± 1.6	-1.5 ± 1.7	15
Other Gammas[a]	0.2 ± 2.5	-1.7 ± 2.1	0.9 ± 1.7	-0.9 ± 1.4	30

[a] Ru-103

[b] "NS" = No sample; see Table 2.0, Listing of Missed Samples.

[c] Gross beta repeated with a result of 7.3±0.8 pCi/L. Reanalysis after filtering = 6.4±2.0 pCi/L.

POINT BEACH

Lake water, analyses for gross beta, iodine-131 and gamma emitting isotopes.
Location: E-33 (Nature Conservancy)
Collection: Monthly composites *Units: pCi/L*

Lab Code	ELW-185	ELW-959	ELW-1398	ELW-1960	
Date Collected	01-09-07	02-15-07	03-13-07	04-11-07	Req. LLD
Gross beta	3.5 ± 0.5	2.3 ± 0.6	6.4 ± 0.8	2.8 ± 0.4	4.0
I-131	-0.07 ± 0.18	-0.14 ± 0.19	0.03 ± 0.12	0.02 ± 0.22	0.5
Be-7	4.2 ± 27.2	0.6 ± 12.9	-8.6 ± 19.1	-27.8 ± 29.0	
Mn-54	-0.2 ± 2.6	0.8 ± 1.3	0.2 ± 2.3	1.8 ± 3.3	10
Fe-59	0.7 ± 6.0	1.3 ± 2.5	1.5 ± 3.9	-2.2 ± 7.3	30
Co-58	1.6 ± 2.7	0.1 ± 1.5	2.0 ± 1.8	-0.3 ± 3.4	10
Co-60	-3.6 ± 3.3	-0.2 ± 1.5	0.6 ± 1.6	1.6 ± 4.1	10
Zn-65	-3.5 ± 6.0	-2.6 ± 2.7	-4.3 ± 4.3	-2.9 ± 6.8	30
Zr-Nb-95	0.8 ± 2.9	-0.3 ± 1.7	-0.9 ± 1.9	1.6 ± 3.7	15
Cs-134	-0.1 ± 3.4	1.1 ± 1.2	0.0 ± 2.1	-1.3 ± 2.9	10
Cs-137	0.7 ± 3.7	-1.0 ± 1.4	0.5 ± 2.2	1.0 ± 3.1	10
Ba-La-140	2.5 ± 3.8	0.7 ± 1.3	5.8 ± 3.6	2.3 ± 3.5	15
Other Gammas[a]	1.5 ± 2.8	-0.9 ± 1.3	0.5 ± 2.0	0.4 ± 3.0	30

Lab Code	ELW-2766	ELW-3643	ELW-4296	ELW-5467	
Date Collected	05-09-07	06-13-07	07-12-07	08-16-07	Req. LLD
Gross beta	2.0 ± 0.6	1.3 ± 0.3	3.8 ± 0.7	2.5 ± 1.0	4.0
I-131	-0.23 ± 0.24	0.02 ± 0.18	0.08 ± 0.16	0.06 ± 0.19	0.5
Be-7	-11.1 ± 19.8	-7.0 ± 14.4	7.2 ± 18.0	-18.5 ± 26.4	
Mn-54	-1.6 ± 2.9	-0.3 ± 1.8	0.5 ± 1.8	-4.0 ± 3.3	10
Fe-59	-9.1 ± 6.2	-0.2 ± 3.0	-4.3 ± 4.3	1.0 ± 6.2	30
Co-58	3.2 ± 2.5	1.8 ± 1.7	2.0 ± 2.1	-4.0 ± 3.3	10
Co-60	1.9 ± 3.8	-0.4 ± 1.2	1.1 ± 2.0	-0.7 ± 3.7	10
Zn-65	-8.0 ± 6.2	-1.8 ± 3.2	-2.1 ± 4.3	0.7 ± 6.4	30
Zr-Nb-95	-3.0 ± 2.8	-0.3 ± 1.7	0.2 ± 2.4	0.5 ± 3.2	15
Cs-134	-2.7 ± 3.0	-0.8 ± 1.5	0.1 ± 2.2	-1.1 ± 3.0	10
Cs-137	-0.5 ± 3.0	-0.4 ± 1.6	1.3 ± 2.4	0.6 ± 3.5	10
Ba-La-140	-5.5 ± 4.2	-1.1 ± 2.0	0.1 ± 2.8	0.3 ± 3.2	15
Other Gammas[a]	-1.0 ± 2.8	0.7 ± 1.7	-0.7 ± 1.9	-0.3 ± 3.4	30

Lab Code	ELW-6350	ELW-6864	ELW-7879	ELW-8376	
Date Collected	09-19-07	10-09-07	11-14-07	12-13-07	
Gross beta	2.7 ± 0.4	2.1 ± 1.0	2.2 ± 1.0	1.0 ± 0.4	4.0
I-131	0.09 ± 0.21	0.17 ± 0.25	0.04 ± 0.14	0.08 ± 0.16	0.5
Be-7	-11.6 ± 17.9	5.3 ± 17.3	9.8 ± 16.8	9.2 ± 13.4	
Mn-54	-0.2 ± 1.7	1.0 ± 2.0	0.4 ± 1.9	-0.2 ± 1.4	10
Fe-59	0.2 ± 3.8	-2.0 ± 3.3	-3.6 ± 4.0	0.5 ± 2.9	30
Co-58	0.2 ± 1.9	0.6 ± 2.1	0.9 ± 1.9	-0.9 ± 1.6	10
Co-60	1.8 ± 1.7	1.0 ± 1.9	0.2 ± 1.8	-0.6 ± 1.8	10
Zn-65	-0.9 ± 4.0	-0.2 ± 3.5	-1.6 ± 3.3	-2.3 ± 3.2	30
Zr-Nb-95	-0.7 ± 2.0	-0.2 ± 2.2	0.9 ± 2.0	-1.3 ± 1.7	15
Cs-134	0.9 ± 1.6	-2.2 ± 2.2	1.1 ± 1.9	-1.1 ± 1.5	10
Cs-137	-1.8 ± 2.1	1.3 ± 2.2	-1.8 ± 2.3	1.1 ± 1.7	10
Ba-La-140	3.0 ± 2.0	2.9 ± 1.9	-0.4 ± 2.4	-4.4 ± 2.0	15
Other Gammas[a]	1.0 ± 1.9	-2.3 ± 2.0	0.0 ± 2.0	-0.4 ± 1.7	30

[a] Ru-103

POINT BEACH

Lake water, analyses for tritium, strontium-89 and strontium-90.
Collection: Quarterly composites of weekly grab samples
Units: pCi/L

Location	E-01 (Meteorological Tower)			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	ELW-2222	ELW-4276	ELW-7137	ELW-8631
H-3	71 ± 92	74 ± 96	-70 ± 97	51 ± 82
Sr-89	0.38 ± 1.22	-0.33 ± 1.21	-1.04 ± 1.13	-0.33 ± 0.83
Sr-90	0.27 ± 0.32	0.21 ± 0.38	0.50 ± 0.29	0.31 ± 0.34

Location	E-05 (Two Creeks Park)			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	ELW-2223	ELW-4277,8	ELW-7138	ELW-8632
H-3	171 ± 96	56 ± 95	-123 ± 95	29 ± 81
Sr-89	-0.27 ± 1.04	0.24 ± 0.89	0.72 ± 1.12	1.34 ± 0.99
Sr-90	0.38 ± 0.29	0.19 ± 0.28	0.17 ± 0.26	-0.30 ± 0.30

Location	E-06 (Coast Guard Station)			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	ELW-2224	ELW-4279	ELW-7139	ELW-8633
H-3	45 ± 91	64 ± 95	-132 ± 95	33 ± 81
Sr-89	-0.03 ± 0.96	-0.71 ± 0.90	0.16 ± 1.02	-0.16 ± 0.95
Sr-90	0.25 ± 0.26	0.28 ± 0.31	0.31 ± 0.26	0.56 ± 0.41

Location	E-33 (Nature Conservancy)			
Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	ELW-2225	ELW-4280	ELW-7140	ELW-8634,5
H-3	-43 ± 88	79 ± 96	-68 ± 97	31 ± 81
Sr-89	-0.32 ± 1.02	0.37 ± 1.16	-0.19 ± 1.09	0.21 ± 0.69
Sr-90	0.32 ± 0.28	0.45 ± 0.35	0.35 ± 0.27	0.32 ± 0.28

Note: pages 23 and 24 are intentionally left out.

POINT BEACH NUCLEAR PLANT

Fish, analyses for gross beta and gamma emitting isotopes.
Location: E-13
Collection: 3x / year Units: pCi/g wet

	Sample Description and Concentration				Required LLD
Collection Date	01-27-07	02-10-07	03-03-07	08-16-07	
Lab Code	EF-1409	EF-1410	EF-1411	EF-5403	
Type	Brown Trout	Rainbow Trout	Brown Trout	Brown Trout	
Ratio (wet/dry wt.)	3.12	2.97	3.20		
Gross Beta	4.27 ± 0.13	5.16 ± 0.13	4.48 ± 0.16	3.22 ± 0.08	0.5
K-40	2.50 ± 0.35	3.22 ± 0.38	3.18 ± 0.39	2.28 ± 0.35	
Mn-54	0.001 ± 0.008	-0.007 ± 0.008	-0.007 ± 0.010	-0.002 ± 0.009	0.13
Fe-59	-0.002 ± 0.014	-0.026 ± 0.012	-0.010 ± 0.018	-0.017 ± 0.019	0.26
Co-58	0.011 ± 0.008	0.016 ± 0.008	0.004 ± 0.008	0.007 ± 0.007	0.13
Co-60	-0.001 ± 0.007	0.000 ± 0.008	0.005 ± 0.010	-0.003 ± 0.009	0.13
Zn-65	0.027 ± 0.015	0.012 ± 0.018	-0.002 ± 0.021	-0.011 ± 0.021	0.26
Cs-134	0.001 ± 0.008	0.000 ± 0.005	-0.006 ± 0.009	0.003 ± 0.010	0.13
Cs-137	0.016 ± 0.010	0.039 ± 0.016	0.031 ± 0.012	0.043 ± 0.024	0.15
Other Gammas[a]	-0.019 ± 0.007	-0.003 ± 0.006	-0.002 ± 0.008	-0.002 ± 0.008	0.5
Collection Date	08-16-07	08-16-07	12-11-07	12-11-07	
Lab Code	EF-5404	EF-5405	EF-8327	EF-8328,29	
Type	Brown Trout	Salmon	Lake Trout	Lake Trout	
Ratio (wet/dry wt.)	3.12	2.05	2.61	5.11	
Gross Beta	5.29 ± 0.11	4.64 ± 0.10	3.28 ± 0.06	3.99 ± 0.06	
K-40	3.45 ± 0.41	2.79 ± 0.37	2.58 ± 0.47	2.76 ± 0.29	
Mn-54	-0.002 ± 0.009	0.003 ± 0.008	-0.014 ± 0.014	-0.014 ± 0.014	
Fe-59	-0.022 ± 0.016	-0.009 ± 0.019	-0.033 ± 0.025	0.012 ± 0.017	
Co-58	0.007 ± 0.008	0.000 ± 0.019	0.001 ± 0.013	-0.010 ± 0.008	
Co-60	0.002 ± 0.010	0.002 ± 0.008	-0.004 ± 0.016	-0.007 ± 0.009	
Zn-65	-0.006 ± 0.020	-0.032 ± 0.020	0.002 ± 0.029	-0.015 ± 0.020	
Cs-134	0.007 ± 0.006	0.000 ± 0.007	-0.004 ± 0.011	-0.010 ± 0.008	
Cs-137	0.031 ± 0.016	0.049 ± 0.014	0.013 ± 0.016	0.018 ± 0.011	
Other Gammas[a]	-0.001 ± 0.007	-0.006 ± 0.007	-0.014 ± 0.010	-0.014 ± 0.010	

[a] Ru-103

POINT BEACH NUCLEAR PLANT

Fish, analyses for gross beta and gamma emitting isotopes.
Location: E-13
Collection: 3x / year Units: pCi/g wet

	Sample Description and Concentration (pCi/g wet)	Required LLD
Collection Date	12-11-07	
Lab Code	EF-8330	
Type	Lake Trout	
Ratio (wet/dry wt.)	4.68	
Gross Beta	3.28 ± 0.07	0.5
K-40	2.25 ± 0.41	
Mn-54	-0.003 ± 0.011	0.13
Fe-59	-0.010 ± 0.022	0.26
Co-58	0.000 ± 0.011	0.13
Co-60	0.005 ± 0.012	0.13
Zn-65	0.023 ± 0.022	0.26
Cs-134	-0.005 ± 0.009	0.13
Cs-137	0.023 ± 0.013	0.15
Other Gammas[a]	-0.013 ± 0.009	0.5

[a] Ru-103

NOTE: Page 27 is intentionally left out.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN SHORELINE SEDIMENT SAMPLES

(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)

Collection Date Lab Code	4/11/2007 ESS-2011	4/11/2007 ESS-2012	4/11/2007 ESS-2013	Required LLD
Location	E-01	E-05	E-06	
Gross Beta	8.94 ± 1.76	16.82 ± 2.03	16.23 ± 2.30	2.0
Be-7	0.047 ± 0.055	0.050 ± 0.040	0.020 ± 0.064	
K-40	4.55 ± 0.32	7.14 ± 0.40	8.65 ± 0.51	-
Cs-137	0.016 ± 0.009	0.012 ± 0.006	0.041 ± 0.020	0.15
Tl-208	0.078 ± 0.021	0.035 ± 0.011	0.043 ± 0.019	-
Pb-212	0.24 ± 0.026	0.10 ± 0.017	0.09 ± 0.017	-
Bi-214	0.19 ± 0.028	0.08 ± 0.029	0.09 ± 0.031	-
Ra-226	0.48 ± 0.20	0.36 ± 0.13	0.32 ± 0.14	-
Ac-228	0.30 ± 0.060	0.20 ± 0.054	0.07 ± 0.039	-

Collection Date Lab Code	4/11/2007 ESS-2014	4/11/2007 ESS-2015		
Location	E-12	E-33		
Gross Beta	14.43 ± 2.01	13.85 ± 2.19		2.0
Be-7	0.039 ± 0.055	0.042 ± 0.053		
K-40	7.84 ± 0.45	6.09 ± 0.39		-
Cs-137	0.019 ± 0.010	0.022 ± 0.012		0.15
Tl-208	0.038 ± 0.017	0.043 ± 0.017		-
Pb-212	0.10 ± 0.018	0.12 ± 0.039		-
Bi-214	0.09 ± 0.025	0.07 ± 0.023		-
Ra-226	0.32 ± 0.14	0.31 ± 0.12		-
Ac-228	0.13 ± 0.063	0.17 ± 0.048		-

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN SHORELINE SEDIMENT SAMPLES

(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)

Collection Date	10/9/2007	10/9/2007	10/9/2007	Required
Lab Code	ESS-6869	ESS-6870,1	ESS-6872	LLD
Location	E-01	E-05	E-06	
Gross Beta	12.13 ± 2.09	19.90 ± 1.51	11.43 ± 1.63	2.0
Be-7	0.078 ± 0.061	0.106 ± 0.076	0.064 ± 0.065	
K-40	5.75 ± 0.40	9.95 ± 0.66	6.39 ± 0.59	-
Cs-137	0.033 ± 0.014	0.016 ± 0.012	0.007 ± 0.012	0.15
Tl-208	0.085 ± 0.023	0.053 ± 0.015	0.034 ± 0.012	-
Pb-212	0.24 ± 0.058	0.13 ± 0.016	0.08 ± 0.020	-
Bi-214	0.18 ± 0.031	0.18 ± 0.033	0.13 ± 0.037	-
Ra-226	0.32 ± 0.14	0.19 ± 0.17	0.31 ± 0.15	-
Ac-228	0.25 ± 0.072	0.22 ± 0.064	0.14 ± 0.077	-

Collection Date	10/9/2007	10/9/2007		
Lab Code	ESS-6873	ESS-6874		
Location	E-12	E-33		
Gross Beta	18.61 ± 2.11	10.31 ± 1.51		2.0
Be-7	0.057 ± 0.057	0.143 ± 0.060		
K-40	8.54 ± 0.50	7.32 ± 0.05		-
Cs-137	0.001 ± 0.007	0.032 ± 0.018		0.15
Tl-208	0.059 ± 0.018	0.046 ± 0.019		-
Pb-212	0.14 ± 0.031	0.13 ± 0.051		-
Bi-214	0.10 ± 0.028	0.10 ± 0.024		-
Ra-226	0.43 ± 0.15	0.28 ± 0.13		-
Ac-228	0.22 ± 0.069	0.15 ± 0.041		-

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN SOIL SAMPLES

(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)				
Collection Date	5/31/2007	5/31/2007	5/31/2007	Required
Lab Code	ESO-3415	ESO-3416,7	ESO-3418	LLD
Location	E-01	E-02	E-03	
Gross Beta	33.23 ± 2.91	22.67 ± 1.66	34.82 ± 2.43	2.0
Be-7	-0.04 ± 0.14	0.17 ± 0.08	0.02 ± 0.11	
K-40	15.46 ± 1.10	12.31 ± 0.52	21.34 ± 0.94	-
Cs-137	0.22 ± 0.048	0.15 ± 0.023	0.35 ± 0.037	0.15
Tl-208	0.19 ± 0.044	0.11 ± 0.016	0.27 ± 0.042	-
Pb-212	0.49 ± 0.053	0.33 ± 0.023	0.87 ± 0.116	-
Bi-214	0.39 ± 0.083	0.21 ± 0.033	0.48 ± 0.055	-
Ra-226	0.94 ± 0.38	0.58 ± 0.19	1.73 ± 0.35	-
Ac-228	0.59 ± 0.18	0.42 ± 0.07	0.83 ± 0.14	-
Collection Date	5/31/2007	5/31/2007	5/31/2007	
Lab Code	ESO-3419	ESO-3420	ESO-3421	
Location	E-04	E-06	E-08	
Gross Beta	28.72 ± 2.24	26.76 ± 2.10	25.32 ± 2.01	2.0
Be-7	0.15 ± 0.09	0.09 ± 0.10	0.03 ± 0.08	
K-40	17.34 ± 0.82	15.10 ± 0.93	13.24 ± 0.69	-
Cs-137	0.15 ± 0.027	0.22 ± 0.038	0.24 ± 0.031	0.15
Tl-208	0.18 ± 0.032	0.12 ± 0.035	0.09 ± 0.026	-
Pb-212	0.48 ± 0.047	0.27 ± 0.038	0.32 ± 0.083	-
Bi-214	0.33 ± 0.044	0.24 ± 0.053	0.15 ± 0.037	-
Ra-226	0.98 ± 0.28	0.53 ± 0.31	0.83 ± 0.24	-
Ac-228	0.74 ± 0.13	0.45 ± 0.13	0.33 ± 0.07	-
Collection Date	5/31/2007	5/31/2007		
Lab Code	ESO-3422	ESO-3423		
Location	E-09	E-20		
Gross Beta	35.96 ± 2.47	35.15 ± 2.96		2.0
Be-7	0.12 ± 0.09	-0.03 ± 0.15		
K-40	21.16 ± 0.93	13.80 ± 1.21		-
Cs-137	0.17 ± 0.033	0.04 ± 0.025		0.15
Tl-208	0.20 ± 0.029	0.18 ± 0.046		-
Pb-212	0.50 ± 0.041	0.44 ± 0.052		-
Bi-214	0.42 ± 0.056	0.33 ± 0.101		-
Ra-226	1.08 ± 0.31	1.06 ± 0.41		-
Ac-228	0.56 ± 0.10	0.51 ± 0.16		-

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN SOIL SAMPLES

(Semiannual Collections)

Sample Description and Concentration (pCi/g dry)				
Collection Date	10/26/2007	10/26/2007	10/26/2007	Required
Lab Code	ESO-7506	ESO-7507	ESO-7508,9	LLD
Location	E-01	E-02	E-03	
Gross Beta	29.30 ± 2.86	37.61 ± 2.79	35.84 ± 2.05	2.0
Be-7	0.01 ± 0.08	0.14 ± 0.08	-0.04 ± 0.10	
K-40	14.04 ± 0.74	19.32 ± 0.82	17.14 ± 0.67	-
Cs-137	0.12 ± 0.027	0.14 ± 0.029	0.29 ± 0.033	0.15
Tl-208	0.14 ± 0.028	0.20 ± 0.037	0.19 ± 0.028	-
Pb-212	0.43 ± 0.093	0.65 ± 0.094	0.56 ± 0.031	-
Bi-214	0.32 ± 0.046	0.45 ± 0.047	0.44 ± 0.043	-
Ra-226	0.67 ± 0.26	0.94 ± 0.28	0.99 ± 0.25	-
Ac-228	0.46 ± 0.08	0.58 ± 0.12	0.69 ± 0.09	-
Collection Date	10/26/2007	10/26/2007	10/26/2007	
Lab Code	ESO-7510	ESO-7511	ESO-7512	
Location	E-04	E-06	E-08	
Gross Beta	23.91 ± 3.19	23.76 ± 3.62	28.92 ± 2.80	2.0
Be-7	0.03 ± 0.09	0.08 ± 0.06	0.06 ± 0.09	
K-40	13.88 ± 0.75	13.02 ± 0.63	13.57 ± 0.74	-
Cs-137	0.26 ± 0.034	0.27 ± 0.029	0.25 ± 0.038	0.15
Tl-208	0.15 ± 0.029	0.10 ± 0.023	0.09 ± 0.018	-
Pb-212	0.46 ± 0.093	0.31 ± 0.028	0.28 ± 0.037	-
Bi-214	0.35 ± 0.044	0.30 ± 0.036	0.24 ± 0.043	-
Ra-226	0.79 ± 0.28	0.75 ± 0.02	0.57 ± 0.03	-
Ac-228	0.51 ± 0.11	0.39 ± 0.09	0.30 ± 0.08	-
Collection Date	10/26/2007	10/26/2007		
Lab Code	ESO-7513	ESO-7514		
Location	E-09	E-20		
Gross Beta	38.35 ± 2.87	35.71 ± 2.76		2.0
Be-7	0.17 ± 0.09	0.04 ± 0.10		
K-40	20.25 ± 0.87	18.07 ± 0.88		-
Cs-137	0.14 ± 0.026	0.15 ± 0.033		0.15
Tl-208	0.20 ± 0.031	0.16 ± 0.029		-
Pb-212	0.57 ± 0.041	0.57 ± 0.111		-
Bi-214	0.43 ± 0.051	0.40 ± 0.056		-
Ra-226	0.89 ± 0.29	1.18 ± 0.47		-
Ac-228	0.66 ± 0.15	0.58 ± 0.13		-

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN VEGETATION SAMPLES

(Tri-Annual Collections)

Sample Description and Concentration (pCi/g wet)				
Location	E-01	E-02	E-03	
Collection Date	5/31/2007	5/31/2007	5/31/2007	
Lab Code	EG-3301	EG-3302	EG-3303	Req. LLD
Ratio (wet/dry)	3.87	3.93	4.52	-
Gross Beta	9.38 ± 0.41	9.69 ± 0.33	7.19 ± 0.22	0.25
Be-7	1.00 ± 0.41	0.87 ± 0.32	0.41 ± 0.18	-
K-40	4.77 ± 0.77	5.48 ± 0.69	6.02 ± 0.88	-
I-131	-0.004 ± 0.017	0.004 ± 0.013	-0.025 ± 0.020	0.060
Cs-134	-0.016 ± 0.017	0.002 ± 0.017	-0.008 ± 0.019	0.060
Cs-137	0.001 ± 0.019	0.009 ± 0.015	-0.005 ± 0.021	0.080
Other Gammas[a]	-0.018 ± 0.019	-0.005 ± 0.019	-0.023 ± 0.027	0.060
Location	E-04	E-06	E-08	
Collection Date	5/31/2007	5/31/2007	5/31/2007	
Lab Code	EG-3304	EG-3305	EG-3306	Req. LLD
Ratio (wet/dry)	5.64	4.73	4.02	-
Gross Beta	7.46 ± 0.16	7.36 ± 0.17	9.58 ± 0.22	0.25
Be-7	0.68 ± 0.26	0.48 ± 0.26	1.02 ± 0.36	-
K-40	5.58 ± 0.59	5.76 ± 1.18	6.86 ± 0.65	-
I-131	0.008 ± 0.011	-0.022 ± 0.018	-0.001 ± 0.016	0.060
Cs-134	-0.008 ± 0.011	-0.015 ± 0.020	-0.020 ± 0.016	0.060
Cs-137	0.008 ± 0.010	0.027 ± 0.020	0.025 ± 0.015	0.080
Other Gammas[a]	-0.006 ± 0.012	0.035 ± 0.018	0.010 ± 0.015	0.060
Location	E-09	E-20		
Collection Date	5/31/2007	5/31/2007		
Lab Code	EG-3307	EG-3308		Req. LLD
Ratio (wet/dry)	4.39	4.46		-
Gross Beta	8.03 ± 0.16	7.29 ± 0.16		0.25
Be-7	0.66 ± 0.26	0.82 ± 0.20		-
K-40	5.52 ± 0.63	7.18 ± 0.44		-
I-131	-0.009 ± 0.014	0.003 ± 0.012		0.060
Cs-134	-0.007 ± 0.012	0.003 ± 0.012		0.060
Cs-137	0.017 ± 0.015	0.002 ± 0.014		0.080
Other Gammas[a]	0.002 ± 0.014	0.007 ± 0.014		0.060

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN VEGETATION SAMPLES
(Tri-Annual Collections)

Sample Description and Concentration (pCi/g wet)				
Location	E-01	E-02	E-03	
Collection Date	7/26/2007	7/25/2007	7/26/2007	
Lab Code	EG-4768	EG-4769	EG-4770	Req. LLD
Ratio (wet/dry)	4.08	3.49	3.67	-
Gross Beta	9.87 ± 0.21	7.71 ± 0.18	8.84 ± 0.18	0.25
Be-7	0.57 ± 0.16	2.23 ± 0.23	0.48 ± 0.18	-
K-40	7.23 ± 0.52	6.31 ± 0.55	7.88 ± 0.51	-
I-131	0.010 ± 0.008	0.029 ± 0.011	-0.001 ± 0.009	0.060
Cs-134	-0.005 ± 0.008	-0.008 ± 0.011	0.001 ± 0.009	0.060
Cs-137	0.005 ± 0.010	-0.002 ± 0.012	0.001 ± 0.010	0.080
Other Gammas[a]	-0.006 ± 0.011	0.001 ± 0.008	0.008 ± 0.009	0.060
Location	E-04	E-06	E-08	
Collection Date	7/26/2007	7/26/2007	7/26/2007	
Lab Code	EG-4771	EG-4772	EG-4773	Req. LLD
Ratio (wet/dry)	5.81	3.08	5.25	-
Gross Beta	7.16 ± 0.15	6.97 ± 0.16	8.42 ± 0.20	0.25
Be-7	0.51 ± 0.17	1.06 ± 0.28	0.54 ± 0.22	-
K-40	6.05 ± 0.64	4.84 ± 0.53	6.60 ± 0.69	-
I-131	0.005 ± 0.012	-0.014 ± 0.014	0.008 ± 0.011	0.060
Cs-134	-0.017 ± 0.014	0.002 ± 0.013	-0.001 ± 0.011	0.060
Cs-137	0.001 ± 0.014	0.051 ± 0.026	-0.001 ± 0.012	0.080
Other Gammas[a]	-0.007 ± 0.016	-0.004 ± 0.008	0.009 ± 0.019	0.060
Location	E-09	E-20		
Collection Date	7/26/2007	7/26/2007		
Lab Code	EG-4774	EG-4775		Req. LLD
Ratio (wet/dry)	3.21	2.92		-
Gross Beta	8.80 ± 0.23	11.72 ± 0.33		0.25
Be-7	1.22 ± 0.23	1.45 ± 0.28		-
K-40	6.95 ± 0.59	5.51 ± 0.55		-
I-131	-0.005 ± 0.008	-0.021 ± 0.012		0.060
Cs-134	-0.005 ± 0.008	-0.002 ± 0.012		0.060
Cs-137	0.002 ± 0.008	0.005 ± 0.013		0.080
Other Gammas[a]	0.011 ± 0.010	0.007 ± 0.012		0.060

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

RADIOACTIVITY IN VEGETATION SAMPLES
(Tri-Annual Collections)

Sample Description and Concentration (pCi/g wet)				
Location	E-01	E-02	E-03	
Collection Date	10/26/2007	10/26/2007	10/26/2007	
Lab Code	EG-7518	EG-7519	EG-7520	Req. LLD
Ratio (wet/dry)	4.13	4.66	3.87	-
Gross Beta	5.35 ± 0.15	8.24 ± 0.21	9.78 ± 0.20	0.25
Be-7	2.98 ± 0.32	2.52 ± 0.36	2.72 ± 0.36	-
K-40	4.82 ± 0.61	7.00 ± 0.64	6.70 ± 0.67	-
I-131	-0.010 ± 0.012	0.010 ± 0.013	0.008 ± 0.011	0.060
Cs-134	-0.008 ± 0.011	-0.005 ± 0.013	0.009 ± 0.010	0.060
Cs-137	-0.010 ± 0.013	0.019 ± 0.013	0.001 ± 0.013	0.080
Other Gammas[a]	0.005 ± 0.014	0.005 ± 0.011	-0.008 ± 0.015	0.060
Location	E-04	E-06	E-08	
Collection Date	10/26/2007	10/26/2007	10/26/2007	
Lab Code	EG-7521	EG-7522	EG-7523	Req. LLD
Ratio (wet/dry)	3.96	3.28	5.55	-
Gross Beta	4.94 ± 0.13	6.32 ± 0.16	3.62 ± 0.08	0.25
Be-7	2.82 ± 0.35	2.44 ± 0.32	1.49 ± 0.29	-
K-40	5.52 ± 0.48	5.81 ± 0.63	3.44 ± 0.39	-
I-131	0.002 ± 0.011	0.017 ± 0.014	0.000 ± 0.009	0.060
Cs-134	-0.010 ± 0.011	0.008 ± 0.010	0.002 ± 0.008	0.060
Cs-137	0.002 ± 0.010	0.110 ± 0.030	0.005 ± 0.010	0.080
Other Gammas[a]	-0.007 ± 0.011	-0.005 ± 0.011	0.008 ± 0.009	0.060
Location	E-09	E-20		
Collection Date	10/26/2007	10/26/2007		
Lab Code	EG-7524	EG-7525		Req. LLD
Ratio (wet/dry)	4.37	4.60		-
Gross Beta	8.95 ± 0.24	9.22 ± 0.21		0.25
Be-7	3.88 ± 0.38	3.15 ± 0.50		-
K-40	5.80 ± 0.58	5.87 ± 0.80		-
I-131	-0.010 ± 0.010	0.018 ± 0.019		0.060
Cs-134	0.006 ± 0.009	-0.009 ± 0.015		0.060
Cs-137	-0.002 ± 0.010	-0.008 ± 0.019		0.080
Other Gammas[a]	-0.012 ± 0.010	0.015 ± 0.023		0.060

[a] See Introduction.

POINT BEACH NUCLEAR PLANT

Aquatic Vegetation, analyses for gross beta and gamma emitting isotopes.

Collection: Semiannual Units: pCi/g wet

Sample Description and Concentration			
Collection Date	06-06-07	06-06-07	Required
Lab Code	ESL-3503	ESL-3504	LLD
Location	E-05	E-12	
Ratio (wet wt./dry wt.)	7.29	1.59	
Gross Beta	4.89 ± 0.29	7.86 ± 0.98	0.25
Be-7	0.56 ± 0.24	0.27 ± 0.21	-
K-40	2.51 ± 0.65	4.98 ± 0.92	-
Co-58	-0.025 ± 0.032	-0.013 ± 0.023	0.25
Co-60	0.003 ± 0.034	0.013 ± 0.033	0.25
Cs-134	0.005 ± 0.033	0.001 ± 0.023	0.25
Cs-137	0.018 ± 0.036	-0.009 ± 0.025	0.25
Collection Date	08-09-07	08-09-07	Required
Lab Code	ESL-5292	ESL-5293	LLD
Location	E-05	E-12	
Ratio (wet wt./dry wt.)	4.42	3.34	
Gross Beta	5.25 ± 0.36	2.87 ± 0.27	0.25
Be-7	1.30 ± 0.32	0.66 ± 0.28	-
K-40	2.32 ± 0.44	1.96 ± 0.89	-
Co-58	0.005 ± 0.012	-0.029 ± 0.035	0.25
Co-60	0.016 ± 0.017	-0.010 ± 0.023	0.25
Cs-134	-0.030 ± 0.016	0.001 ± 0.029	0.25
Cs-137	0.026 ± 0.018	0.009 ± 0.038	0.25
Collection Date	10-04-07	10-04-07	Required
Lab Code	ESL-6771	ESL-6772	LLD
Location	E-05	E-12	
Ratio (wet wt./dry wt.)	3.54	3.62	
Gross Beta	9.58 ± 0.71	7.64 ± 0.59	0.25
Be-7	0.17 ± 0.10	0.95 ± 0.36	-
K-40	3.04 ± 0.41	3.02 ± 0.49	-
Co-58	-0.014 ± 0.011	0.019 ± 0.014	0.25
Co-60	0.001 ± 0.012	0.017 ± 0.012	0.25
Cs-134	-0.009 ± 0.011	-0.027 ± 0.015	0.25
Cs-137	0.022 ± 0.013	0.020 ± 0.017	0.25

POINT BEACH NUCLEAR PLANT

AMBIENT GAMMA RADIATION (TLD)
1st. Quarter, 2007

Date Annealed:	12-18-06	Days in the field	91
Date Placed:	01-03-07	Days from Annealing	
Date Removed:	04-04-07	to Readout:	116
Date Read:	04-13-07		

Location	Days in Field	Total mR	Net mR	Net mR per 7 days
Indicator				
E-1	91	14.3 ± 1.1	9.8 ± 1.2	0.75 ± 0.09
E-2	91	18.2 ± 0.4	13.7 ± 0.7	1.05 ± 0.05
E-3	91	20.7 ± 1.4	16.2 ± 1.5	1.24 ± 0.12
E-4	91	17.1 ± 1.4	12.6 ± 1.5	0.97 ± 0.12
E-5	91	15.7 ± 0.8	11.2 ± 1.0	0.86 ± 0.07
E-6	91	16.6 ± 0.8	12.1 ± 1.0	0.93 ± 0.07
E-7	91	16.7 ± 0.9	12.2 ± 1.1	0.93 ± 0.08
E-8	91	16.4 ± 0.7	11.9 ± 0.9	0.91 ± 0.07
E-9	91	19.0 ± 0.7	14.5 ± 0.9	1.11 ± 0.07
E-12	91	14.4 ± 0.2	9.9 ± 0.6	0.76 ± 0.04
E-14	91	18.1 ± 0.6	13.6 ± 0.8	1.04 ± 0.06
E-15	91	19.0 ± 0.6	14.5 ± 0.8	1.11 ± 0.06
E-16	91	17.3 ± 0.4	12.8 ± 0.7	0.98 ± 0.05
E-17	91	18.5 ± 0.5	14.0 ± 0.7	1.07 ± 0.06
E-18	91	18.7 ± 0.8	14.2 ± 1.0	1.09 ± 0.07
E-22	91	19.1 ± 1.5	14.6 ± 1.6	1.12 ± 0.12
E-23	91	17.6 ± 0.4	13.1 ± 0.7	1.00 ± 0.05
E-24	91	18.2 ± 0.5	13.7 ± 0.7	1.05 ± 0.06
E-25	91	17.3 ± 0.3	12.8 ± 0.6	0.98 ± 0.05
E-26	91	16.0 ± 0.2	11.5 ± 0.6	0.88 ± 0.04
E-27	91	16.9 ± 0.3	12.4 ± 0.6	0.95 ± 0.05
E-28	91	14.0 ± 0.2	9.5 ± 0.6	0.73 ± 0.04
E-29	91	17.9 ± 0.8	13.4 ± 1.0	1.03 ± 0.07
E-30	91	16.3 ± 0.7	11.8 ± 0.9	0.90 ± 0.07
E-31	91	17.4 ± 0.6	12.9 ± 0.8	0.99 ± 0.06
E-32	91	17.0 ± 0.6	12.5 ± 0.8	0.96 ± 0.06
E-38	91	16.7 ± 0.8	12.2 ± 1.0	0.93 ± 0.07
E-39	91	15.4 ± 0.7	10.9 ± 0.9	0.83 ± 0.07
Control				
E-20	91	16.4 ± 1.1	11.9 ± 1.2	0.91 ± 0.09
Mean±s.d.		17.1 ± 1.5	12.6 ± 1.5	0.97 ± 0.11

In-Transit Exposure

Date Annealed	12-18-06	03-09-07
Date Read	01-08-07	04-13-07
	Total mR	
ITC-1	3.2 ± 0.3	6.2 ± 0.4
ITC-2	3.4 ± 0.2	5.4 ± 0.1

POINT BEACH NUCLEAR PLANT

AMBIENT GAMMA RADIATION (TLD)
2nd Quarter, 2007

Date Annealed:	03-09-07	Days in the field	92
Date Placed:	04-04-07	Days from Annealing	
Date Removed:	07-05-07	to Readout:	140
Date Read:	07-27-07		

Location	Days in Field	Total mR	Net mR	Net mR per 7 days
Indicator				
E-1	92	19.3 ± 0.7	12.5 ± 1.2	0.95 ± 0.09
E-2	92	26.0 ± 1.4	19.2 ± 1.7	1.46 ± 0.13
E-3	92	26.7 ± 2.1	19.9 ± 2.3	1.52 ± 0.18
E-4	92	22.6 ± 0.4	15.8 ± 1.1	1.20 ± 0.08
E-5	92	24.3 ± 0.6	17.5 ± 1.2	1.33 ± 0.09
E-6	92	21.9 ± 0.6	15.1 ± 1.2	1.15 ± 0.09
E-7	92	21.1 ± 1.3	14.3 ± 1.6	1.09 ± 0.13
E-8	92	22.5 ± 0.8	15.7 ± 1.3	1.20 ± 0.10
E-9	92	24.7 ± 1.6	17.9 ± 1.9	1.36 ± 0.14
E-12	92	18.5 ± 0.6	11.7 ± 1.2	0.89 ± 0.09
E-14	92	23.2 ± 1.5	16.4 ± 1.8	1.25 ± 0.14
E-15	92	28.8 ± 0.5	22.0 ± 1.1	1.68 ± 0.09
E-16	92	23.2 ± 1.1	16.4 ± 1.5	1.25 ± 0.11
E-17	92	23.7 ± 1.2	16.9 ± 1.6	1.29 ± 0.12
E-18	92	24.7 ± 0.6	17.9 ± 1.2	1.36 ± 0.09
E-22	92	25.3 ± 0.4	18.5 ± 1.1	1.41 ± 0.08
E-23	92	26.4 ± 1.3	19.6 ± 1.6	1.49 ± 0.13
E-24	92	24.3 ± 1.4	17.5 ± 1.7	1.33 ± 0.13
E-25	92	25.8 ± 2.1	19.0 ± 2.3	1.45 ± 0.18
E-26	92	22.0 ± 0.5	15.2 ± 1.1	1.16 ± 0.09
E-27	92	24.6 ± 0.6	17.8 ± 1.2	1.36 ± 0.09
E-28	92	20.0 ± 0.8	13.2 ± 1.3	1.01 ± 0.10
E-29	92	24.6 ± 0.9	17.8 ± 1.4	1.36 ± 0.10
E-30	92	23.9 ± 0.5	17.1 ± 1.1	1.30 ± 0.09
E-31	92	26.4 ± 2.0	19.6 ± 2.2	1.49 ± 0.17
E-32	92	21.6 ± 0.5	14.8 ± 1.1	1.13 ± 0.09
E-38	92	22.3 ± 0.6	15.5 ± 1.2	1.18 ± 0.09
E-39	92	20.8 ± 0.7	14.0 ± 1.2	1.07 ± 0.09
Control				
E-20	92	22.7 ± 0.8	15.9 ± 1.3	1.21 ± 0.10
Mean±s.d.		23.5 ± 2.4	16.7 ± 2.4	1.27 ± 0.17

In-Transit Exposure

Date Annealed	03-09-07	06-07-07
Date Read	04-13-07	07-30-07
	Total mR	
ITC-1	6.2 ± 0.4	8.2 ± 0.9
ITC-2	5.4 ± 0.1	7.3 ± 0.2

POINT BEACH NUCLEAR PLANT

AMBIENT GAMMA RADIATION (TLD)
3rd Quarter, 2007

Date Annealed:	06-07-07	Days in the field	92
Date Placed:	07-05-07	Days from Annealing	
Date Removed:	10-05-07	to Readout:	130
Date Read:	10-15-07		

Location	Days in Field	Total mR	Net mR	Net mR per 7 days
Indicator				
E-1	92	16.0 ± 1.0	9.3 ± 1.5	0.71 ± 0.11
E-2	92	20.9 ± 0.3	14.2 ± 1.1	1.08 ± 0.08
E-3	92	24.6 ± 1.3	17.9 ± 1.7	1.36 ± 0.13
E-4	92	19.8 ± 1.5	13.1 ± 1.8	0.99 ± 0.14
E-5	92	18.7 ± 1.1	12.0 ± 1.5	0.91 ± 0.12
E-6	92	19.1 ± 1.0	12.4 ± 1.5	0.94 ± 0.11
E-7	92	19.0 ± 1.0	12.3 ± 1.5	0.93 ± 0.11
E-8	92	18.6 ± 0.5	11.9 ± 1.2	0.90 ± 0.09
E-9	92	22.3 ± 0.5	15.6 ± 1.2	1.19 ± 0.09
E-12	92	15.7 ± 0.3	9.0 ± 1.1	0.68 ± 0.08
E-14	92	21.0 ± 0.8	14.3 ± 1.3	1.09 ± 0.10
E-15	92	22.4 ± 0.7	15.7 ± 1.3	1.19 ± 0.10
E-16	92	19.8 ± 0.6	13.1 ± 1.2	0.99 ± 0.09
E-17	92	20.9 ± 0.7	14.2 ± 1.3	1.08 ± 0.10
E-18	92	22.1 ± 0.9	15.4 ± 1.4	1.17 ± 0.11
E-22	92	21.7 ± 1.4	15.0 ± 1.8	1.14 ± 0.13
E-23	92	21.8 ± 0.6	15.1 ± 1.2	1.15 ± 0.09
E-24	92	21.5 ± 1.7	14.8 ± 2.0	1.12 ± 0.15
E-25	92	20.3 ± 0.5	13.6 ± 1.2	1.03 ± 0.09
E-26	92	18.3 ± 0.4	11.6 ± 1.1	0.88 ± 0.09
E-27	92	20.3 ± 0.3	13.6 ± 1.1	1.03 ± 0.08
E-28	92	15.1 ± 0.3	8.4 ± 1.1	0.64 ± 0.08
E-29	92	20.2 ± 0.9	13.5 ± 1.4	1.03 ± 0.11
E-30	92	18.4 ± 1.2	11.7 ± 1.6	0.89 ± 0.12
E-31	92	20.3 ± 0.6	13.6 ± 1.2	1.03 ± 0.09
E-32	92	18.0 ± 0.6	11.3 ± 1.2	0.86 ± 0.09
E-38	92	20.2 ± 1.5	13.5 ± 1.8	1.03 ± 0.14
E-39	92	17.8 ± 0.7	11.1 ± 1.3	0.84 ± 0.10
Control				
E-20	92	19.1 ± 1.1	12.4 ± 1.5	0.94 ± 0.12
Mean±s.d.		19.8 ± 2.1	13.1 ± 2.1	0.99 ± 0.16

	In-Transit Exposure	
Date Annealed	06-07-07	09-14-07
Date Read	07-30-07	10-10-07
	Total mR	
ITC-1	8.2 ± 0.9	5.6 ± 0.5
ITC-2	7.3 ± 0.2	5.8 ± 0.1

POINT BEACH NUCLEAR PLANT

AMBIENT GAMMA RADIATION (TLD)
4th Quarter, 2007

Date Annealed:	09-14-07	Days in the field	97
Date Placed:	10-05-07	Days from Annealing	
Date Removed:	01-10-08	to Readout:	129
Date Read:	01-21-08		

Location	Days in Field	Total mR	Net mR	Net mR per 7 days
Indicator				
E-1	97	18.4 ± 1.4	12.2 ± 1.6	0.88 ± 0.12
E-2	97	25.7 ± 1.5	19.5 ± 1.7	1.41 ± 0.13
E-3	97	24.9 ± 1.7	18.7 ± 1.9	1.35 ± 0.14
E-4	97	20.8 ± 0.6	14.6 ± 1.1	1.06 ± 0.08
E-5	97	22.8 ± 0.5	16.6 ± 1.0	1.20 ± 0.07
E-6	97	20.4 ± 0.5	14.2 ± 1.0	1.03 ± 0.07
E-7	97	19.9 ± 0.3	13.7 ± 0.9	0.99 ± 0.07
E-8	97	20.9 ± 0.7	14.7 ± 1.1	1.06 ± 0.08
E-9	97	23.3 ± 1.4	17.1 ± 1.6	1.24 ± 0.12
E-12	97	19.0 ± 1.5	12.8 ± 1.7	0.93 ± 0.13
E-14	97	21.4 ± 1.3	15.2 ± 1.6	1.10 ± 0.11
E-15	97	23.7 ± 0.9	17.5 ± 1.3	1.26 ± 0.09
E-16	97	20.4 ± 0.9	14.2 ± 1.3	1.03 ± 0.09
E-17	97	20.7 ± 1.4	14.5 ± 1.6	1.05 ± 0.12
E-18	97	22.2 ± 0.5	16.0 ± 1.0	1.16 ± 0.07
E-22	97	22.4 ± 0.4	16.2 ± 1.0	1.17 ± 0.07
E-23	97	23.7 ± 0.9	17.5 ± 1.3	1.26 ± 0.09
E-24	97	21.1 ± 0.4	14.9 ± 1.0	1.08 ± 0.07
E-25	97	23.2 ± 0.4	17.0 ± 1.0	1.23 ± 0.07
E-26	97	19.8 ± 0.5	13.6 ± 1.0	0.98 ± 0.07
E-27	97	23.7 ± 0.7	17.5 ± 1.1	1.26 ± 0.08
E-28	97	16.7 ± 0.3	10.5 ± 0.9	0.76 ± 0.07
E-29	97	18.1 ± 0.8	11.9 ± 1.2	0.86 ± 0.09
E-30	97	21.3 ± 0.6	15.1 ± 1.1	1.09 ± 0.08
E-31	97	23.0 ± 1.4	16.8 ± 1.6	1.21 ± 0.12
E-32	97	19.3 ± 0.5	13.1 ± 1.0	0.95 ± 0.07
E-38	97	19.5 ± 0.6	13.3 ± 1.1	0.96 ± 0.08
E-39	97	19.0 ± 0.7	12.8 ± 1.1	0.93 ± 0.08
Control				
E-20	97	21.9 ± 1.6	15.7 ± 1.8	1.13 ± 0.13
Mean±s.d.		21.3 ± 2.1	15.1 ± 2.1	1.09 ± 0.14

	In-Transit Exposure	
Date Annealed	09-14-07	12-05-07
Date Read	10-10-07	01-22-08
	Total mR	
ITC-1	5.6 ± 0.5	7.2 ± 0.7
ITC-2	5.8 ± 0.1	6.1 ± 0.1

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APPENDIX A

INTERLABORATORY COMPARISON PROGRAM RESULTS

NOTE: Environmental Inc., Midwest Laboratory participates in intercomparison studies administered by Environmental Resources Associates, and serves as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada. Results are reported in Appendix A. TLD Intercomparison results, in-house spikes, blanks, duplicates and mixed analyte performance evaluation program results are also reported. Appendix A is updated four times a year; the complete Appendix is included in March, June, September and December monthly progress reports only.

January through December, 2007

Appendix A

Interlaboratory Comparison Program Results

Environmental, Inc., Midwest Laboratory has participated in interlaboratory comparison (crosscheck) programs since the formulation of it's quality control program in December 1971. These programs are operated by agencies which supply environmental type samples containing concentrations of radionuclides known to the issuing agency but not to participant laboratories. The purpose of such a program is to provide an independent check on a laboratory's analytical procedures and to alert it of any possible problems.

Participant laboratories measure the concentration of specified radionuclides and report them to the issuing agency. Several months later, the agency reports the known values to the participant laboratories and specifies control limits. Results consistently higher or lower than the known values or outside the control limits indicate a need to check the instruments or procedures used.

Results in Table A-1 were obtained through participation in the environmental sample crosscheck program administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.

The results in Table A-2 list results for thermoluminescent dosimeters (TLDs), via International Intercomparison of Environmental Dosimeters, when available, and internal laboratory testing.

Table A-3 lists results of the analyses on in-house "spiked" samples for the past twelve months. All samples are prepared using NIST traceable sources. Data for previous years available upon request.

Table A-4 lists results of the analyses on in-house "blank" samples for the past twelve months. Data for previous years available upon request.

Table A-5 lists REMP specific analytical results from the in-house "duplicate" program for the past twelve months. Acceptance is based on the difference of the results being less than the sum of the errors. Complete analytical data for duplicate analyses is available upon request.

The results in Table A-6 were obtained through participation in the Mixed Analyte Performance Evaluation Program.

Results in Table A-7 were obtained through participation in the environmental sample crosscheck program administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the Environmental Measurement Laboratory Quality Assessment Program (EML).

Attachment A lists acceptance criteria for "spiked" samples.

Out-of-limit results are explained directly below the result.

Attachment A

ACCEPTANCE CRITERIA FOR "SPIKED" SAMPLES

LABORATORY PRECISION: ONE STANDARD DEVIATION VALUES FOR VARIOUS ANALYSES[a]

Analysis	Level	One standard deviation for single determination
Gamma Emitters	5 to 100 pCi/liter or kg	5.0 pCi/liter
	> 100 pCi/liter or kg	5% of known value
Strontium-89[b]	5 to 50 pCi/liter or kg	5.0 pCi/liter
	> 50 pCi/liter or kg	10% of known value
Strontium-90[b]	2 to 30 pCi/liter or kg	5.0 pCi/liter
	> 30 pCi/liter or kg	10% of known value
Potassium-40	≥ 0.1 g/liter or kg	5% of known value
Gross alpha	≤ 20 pCi/liter	5.0 pCi/liter
	> 20 pCi/liter	25% of known value
Gross beta	≤ 100 pCi/liter	5.0 pCi/liter
	> 100 pCi/liter	5% of known value
Tritium	≤ 4,000 pCi/liter	$\pm 1\sigma = 169.85 \times (\text{known})^{0.0933}$
	> 4,000 pCi/liter	10% of known value
Radium-226,-228	≥ 0.1 pCi/liter	15% of known value
Plutonium	≥ 0.1 pCi/liter, gram, or sample	10% of known value
Iodine-131, Iodine-129[b]	≤ 55 pCi/liter	6.0 pCi/liter
	> 55 pCi/liter	10% of known value
Uranium-238, Nickel-63[b] Technetium-99[b]	≤ 35 pCi/liter	6.0 pCi/liter
	> 35 pCi/liter	15% of known value
Iron-55[b]	50 to 100 pCi/liter	10 pCi/liter
	> 100 pCi/liter	10% of known value
Others[b]	---	20% of known value

[a] From EPA publication, "Environmental Radioactivity Laboratory Intercomparison Studies Program, Fiscal Year, 1981-1982, EPA-600/4-81-004.

[b] Laboratory limit.

TABLE A-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)[a].

Lab Code	Date	Analysis	Concentration (pCi/L) Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance
STW-1121	04/09/07	Sr-89	30.7 ± 4.3	35.4	26.7 - 44.1	Pass
STW-1121	04/09/07	Sr-90	39.3 ± 1.8	42.1	33.4 - 50.8	Pass
STW-1122	04/09/07	Ba-133	30.0 ± 2.4	29.3	20.6 - 38.0	Pass
STW-1122	04/09/07	Co-60	118.5 ± 3.9	119.0	109.0 - 129.0	Pass
STW-1122	04/09/07	Cs-134	52.6 ± 2.3	54.3	45.6 - 63.0	Pass
STW-1122	04/09/07	Cs-137	49.5 ± 3.8	50.3	41.6 - 59.0	Pass
STW-1122	04/09/07	Zn-65	91.7 ± 6.3	88.6	73.3 - 104.0	Pass
STW-1123	04/09/07	Gr. Alpha	33.8 ± 3.5	56.5	32.0 - 81.0	Pass
STW-1123	04/09/07	Gr. Beta	24.2 ± 2.3	25.3	16.6 - 34.0	Pass
STW-1124	04/09/07	I-131	19.2 ± 1.2	18.9	13.7 - 24.1	Pass
STW-1125	04/09/07	H-3	7540.0 ± 255.0	8060.0	6660.0 - 9450.0	Pass
STW-1125	04/09/07	Ra-226	13.0 ± 0.6	13.4	9.9 - 16.9	Pass
STW-1125	04/09/07	Ra-228	19.9 ± 2.7	18.2	10.3 - 26.1	Pass
STW-1125	04/09/07	Uranium	4.5 ± 0.2	4.6	0.0 - 9.8	Pass
STW-1127	07/09/07	Sr-89	51.7 ± 5.0	58.2	49.5 - 66.9	Pass
STW-1127	07/09/07	Sr-90	21.4 ± 2.3	19.0	10.3 - 27.7	Pass
STW-1128	07/09/07	Ba-133	19.4 ± 2.2	19.4	10.7 - 28.1	Pass
STW-1128	07/09/07	Co-60	32.8 ± 2.0	33.5	24.8 - 42.2	Pass
STW-1128	07/09/07	Cs-134	67.0 ± 2.9	68.9	60.2 - 77.6	Pass
STW-1128	07/09/07	Cs-137	61.6 ± 3.8	61.3	52.6 - 70.0	Pass
STW-1128	07/09/07	Zn-65	55.6 ± 7.5	54.6	45.2 - 64.0	Pass
STW-1129	07/09/07	Gr. Alpha	19.2 ± 1.6	27.1	15.4 - 38.8	Pass
STW-1129	07/09/07	Gr. Beta	9.1 ± 0.9	11.5	2.8 - 20.2	Pass
STW-1130	07/09/07	Ra-226	7.0 ± 0.5	7.7	5.7 - 9.7	Pass
STW-1130	07/09/07	Ra-228	9.2 ± 2.3	9.1	5.2 - 13.1	Pass
STW-1130	07/09/07	Uranium	23.9 ± 1.1	25.1	19.9 - 30.3	Pass
STW-1131	10/05/07	Sr-89	27.3 ± 3.3	27.4	19.3 - 33.9	Pass
STW-1131	10/05/07	Sr-90	17.7 ± 1.2	18.2	12.9 - 21.6	Pass
STW-1132	10/05/07	Ba-133	12.2 ± 3.3	12.6	8.6 - 15.5	Pass
STW-1132	10/05/07	Co-60	23.8 ± 1.4	23.2	19.9 - 28.3	Pass
STW-1132	10/05/07	Cs-134	70.5 ± 4.2	71.1	58.0 - 78.2	Pass
STW-1132	10/05/07	Cs-137	178.2 ± 3.3	180.0	162.0 - 200.0	Pass
STW-1132	10/05/07	Zn-65	263.9 ± 6.9	251.0	226.0 - 294.0	Pass
STW-1133	10/05/07	Gr. Alpha	54.7 ± 2.1	58.6	30.6 - 72.9	Pass
STW-1133	10/05/07	Gr. Beta	11.9 ± 0.9	9.7	4.3 - 18.2	Pass
STW-1134	10/05/07	I-131	33.0 ± 1.5	28.9	24.0 - 33.8	Pass
STW-1135	10/05/07	H-3	9965.0 ± 250.0	9700.0	8430.0 - 10700.0	Pass
STW-1135	10/05/07	Ra-226	12.7 ± 0.2	12.9	9.6 - 14.9	Pass
STW-1135	10/05/07	Ra-228	19.6 ± 2.4	17.9	12.0 - 21.5	Pass
STW-1135	10/05/07	Uranium	27.3 ± 1.1	27.5	22.1 - 30.8	Pass

[a] Results obtained by Environmental. Inc., Midwest Laboratory as a participant in the crosscheck program for proficiency testing in drinking water conducted by Environmental Resources Associates (ERA).

[b] Unless otherwise indicated, the laboratory result is given as the mean ± standard deviation for three determinations.

[c] Results are presented as the known values, expected laboratory precision (1 sigma, 1 determination) and control limits as provided by ERA.

TABLE A-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)[a].

Lab Code	Date	Concentration (pCi/L)				
		Analysis	Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance

[a] Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the crosscheck program for proficiency testing in drinking water conducted by Environmental Resources Associates (ERA).

[b] Unless otherwise indicated, the laboratory result is given as the mean ± standard deviation for three determinations.

[c] Results are presented as the known values, expected laboratory precision (1 sigma, 1 determination) and control limits as provided by ERA.

[d] The reported result was an average of three analyses, results ranged from 25.36 to 29.23 pCi/L. A fourth analysis was performed, result of analysis, 24.89 pCi/L.

TABLE A-2. Crosscheck program results; Thermoluminescent Dosimetry, (TLD, $CaSO_4$: Dy Cards).

Lab Code	Date	Description	mR Known Value	mR Lab Result ± 2 sigma	Control Limits	Acceptance
Environmental, Inc.						
2007-1	7/13/2007	30 cm.	54.25	60.56 ± 5.54	37.98 - 70.53	Pass
2007-1	7/13/2007	40 cm.	30.51	34.23 ± 0.96	21.36 - 39.66	Pass
2007-1	7/13/2007	50 cm.	19.53	17.95 ± 1.86	13.67 - 25.39	Pass
2007-1	7/13/2007	60 cm.	13.56	16.61 ± 0.60	9.49 - 17.63	Pass
2007-1	7/13/2007	70 cm.	9.96	9.72 ± 0.90	6.97 - 12.95	Pass
2007-1	7/13/2007	80 cm.	7.63	7.79 ± 0.33	5.34 - 9.92	Pass
2007-1	7/13/2007	90 cm.	6.03	5.53 ± 0.72	4.22 - 7.84	Pass
2007-1	7/13/2007	100 cm.	4.88	5.32 ± 0.17	3.42 - 6.34	Pass
2007-1	7/13/2007	110 cm.	4.03	3.49 ± 0.14	2.82 - 5.24	Pass
2007-1	7/13/2007	120 cm.	3.39	2.64 ± 0.14	2.37 - 4.41	Pass
2007-1	7/13/2007	150 cm.	2.17	2.13 ± 0.87	1.52 - 2.82	Pass
Environmental, Inc.						
2007-2	11/12/2007	30 cm.	54.37	65.47 ± 5.25	38.06 - 70.68	Pass
2007-2	11/12/2007	40 cm.	30.59	37.43 ± 2.18	21.41 - 39.77	Pass
2007-2	11/12/2007	60 cm.	13.59	15.18 ± 0.50	9.51 - 17.67	Pass
2007-2	11/12/2007	70 cm.	9.99	12.18 ± 0.46	6.99 - 12.99	Pass
2007-2	11/12/2007	80 cm.	7.65	8.74 ± 0.39	5.36 - 9.95	Pass
2007-2	11/12/2007	90 cm.	6.04	5.89 ± 0.25	4.23 - 7.85	Pass
2007-2	11/12/2007	110 cm.	4.04	4.13 ± 0.41	2.83 - 5.25	Pass
2007-2	11/12/2007	120 cm.	3.4	2.92 ± 0.13	2.38 - 4.42	Pass
2007-2	11/12/2007	120 cm.	3.4	2.91 ± 0.31	2.38 - 4.42	Pass
2007-2	11/12/2007	150 cm.	2.17	1.95 ± 0.72	1.52 - 2.82	Pass
2007-2	11/12/2007	180 cm.	1.51	1.38 ± 0.05	1.06 - 1.96	Pass

TABLE A-3. In-House "Spike" Samples

Lab Code [b]	Date	Concentration (pCi/L)[a] Analysis	Laboratory results 2s, n=1 [c]	Known Activity	Control Limits [d]	Acceptance
W-30707	3/7/2007	Gr. Alpha	19.51 ± 0.40	20.08	10.04 - 30.12	Pass
W-30707	3/7/2007	Gr. Beta	67.45 ± 0.49	65.73	55.73 - 75.73	Pass
SPAP-1566	3/23/2007	Cs-134	25.35 ± 1.31	27.82	17.82 - 37.82	Pass
SPAP-1566	3/23/2007	Cs-137	107.52 ± 3.02	116.48	104.83 - 128.13	Pass
SPW-1568	3/23/2007	H-3	65595.00 ± 672.00	71118.00	56894.40 - 85341.60	Pass
SPW-1678	3/28/2007	Tc-99	28.44 ± 1.12	32.35	20.35 - 44.35	Pass
SPW-1595	4/5/2007	Cs-134	54.48 ± 2.12	54.99	44.99 - 64.99	Pass
SPW-1595	4/5/2007	Cs-137	59.03 ± 2.94	58.19	48.19 - 68.19	Pass
SPW-1595	4/5/2007	I-131(G)	83.11 ± 3.51	82.07	72.07 - 92.07	Pass
SPW-1595A	4/5/2007	I-131	78.40 ± 1.10	82.07	65.66 - 98.48	Pass
SPW-1595B	4/5/2007	I-131	78.97 ± 1.10	82.07	65.66 - 98.48	Pass
SPMI-1597	4/5/2007	Cs-134	54.03 ± 2.15	54.99	44.99 - 64.99	Pass
SPMI-1597	4/5/2007	Cs-137	59.81 ± 4.75	58.19	48.19 - 68.19	Pass
SPMI-1597	4/5/2007	I-131(G)	83.97 ± 4.07	82.07	72.07 - 92.07	Pass
SPMI-1597A	4/5/2007	I-131	79.53 ± 1.03	82.07	65.66 - 98.48	Pass
SPMI-1597B	4/5/2007	I-131	83.51 ± 1.05	82.07	65.66 - 98.48	Pass
SPCH-2839	5/17/2007	I-131(G)	78.70 ± 7.36	70.40	60.40 - 80.40	Pass
SPW-2847	5/17/2007	Cs-134	55.43 ± 1.68	52.85	42.85 - 62.85	Pass
SPW-2847	5/17/2007	Cs-137	59.86 ± 2.71	58.03	48.03 - 68.03	Pass
SPW-2847	5/17/2007	I-131(G)	63.95 ± 2.69	70.87	60.87 - 80.87	Pass
SPMI-2849	5/17/2007	Cs-134	51.37 ± 1.65	52.85	42.85 - 62.85	Pass
SPMI-2849	5/17/2007	Cs-137	60.42 ± 4.31	58.03	48.03 - 68.03	Pass
SPMI-2849	5/17/2007	I-131(G)	62.44 ± 3.14	70.87	60.87 - 80.87	Pass
SPCH-2922	5/17/2007	I-131(G)	80.00 ± 6.40	70.40	41.60 - 99.20	Pass
SPW-2847	5/18/2007	I-131	60.14 ± 0.89	70.87	56.70 - 85.04	Pass
SPW-2847	5/18/2007	Sr-89	104.93 ± 6.64	121.90	97.52 - 146.28	Pass
SPW-2847	5/18/2007	Sr-89	46.72 ± 1.97	46.08	36.08 - 56.08	Pass
SPMI-2849	5/18/2007	I-131	67.97 ± 0.88	70.87	56.70 - 85.04	Pass
SPW-2909 [e]	5/22/2007	Fe-55	11137.00 ± 316.00	14271.50	11417.20 - 17125.80	Fail
SPW-2911	5/22/2007	H-3	65023.00 ± 679.00	70485.00	56388.00 - 84582.00	Pass
SPAP-2913	5/22/2007	Gr. Beta	55.27 ± 8.51	52.65	42.12 - 73.71	Pass
SPAP-2915	5/22/2007	Cs-134	22.53 ± 1.12	26.42	16.42 - 36.42	Pass
SPAP-2915	5/22/2007	Cs-137	111.14 ± 3.57	116.06	104.45 - 127.67	Pass
SPF-2922	5/22/2007	Cs-134	0.52 ± 0.03	0.53	0.32 - 0.74	Pass
SPF-2922	5/22/2007	Cs-137	2.58 ± 0.07	2.32	1.39 - 3.25	Pass
SPW-3223	5/24/2007	Ni-63	2233.10 ± 10.32	2135.90	1281.54 - 2990.26	Pass
W-60507	6/5/2007	Gr. Alpha	20.93 ± 0.42	20.08	10.04 - 30.12	Pass
W-60507	6/5/2007	Gr. Beta	60.50 ± 0.46	65.73	55.73 - 75.73	Pass
SPW-4327	7/18/2007	Tc-99	25.58 ± 1.11	32.35	20.35 - 44.35	Pass
SPW-5476	8/17/2007	Ni-63	1925.18 ± 9.62	2135.90	1281.54 - 2990.26	Pass
W-92107	9/21/2007	Gr. Alpha	23.02 ± 0.44	20.08	10.04 - 30.12	Pass
W-92107	9/21/2007	Gr. Beta	61.48 ± 0.47	65.73	55.73 - 75.73	Pass

TABLE A-3. In-House "Spike" Samples

Lab Code	Date	Concentration (pCi/L)[a] Analysis	Laboratory results 2s, n=1[b]	Known Activity	Control Limits[c]	Acceptance
SPW-6880	10/10/2007	Tc-99	30.97 ± 1.21	32.35	20.35 - 44.35	Pass
w-111007	11/10/2007	Gr. Alpha	22.43 ± 0.42	20.08	10.04 - 30.12	Pass
w-111007	11/10/2007	Gr. Beta	64.49 ± 0.48	65.73	55.73 - 75.73	Pass
SPAP-7742	11/13/2007	Cs-134	21.18 ± 1.29	22.41	12.41 - 32.41	Pass
SPAP-7742	11/13/2007	Cs-137	113.61 ± 3.16	114.76	103.28 - 126.24	Pass
SPAP-7744	11/13/2007	Gr. Beta	53.41 ± 0.13	52.03	41.62 - 72.84	Pass
SPMI-7746	11/13/2007	Cs-134	42.20 ± 1.48	44.83	34.83 - 54.83	Pass
SPMI-7746	11/13/2007	Cs-137	56.05 ± 2.83	57.40	47.40 - 67.40	Pass
SPMI-7746	11/13/2007	Sr-90	41.02 ± 1.61	45.54	36.43 - 54.65	Pass
SPW-7748	11/13/2007	Cs-134	43.11 ± 1.52	44.80	34.80 - 54.80	Pass
SPW-7748	11/13/2007	Cs-137	59.28 ± 3.50	57.40	47.40 - 67.40	Pass
SPW-7748	11/13/2007	Sr-90	37.23 ± 1.51	45.54	36.43 - 54.65	Pass
SPW-7752	11/13/2007	Fe-55	12935.10 ± 357.00	12640.50	10112.40 - 15168.60	Pass
SPW-7758	11/13/2007	H-3	65405.00 ± 712.50	68618.00	54894.40 - 82341.60	Pass
SPF-7760	11/13/2007	Cs-134	0.45 ± 0.02	0.45	0.27 - 0.63	Pass
SPF-7760	11/13/2007	Cs-137	2.45 ± 0.07	2.29	1.37 - 3.21	Pass
SPW-8034	11/13/2007	Ni-63	2194.06 ± 10.77	2129.03	1277.42 - 2980.64	Pass

[a] Liquid sample results are reported in pCi/Liter, air filters(pCi/filter), charcoal (pCi/m^3), and solid samples (pCi/g).

[b] Laboratory codes as follows: W (water), MI (milk), AP (air filter), SO (soil), VE (vegetation), CH (charcoal canister), F (fish).

[c] Results are based on single determinations.

[d] Control limits are based on Attachment A, Page A2 of this report.

[e] Sample recount: 12557 ± 335.

NOTE: For fish, Jello is used for the Spike matrix. For Vegetation, cabbage is used for the Spike matrix.

TABLE A-4. In-House "Blank" Samples

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
W-30707	water	3/7/2007	Gr. Alpha	0.40	0.01 ± 0.28	2
W-30707	water	3/7/2007	Gr. Beta	0.75	0.06 ± 0.53	4
SPAP-1567	Air Filter	3/23/2007	Cs-134	0.79		100
SPW-1567	Air Filter	3/23/2007	Cs-137	1.01		100
SPW-1568	water	3/23/2007	H-3	176.10	-26.16 ± 91.62	200
SPW-1596	water	4/5/2007	Cs-134	3.28		10
SPW-1596	water	4/5/2007	Cs-137	3.45		10
SPW-1596	water	4/5/2007	I-131	0.27	0.02 ± 0.18	0.5
SPW-1596	water	4/5/2007	I-131(G)	2.91		20
SPMI-1598	Milk	4/5/2007	Cs-134	3.30		10
SPMI-1598	Milk	4/5/2007	Cs-137	5.08		10
SPMI-1598	Milk	4/5/2007	I-131	0.26	-0.10 ± 0.17	0.5
SPMI-1598	Milk	4/5/2007	I-131(G)	4.10		20
SPCH-2839	Charcoal Canister	5/17/2007	I-131(G)	2.24		9.6
SPW-2848	water	5/17/2007	Cs-134	3.14		10
SPW-2848	water	5/17/2007	Cs-137	1.37		10
SPW-2848	water	5/17/2007	I-131(G)	5.34		20
SPMI-2850	Milk	5/17/2007	Cs-134	3.32		10
SPMI-2850	Milk	5/17/2007	Cs-137	2.60		10
SPMI-2850	Milk	5/17/2007	I-131(G)	4.77		20
SPW-2848	water	5/18/2007	I-131	0.34	-0.06 ± 0.19	0.5
SPW-2848	water	5/18/2007	Sr-89	0.81	-0.02 ± 0.65	5
SPW-2848	water	5/18/2007	Sr-90	0.53	0.01 ± 0.25	1
SPMI-2850	Milk	5/18/2007	I-131	0.45	0.20 ± 0.26	0.5
SPMI-2850	Milk	5/18/2007	Sr-89	0.96	-0.73 ± 1.02	5
SPMI-2850 [d]	Milk	5/18/2007	Sr-90	0.58	0.96 ± 0.38	1
SPAP-2914	Air Filter	5/22/2007	Gr. Beta	0.004	-0.002 ± 0.002	0.01
SPAP-2916	Air Filter	5/22/2007	Cs-134	2.84		100
SPAP-2916	Air Filter	5/22/2007	Cs-137	2.24		100
SPF-2923	Fish	5/22/2007	Cs-134	8.71		100
SPF-2923	Fish	5/22/2007	Cs-137	8.35		100
SPW-3224	water	5/24/2007	Ni-63	1.61	-0.30 ± 0.84	20
W-60507	water	6/5/2007	Gr. Alpha	0.43	-0.01 ± 0.30	2
W-60507	water	6/5/2007	Gr. Beta	0.77	0.01 ± 0.54	4
SPW-4328	water	7/18/2007	Tc-99	6.41	-3.12 ± 3.84	10
SPW-5477	water	8/17/2007	Ni-63	1.48	4.38 ± 1.01	20
W-92107	water	9/21/2007	Gr. Alpha	0.41	0.09 ± 0.29	2
W-92107	water	9/21/2007	Gr. Beta	0.75	-0.26 ± 0.51	4

TABLE A-4. In-House "Blank" Samples

Lab Code	Sample Type	Date	Analysis[b]	Concentration (pCi/L)[a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[c]	Criteria (4.66 σ)
SPW-6881	water	10/10/2007	Tc-99	6.82	-6.58 ± 4.04	10
SPAP-7743	Air Filter	11/13/2007	Gr. Beta	0.003	-0.002 ± 0.002	0.01
SPMI-7745	Milk	11/13/2007	Cs-134	2.16		10
SPMI-7745	Milk	11/13/2007	Cs-137	3.46		10
SPMI-7745	Milk	11/13/2007	I-131(G)	5.89		20
SPMI-7745	Milk	11/13/2007	Sr-90	0.59	0.73 ± 0.35	1
SPW-7747	water	11/13/2007	Cs-134	2.39		10
SPW-7747	water	11/13/2007	Cs-137	3.53		10
SPW-7747	water	11/13/2007	I-131(G)	12.51		20
SPW-7747	water	11/13/2007	Sr-90	0.71	-0.04 ± 0.32	1
SPW-7751	water	11/13/2007	Fe-55	15.50	-4.18 ± 9.20	1000
SPW-7757	water	11/13/2007	H-3	151.35	-14.98 ± 78.85	200
SPF-7759	Fish	11/13/2007	Cs-134	5.50		100
SPF-7759	Fish	11/13/2007	Cs-137	5.10		100
SPW-8033	water	11/13/2007	Ni-63	1.45	-0.19 ± 0.87	20
W-120607	water	12/6/2007	Gr. Alpha	0.40	0.02 ± 0.28	2
W-120607	water	12/6/2007	Gr. Beta	0.77	-0.70 ± 0.51	4

[a] Liquid sample results are reported in pCi/Liter, air filters(pCi/filter), charcoal (pCi/charcoal canister), and solid samples (pCi/kg).

[b] I-131(G); iodine-131 as analyzed by gamma spectroscopy.

[c] Activity reported is a net activity result. For gamma spectroscopic analysis, activity detected below the LLD value is not reported.

[d] Low levels of Sr-90 are still detected in the environment. A concentration of (1-5 pCi/L) in milk is not unusual.

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
E-20, 21	1/2/2007	Gr. Beta	1.76 ± 0.07	1.70 ± 0.06	1.73 ± 0.05	Pass
E-20, 21	1/2/2007	K-40	1.49 ± 0.24	1.57 ± 0.27	1.53 ± 0.18	Pass
CF-41, 42	1/2/2007	Gr. Beta	18.02 ± 0.41	18.81 ± 0.42	18.42 ± 0.29	Pass
CF-41, 42	1/2/2007	K-40	11.68 ± 1.12	12.67 ± 0.97	12.18 ± 0.74	Pass
CF-41, 42	1/2/2007	Sr-90	0.039 ± 0.011	0.026 ± 0.010	0.033 ± 0.007	Pass
P-9516, 9517	1/3/2007	H-3	270.78 ± 91.74	301.18 ± 92.99	285.98 ± 65.31	Pass
LW-9579, 9580	1/4/2007	Gr. Beta	0.91 ± 0.31	0.93 ± 0.30	0.92 ± 0.22	Pass
DW-70085, 70086	1/9/2007	Gr. Alpha	7.95 ± 1.20	7.92 ± 1.42	7.94 ± 0.93	Pass
DW-70037, 70038	1/11/2007	Gr. Alpha	55.47 ± 3.99	52.87 ± 4.02	54.17 ± 2.83	Pass
DW-70054, 70055	1/18/2007	Gr. Alpha	2.68 ± 0.88	1.88 ± 0.78	2.28 ± 0.59	Pass
DW-70122, 70123	1/18/2007	Gr. Alpha	4.30 ± 1.14	6.25 ± 1.16	5.28 ± 0.81	Pass
DW-70122, 70123	1/18/2007	Gr. Beta	4.22 ± 0.70	5.33 ± 0.75	4.78 ± 0.51	Pass
DW-70098, 70099	1/25/2007	Gr. Alpha	3.27 ± 0.90	1.97 ± 0.92	2.62 ± 0.64	Pass
DW-70110, 70111	1/25/2007	Gr. Alpha	2.19 ± 0.92	1.69 ± 0.79	1.94 ± 0.61	Pass
SWU-676, 677	1/30/2007	Gr. Beta	1.77 ± 0.39	2.11 ± 0.39	1.94 ± 0.28	Pass
DW-70148, 70149	1/30/2007	Gr. Alpha	4.65 ± 1.37	5.20 ± 1.81	4.93 ± 1.14	Pass
SW-600, 601	2/1/2007	K-40	1.24 ± 0.12	1.20 ± 0.12	1.22 ± 0.08	Pass
SW-601, 602	2/1/2007	Gr. Beta	0.89 ± 0.37	1.02 ± 0.25	0.96 ± 0.22	Pass
DW-1138, 1139	2/9/2007	H-3	2707.00 ± 161.00	2700.00 ± 161.00	2703.50 ± 113.84	Pass
MI-721, 722	2/13/2007	K-40	1330.40 ± 117.60	1316.40 ± 116.50	1323.40 ± 82.77	Pass
SW-847, 848	2/13/2007	Gr. Alpha	3.82 ± 1.67	2.61 ± 1.24	3.22 ± 1.04	Pass
SW-847, 848	2/13/2007	Gr. Beta	7.33 ± 1.37	5.89 ± 0.90	6.61 ± 0.82	Pass
DW-70175, 70176	2/14/2007	Gr. Alpha	11.72 ± 1.68	8.84 ± 1.32	10.28 ± 1.07	Pass
DW-70187, 70188	2/14/2007	Gr. Alpha	6.79 ± 1.18	6.47 ± 1.08	6.63 ± 0.80	Pass
SWU-1162, 1163	2/27/2007	Gr. Beta	3.63 ± 0.69	2.61 ± 0.44	3.12 ± 0.41	Pass
DW-70205, 70206	2/28/2007	Gr. Alpha	0.88 ± 0.80	1.31 ± 0.79	1.10 ± 0.56	Pass
PW-1117, 1118	3/1/2007	Gr. Alpha	3.79 ± 1.91	3.62 ± 2.09	3.71 ± 1.42	Pass
PW-1117, 1118	3/1/2007	Gr. Beta	7.12 ± 1.40	7.20 ± 1.39	7.16 ± 0.99	Pass
W-2122, 2123	3/5/2007	Gr. Alpha	6.10 ± 4.16	3.80 ± 4.30	4.95 ± 2.99	Pass
W-2122, 2123	3/5/2007	Gr. Beta	10.65 ± 2.15	13.11 ± 2.42	11.88 ± 1.62	Pass
W-2085, 2086	3/6/2007	Gr. Alpha	2.51 ± 2.29	1.10 ± 2.78	1.81 ± 1.80	Pass
W-2085, 2086	3/6/2007	Gr. Beta	11.02 ± 1.85	9.50 ± 2.01	10.26 ± 1.37	Pass
DW-70232, 70233	3/8/2007	Gr. Alpha	4.75 ± 1.28	5.98 ± 1.31	5.37 ± 0.92	Pass
WW-1477, 1478	3/12/2007	Gr. Beta	6.41 ± 1.48	4.10 ± 1.25	5.26 ± 0.97	Pass
WW-1498, 1499	3/15/2007	Gr. Beta	0.83 ± 0.31	0.97 ± 0.33	0.90 ± 0.22	Pass
W-2140, 2141	3/19/2007	Gr. Alpha	2.31 ± 1.57	1.33 ± 1.64	1.82 ± 1.14	Pass
W-2140, 2141	3/19/2007	Gr. Beta	4.26 ± 1.00	5.58 ± 1.02	4.92 ± 0.71	Pass
DW-1626, 1627	3/21/2007	H-3	4973.00 ± 209.00	5190.00 ± 213.00	5081.50 ± 149.21	Pass
MI-1647, 1648	3/21/2007	K-40	1448.80 ± 120.20	1439.30 ± 126.00	1444.05 ± 87.07	Pass
DW-70248, 70249	3/21/2007	Gr. Alpha	11.10 ± 1.18	9.90 ± 1.16	10.50 ± 0.83	Pass
W-2150, 2151	3/26/2007	Gr. Alpha	3.56 ± 2.20	3.30 ± 1.81	3.43 ± 1.42	Pass
W-2150, 2151	3/26/2007	Gr. Beta	9.26 ± 1.00	10.17 ± 1.90	9.72 ± 1.07	Pass
LW-1941, 1942	3/31/2007	Gr. Beta	1.35 ± 0.43	1.36 ± 0.41	1.36 ± 0.30	Pass

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
MI-1824, 1825	4/2/2007	K-40	1316.10 ± 110.60	1229.80 ± 110.50	1272.95 ± 78.17	Pass
MI-1824, 1825	4/2/2007	Sr-90	1.20 ± 0.50	1.10 ± 0.36	1.15 ± 0.31	Pass
AP-2170, 2171	4/2/2007	Be-7	0.08 ± 0.01	0.08 ± 0.01	0.08 ± 0.01	Pass
WW-1850, 1851	4/3/2007	H-3	-5.83 ± 102.29	150.05 ± 80.14	72.11 ± 64.97	Pass
AP-2198, 2199	4/3/2007	Be-7	0.08 ± 0.01	0.08 ± 0.01	0.08 ± 0.01	Pass
AP-2370, 2371	4/3/2007	Be-7	0.07 ± 0.01	0.07 ± 0.01	0.07 ± 0.01	Pass
DW-70300, 70301	4/4/2007	Gr. Alpha	3.78 ± 0.89	3.66 ± 0.96	3.72 ± 0.65	Pass
DW-70300, 70301	4/4/2007	Gr. Beta	2.93 ± 0.61	2.91 ± 0.64	2.92 ± 0.44	Pass
DW-70335, 70336	4/5/2007	Gr. Alpha	24.37 ± 2.89	22.72 ± 2.91	23.55 ± 2.05	Pass
DW-70335, 70336	4/5/2007	Gr. Beta	20.26 ± 1.37	18.33 ± 1.34	19.30 ± 0.96	Pass
SW-1898, 1899	4/10/2007	Gr. Alpha	3.86 ± 1.40	4.78 ± 1.51	4.32 ± 1.03	Pass
SW-1898, 1899	4/10/2007	Gr. Beta	6.31 ± 1.36	7.03 ± 1.42	6.67 ± 0.98	Pass
SW-1898, 1899	4/10/2007	H-3	241.99 ± 93.35	318.10 ± 96.48	280.04 ± 67.12	Pass
DW-70346, 70347	4/11/2007	Gr. Alpha	1.83 ± 1.08	2.54 ± 1.04	2.19 ± 0.75	Pass
DW-70346, 70347	4/11/2007	Gr. Beta	4.62 ± 0.72	4.01 ± 0.71	4.32 ± 0.51	Pass
DW-70376, 70377	4/11/2007	Gr. Alpha	1.81 ± 0.80	1.66 ± 0.86	1.74 ± 0.59	Pass
DW-70376, 70377	4/11/2007	Gr. Beta	1.84 ± 0.62	2.24 ± 0.61	2.04 ± 0.44	Pass
DW-70311, 70312	4/12/2007	Gr. Alpha	10.82 ± 1.50	13.20 ± 1.56	12.01 ± 1.08	Pass
WW-2349, 2350	4/17/2007	Gr. Alpha	0.71 ± 0.56	0.62 ± 0.52	0.66 ± 0.38	Pass
WW-2461, 2462	4/25/2007	H-3	190.30 ± 100.31	115.95 ± 97.65	153.13 ± 70.00	Pass
LW-2437, 2438	4/26/2007	Gr. Beta	2.71 ± 0.50	2.15 ± 0.45	2.43 ± 0.34	Pass
LW-2917, 2918	4/30/2007	Gr. Beta	1.97 ± 0.79	2.78 ± 0.81	2.38 ± 0.57	Pass
SO-2583, 2584	5/1/2007	Be-7	544.99 ± 247.70	601.13 ± 192.20	573.06 ± 156.76	Pass
SO-2583, 2584	5/1/2007	Cs-137	119.22 ± 36.61	87.46 ± 23.97	103.34 ± 21.88	Pass
SO-2583, 2584	5/1/2007	K-40	17825.00 ± 749.90	17672.00 ± 724.30	17748.50 ± 521.29	Pass
SO-2583, 2584	5/1/2007	Gr. Alpha	11.49 ± 3.96	8.04 ± 3.88	9.77 ± 2.77	Pass
SO-2583, 2584	5/1/2007	Gr. Beta	31.02 ± 3.74	26.10 ± 3.40	28.56 ± 2.53	Pass
SO-2583, 2584	5/1/2007	Sr-90	0.086 ± 0.024	0.068 ± 0.025	0.077 ± 0.017	Pass
S-2620, 2621	5/2/2007	H-3	277.90 ± 126.70	304.40 ± 101.00	291.15 ± 81.02	Pass
MI-2610, 2611	5/3/2007	K-40	1549.20 ± 184.20	1388.80 ± 128.20	1469.00 ± 112.21	Pass
W-4469, 4470	5/7/2007	Gr. Beta	10.60 ± 1.90	11.10 ± 1.80	10.85 ± 1.31	Pass
SS-2697, 2698	5/8/2007	Cs-137	0.06 ± 0.02	0.05 ± 0.03	0.05 ± 0.02	Pass
SS-2697, 2698	5/8/2007	K-40	8.03 ± 0.57	7.36 ± 0.68	7.70 ± 0.44	Pass
MI-2790, 2791	5/14/2007	K-40	1694.30 ± 126.20	1627.60 ± 128.80	1660.95 ± 90.16	Pass
W-4505, 4506	5/14/2007	Gr. Beta	3.30 ± 1.70	3.90 ± 1.50	3.60 ± 1.13	Pass
DW-3219, 3220	5/26/2007	I-131	0.62 ± 0.32	0.69 ± 0.31	0.66 ± 0.22	Pass
SO-3416, 3417	5/31/2007	Cs-137	0.15 ± 0.03	0.15 ± 0.03	0.15 ± 0.02	Pass
SO-3416, 3417	5/31/2007	Gr. Beta	22.88 ± 2.33	22.46 ± 2.37	22.67 ± 1.66	Pass
SO-3416, 3417	5/31/2007	K-40	12.26 ± 0.80	12.36 ± 0.65	12.31 ± 0.52	Pass
F-3561, 3562	5/31/2007	K-40	3.06 ± 0.39	3.37 ± 0.45	3.21 ± 0.30	Pass
SL-3311, 3312	6/4/2007	Be-7	0.61 ± 0.29	0.55 ± 0.25	0.58 ± 0.19	Pass
SL-3311, 3312	6/4/2007	K-40	5.78 ± 0.67	4.87 ± 0.25	5.33 ± 0.36	Pass

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
SL-3992, 3993	6/4/2007	Be-7	0.75 ± 0.19	0.74 ± 0.32	0.75 ± 0.19	Pass
SL-3992, 3993	6/4/2007	Gr. Beta	13.61 ± 1.12	14.06 ± 1.08	13.84 ± 0.78	Pass
SL-3992, 3993	6/4/2007	K-40	2.43 ± 0.36	2.29 ± 0.40	2.36 ± 0.27	Pass
W-5087, 5088	6/11/2007	Gr. Beta	8.70 ± 1.90	7.70 ± 1.90	8.20 ± 1.34	Pass
SW-3710, 3711	6/14/2007	H-3	9571.51 ± 287.22	9879.21 ± 291.42	9725.36 ± 204.59	Pass
W-4062, 4063	6/28/2007	Gr. Alpha	0.76 ± 0.63	0.32 ± 0.66	0.54 ± 0.45	Pass
W-4062, 4063	6/28/2007	Gr. Beta	0.97 ± 0.53	0.58 ± 0.57	0.78 ± 0.39	Pass
AP-4448, 4449	6/28/2007	Be-7	0.10 ± 0.02	0.09 ± 0.02	0.10 ± 0.01	Pass
SG-3735, 3736	6/30/2007	Be-7	0.84 ± 0.12	0.82 ± 0.18	0.83 ± 0.11	Pass
SG-3735, 3736	6/30/2007	Cs-137	0.07 ± 0.01	0.07 ± 0.01	0.07 ± 0.01	Pass
SG-3735, 3736	6/30/2007	Gr. Beta	29.51 ± 2.22	30.81 ± 2.22	30.16 ± 1.57	Pass
SG-3735, 3736	6/30/2007	K-40	9.41 ± 0.31	8.90 ± 0.48	9.16 ± 0.29	Pass
LW-4175, 4176	6/30/2007	Gr. Beta	2.18 ± 0.60	1.93 ± 0.68	2.06 ± 0.45	Pass
SG-5422, 5423	7/2/2007	Gr. Alpha	10.31 ± 1.98	10.57 ± 1.99	10.44 ± 1.40	Pass
SG-5422, 5423	7/2/2007	Gr. Beta	18.59 ± 1.46	20.97 ± 1.49	19.78 ± 1.04	Pass
AP-4656, 4657	7/3/2007	Be-7	0.09 ± 0.02	0.10 ± 0.02	0.10 ± 0.01	Pass
AP-4763, 4764	7/3/2007	Be-7	0.11 ± 0.02	0.10 ± 0.02	0.11 ± 0.01	Pass
SG-5430, 5431	7/11/2007	Be-7	10.17 ± 0.48	10.06 ± 0.51	10.12 ± 0.35	Pass
SG-5430, 5431	7/11/2007	Cs-137	0.050 ± 0.010	0.059 ± 0.011	0.055 ± 0.007	Pass
SG-5430, 5431	7/11/2007	Gr. Alpha	17.86 ± 2.78	15.74 ± 2.70	16.80 ± 1.94	Pass
SG-5430, 5431	7/11/2007	Gr. Beta	26.19 ± 1.74	25.04 ± 1.86	25.62 ± 1.27	Pass
SG-5430, 5431	7/11/2007	K-40	7.69 ± 0.30	7.65 ± 0.28	7.67 ± 0.21	Pass
WW-4298, 4299	7/12/2007	Gr. Beta	1.74 ± 0.74	2.22 ± 0.80	1.98 ± 0.55	Pass
DW-70612, 70613	7/23/2007	Gr. Alpha	4.54 ± 1.11	4.19 ± 0.97	4.37 ± 0.74	Pass
WW-4918, 4919	7/25/2007	H-3	240.43 ± 111.12	216.68 ± 110.27	228.56 ± 78.27	Pass
MI-4742, 4743	7/26/2007	K-40	1820.30 ± 134.10	1802.90 ± 199.50	1811.60 ± 120.19	Pass
VE-4939, 4940	8/1/2007	Be-7	0.39 ± 0.21	0.45 ± 0.20	0.42 ± 0.15	Pass
VE-4939, 4940	8/1/2007	Gr. Beta	5.50 ± 0.14	5.76 ± 0.13	5.63 ± 0.10	Pass
VE-4939, 4940	8/1/2007	K-40	3.36 ± 0.45	3.36 ± 0.21	3.36 ± 0.25	Pass
SG-6274, 6275	8/6/2007	Gr. Alpha	16.68 ± 3.29	19.26 ± 3.39	17.97 ± 2.36	Pass
SG-6274, 6275	8/6/2007	Gr. Beta	40.93 ± 2.74	42.42 ± 2.66	41.68 ± 1.91	Pass
SW-5218, 5219	8/7/2007	I-131	1.31 ± 0.24	1.42 ± 0.24	1.37 ± 0.17	Pass
SG-6284, 6285	8/8/2007	Cs-137	0.043 ± 0.006	0.051 ± 0.007	0.047 ± 0.005	Pass
SG-6284, 6285	8/8/2007	Gr. Alpha	9.38 ± 2.93	13.61 ± 3.38	11.50 ± 2.24	Pass
SG-6284, 6285	8/8/2007	Gr. Beta	33.46 ± 2.84	32.87 ± 2.93	33.17 ± 2.04	Pass
SG-6284, 6285	8/8/2007	K-40	16.15 ± 0.24	16.23 ± 0.25	16.19 ± 0.17	Pass
WW-5310, 5311	8/9/2007	H-3	644.00 ± 106.00	831.00 ± 113.00	737.50 ± 77.47	Pass
SW-5393, 5394	8/14/2007	Gr. Beta	2.32 ± 1.31	1.71 ± 1.27	2.02 ± 0.92	Pass
SW-5393, 5394	8/14/2007	H-3	190.06 ± 86.80	69.05 ± 80.88	129.55 ± 59.32	Pass
W-5468, 5469	8/15/2007	H-3	262.58 ± 108.43	346.53 ± 111.42	304.55 ± 77.74	Pass

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
VE-5553, 5554	8/22/2007	K-40	1.89 ± 0.33	1.89 ± 0.22	1.89 ± 0.20	Pass
WW-5643, 5644	8/22/2007	H-3	259.00 ± 110.00	266.00 ± 110.00	262.50 ± 77.78	Pass
SWU-5799, 5800	8/28/2007	Gr. Beta	2.64 ± 1.18	3.62 ± 1.06	3.13 ± 0.79	Pass
DW-70752, 70753	8/31/2007	Gr. Alpha	14.41 ± 1.48	12.90 ± 1.50	13.66 ± 1.05	Pass
VE-5917, 5918	9/4/2007	Be-7	0.94 ± 0.17	0.83 ± 0.20	0.89 ± 0.13	Pass
VE-5917, 5918	9/4/2007	K-40	3.73 ± 0.37	3.58 ± 0.36	3.66 ± 0.26	Pass
VE-5917, 5918	9/4/2007	Gr. Beta	2.71 ± 0.10	2.69 ± 0.10	2.70 ± 0.07	Pass
MI-6009, 6010	9/11/2007	K-40	1348.90 ± 113.40	1388.10 ± 116.40	1368.50 ± 81.25	Pass
MI-6030, 6031	9/12/2007	K-40	1242.70 ± 118.00	1475.60 ± 119.60	1359.15 ± 84.01	Pass
MI-6030, 6031	9/12/2007	Sr-90	1.00 ± 0.38	0.90 ± 0.34	0.95 ± 0.26	Pass
DW-70718, 70719	9/12/2007	Gr. Alpha	23.04 ± 3.71	23.22 ± 3.61	23.13 ± 2.59	Pass
DW-70718, 70719	9/12/2007	Gr. Beta	16.13 ± 1.59	17.36 ± 1.69	16.75 ± 1.16	Pass
SO-6156, 6157	9/14/2007	H-3	181.99 ± 90.67	232.19 ± 92.95	207.09 ± 64.92	Pass
SO-6484, 6485	9/17/2007	Cs-137	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	Pass
SO-6484, 6485	9/17/2007	Gr. Beta	24.20 ± 2.60	23.30 ± 2.30	23.75 ± 1.74	Pass
SO-6484, 6485	9/17/2007	K-40	11.52 ± 1.16	10.89 ± 1.10	11.20 ± 0.80	Pass
WW-6469, 6470	9/21/2007	Gr. Beta	27.19 ± 2.51	24.23 ± 2.29	25.71 ± 1.70	Pass
E-6647, 6648	10/1/2007	Gr. Beta	1.82 ± 0.10	1.93 ± 0.11	1.88 ± 0.07	Pass
E-6647, 6648	10/1/2007	K-40	1.48 ± 0.24	1.31 ± 0.23	1.40 ± 0.17	Pass
WW-6656, 6657	10/1/2007	Gr. Beta	2.80 ± 0.97	1.95 ± 0.87	2.38 ± 0.65	Pass
TD-7080, 7081	10/2/2007	H-3	332.00 ± 229.00	383.00 ± 191.00	357.50 ± 149.10	Pass
SG-6891, 6892	10/3/2007	Gr. Alpha	12.93 ± 2.12	13.52 ± 2.07	13.23 ± 1.48	Pass
SG-6891, 6892	10/3/2007	Gr. Beta	18.08 ± 1.41	18.27 ± 1.36	18.18 ± 0.98	Pass
AP-7191, 7192	10/3/2007	Be-7	0.09 ± 0.01	0.09 ± 0.01	0.09 ± 0.01	Pass
WW-6786, 6787	10/8/2007	H-3	13333 ± 322	13532 ± 324	13433 ± 228	Pass
WW-6786, 6787	10/8/2007	H-3	13188 ± 322	13556 ± 326	13372 ± 229	Pass
VE-6828, 6829	10/8/2007	Gr. Alpha	0.06 ± 0.04	0.06 ± 0.05	0.06 ± 0.03	Pass
VE-6828, 6829	10/8/2007	Gr. Beta	5.55 ± 0.21	5.20 ± 0.22	5.38 ± 0.10	Pass
VE-6828, 6829	10/8/2007	K-40	5.45 ± 0.43	5.20 ± 0.49	5.32 ± 0.33	Pass
SS-6870, 6871	10/9/2007	Gr. Beta	18.10 ± 2.08	21.71 ± 2.19	19.90 ± 1.51	Pass
SS-6870, 6871	10/9/2007	K-40	10.19 ± 0.66	9.72 ± 0.68	9.95 ± 0.47	Pass
LW-7507, 7508	10/11/2007	Gr. Beta	1.40 ± 0.56	1.44 ± 0.54	1.42 ± 0.39	Pass
MI-6933, 6934	10/16/2007	K-40	1386.60 ± 104.70	1331.20 ± 106.70	1358.90 ± 74.74	Pass
MI-6933, 6934	10/16/2007	Sr-90	1.73 ± 0.52	2.17 ± 0.57	1.95 ± 0.39	Pass
MI-7059, 7060	10/17/2007	K-40	1424.80 ± 106.60	1448.60 ± 115.30	1436.70 ± 78.51	Pass
F-7213, 7214	10/24/2007	H-3	6.83 ± 0.22	7.24 ± 0.22	7.03 ± 0.16	Pass
F-7213, 7214	10/24/2007	K-40	3.13 ± 0.51	3.16 ± 0.48	3.15 ± 0.35	Pass
WW-7408, 7409	10/24/2007	H-3	340.71 ± 90.45	346.22 ± 90.67	343.46 ± 64.03	Pass
DW-70856, 70857	10/24/2007	Gr. Alpha	11.03 ± 1.66	10.71 ± 1.34	10.87 ± 1.07	Pass
SO-7508, 7509	10/26/2007	Cs-137	0.30 ± 0.04	0.29 ± 0.05	0.29 ± 0.03	Pass
SO-7508, 7509	10/26/2007	Gr. Beta	34.43 ± 2.72	37.25 ± 3.07	35.84 ± 2.05	Pass
SO-7508, 7509	10/26/2007	K-40	16.84 ± 0.84	17.43 ± 1.05	17.14 ± 0.67	Pass

TABLE A-5. In-House "Duplicate" Samples

Lab Code	Date	Analysis	Concentration (pCi/L)[a] First Result	Second Result	Averaged Result	Acceptance
SS-7529, 7530	10/29/2007	Cs-137	0.12 ± 0.03	0.12 ± 0.02	0.12 ± 0.02	Pass
SS-7529, 7530	10/29/2007	K-40	11.85 ± 0.68	11.75 ± 0.58	11.80 ± 0.45	Pass
SW-7589, 7590	10/30/2007	Gr. Beta	1.75 ± 0.29	1.24 ± 0.26	1.50 ± 0.19	Pass
SWU-7733, 7734	10/30/2007	Gr. Beta	1.66 ± 1.01	2.43 ± 1.13	2.05 ± 0.76	Pass
MI-7618, 7619	10/31/2007	K-40	1376.80 ± 114.30	1426.70 ± 128.80	1401.75 ± 86.10	Pass
VE-7666, 7667	11/5/2007	Gr. Alpha	0.07 ± 0.04	0.16 ± 0.05	0.11 ± 0.03	Pass
VE-7666, 7667	11/5/2007	Gr. Beta	6.03 ± 0.15	6.13 ± 0.15	6.08 ± 0.10	Pass
VE-7666, 7667	11/5/2007	K-40	5.82 ± 0.36	5.74 ± 0.36	5.78 ± 0.25	Pass
DW-7853, 7854	11/9/2007	I-131	1.61 ± 0.40	1.08 ± 0.39	1.35 ± 0.28	Pass
MI-7874, 7875	11/14/2007	K-40	1407.70 ± 101.30	1362.60 ± 114.50	1385.15 ± 76.44	Pass
WW-8142, 8143	11/28/2007	Gr. Beta	9.51 ± 2.21	7.86 ± 2.01	8.68 ± 1.49	Pass
DW-8094, 8095	11/29/2007	Gr. Beta	1.60 ± 0.58	1.25 ± 0.54	1.43 ± 0.40	Pass
F-8328, 8329	12/11/2007	Gr. Beta	3.97 ± 0.08	4.00 ± 0.08	3.99 ± 0.05	Pass
WW-8378, 8379	12/11/2007	H-3	296.00 ± 103.00	407.00 ± 107.00	351.50 ± 74.26	Pass

Note: Duplicate analyses are performed on every twentieth sample received in-house. Results are not listed for those analyses with activities that measure below the LLD.

[a] Results are reported in units of pCi/L, except for air filters (pCi/Filter), food products, vegetation, soil, sediment (pCi/g).

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP)[a].

Lab Code[c]	Date	Concentration[b] Analysis	Laboratory result	Known Activity	Control Limits[d]	Acceptance
STW-1110	01/01/07	Gr. Alpha	0.45 ± 0.08	0.33	0.00 - 0.65	Pass
STW-1110	01/01/07	Gr. Beta	0.90 ± 0.14	0.85	0.43 - 1.28	Pass
STW-1111[e]	01/01/07	Am-241	2.80 ± 0.21	1.71	1.20 - 2.22	Fail
STW-1111	01/01/07	Co-57	151.60 ± 10.00	143.70	100.60 - 186.80	Pass
STW-1111	01/01/07	Cs-134	79.20 ± 8.00	83.50	58.50 - 108.60	Pass
STW-1111	01/01/07	Cs-137	168.70 ± 12.10	163.00	114.10 - 211.90	Pass
STW-1111	01/01/07	Fe-55	130.30 ± 19.90	129.30	90.50 - 168.10	Pass
STW-1111	01/01/07	H-3	262.20 ± 9.10	283.00	198.10 - 367.90	Pass
STW-1111	01/01/07	Mn-54	130.60 ± 11.50	123.80	86.70 - 160.90	Pass
STW-1111	01/01/07	Ni-63	127.80 ± 3.60	130.40	91.30 - 169.50	Pass
STW-1111	01/01/07	Ni-63	127.80 ± 3.60	130.40	91.30 - 169.50	Pass
STW-1111	01/01/07	Pu-238	2.03 ± 0.17	2.25	1.58 - 2.93	Pass
STW-1111	01/01/07	Pu-239/40	2.27 ± 0.17	2.22	1.55 - 2.89	Pass
STW-1111	01/01/07	Sr-90	9.60 ± 1.40	8.87	6.21 - 11.53	Pass
STW-1111	01/01/07	Tc-99	8.80 ± 1.50	88.00	7.40 - 13.70	Pass
STW-1111	01/01/07	U-233/4	2.44 ± 0.21	2.49	1.74 - 3.24	Pass
STW-1111	01/01/07	U-238	2.44 ± 0.21	2.48	1.74 - 3.22	Pass
STW-1111	01/01/07	Zn-65	123.70 ± 17.00	114.80	80.40 - 149.20	Pass
STSO-1112[f]	01/01/07	Am-241	46.40 ± 9.00	34.80	24.40 - 45.20	Fail
STSO-1112	01/01/07	Co-57	501.20 ± 2.90	471.20	329.80 - 612.60	Pass
STSO-1112	01/01/07	Co-60	285.90 ± 2.10	274.70	192.30 - 357.10	Pass
STSO-1112	01/01/07	Cs-134	325.90 ± 7.40	327.40	229.20 - 425.60	Pass
STSO-1112	01/01/07	Cs-137	855.70 ± 4.60	799.70	559.80 - 1039.60	Pass
STSO-1112	01/01/07	Mn-54	750.90 ± 4.70	685.20	479.60 - 890.80	Pass
STAP-1113	01/01/07	Gr. Alpha	0.27 ± 0.04	0.60	0.00 - 1.20	Pass
STAP-1113	01/01/07	Gr. Beta	0.57 ± 0.05	0.44	0.22 - 0.66	Pass
STAP-1114	01/01/07	Am-241	0.10 ± 0.03	0.10	0.07 - 0.13	Pass
STAP-1114	01/01/07	Co-57	3.51 ± 0.07	2.89	2.02 - 3.75	Pass
STAP-1114	01/01/07	Co-60	2.98 ± 0.10	2.91	2.03 - 3.78	Pass
STAP-1114	01/01/07	Cs-134	4.02 ± 0.16	4.20	2.94 - 5.45	Pass
STAP-1114	01/01/07	Cs-137	2.75 ± 0.12	2.57	1.80 - 3.34	Pass
STAP-1114	01/01/07	Mn-54	3.94 ± 0.12	3.52	2.46 - 4.57	Pass
STAP-1114	01/01/07	Pu-238	0.07 ± 0.01	0.07	0.05 - 0.09	Pass
STAP-1114	01/01/07	Pu-239/40	0.08 ± 0.01	0.08	0.06 - 0.11	Pass
STAP-1114	01/01/07	Sr-90	0.58 ± 0.18	0.61	0.43 - 0.79	Pass
STAP-1114	01/01/07	U-233/4	0.09 ± 0.01	0.10	0.07 - 0.13	Pass
STAP-1114	01/01/07	U-238	0.09 ± 0.01	0.10	0.07 - 0.13	Pass
STAP-1114	01/01/07	Zn-65	2.70 ± 0.10	2.68	1.88 - 3.49	Pass

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP)[a].

		Concentration [b]				
Lab Code[c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STVE-1115	01/01/07	Co-57	8.90 ± 0.20	8.19	5.73 - 10.64	Pass
STVE-1115	01/01/07	Co-60	6.50 ± 0.20	5.82	4.08 - 7.57	Pass
STVE-1115	01/01/07	Cs-134	6.90 ± 0.30	6.21	4.35 - 8.07	Pass
STVE-1115	01/01/07	Cs-137	8.20 ± 0.30	6.99	4.90 - 9.09	Pass
STVE-1115	01/01/07	Mn-54	10.10 ± 0.30	8.46	5.91 - 10.98	Pass

[a] Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the Department of Energy's Mixed Analyte Performance Evaluation Program, Idaho Operations office, Idaho Falls, Idaho

[b] Results are reported in units of Bq/kg (soil), Bq/L (water) or Bq/total sample (filters, vegetation).

[c] Laboratory codes as follows: STW (water), STAP (air filter), STSO (soil), STVE (vegetation).

[d] MAPEP results are presented as the known values and expected laboratory precision (1 sigma, 1 determination) and control limits as defined by the MAPEP.

[e] Result of reanalysis, 2.08 ± 0.13 pCi/L.

[f] The test samples were recounted on lower background detectors. Result of the recounts: 41.4 ± 6.3 Bq/kg.

TABLE A-7. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)[a].

Lab Code [b]	Date	Analysis	Concentration (pCi/L) Laboratory Result [c]	ERA Result [d]	Control Limits	Acceptance
STAP-1116	03/19/07	Gr. Alpha	34.64 ± 2.56	25.8	12.4 - 39	Pass
STAP-1116	03/19/07	Gr. Beta	93.41 ± 3.20	79.5	48.8 - 116	Pass
STAP-1117	03/19/07	Am-241	56.04 ± 3.90	57.5	33.1 - 80	Pass
STAP-1117	03/19/07	Co-60	1610.00 ± 8.40	1300.0	1010.0 - 1620	Pass
STAP-1117	03/19/07	Cs-134	1340.40 ± 48.84	1120.0	732.0 - 1380	Pass
STAP-1117 [e]	03/19/07	Cs-137	345.30 ± 8.20	255.0	192.0 - 336	Fail
STAP-1117 [f]	03/19/07	Fe-55	< 134.0	0.0		Pass
STAP-1117 [f]	03/19/07	Mn-54	< 5.0	0.0		Pass
STAP-1117	03/19/07	Pu-238	43.32 ± 2.28	37.4	25.7 - 49	Pass
STAP-1117	03/19/07	Pu-239/40	35.23 ± 2.24	31.6	22.9 - 41	Pass
STAP-1117	03/19/07	Sr-90	156.10 ± 6.60	156.0	66.6 - 246	Pass
STAP-1117	03/19/07	U-233/4	42.22 ± 1.84	47.8	30.1 - 71	Pass
STAP-1117	03/19/07	U-238	42.00 ± 1.84	47.4	30.2 - 68	Pass
STAP-1117	03/19/07	Uranium	85.79 ± 3.60	97.3	49.5 - 155	Pass
STAP-1117	03/19/07	Zn-65	363.80 ± 11.90	245.0	208.0 - 412	Pass
STSO-1118	03/19/07	Ac-228	3097.77 ± 94.96	2790.0	1790.0 - 3930	Pass
STSO-1118	03/19/07	Am-241	1000.70 ± 156.10	927.0	548.0 - 1200	Pass
STSO-1118	03/19/07	Bi-212	2467.87 ± 114.33	2500.0	658.0 - 3730	Pass
STSO-1118	03/19/07	Co-60	7847.40 ± 86.60	7330.0	5340.0 - 9820	Pass
STSO-1118	03/19/07	Cs-134	7910.60 ± 356.88	7560.0	4850.0 - 9070	Pass
STSO-1118	03/19/07	Cs-137	4635.00 ± 99.10	4300.0	3290.0 - 5580	Pass
STSO-1118	03/19/07	K-40	12201.60 ± 423.20	11100.0	8050.0 - 15000	Pass
STSO-1118 [f]	03/19/07	Mn-54	< 34.0	0.0		Pass
STSO-1118	03/19/07	Pb-212	2046.80 ± 127.20	1730.0	1120.0 - 2430	Pass
STSO-1118	03/19/07	Pb-214	4142.80 ± 110.40	3330.0	1980.0 - 4980	Pass
STSO-1118	03/19/07	Pu-238	1099.20 ± 73.10	857.0	490.0 - 1200	Pass
STSO-1118	03/19/07	Pu-239/40	1586.10 ± 82.00	1360.0	928.0 - 1810	Pass
STSO-1118	03/19/07	Sr-90	6163.30 ± 791.60	7500.0	2610.0 - 12400	Pass
STSO-1118	03/19/07	Th-234	4329.40 ± 569.10	3590.0	2190.0 - 4560	Pass
STSO-1118	03/19/07	U-233/4	3236.70 ± 106.00	3620.0	2280.0 - 4520	Pass
STSO-1118	03/19/07	U-238	3425.20 ± 134.00	3590.0	2190.0 - 4560	Pass
STSO-1118	03/19/07	Uranium	6787.80 ± 240.00	7380.0	4210.0 - 9930	Pass
STSO-1118	03/19/07	Uranium	6787.80 ± 240.00	7380.0	4210.0 - 9930	Pass
STSO-1118 [f]	03/19/07	Zn-65	0.00 ± 0.00	0.0	0.0 - 0	Pass

TABLE A-7. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)[a].

Lab Code [b]	Date	Analysis	Concentration (pCi/L) Laboratory Result [c]	ERA Result [d]	Control Limits	Acceptance
STVE-1119	03/19/07	Am-241	3249.60 ± 150.30	3550.0	2020.0 - 4890	Pass
STVE-1119	03/19/07	Cm-244	1860.70 ± 91.50	1840.0	905.0 - 2870	Pass
STVE-1119	03/19/07	Co-60	2827.90 ± 62.40	2600.0	1760.0 - 3720	Pass
STVE-1119	03/19/07	Cs-134	654.80 ± 48.40	579.0	308.0 - 822	Pass
STVE-1119	03/19/07	Cs-137	3307.30 ± 58.80	2920.0	2150.0 - 4060	Pass
STVE-1119	03/19/07	K-40	40814.20 ± 618.80	37900.0	27200.0 - 53600	Pass
STVE-1119 [f]	03/19/07	Mn-54	< 27.6	0.0		Pass
STVE-1119	03/19/07	Pu-238	2762.00 ± 251.10	2430.0	1250.0 - 3600	Pass
STVE-1119	03/19/07	Pu-239/40	2156.60 ± 83.40	1900.0	1180.0 - 2600	Pass
STVE-1119	03/19/07	Sr-90	8999.70 ± 580.90	8890.0	4900.0 - 11800	Pass
STVE-1119	03/19/07	U-233/4	2821.90 ± 73.50	2940.0	1930.0 - 3920	Pass
STVE-1119	03/19/07	U-238	2896.10 ± 50.70	2910.0	2090.0 - 3610	Pass
STVE-1119	03/19/07	Uranium	5718.00 ± 124.15	5980.0	4110.0 - 7770	Pass
STVE-1119	03/19/07	Zn-65	474.30 ± 45.70	366.0	267.0 - 500	Pass
STW-1120	03/19/07	Am-241	133.50 ± 10.60	179.0	123.0 - 243	Pass
STW-1120	03/19/07	Co-60	541.40 ± 9.00	536.0	467.0 - 631	Pass
STW-1120	03/19/07	Cs-134	1623.80 ± 66.10	1750.0	1290.0 - 2020	Pass
STW-1120	03/19/07	Cs-137	1839.10 ± 17.90	1850.0	1570.0 - 2220	Pass
STW-1120	03/19/07	Fe-55	829.50 ± 226.80	671.0	392.0 - 896	Pass
STW-1120 [f]	03/19/07	Mn-54	< 8.1	0.0		Pass
STW-1120	03/19/07	Pu-238	123.30 ± 4.30	116.0	87.6 - 144	Pass
STW-1120	03/19/07	Pu-239/40	95.10 ± 3.80	90.9	70.3 - 113	Pass
STW-1120	03/19/07	Sr-90	949.40 ± 16.70	989.0	630.0 - 1320	Pass
STW-1120	03/19/07	U-233/4	164.20 ± 6.58	192.0	145.0 - 247	Pass
STW-1120	03/19/07	U-238	169.20 ± 8.22	190.0	145.0 - 236	Pass
STW-1120	03/19/07	Uranium	339.60 ± 10.66	391.0	282.0 - 521	Pass
STW-1120	03/19/07	Zn-65	2009.00 ± 36.40	1910.0	1600.0 - 2410	Pass

[a] Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the crosscheck program for proficiency testing administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the Environmental Measurements Laboratory Quality Assessment Program (EML).

[b] Laboratory codes as follows: STW (water), STAP (air filter), STSO (soil), STVE (vegetation).

[c] Unless otherwise indicated, the laboratory result is given as the mean ± standard deviation for three determinations.

[d] Results are presented as the known values, expected laboratory precision (1 sigma, 1 determination) and control limits as provided by ERA.

[e] A high bias (~ 20%) was observed in gamma results for air filters. A composite filter geometry was used in the calculations vs. a single filter geometry. Result of recalculation: Cs-137, 305.8 ± 6.0 pCi/filter.

[f] Included in the testing series as a "false positive". No activity expected.

APPENDIX B

DATA REPORTING CONVENTIONS

Data Reporting Conventions

1.0. All activities, except gross alpha and gross beta, are decay corrected to collection time or the end of the collection period.

2.0. Single Measurements

Each single measurement is reported as follows: $x \pm s$

where: x = value of the measurement;

s = 2s counting uncertainty (corresponding to the 95% confidence level).

In cases where the activity is less than the lower limit of detection L, it is reported as: <L,

where L = the lower limit of detection based on 4.66s uncertainty for a background sample.

3.0. Duplicate analyses

3.1 Individual results: For two analysis results; $x_1 \pm s_1$ and $x_2 \pm s_2$

Reported result: $x \pm s$; where $x = (1/2)(x_1 + x_2)$ and $s = (1/2)\sqrt{s_1^2 + s_2^2}$

3.2. Individual results: $<L_1$, $<L_2$ Reported result: <L, where L = lower of L_1 and L_2

3.3. Individual results: $x \pm s$, <L Reported result: $x \pm s$ if $x \geq L$; <L otherwise.

4.0. Computation of Averages and Standard Deviations

4.1 Averages and standard deviations listed in the tables are computed from all of the individual measurements over the period averaged; for example, an annual standard deviation would not be the average of quarterly standard deviations. The average $\bar{x}$ and standard deviation s of a set of n numbers $x_1, x_2 \ldots x_n$ are defined as follows:

$$\bar{x} = \frac{1}{n} \sum x \qquad s = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$

4.2 Values below the highest lower limit of detection are not included in the average.

4.3 If all values in the averaging group are less than the highest LLD, the highest LLD is reported.

4.4 If all but one of the values are less than the highest LLD, the single value x and associated two sigma error is reported.

4.5 In rounding off, the following rules are followed:

4.5.1. If the number following those to be retained is less than 5, the number is dropped, and the retained number s are kept unchanged. As an example, 11.443 is rounded off to 11.44.

4.5.2. If the number following those to be retained is equal to or greater than 5, the number is dropped and the last retained number is raised by 1. As an example, 11.445 is rounded off to 11.45.

APPENDIX C

Sampling Program and Locations

POINT BEACH NUCLEAR PLANT

Sample Type	Locations No.	Locations Codes (and Type)[a]	Collection Type (and Frequency)[b]	Analysis (and Frequency)[b]
Airborne Filters	6	E-1-4, 8, 20	Weekly	GB, GS, on QC for each location
Airborne Iodine	6	E-1-4, 8, 20	Weekly	I-131
Ambient Radiation (TLD's)	22	E-1-9, 12, 14-18, 20, 22-32, 34-36, 38,39	Quarterly	Ambient Gamma
Lake Water	5	E-1, 5, 6, 33	Monthly	GB, GS, I-131 on MC H-3, Sr-89-90 on QC
Well Water	1	E-10	Quarterly	GB, GS, H-3, Sr-89-90, I-131
Vegetation	8	E-1-4, 6, 9, 20	3x / year as available	GB, GS
Shoreline Silt	5	E-1, 5, 6, 12, 33	2x / year	GB, GS
Soil	8	E-1-4, 6, 8, 9, 20	2x / year	GB, GS
Milk	3	E-11, 40, 21	Monthly	GS, I-131, Sr-89-90
Algae	2	E-5, 12	3x / year as available	GB, GS
Fish	1	E-13	3x / year as available	GB, GS (in edible portions)

	SPECIAL COLLECTIONS AND ANALYSES	
Airborne Filters	4 per month 1 per quarter	Sr-89, Sr-90 Sr-89, Sr-90 (comp.)
Liquid	1 per month	GA, Sr-89, Sr-90
Subsoil Water	4 per quarter	GA, GB, H-3, GS
Miscellaneous Water Samples	4-5 per year	Sr-89, Sr-90

[a] Locations codes are defined in Table 2. Control Stations are indicated by (C). All other stations are indicators.

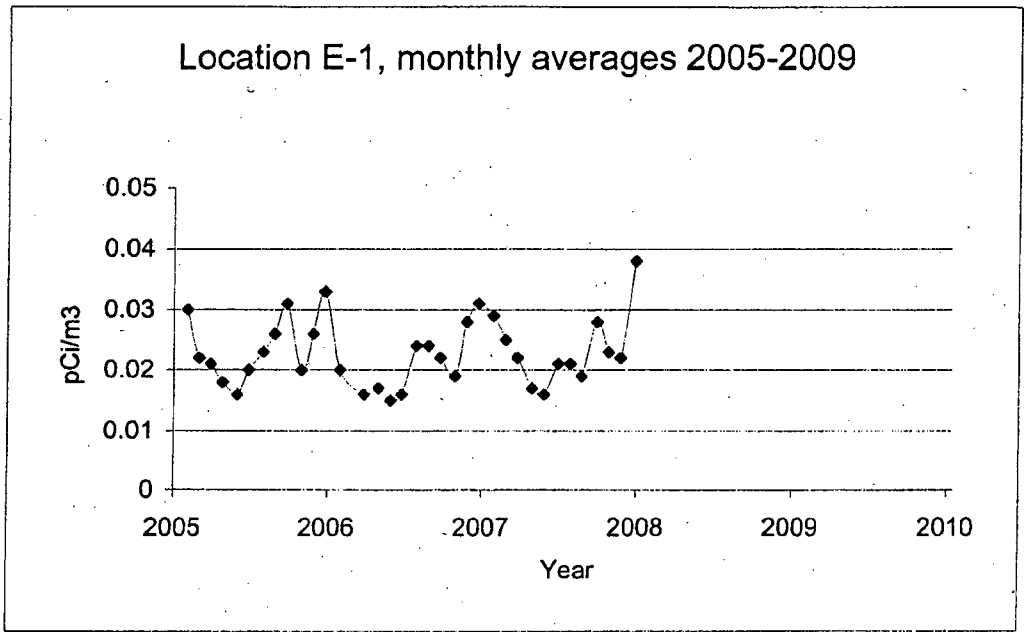
[b] Analysis type is coded as follows: GB = gross beta, GA = gross alpha, GS = gamma spectroscopy, H-3 = tritium, Sr-89 = strontium-89, Sr-90 = strontium-90, I-131 = iodine-131. Analysis frequency is coded as follows: MC = monthly composite, QC = quarterly composite.

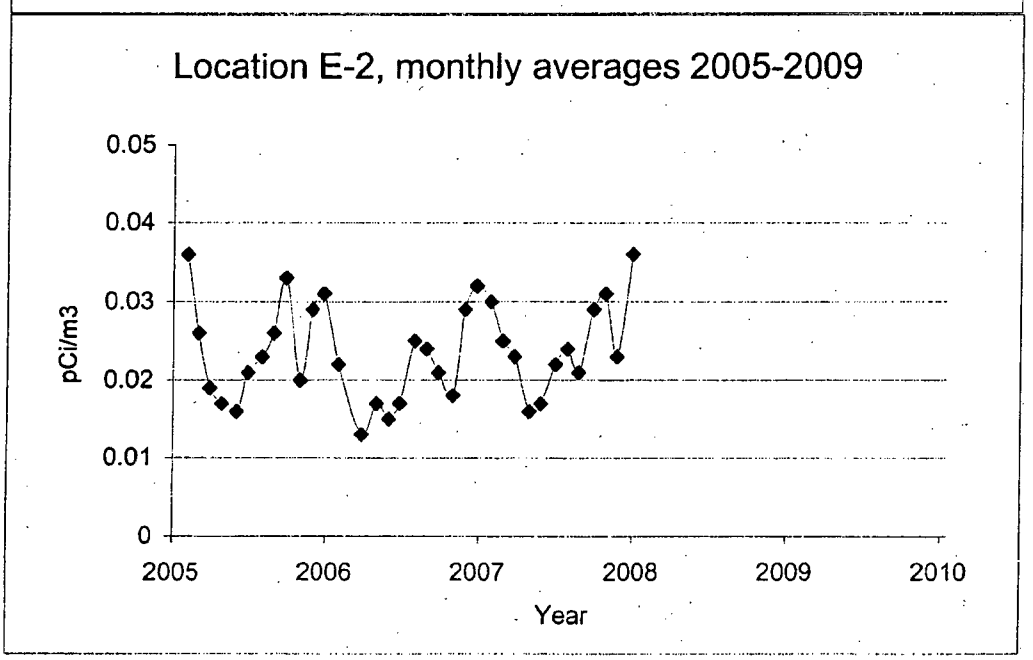
APPENDIX D

Graphs of Data Trends

POINT BEACH

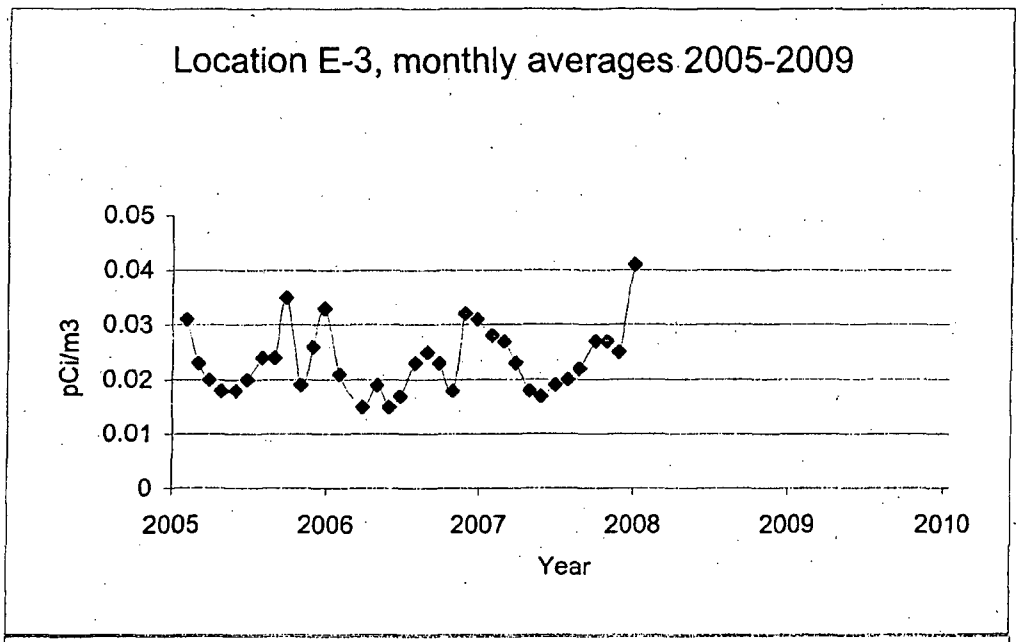
Air Particulates - Gross Beta

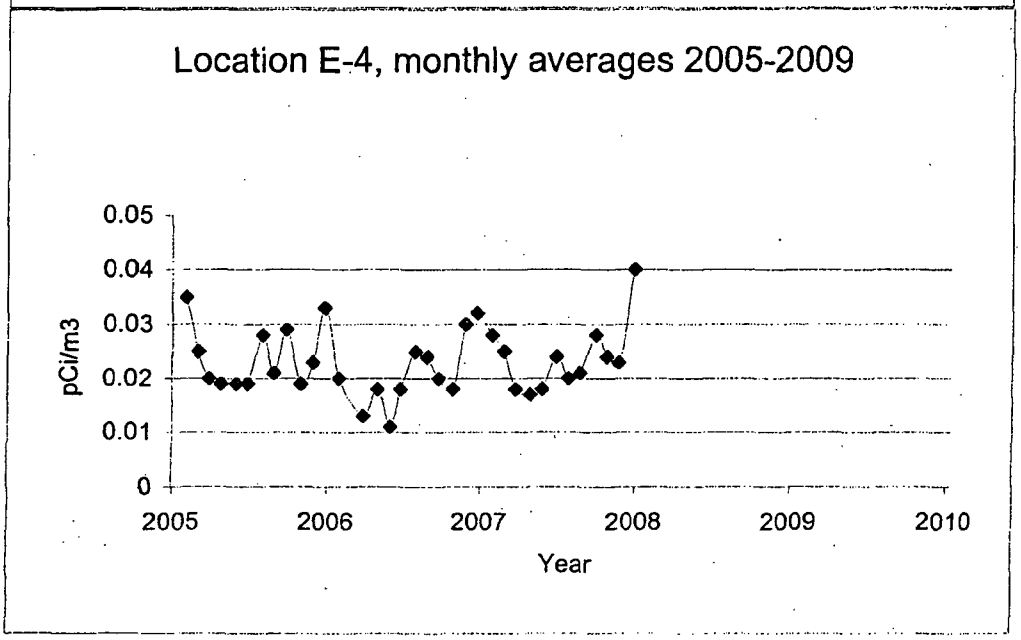




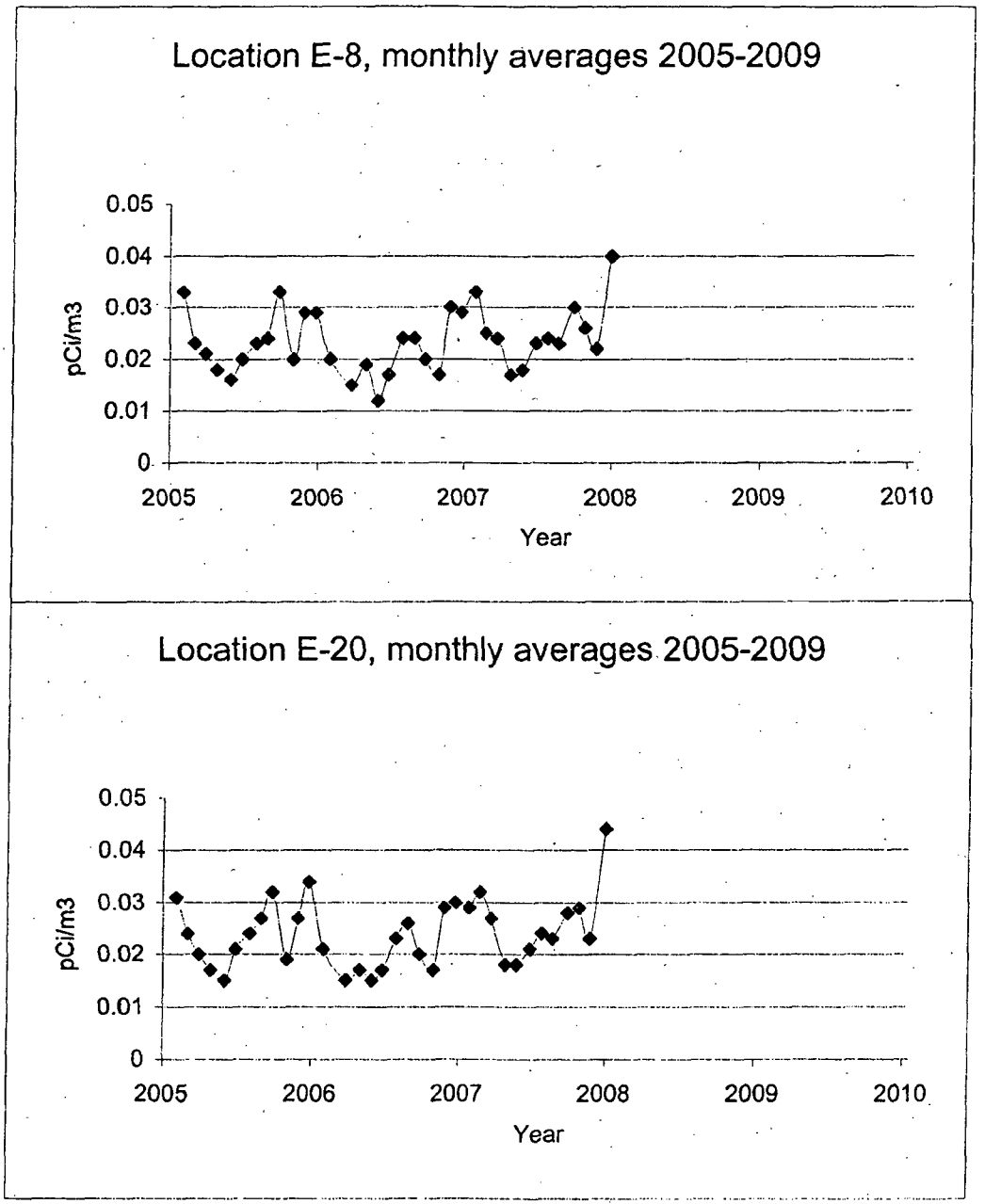
POINT BEACH

Air Particulates - Gross Beta





Air Particulates - Gross Beta



APPENDIX 2

Environmental, Inc. Midwest Laboratory
Groundwater Monitoring Results for the Point Beach Nuclear Plant
Reporting Period: January – December 2007

APPENDIX 2

Environmental, Inc. Midwest Laboratory
Groundwater Monitoring Results for the Point Beach Nuclear Plant
Reporting Period: January – December 2007

Environmental, Inc.
Midwest Laboratory
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Dr. Kjell A. Johansen
Sr. Chemist- Environmental
Point Beach Nuclear Plant
Wisconsin Electric Power Company
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-753
DATE: 03-08-2007
SAMPLES RECEIVED: 01-09-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in two water samples.

Sample Description		Beach Drain	
	S-1	S-3	S-3
Collection Date	01-04-07	01-04-07	01-04-07
Lab Code	EW-179	EW-180	EW-181[a]
Isotope	Concentration / LLD (pCi/L)		
H-3	168 ± 90/ < 166	174 ± 90/ < 166	116 ± 88/ < 166

[a] Denotes a duplicate.
The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY _____
Tony Coorlim,
Quality Assurance

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

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Dr. Kjell Johansen
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Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-813
DATE: 02-19-2008
SAMPLES RECEIVED: 02-12-2008
PURCHASE ORDER NO.:

Below is the result of the analysis for tritium in one water samples collected February 7, 2008.

Sample Description	Lab Code	Concentration / LLD (pCi/L) H-3
S-1 (Beach Drain)	EXW-514	302 ± 77 / < 153

The error given is the probable counting error at the 95% confidence level. The less than (<) value, is based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

E-mail: Kjell_Johansen@fpl.com

APPROVED BY _____
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Quality Assurance

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Sr. Chemist- Environmental
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Wisconsin Electric Power Company
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-754
DATE: 03-30-2007
SAMPLES RECEIVED: 03-16-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in three water samples.

Sample Description	S-1 Beach Drain	S-3	S-8
Collection Date	03-13-07	03-13-07	03-13-07
Lab Code	EXW-1464	EXW-1465	EXW-1466
Isotope	Concentration / LLD (pCi/L)		
H-3	683 ± 102/ < 140	269 ± 89/ < 145	443 ± 96/ < 145

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY

Tony Coorlim,
Quality Assurance

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310
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Dr. Kjell A. Johansen
Sr. Chemist- Environmental
Point Beach Nuclear Plant
Wisconsin Electric Power Company
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-762
DATE: 05-10-2007
SAMPLES RECEIVED: 04-27-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in two water samples.

Sample Description	Beach Drain	
	S-1	S-3
Collection Date	04-25-07	04-25-07
Lab Code	EXW-2443	EXW-2444
Isotope	Concentration / LLD (pCi/L)	
H-3	174 ± 90/ < 157	120 ± 88/ < 157

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY

Tony Coorlim,
Quality Assurance

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Dr. Kjell A. Johansen
Sr. Chemist- Environmental
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-764
DATE: 05-22-2007
SAMPLES RECEIVED: 05-15-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in two water samples.

Sample Description	Beach Drain	
	S-1	S-3
Collection Date	05-11-07	05-11-07
Lab Code	EXW-2767	EXW-2768
Isotope	Concentration / LLD (pCi/L)	
H-3	208 ± 102/ < 179	165 ± 100/ < 179

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY _____
Tony Goorlim,
Quality Assurance

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Dr. Kjell A. Johansen
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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-769
DATE: 06-21-2007
SAMPLES RECEIVED: 06-11-2007
PURCHASE ORDER NO.:

Below is the result of the analysis for tritium in one water sample.

Sample Description	Beach Drain S-3
Collection Date	06-06-07
Lab Code	EXW-3502

Isotope	Concentration / LLD (pCi/L)
H-3	336 ± 98 / 169

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob,
Laboratory Manager

APPROVED BY

Tony Coorlim,
Quality Assurance

Environmental, Inc.
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an Allegheny Technologies Co.

Dr. Kjell Johansen

Point Beach Nuclear Plant
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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-772
DATE: 07/30/2007
SAMPLES RECEIVED: 07/06/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
S-1, Beach Drain	EXW-4047	07/03/07	243 ± 103	< 176
S-3, Beach Drain	EXW-4048	07/03/07	270 ± 88	< 143

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

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Dr. Kjell Johansen

Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-776
DATE: 09/07/2007
SAMPLES RECEIVED: 08/14/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
Façade Subsoil Sump Composite	EXW-5147	07/03/07	708 ± 127	< 189
S-1, Beach Drain	EXW-5296	08/09/07	246 ± 91	< 152
S-3, Beach Drain	EXW-5297	08/09/07	358 ± 96	< 152

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

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Dr. Kjell Johansen

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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-782
DATE: 09/24/2007
SAMPLES RECEIVED: 09/17/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
S-3	EXW-5914	09/05/07	299 ± 96	< 165
GW-11	EXWW-6038	08/27/07	248 ± 102	< 185
GW-12	EXWW-6039	08/29/07	93 ± 96	< 185
GW-13	EXWW-6040	08/29/07	70 ± 95	< 185
GW-13 (duplicate)	EXWW-6041	08/29/07	136 ± 98	< 185
GW-14	EXWW-6042	08/11/07	189 ± 100	< 185
GW-15	EXWW-6043	09/04/07	224 ± 101	< 185
GW-16	EXWW-6044	09/04/07	15 ± 92	< 185
2Z-361B	EXWW-6177	03/10/07	4207 ± 213	< 189
2Z-361B (Duplicate)	EXWW-6178	03/10/07	4205 ± 213	< 189
2Z-361A	EXWW-6179	03/10/07	-20 ± 93	< 189
1Z-361A	EXWW-6180	03/10/07	1019 ± 133	< 189
1Z-361B	EXWW-6181	05/07/07	168 ± 101	< 188
2Z-361B	EXWW-6182	06/26/07	2678 ± 177	< 186
1Z-361A	EXWW-6183	06/26/07	1381 ± 143	< 186
2Z-361A	EXWW-6184	07/27/07	47 ± 94	< 185
1Z-361B	EXWW-6185	07/27/07	183 ± 100	< 185
Façade, Subsoil Sump	EXWW-6192	09/01/07	529 ± 105	< 165

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

Dr. Kjell Johansen

Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-785
DATE: 10/16/2007
SAMPLES RECEIVED: 09/28/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
GW-04	EXWW-6544	09/26/07	36 ± 101	< 189
S-1 (Beach Drain)	EXWW-6773	10/04/07	112 ± 107	< 195
S-3 (Beach Drain)	EXWW-6774	10/04/07	46 ± 104	< 195

Approval _____
WBS/GL _____

RECEIVED
OCT 24 2007
- ACCOUNTS PAYABLE - PBNP

FIV # _____ Status _____
Rec Notice # _____

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

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Dr. Kjell A. Johansen
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Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-792
DATE: 12-28-2007
SAMPLES RECEIVED: 11-12-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in two water samples.

Sample Description	Beach Drain	
	S-1	S-3
Collection Date	11-08-07	11-08-07
Lab Code	EXW-7730	EXW-7731
Isotope	Concentration / LLD (pCi/L)	
H-3	588 ± 104/ < 151	234 ± 90/ < 151

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY

Tony Coorlim,
Quality Assurance

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Dr. Kjell A. Johansen
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LABORATORY REPORT NO.: 8006-100-797
DATE: 12-21-2007
SAMPLES RECEIVED: 12-06-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in two water samples.

Sample Description	Beach Drain	
	S-1	S-3
Collection Date	12-04-07	12-04-07
Lab Code	EXW-8200	EXW-8201
Isotope	Concentration / LLD (pCi/L)	
H-3	321 ± 91/ < 145	238 ± 87/ < 145

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY _____
Tony Coorlim,
Quality Assurance

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Mr. Gary Corell
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-757
DATE: 04-03-07
SAMPLES RECEIVED: 03-06-07

Dear Mr. Corell:

Below is the result of the analysis for tritium in one water sample.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
EC EIC GW-04	02-10-07	EWW-1199	31 ± 88	<181

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Sincerely,

Ellen Saar

Ellen Saar
Project Coordinator

APPROVED BY _____

Bronia Grob, M.S.
Laboratory Manager

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Midwest Laboratory
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Dr. Kjell A. Johansen
Sr. Chemist- Environmental
Point Beach Nuclear Plant
Wisconsin Electric Power Company
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-756
DATE: 04-17-2007
SAMPLES RECEIVED: 03-30-2007
PURCHASE ORDER NO.:

Below are the results of tritium analyses on six water samples.

Sample Description	Lab Code	Concentration/LLD H-3 (pCi/L)	Collection Date
GW-01 (Bridge)	EWW-1750	87 ± 92 / < 169	03-28-07
GW-02 (East Creek)	EWW-1751	225 ± 98 / < 169	03-28-07
GW-03 (West Creek)	EWW-1752	116 ± 94 / < 169	03-28-07
GW-04 (Energy Center)	EWW-1753	76 ± 92 / < 169	03-28-07
GW-05 (Warehouse 6)	EWW-1754	21 ± 90 / < 169	03-28-07
GW-06 (SBCC)	EWW-1755	-89 ± 85 / < 169	03-28-07
GW-06 (SBCC)	EWW-1756[a]	-10 ± 88 / < 169	03-28-07

[a] Denotes a duplicate.
The less than, (<), value is based on 4.66 counting error for background sample. The error given is the probable counting error at 95% confidence level.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY

Tony Coorlim,
Quality Assurance

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Dr. Kjell Johansen
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-760
DATE: 06-18-07
SAMPLES RECEIVED: 04-16-07

Well Water, analyses for gross beta, iodine-131, tritium, strontium-89, strontium-90 and gamma emitting isotopes.

Lab Code	EWW- 2008		EWW- 2010	
Date Collected	04-11-07		04-11-07	
Location	GW-06 SBCC		GW-5	
Isotope	Activity / MDC (pCi/L)		Activity / MDC (pCi/L)	
Gross Beta	4.84 ± 3.19	< 5.82	9.37 ± 2.68	< 4.45
I-131	-0.090 ± 0.22	< 0.40	-0.23 ± 0.20	< 0.39
Sr-89	0.033 ± 0.49	< 0.56	-0.45 ± 0.45	< 0.57
Sr-90	0.094 ± 0.24	< 0.49	0.19 ± 0.22	< 0.42
H-3	99.5 ± 87.2	< 166.7	64.4 ± 85.6	< 166.7

The error given is the probable counting error at the 95% confidence level. The less than value (<) is based on a 4.66 s counting error for the background sample.

Gamma *

Be-7	-11.37 ± 18.30	< 42.58	8.69 ± 13.50	< 26.49
Mn-54	-0.87 ± 2.07	< 3.48	1.01 ± 1.56	< 2.78
Co-58	1.67 ± 2.09	< 3.71	0.70 ± 1.25	< 1.95
Co-60	1.11 ± 1.79	< 2.08	0.20 ± 1.46	< 1.93
Fe-59	-2.22 ± 3.35	< 4.01	-4.30 ± 3.09	< 3.13
Zn-65	-3.26 ± 3.90	< 3.39	1.21 ± 3.33	< 5.37
Zr-Nb-95	-0.28 ± 2.24	< 4.19	-0.52 ± 1.74	< 1.99
Ru-103	-0.84 ± 1.97	< 5.19	-1.40 ± 1.56	< 2.57
Cs-134	-2.17 ± 2.20	< 2.78	0.95 ± 1.29	< 2.48
Cs-137	-1.31 ± 2.34	< 2.43	-1.07 ± 1.58	< 2.72
Ba-La-140	1.87 ± 2.16	< 3.30	-0.17 ± 1.78	< 2.75

*For those isotopes where both an activity and an MDC value are given, the MDC value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity is given, but no MDC value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

Approved:

B. Grob
Laboratory Manager

Sincerely,

SA Coorlim
Quality Assurance

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Midwest Laboratory
an Allegheny Technologies Co.

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Mr. Gary Corell
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-765
DATE: 05-30-07
SAMPLES RECEIVED: 04-27-07

Dear Mr. Corell:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
GW-01 E-001 Met Tower	04-25-07	EWW-2445	-79 ± 79	<157
East Creek GW-02	04-25-07	EWW-2446	93 ± 87	<157
West Creek GW-03	04-25-07	EWW-2447	-77 ± 79	<157
EC GW-04	04-25-07	EWW-2448	-156 ± 75	<157

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Sincerely,

Ellen Saar
Project Coordinator

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

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Midwest Laboratory
an Allegheny Technologies Co.

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Mr. Gary Corell
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-770
DATE: 07-03-07
SAMPLES RECEIVED: 06-05-07

Dear Mr. Corell:

Below are the results of the analyses for tritium in six water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001 Met Tower GW-01	05-31-07	ESW-3364	98 ± 80	<143
East Creek GW-02	05-31-07	ESW-3365	102 ± 88	<169
West Creek GW-03	05-31-07	ESW-3366	72 ± 87	<169
EC GW-04	05-31-07	EWW-3367	185 ± 92	-
North Side Bog	05-31-07	ESW-3368	223 ± 94	-
Energy Center Bog	05-31-07	ESW-3369	398 ± 101	-

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Sincerely,

Ellen Saar
Project Coordinator

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

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Mr. Gary Corell
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-773
DATE: 08-06-07
SAMPLES RECEIVED: 06-29-07

Dear Mr. Corell:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001 Met Tower GW-01	06-27-07	ESW-3977	-1 ± 75	<143
East Creek GW-02	06-27-07	ESW-3978	73 ± 79	<143
West Creek GW-03	06-27-07	ESW-3979	129 ± 82	<143
EC GW-04	06-27-07	EWW-3980	43 ± 77	<143

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Sincerely,

Ellen Saar

Ellen Saar
Project Coordinator

APPROVED BY _____
for Bronia Grob, M.S.
Laboratory Manager

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Midwest Laboratory
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Mr. Gary Corell
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-778
DATE: 08-31-07
SAMPLES RECEIVED: 07-30-07

Dear Mr. Corell:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001 Met Tower GW-01	07-25-07	ESW-4779	126 ± 107	<195
East Creek GW-02	07-25-07	ESW-4780	103 ± 107	<195
West Creek GW-03	07-25-07	ESW-4781	30 ± 104	<195
EC GW-04	07-25-07	EWW-4782	-9 ± 80	<153

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Sincerely,

Ellen Saar

Ellen Saar
Project Coordinator

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

REC'D SEP 28 2007

Environmental, Inc.
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Dr. Kjell Johansen
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-779
DATE: 08-24-07
SAMPLES RECEIVED: 07-16-07

Well Water, analyses for gross beta, iodine-131, tritium, strontium-89, strontium-90 and gamma emitting isotopes.

Lab Code	EWW- 4297		EWW- 4300	
Date Collected	07-12-07		07-12-07	
Location	GW-06 SBCC		GW-5 WAREHOUSE 6	
Isotope	**Activity / MDC (pCi/L)**		**Activity / MDC (pCi/L)**	
Gross Beta	0.21 ± 0.75	< 1.12	3.15 ± 0.79	< 1.03
I-131	0.18 ± 0.24	< 0.36	0.13 ± 0.25	< 0.36
Sr-89	0.50 ± 0.71	< 0.81	-0.05 ± 0.57	< 0.60
Sr-90	-0.17 ± 0.32	< 0.74	0.10 ± 0.27	< 0.56
H-3	56 ± 79	< 146	21 ± 78	< 146

The error given is the probable counting error at the 95% confidence level. The less than value (<) is based on a 4.66 s counting error for the background sample.

Gamma *

Be-7	-22.22 ± 28.69	< 31.62	-0.73 ± 22.83	< 41.98
Mn-54	0.28 ± 3.89	< 4.53	-0.68 ± 3.15	< 2.12
Co-58	-1.30 ± 3.95	< 5.78	2.80 ± 2.90	< 4.08
Co-60	0.14 ± 4.53	< 5.86	1.25 ± 3.64	< 4.16
Fe-59	-2.76 ± 6.37	< 10.66	2.21 ± 6.27	< 8.85
Zn-65	-3.23 ± 6.66	< 3.34	-5.03 ± 7.51	< 4.01
Zr-Nb-95	-3.85 ± 3.47	< 5.37	0.53 ± 3.67	< 6.66
Ru-103	-1.69 ± 3.59	< 6.28	2.02 ± 2.97	< 5.90
Cs-134	1.29 ± 2.96	< 5.34	-3.15 ± 3.82	< 5.03
Cs-137	0.09 ± 3.27	< 4.88	0.97 ± 3.71	< 3.89
Ba-La-140	2.49 ± 3.84	< 5.61	1.42 ± 3.88	< 8.25

*For those isotopes where both an activity and an MDC value are given, the MDC value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity is given, but no MDC value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

Approved:

B. Grob
Laboratory Manager

Sincerely,

SA Coorlim
Quality Assurance

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

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Mr. Gary Corell
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-783CR
DATE: 03-31-08
SAMPLES RECEIVED: 08-31-07

Dear Mr. Corell:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001 (GW-01)	08-29-07	ESW-5867	88 ± 86	<166
East Creek (GW-02)	08-29-07	ESW-5868	103 ± 87	<166
West Creek (GW-03)	08-29-07	ESW-5869	164 ± 90	<166
Duplicate of 5869	08-29-07	ESW-5870	126 ± 88	<166
EC (GW-04)	08-29-07	EWW-5871	124 ± 88	<166

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

cc: K. Johansen

Ellen Saar
Project Coordinator

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

Dr. Kjell Johansen

Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-785
DATE: 10/16/2007
SAMPLES RECEIVED: 09/28/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
GW-04	EXWW-6544	09/26/07	36 ± 101	< 189
S-1 (Beach Drain)	EXWW-6773	10/04/07	112 ± 107	< 195
S-3 (Beach Drain)	EXWW-6774	10/04/07	46 ± 104	< 195

Approval _____
WBS/GL _____

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OCT 24 2007
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FIN # _____ Status _____
Rec Notice # _____

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

Dr. Kjell Johansen

Point Beach Nuclear Plant
6610 Nuclear Road
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LABORATORY REPORT NO.: 8006-100-782
DATE: 09/24/2007
SAMPLES RECEIVED: 09/17/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
S-3	EXW-5914	09/05/07	299 ± 96	< 165
GW-11	EXWW-6038	08/27/07	248 ± 102	< 185
GW-12	EXWW-6039	08/29/07	93 ± 96	< 185
GW-13	EXWW-6040	08/29/07	70 ± 95	< 185
GW-13 (duplicate)	EXWW-6041	08/29/07	136 ± 98	< 185
GW-14	EXWW-6042	08/11/07	189 ± 100	< 185
GW-15	EXWW-6043	09/04/07	224 ± 101	< 185
GW-16	EXWW-6044	09/04/07	15 ± 92	< 185
2Z-361B	EXWW-6177	03/10/07	4207 ± 213	< 189
2Z-361B (Duplicate)	EXWW-6178	03/10/07	4205 ± 213	< 189
2Z-361A	EXWW-6179	03/10/07	-20 ± 93	< 189
1Z-361A	EXWW-6180	03/10/07	1019 ± 133	< 189
1Z-361B	EXWW-6181	05/07/07	168 ± 101	< 188
2Z-361B	EXWW-6182	06/26/07	2678 ± 177	< 186
1Z-361A	EXWW-6183	06/26/07	1381 ± 143	< 186
2Z-361A	EXWW-6184	07/27/07	47 ± 94	< 185
1Z-361B	EXWW-6185	07/27/07	183 ± 100	< 185
Façade, Subsoil Sump	EXWW-6192	09/01/07	529 ± 105	< 165

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Cooriim
Quality Assurance

Bronia Grob
Laboratory Manager

Environmental, Inc.
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Dr. Kjell Johansen

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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-804
DATE: 01/18/2008
SAMPLES RECEIVED: 10/12/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
GW-05 (Warehouse 6)	EWW-6865	10/09/07	65 ± 81	< 148
GW-06 (Site Boundary Control Center)	EWW-6866	10/09/07	39 ± 80	< 148

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

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Mr. Gary Corell
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-802
DATE: 01-02-08
SAMPLES RECEIVED: 12-03-07

Dear Mr. Corell:

Below are the results of the analyses for tritium in four water samples.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001 GW-01	ND[a]			
East Creek GW-02	ND[a]			
West Creek GW-03	ND[a]			
EC GW-04	11-29-07	EWW-8128	-70 ± 79	<157

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.
[a] "ND" = No data; ice buildup.

cc: K. Johansen

Ellen Saar
Project Coordinator

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

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Dr. Kjell Johansen
FPL Energy
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-796
DATE: 01-07-2008
SAMPLES RECEIVED: 12-19-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in six ground water samples collected December 13, 2007.

Sample Description	Lab Code	Concentration / LLD (pCi/L) H-3
GW-11 (MW-01)	EXWW-8460	116 ± 96 / < 173
GW-12 (MW-02)	EXWW-8461	-19 ± 90 / < 173
GW-13 (MW-06)	EXWW-8462	85 ± 95 / < 173
GW-14 (MW-05)	EXWW-8463	75 ± 94 / < 173
GW-15 (MW-04)	EXWW-8464	329 ± 104 / < 173
GW-16 (MW-03)	EXWW-8465	186 ± 99 / < 173

The error given is the probable counting error at the 95% confidence level. The less than (<) value, is based on 4.66 sigma counting error for the background sample.

Sincerely,

Brenda Groth M.S.
Laboratory Manager

E-mail: Kjell_Johansen@fpl.com

APPROVED BY

Tony Coorlim,
Quality Assurance

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

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Mr. Gary Corell
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-810
DATE: 01-31-08
SAMPLES RECEIVED: 12-28-07

Dear Mr. Corell:

Below is the result of the analysis for tritium in one water sample.

Location	Date Collected	Lab Code	Concentration H-3 (pCi/L) Activity	MDA
E-001 GW-01	ND[a]			
East Creek GW-02	ND[a]			
West Creek GW-03	ND[a]			
EC GW-04	12-26-07	EWW-8622	107 ± 97	<176

For those isotopes where both an activity and an MDA value are given, the MDA value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity value is given, but no MDA value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

[a] "ND" = No data; no flow.

cc: K. Johansen

Ellen Saar
Project Coordinator

APPROVED BY _____
Bronia Grob, M.S.
Laboratory Manager

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

Dr. Kjell Johansen

Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-782
DATE: 09/24/2007
SAMPLES RECEIVED: 09/17/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
S-3	EXW-5914	09/05/07	299 ± 96	< 165
GW-11	EXWW-6038	08/27/07	248 ± 102	< 185
GW-12	EXWW-6039	08/29/07	93 ± 96	< 185
GW-13	EXWW-6040	08/29/07	70 ± 95	< 185
GW-13 (duplicate)	EXWW-6041	08/29/07	136 ± 98	< 185
GW-14	EXWW-6042	08/11/07	189 ± 100	< 185
GW-15	EXWW-6043	09/04/07	224 ± 101	< 185
GW-16	EXWW-6044	09/04/07	15 ± 92	< 185
2Z-361B	EXWW-6177	03/10/07	4207 ± 213	< 189
2Z-361B (Duplicate)	EXWW-6178	03/10/07	4205 ± 213	< 189
2Z-361A	EXWW-6179	03/10/07	-20 ± 93	< 189
1Z-361A	EXWW-6180	03/10/07	1019 ± 133	< 189
1Z-361B	EXWW-6181	05/07/07	168 ± 101	< 188
2Z-361B	EXWW-6182	06/26/07	2678 ± 177	< 186
1Z-361A	EXWW-6183	06/26/07	1381 ± 143	< 186
2Z-361A	EXWW-6184	07/27/07	47 ± 94	< 185
1Z-361B	EXWW-6185	07/27/07	183 ± 100	< 185
Façade, Subsoil Sump	EXWW-6192	09/01/07	529 ± 105	< 165

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

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Dr. Kjell A. Johansen
Sr. Chemist- Environmental
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-798
DATE: 12-26-2007
SAMPLES RECEIVED: 12-10-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in two water samples.

Sample Description	Façade Well	
	U-1(Z-361A)	U-1(Z-361B)
Collection Date	09-24-07	09-24-07
Lab Code	EXW-8267	EXW-8268
Isotope	Concentration / LLD (pCi/L)	
H-3	1,525 ± 144/ < 190	223 ± 107/ < 190

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY _____
Tony Coorlim,
Quality Assurance

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Dr. Kjell A. Johansen
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LABORATORY REPORT NO.: 8006-100-799
DATE: 01-07-2008
SAMPLES RECEIVED: 12-17-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in two water samples.

Sample Description	Ground Water		
	2Z-361A	2Z-361B	2Z-361B
Collection Date	12-11-07	12-11-07	12-11-07
Lab Code	EXW-8377	EXW-8378	EXW-8379[a]
Isotope	Concentration / LLD (pCi/L)		
H-3	77 ± 94 / < 173	296 ± 103 / < 173	407 ± 107 / < 173

[a] Denotes a duplicate.
The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY _____
Tony Coorlim,
Quality Assurance

Environmental, Inc.
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an Allegheny Technologies Co.

Dr. Kjell Johansen

Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-776
DATE: 09/07/2007
SAMPLES RECEIVED: 08/14/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
Façade Subsoil Sump Composite	EXW-5147	07/03/07	708 ± 127	< 189
S-1, Beach Drain	EXW-5296	08/09/07	246 ± 91	< 152
S-3, Beach Drain	EXW-5297	08/09/07	358 ± 96	< 152

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

Dr. Kjell Johansen

Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-780
DATE: 09/11/2007
SAMPLES RECEIVED: 08/20/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
Façade Subsoil Sump	EXW-5581	08/10/07	519 ± 120	< 188
Façade Subsoil Sump	EXW-5615	06/08/07	491 ± 120	< 190

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

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an Allegheny Technologies Co.

Dr. Kjell Johansen

Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-782
DATE: 09/24/2007
SAMPLES RECEIVED: 09/17/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
S-3	EXW-5914	09/05/07	299 ± 96	< 165
GW-11	EXWW-6038	08/27/07	248 ± 102	< 185
GW-12	EXWW-6039	08/29/07	93 ± 96	< 185
GW-13	EXWW-6040	08/29/07	70 ± 95	< 185
GW-13 (duplicate)	EXWW-6041	08/29/07	136 ± 98	< 185
GW-14	EXWW-6042	08/11/07	189 ± 100	< 185
GW-15	EXWW-6043	09/04/07	224 ± 101	< 185
GW-16	EXWW-6044	09/04/07	15 ± 92	< 185
2Z-361B	EXWW-6177	03/10/07	4207 ± 213	< 189
2Z-361B (Duplicate)	EXWW-6178	03/10/07	4205 ± 213	< 189
2Z-361A	EXWW-6179	03/10/07	-20 ± 93	< 189
1Z-361A	EXWW-6180	03/10/07	1019 ± 133	< 189
1Z-361B	EXWW-6181	05/07/07	168 ± 101	< 188
2Z-361B	EXWW-6182	06/26/07	2678 ± 177	< 186
1Z-361A	EXWW-6183	06/26/07	1381 ± 143	< 186
2Z-361A	EXWW-6184	07/27/07	47 ± 94	< 185
1Z-361B	EXWW-6185	07/27/07	183 ± 100	< 185
Façade, Subsoil Sump	EXWW-6192	09/01/07	529 ± 105	< 165

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

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Dr. Kjell A. Johansen
Sr. Chemist- Environmental
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-790
DATE: 11-06-2007
SAMPLES RECEIVED: 10-18-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in one water sample.

Sample Description	Façade Subsoil Sump Composite	
Collection Date	10-11-07	
Lab Code	EXW-7297	
Isotope	Concentration / LLD (pCi/L)	
H-3	288 ± 109	< 189

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY

Tony Coorlim,
Quality Assurance

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Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-794
DATE: 12-10-2007
SAMPLES RECEIVED: 11-21-2007
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in one water sample.

Sample Description	Façade Subsoil Sump Composite
Collection Date	11-07-07
Lab Code	EXW-7943

Isotope	Concentration / LLD (pCi/L)	
H-3	363 ± 108	< 183

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob,
Laboratory Manager

APPROVED BY _____

Tony Coorlim,
Quality Assurance

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Dr. Kjell A. Johansen
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LABORATORY REPORT NO.: 8006-100-800
DATE: 01-07-2008
SAMPLES RECEIVED: 12-17-2007
PURCHASE ORDER NO.:

Below is the result of the analysis for tritium in one water sample.

Sample Description	Façade Subsoil Sump Composite
Collection Date	12-07-07
Lab Code	EXW-8386

Isotope	Concentration / LLD (pCi/L)
H-3	489 ± 110 / < 173

The error given is the probable counting error at 95% confidence level and LLD values are based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

APPROVED BY _____

Tony Coorlim,
Quality Assurance

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

Dr. Kjell Johansen

Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-768
DATE: 06/19/2007
SAMPLES RECEIVED: 06/11/2007
PURCHASE ORDER NO.:

Sample ID	Lab Code	Collection Date	H-3 (pCi/L)	LLD
SSD-U1, SW Facade	EXW-3476	05/24/07	317 ± 98	< 169
SSD-U2, NW Facade	EXW-3477	05/24/07	351 ± 99	< 169
Duplicate, EXW-3477	EXW-3478	05/24/07	405 ± 101	< 169
SSD-NSB-2	EXW-3479	05/24/07	221 ± 94	< 169
SSD-LIN	EXW-3480	05/25/07	213 ± 93	< 169
SSD-F5-1	EXW-3481	05/25/07	309 ± 97	< 169
SSD-A12.1	EXW-3482	05/25/07	809 ± 116	< 169
SSD-E-9.5 (Door 19)	EXW-3483	05/25/07	411 ± 102	< 169
SSD-EF-01	EXW-3484	05/25/07	1501 ± 140	< 181
SSD-F13.1	EXW-3485	05/25/07	451 ± 111	< 181
SSD-E13.1	EXW-3486	05/25/07	558 ± 114	< 181
SSD-F6	EXW-3487	05/25/07	242 ± 104	< 181
SSD-F7	EXW-3488	05/25/07	382 ± 109	< 181
SSD-F9.9	EXW-3489	05/25/07	363 ± 108	< 181
SSD-F8	EXW-3490	05/25/07	432 ± 110	< 181
SSD-B6.1	EXW-3491	05/25/07	317 ± 98	< 169
MH-01	EXW-3492	05/24/07	157 ± 101	< 181
MH-03	EXW-3493	05/24/07	145 ± 100	< 181
MH-04	EXW-3494	05/24/07	52 ± 86	< 169
MH-05	EXW-3495	05/24/07	150 ± 101	< 181
MH-02	EXW-3496	05/25/07	148 ± 101	< 181
MH-09	EXW-3497	05/24/07	127 ± 100	< 181
MH-10	EXW-3498	05/24/07	279 ± 105	< 181
Duplicate, EXW-3498	EXW-3499	05/24/07	304 ± 106	< 181
MH-14	EXW-3500	05/24/07	121 ± 100	< 181
MH-19	EXW-3501	05/24/07	165 ± 91	< 169

The error given is the probable counting error at the 95% confidence level.
Less than (<) values are based on a 4.66 sigma counting error for the background sample.

SA Coorlim
Quality Assurance

Bronia Grob
Laboratory Manager

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Dr. Kjell Johansen
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100 -777
DATE: 08-13-07
SAMPLES RECEIVED: 06-11-07

Well Water, analyses for iron-55, strontium-89, strontium-90 and gamma emitting isotopes.

Lab Code	EXW- 3484
Date Collected	05-25-07
Location	SSD-EF-01

Isotope	Activity / MDC (pCi/L)	
Fe-55	-156 ± 459	< 768
Sr-89	-0.15 ± 0.66	< 0.68
Sr-90	0.22 ± 0.28	< 0.55

The error given is the probable counting error at the 95% confidence level. The less than value (<) is based on a 4.66 sigma counting error for the background sample.

Gamma *

Be-7	-12.51 ± 12.83	< 26.69
Mn-54	0.89 ± 1.68	< 2.68
Co-58	1.12 ± 1.53	< 3.44
Co-60	1.68 ± 1.67	< 2.81
Fe-59	3.12 ± 3.84	< 4.61
Zn-65	-0.14 ± 3.29	< 3.32
Zr-Nb-95	0.69 ± 1.29	< 3.28
Ru-103	-1.52 ± 1.62	< 4.12
Cs-134	-0.69 ± 1.40	< 2.59
Cs-137	2.02 ± 1.78	< 3.36
Ba-La-140	2.59 ± 1.80	< 5.64

*For those isotopes where both an activity and an MDC value are given, the MDC value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity is given, but no MDC value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

Approved:

B. Grob
Laboratory Manager

Sincerely,

SA Coorlim
Quality Assurance

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

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Dr. Kjell Johansen
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100 -778
DATE: 08-13-07
SAMPLES RECEIVED: 06-11-07

Ground Water, analyses for gamma emitting isotopes on solid portions.

Lab Code	EXW- 3491
Date Collected	05-25-07
Location	SSD-B6.1

Isotope	Activity / MDC (pCi/gdry)	
Gamma *		
Be-7	0.177 ± 0.308	< 0.878
K-40	5.436 ± 1.102	-
Mn-54	0.011 ± 0.034	< 0.047
Co-58	0.014 ± 0.030	< 0.068
Co-60	0.259 ± 0.052	-
Fe-59	-0.074 ± 0.066	< 0.121
Zn-65	-0.036 ± 0.064	< 0.112
Zr-Nb-95	-0.007 ± 0.034	< 0.077
Ru-103	-0.012 ± 0.030	< 0.070
Cs-134	0.016 ± 0.037	< 0.066
Cs-137	1.751 ± 0.146	-
Ba-La-140	-0.003 ± 0.032	< 0.242
Bi-212	1.250 ± 0.573	-
Bi-214	0.287 ± 0.147	-
Pb-212	0.886 ± 0.104	-
Pb-214	0.435 ± 0.154	-
Ra-226	0.966 ± 0.657	< 1.219
Ac-228	1.162 ± 0.301	-

*For those isotopes where both an activity and an MDC value are given, the MDC value should be considered as the reportable value (based on a 4.66 sigma counting error for the background sample) and the activity is presented for information only. For isotopes where an activity is given, but no MDC value, the activity is considered the reportable value and the error given is the probable counting error at the 95% confidence level.

Approved:

B. Grot
Laboratory Manager

Sincerely,

SA Coorlim
Quality Assurance

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Dr. Kjell Johansen
FPL Energy
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

LABORATORY REPORT NO.: 8006-100-821
DATE: 05-02-2008
SAMPLES RECEIVED: 03-18-2008
PURCHASE ORDER NO.:

Below are the results of the analyses for tritium in two ground water samples.

Sample Description	Lab Code	Concentration / LLD (pCi/L) H-3	Collection Date
GW-09 (1Z-361A)	EXWW-1111	1,356 ± 134 / < 175	12-13-07
GW-09 (1Z-361B)	EXWW-1112	194 ± 93 / < 175	12-13-07

The error given is the probable counting error at the 95% confidence level. The less than (<) value, is based on 4.66 sigma counting error for the background sample.

Sincerely,

Bronia Grob, M. S.
Laboratory Manager

E-mail: Kjell_Johansen@fpl.com

APPROVED BY _____
Tony Coorlim,
Quality Assurance

APPENDIX 3

University of Waterloo (Ontario)
Environmental Isotope Laboratory
Precipitation Monitoring Results for the Point Beach Nuclear Plant
Reporting Period: January – December 2007

Client: Johansen
Nuclear Management Company

ISO# 2007427
Location: T-1
1 for 3H

Environmental Isotope Lab
2007-07-20

Sample	Lab#	3H	Result	Repeat
E-02 6/6/07 Rainwater	156599	X	11.6 +/- 8	15.7 +/- 8

Tritium is reported in Tritium Units.
1TU = 3.221 Picocuries/L per IAEA, 2000 Report
1TU = 0.11919 Becquerels/L per IAEA, 2000 Report

To Contact EIL:
mepatton@uwaterloo.ca
or phone:
519 888 4732

Robert J. Drimmie
Laboratory Manager
rdrimmie@uwaterloo.ca
519 888 4567 ext 32580

#	Sample	Lab#	3H	Result	Repeat	
1	E-02 (SBCC Rain Water) 08/09/07	160736	X	<6.0 +/- 8.0		500ml bottle

Tritium is reported in Tritium Units.
1TU = 3.221 Picocuries/L per IAEA, 2000 Report.
1TU = 0.11919 Becquerels/L per IAEA, 2000 Report.

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Client: Johansen
Point Beach Nuclear Plant

ISO# 2007632
Location: T 9-
1 for 3H

Environmental Isotope Lab
10/12/2007

#	Sample	Lab#	3H	Result	± 1σ	Repeat	± 1σ
1	E-02 (SBCC Rain Water) 9-5-07 0805	162124	X	9.0	8.0	9.5	8.0

Tritium is reported in Tritium Units.
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1TU = 0.11919 Becquerels/L per IAEA, 2000 Report.

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Client: Johansen
FPL Energy Point Beach Nuclear Plant

ISO# 2007735
Location: T - 2

Environmental Isotope Lab
07/11/2007

#	Sample	Lab#	3H	Result	± 1σ	Repeat	± 1σ
1	E-02 (SBCC Rain Water) 10/03/07	164532	X	17.4	8.0		

Tritium is reported in Tritium Units.
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Client: Johansen
FPL Energy Point Beach Nuclear Plant

ISO# 2007751
Location: T - 14
1 for 3H

Environmental Isotope Lab
07/11/2007

#	Sample	Lab#	^3H	Result	± 1σ	Repeat	± 1σ
1	E-02 (SBCC Rain Water) 0850 10/18/07	164965	X	13.9	8.0		

Tritium is reported in Tritium Units.
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1TU = 0.11919 Becquerels/L per IAEA, 2000 Report.

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