Exelon Generation Company, LLC
Dresden Nuclear Power Station
6500 North Dresden Road
Morris, IL 60450-9765

www.exeloncorp.com

Exelon Nuclear

May 14, 2010

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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Dresden Nuclear Power Station, Units 1, 2, and 3
Facility Operating License No. DPR-2
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-010, 50-237, and 50-249

Subject: Dresden Nuclear Power Station 2009 Annual Radiological Environmental Operating Report

Enclosed is the Exelon Dresden Nuclear Power Station 2009 Annual Radiological Environmental Operating Report, submitted in accordance with Section 6.9.A.3 of the Unit 1 Dresden Nuclear Power Station Technical Specifications and Section 5.6.2, "Annual Radiological Environmental Operating Report," of the Units 2 and 3 Technical Specifications. This report provides the results of the radiological environmental and meteorological monitoring programs for the 2009 calendar year.

In addition, Appendix F of the report contains the results of groundwater monitoring conducted in accordance with Exelon's Radiological Groundwater Protection Program, which is a voluntary program implemented in 2009. This information is being reported in accordance with a nuclear industry initiative.

Should you have any questions concerning this letter, please contact Mr. Dennis Leggett, Regulatory Assurance Manager, at (815) 416-2800.

Respectfully,

Tim Hanley
Site Vice President
Dresden Nuclear Power Station

Attachment - Annual Radiological Environmental Operating Report

cc: Regional Administrator - NRC Region III
NRC Senior Resident - Dresden Nuclear Power Station

IE25
LIM500
NRR
FSME

Docket No: 50-010
50-237
50-249

DRESDEN NUCLEAR POWER STATION
UNITS 1, 2 and 3

Annual Radiological
Environmental Operating Report

1 January Through 31 December 2009

Prepared By

Teledyne Brown Engineering
Environmental Services

Exelon SM
Nuclear

Dresden Nuclear Power Station
Morris, IL 60450

May 2010

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I. Summary and Conclusions

This report on the Radiological Environmental Monitoring Program conducted for the Dresden Nuclear Power Station (DNPS) by Exelon covers the period 1 January 2009 through 31 December 2009. During that time period, 1,940 analyses were performed on 1,809 samples. In assessing all the data gathered for this report it was concluded that the operation of DNPS had no adverse radiological impact on the environment.

Surface water samples were analyzed for concentrations of gross beta, tritium and gamma emitting nuclides. Ground water samples were analyzed for concentrations of tritium and gamma emitting nuclides. No anthropogenic gamma emitting nuclides were detected. Gross beta and tritium activities detected were consistent with those detected in previous years.

Fish (commercially and recreationally important species), sediment and dredging spoils samples were analyzed for concentrations of gamma emitting nuclides. No fission or activation products were detected in fish. Sediment and dredging spoils samples had Cesium-137 concentrations consistent with levels observed in previous years. No plant-produced fission or activation products were found in sediment.

Air particulate samples were analyzed for concentrations of gross beta and gamma emitting nuclides. Gross beta results at the indicator locations were consistent with those at the control location. No fission or activation products were detected.

High sensitivity I-131 analyses were performed on weekly air samples. All results were less than the minimum detectable activity.

Cow milk samples were analyzed for concentrations of I-131 and gamma emitting nuclides. All I-131 results were below the minimum detectable activity. Concentrations of naturally occurring K-40 were found. No fission or activation products were found.

Food product samples were analyzed for concentrations of gamma emitting nuclides. No fission or activation products were detected.

Environmental gamma radiation measurements were performed quarterly using thermoluminescent dosimeters. Levels detected were consistent with those observed in previous years.

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II. Introduction

The Dresden Nuclear Power Station (DNPS), consisting of one retired reactor and two operating boiling water reactors owned and operated by Exelon Corporation, is located in Grundy County, Illinois. Unit No. 1 went critical in 1960 and was retired in 1978. Unit No. 2 went critical on 16 June 1970. Unit No. 3 went critical on 02 November 1971. The site is located in northern Illinois, approximately 12 miles southwest of Joliet, Illinois at the confluence of the Des Plaines and Kankakee Rivers where they form the Illinois River.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) Global Dosimetry, and Environmental Inc. Midwest Laboratory (EIML) on samples collected during the period 1 January 2009 through 31 December 2009.

An assessment of the station's radioactive effluent monitoring results and radiation dose via the principle pathways of exposure resulting from plant emissions of radioactivity including the maximum noble gas gamma and beta air doses in the unrestricted area, an annual summary of meteorological conditions including wind speed, wind direction, and atmospheric stability, and the result of the 40CFR190 uranium fuel cycle dose analysis for the calendar year are published in the station's Annual Radioactive Effluent Release Report.

A. Objective of the Radiological Environmental Monitoring Program (REMP)

The objectives of the REMP are to:

1. Provide data on measurable levels of radiation and radioactive materials in the site environs.

2. Evaluate the relationship between quantities of radioactive material released from the plant and resultant radiation doses to individuals from principal pathways of exposure.

B. Implementation of the Objectives

The implementation of the objectives is accomplished by:

1. Identifying significant exposure pathways.

2. Establishing baseline radiological data of media within those pathways.

3. Continuously monitoring those media before and during Station operation to assess Station radiological effects (if any) on man and the environment.

III. Program Description

A. Sample Collection

Samples for the DNPS REMP were collected for Exelon Nuclear by EIML. This section describes the general collection methods used by EIML to obtain environmental samples for the DNPS REMP in 2009. Sample locations and descriptions can be found in Table B–1 and Figures B–1 and B-2, Appendix B. The collection methods used by EIML are listed in Table B-2.

Aquatic Environment

The aquatic environment was evaluated by performing radiological analyses on samples of surface water, ground water, fish, sediment, and dredging spoils. Samples were collected from three surface water locations (D-21, D-52 and D-57) and composited for analysis. Control locations were D-52 and D-57. Samples were collected quarterly or more frequently from two well water locations (D-23 and D-35). All samples were collected in new unused plastic bottles, which were rinsed with source water prior to collection. Fish samples comprising the flesh of channel catfish, largemouth bass, common carp and freshwater drum were collected semiannually at two locations, D-28 and D-46 (Control). Sediment samples composed of recently deposited substrate were collected at one location semiannually, D-27. Samples were also collected from the spoils of dredging of the Illinois River downstream of Dresden Nuclear Power Station in 2009.

Atmospheric Environment

The atmospheric environment was evaluated by performing radiological analyses on samples of air particulate, airborne iodine, milk, and food products. Airborne iodine and particulate samples were collected at thirteen locations (D-01, D-02, D-03, D-04, D-07, D-08, D-10, D-12, D-14, D-45, D-53, D-55 and D-56). The control location was D-12. Airborne iodine and particulate samples were obtained at each location, using a vacuum pump with charcoal and glass fiber filters attached. The pumps were run continuously and sampled air at the rate of approximately one cubic foot per minute. The air filters and air iodine samples were replaced weekly and sent to the laboratory for analysis.

Milk samples were collected biweekly at one control location (D-25) from May through October, and monthly from November through April. There are no milking animals within 10 km of the site. All samples were collected in new unused two gallon plastic bottles from the bulk tank at

each location, preserved with sodium bisulfite, and shipped promptly to the laboratory.
Food products were collected annually in September at five locations (D-Control, D-Quad 1, D-Quad 2, D-Quad 3, and D-Quad 4). The control location was D-Control. Various types of samples were collected and placed in new unused plastic bags, and sent to the laboratory for analysis.

Ambient Gamma Radiation

Direct radiation measurements were made using CaF_2 and LiF thermoluminescent dosimeters (TLD). Each location consisted of 2 TLD sets. The TLD locations were placed on and around the DNPS site as follows:

An inner ring consisting of 16 locations (D-101, D-102, D-103, D-104, D-105, D-106, D-107, D-108, D-109, D-110, D-111, D-112A, D-113, D-114, D-115 and D-116) at or near the site boundary.

An outer ring consisting of 16 locations (D-201, D-202, D-203, D-204, D-205, D-206, D-207, D-208, D-209, D-210, D-211, D-212, D-213, D-214, D-215 and D-216) approximately 5 to 10 km from the site.

An other set consisting of TLDs at the 12 air sampler locations (D-01, D-02, D-03, D-04, D-07, D-08, D-10, D-14, D-45, D-53, D-55, and D-56).

The balance of one location (D-12) representing the control area.

Two TLDs – each comprised of two CaF_2 and two LiF thermoluminescent phosphors enclosed in plastic – were placed at each location. The TLDs were exchanged quarterly and sent to Global Dosimetry for analysis.

B. Sample Analysis

This section describes the general analytical methodologies used by TBE and EIML to analyze the environmental samples for radioactivity for the DNPS REMP in 2009. The analytical procedures used by the laboratories are listed in Table B-2.

In order to achieve the stated objectives, the current program includes the following analyses:

1. Concentrations of beta emitters in surface water and air particulates.

2. Concentrations of gamma emitters in ground and surface water, air

particulates, milk, fish, sediment and vegetation.

3. Concentrations of tritium in ground and surface water.

4. Concentrations of I-131 in air and milk.

5. Ambient gamma radiation levels at various site environs.

C. Data Interpretation

For the purpose of this report, Dresden Nuclear Power Station was considered operational at initial criticality. In addition, data were compared to previous years' operational data for consistency and trending. Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

The lower limit of detection (LLD) was defined as the smallest concentration of radioactive material in a sample that would yield a net count (above background) that would be detected with only a 5% probability of falsely concluding that a blank observation represents a "real" signal. The LLD was intended as a before the fact estimate of a system (including instrumentation, procedure and sample type) and not as an after the fact criteria for the presence of activity. All analyses were designed to achieve the required DNPS detection capabilities for environmental sample analysis.

The minimum detectable concentration (MDC) is calculated the same as the LLD with the exception that the measurement is an after the fact estimate of the presence of activity.

2. Net Activity Calculation and Reporting of Results

Net activity for a sample was calculated by subtracting background activity from the sample activity. Since the REMP measures extremely small changes in radioactivity in the environment, background variations may result in sample activity being lower than the background activity effecting a negative number. An MDC was reported in all cases where positive activity was not detected.

Gamma spectroscopy results for each type of sample were grouped as follows:

For ground and surface water and vegetation 12 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Zr-95, Nb-95, I-131, Cs-134,

Cs-137, Ba-140, and La-140 were reported.
For fish, sediment, dredge spoil, air particulate and milk 11 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Nb-95, Zr-95, Cs-134, Cs-137, Ba-140 and La-140 were reported.

Means and standard deviations of the results were calculated. The standard deviations represent the variability of measured results for different samples rather than single analysis uncertainty.

D. Program Exceptions

For 2009 the DNPS REMP had a sample recovery rate in excess of 99%. Sample anomalies and missed samples are listed in the tables below:

Table D-1 LISTING OF SAMPLE ANOMALIES

Sample Type	Location Code	Collection Date	Reason
AP/I	D-01	02/27/09 – 03/06/09	Low timer reading of 162.5 hours; cause is unknown.
AP	D-08	03/20/09 – 03/27/09	Heavy accumulation on particulate filter; likely due to nearby field burning activities.
AP	D-55	03/20/09 – 03/27/09	Heavy accumulation on particulate filter; likely due to nearby construction activities.
AP/I	D-12	03/27/09 – 04/03/09	Low timer reading of 155.9 hours; cause is unknown.
AP/I	D-01	04/03/09 – 04/10/09	Low timer reading of 162.9 hours; cause is unknown.
AP/I	D-07	04/03/09 – 04/10/09	Low timer reading of 133.6 hours; cause is unknown.
AP/I	D-04	05/01/09 – 05/08/09	Estimated collection time of 165.7 hours due to failed timer. Timer was replaced.
AP/I	D-12	05/08/09 – 05/15/09	Low timer reading of 158.2 hours; likely due to storms in the area.

Table D-1 LISTING OF SAMPLE ANOMALIES (continued)

Sample Type	Location Code	Collection Date	Reason
AP/I	D-02	12/18/09 – 12/24/09	Estimated collection time of 142.1 hours due to failed timer. Timer was replaced.
SW	D-52	01/02/09 – 01/30/09	01/16/09 aliquot was not drawn; sample point frozen over.
SW	D-57	12/26/08 – 01/30/09	Composite sampler damaged by ice on river. Grab samples drawn 01/09/09 – 01/23/09 and added to composite until sampler repaired.
TLD	D-207-2	01/02/09 – 03/27/09	TLD on utility pole that fell during storm, placed TLD on new pole in same location.

Table D-2 LISTING OF MISSED SAMPLES

Sample Type	Location Code	Collection Date	Reason

There were no missed samples for 2009.

Each program exception was reviewed to understand the causes of the program exception. Sampling and maintenance errors were reviewed with the personnel involved to prevent recurrence. Occasional equipment breakdowns and power outages were unavoidable.

The overall sample recovery rate indicates that the appropriate procedures and equipment are in place to assure reliable program implementation.

E. Program Changes

There were no program changes for 2009.

IV. Results and Discussion

A. Aquatic Environment

1. Surface Water

Samples were composited or taken weekly and composited for analysis at three locations (D-21, D-52, and D-57). Of these locations only D-21 located downstream, could be affected by Dresden's effluent releases. The following analyses were performed:

Gross Beta

Monthly composites from all locations were analyzed for concentrations of gross beta (Table C–I.1, Appendix C). The values ranged from <3.2 to 10.9 pCi/l. Concentrations detected were consistent with those detected in previous years (Figures C-1, C–2, and C–3, Appendix C).

Tritium

Quarterly composites from all locations were analyzed for tritium activity (Table C–I.2, Appendix C). The indicator values ranged from <168 to 573 pCi/L. Control values ranged from <161 to 621 pCi/L. Concentrations detected were consistent with those detected in previous years (Figures C–4, C–5, and C-6, Appendix C).

Gamma Spectrometry

Monthly composites from all locations were analyzed for gamma emitting nuclides (Table C–I.3, Appendix C). No nuclides were detected, and all required LLDs were met.

2. Ground Water

Quarterly or more frequent grab samples were collected at two locations (D-23 and D-35). These locations could be affected by Dresden's effluent releases and by sources upstream on the Kankakee River. The following analyses were performed:

Tritium

All samples were analyzed for tritium activity (Table C–II.1, Appendix C). D-35 values ranged from <172 to <181 pCi/L. D-23

values ranged from 250 to 725 pCi/L. Concentrations detected were consistent with those detected in previous years (Figure C–7, Appendix C).

Gamma Spectrometry

All samples were analyzed for gamma emitting nuclides (Table C–II.2, Appendix C). No nuclides were detected, and all required LLDs were met.

3. Fish

Fish samples comprised of channel catfish, largemouth bass, common carp and freshwater drum were collected at two locations (D-28 and D-46) semiannually. Location D-28 could be affected by Dresden's effluent releases. The following analysis was performed:

Gamma Spectrometry

The edible portion of fish samples from both locations was analyzed for gamma emitting nuclides (Table C–III.1, Appendix C). Naturally occurring K-40 was found at all stations and ranged from 2,210 to 3,590 pCi/kg wet. No fission or activation products were detected.

4. Sediment

Aquatic sediment samples were collected at one location (D-27) semiannually. This downstream location could be affected by Dresden's effluent releases. The following analysis was performed:

Gamma Spectrometry

Sediment samples from the location were analyzed for gamma emitting nuclides (Table C–IV.1, Appendix C). Cesium-137 was detected in one sample.

Concentrations of the fission product Cs-137 was found in one sample at a concentration of 87 pCi/kg dry. The activity detected was consistent with those detected in previous years and is likely due to fallout from above-ground nuclear weapons testing. No other fission or activation products were detected.

5. Dredging Spoils

Dredging Spoil samples were collected when the river was dredged in 2009. The following analysis was performed:

Gamma Spectrometry

Dredging Spoil samples were analyzed for gamma emitting nuclides (Table C–IV.2, Appendix C). Cesium-137 was detected in four of the six samples analyzed and ranged from concentrations of 95 to 142 pCi/kg dry. The activity detected was consistent with those detected in previous years and is likely due to fallout from above-ground nuclear weapons testing. No other fission or activation products were detected.

B. Atmospheric Environment

1. Airborne

a. Air Particulates

Continuous air particulate samples were collected from 13 locations on a weekly basis. The 13 locations were separated into four groups: On-site samplers (D-01, D-02, D-03), Near-field samplers within 4 km of the site (D-04, D-07, D-45, D-53 and D-56), Far-field samplers between 4 and 10 km from the site (D-08, D-10, D-14 and D-55) and the Control sampler between 10 and 30 km from the site (D-12). The following analyses were performed:

Gross Beta

Weekly samples were analyzed for concentrations of beta emitters (Table C–V.1 and C–V.2, Appendix C).

Detectable gross beta activity was observed at all locations. Comparison of results among the four groups aid in determining the effects, if any, resulting from the operation of DNPS. The results from the On-Site locations ranged from 7 to 39 E–3 pCi/m^3 with a mean of 20 E–3 pCi/m^3. The results from the Near-Field locations ranged from 7 to 42 E–3 pCi/m^3 with a mean of 20 E–3 pCi/m^3. The results from the Far-Field locations ranged from 8 to 43 E–3 pCi/m^3 with a mean of 20 E–3 pCi/m^3. The results from the Control location ranged from 8 to 42 E–3 pCi/m^3 with a mean of 20

E–3 pCi/m^3. Comparison of the 2009 air particulate data with previous years data indicate no effects from the operation of DNPS. In addition a comparison of the weekly mean values for 2009 indicate no notable differences among the four groups (Figures C–8 through C-14, Appendix C).

Gamma Spectrometry

Samples were composited quarterly and analyzed for gamma emitting nuclides (Table C–V.3, Appendix C). Naturally occurring Be-7 due to cosmic ray activity was detected in 48 of 52 samples and ranged from 43.4 to 114 E–3 pCi/m^3. K-40 was also detected in 1 sample at a concentration of 20.7 E–3 pCi/ m^3. No anthropogenic nuclides were detected, and all required LLDs were met.

b. Airborne Iodine

Continuous air samples were collected from 13 locations (D-01, D-02, D-03, D-04, D-07, D-08, D-10, D-12, D-14, D-45, D-53, D-55 and D-56) and analyzed weekly for I-131 (Table C–VI.1, Appendix C). Only naturally occuring nuclides were detected, and all required LLDs were met.

2. Terrestrial

a. Milk

There are no indicator locations within 10 kilometers of the station. Samples were collected from one control location (D-25) biweekly May through October and monthly November through April. The following analyses were performed:

Iodine-131

Milk samples from the location were analyzed for concentrations of I-131 (Table C–VII.1, Appendix C). No nuclides were detected, and all required LLDs were met.

Gamma Spectrometry

Each milk sample was analyzed for concentrations of gamma emitting nuclides (Table C–VII.2, Appendix C).

Naturally occurring K-40 activity was found in all nineteen samples. The activities ranged from 1,100 to 1,370 pCi/l. No other nuclides were detected, and all required LLDs were met.

b. Food Products

Food product samples were collected at five locations (D-Control, D-Quad 1, D-Quad 2, D-Quad 3 and D-Quad 4) when available. Four locations, (D-Quad 1, D-Quad 2, D-Quad 3 and D-Quad 4) could be affected by Dresden's effluent releases. The following analysis was performed:

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–VIII.1, Appendix C). Only naturally occuring nuclides were detected, and all required LLDs were met.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Global Dosimetry 110 Environmental (CaF_2 and LiF) thermoluminescent dosimeters. Forty-five TLD locations were established around the site. Results of TLD measurements are listed in Tables C–IX.1 to C–IX.3, Appendix C.

Most TLD measurements were below 30 mR/quarter, with a range of 19 to 35 mR/quarter. A comparison of the Inner Ring, Outer Ring, and Other locations' data to the Control Location data, indicate that the ambient gamma radiation levels from the Control location (D-12-01, D-12-02) were comparable.

D. Land Use Survey

A Land Use Survey conducted on 04 August 2009 around the Dresden Nuclear Power Station (DNPS) was performed by EIML for Exelon Nuclear to comply with Section 12.6.2 of the Dresden Offsite Dose Calculation Manual (ODCM). The purpose of the survey was to document the nearest resident or industrial facility, milk producing animal, and livestock in each of the sixteen 22 ½ degree sectors within 10 km around the site. There were no changes required to the DNPS REMP as a result of this survey. The results of this survey are summarized below.

Distance in Miles from the DNPS Reactor Buildings			
Sector	Residence Miles	Livestock Miles	Milk Farm Miles
A N	1.5	1.4	-
B NNE	0.8	6.0	-
C NE	0.8	5.8	-
D ENE	0.7	1.7	-
E E	1.1	-	-
F ESE	1.0	-	-
G SE	0.6	-	-
H SSE	0.5	-	-
J S	0.5	-	16.0
K SSW	3.3	-	-
L SW	3.6	-	11.4
M WSW	5.8	-	-
N W	3.5	0.5	-
P WNW	3.7	0.5	-
Q NW	2.6	0.5	-
R NNW	0.8	1.0	-

E. Errata Data

There was no errata data discovered in 2009.

F. Summary of Results – Inter-Laboratory Comparison Program

The primary laboratory analyzed Performance Evaluation (PE) samples of air particulate, air iodine, milk, soil, vegetation and water matrices (Appendix D). The PE samples, supplied by Analytics Inc., Environmental Resource Associates (ERA) and DOE's Mixed Analyte Performance Evaluation Program (MAPEP), were evaluated against the following pre-set acceptance criteria:

1. Analytics Evaluation Criteria

   Analytics' evaluation report provides a ratio of laboratory results and Analytics' known value. Since flag values are not assigned by Analytics, TBE-ES evaluates the reported ratios based on internal QC requirements, which are based on the DOE MAPEP criteria.

2. ERA Evaluation Criteria

   ERA's evaluation report provides an acceptance range for control and warning limits with associated flag values. ERA's acceptance limits are established per the USEPA, NELAC, state specific PT program requirements or ERA's SOP for the Generation of

Performance Acceptance Limits, as applicable. The acceptance limits are either determined by a regression equation specific to each analyte or a fixed percentage limit promulgated under the appropriate regulatory document.

3. DOE Evaluation Criteria

   MAPEP's evaluation report provides an acceptance range with associated flag values.

   The MAPEP defines three levels of performance: Acceptable (flag = "A"), Acceptable with Warning (flag = "W"), and Not Acceptable (flag = "N"). Performance is considered acceptable when a mean result for the specified analyte is ± 20% of the reference value. Performance is acceptable with warning when a mean result falls in the range from ±20% to ±30% of the reference value (i.e., 20% < bias < 30%). If the bias is greater than 30%, the results are deemed not acceptable.

For the primary laboratory, 17 out of 18 analytes met the specified acceptance criteria. One sample did not meet the specified acceptance criteria for the following reason:

1. Teledyne Brown Engineering's Analytics June 2009 Zn-65 in AP result of 137 pCi/L was higher than the known value of 101 pCi/L, resulting in a found to known ratio of 1.36. NCR 09-23 was initiated to investigate this failure. The failure appears to be a result of a slightly high bias on Detector 7. A recount on Detector 17 resulted in a Zn-65 result of 101 pCi/L. The detector has been tagged out-of-service until a recalibration can be performed. Detector 7 is not used for client samples.

For the secondary laboratory, Environmental, Inc., 11 out of 14 analytes met the specified acceptance criteria. Three samples did not meet the specified acceptance criteria for the following reasons:

1. Environmental Inc.'s ERA April 2009 Cs-137 in water result of 147.7 pCi/L exceeded the lower control limit of 151.0 pCi/L. All gamma emitters showed a low bias. A large plastic burr found on the base of the Marinelli kept the beaker from sitting directly on the detector. Recounting in a different beaker gave an acceptable result of 155.33 ± 14.55 pCi/L.
2. Environmental Inc.'s ERA April 2009 H-3 in water result of 22819 pCi/L exceeded the upper control limit of 22300 pCi/L. A recount of

the original vials averaged 23,009 pCi/L. Reanalysis results were acceptable at 19,170 pCi/L. No cause could be found for the failure.

3. Environmental Inc.'s MAPEP January 2009 Sr-90 in AP result of 0.93 exceeded the upper control limit of 0.83. Reanalysis results were acceptable at 0.54 ± 0.12 Bq/filter. No cause could be found for the failure.
4. Environmental Inc.'s MAPEP July 2009 Sr-90 in soil result of 310.5 Bq/kg exceeded the lower control limit of 319 Bq/kg. Reanalysis results were acceptable at 363.3 Bq/kg. Incomplete separation of strontium from calcium could result in a higher recovery percentage and consequently lower reported activity.

The Inter-Laboratory Comparison Program provides evidence of "in control" counting systems and methods, and that the laboratories are producing accurate and reliable data.

APPENDIX A

RADIOLOGICAL ENVIRONMENTAL MONITORING REPORT SUMMARY

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR DRESDEN NUCLEAR POWER STATION, 2009

NAME OF FACILITY: DRESDEN **DOCKET NUMBER: 50-010 50-237 & 50-249**
LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2009**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCI/LITER)	GR-B	36	4	7.8 (12/12) (4.8/10.9)	6.9 (22/24) (4.0/10.4)	7.8 (12/12) (4.8/10.9)	D-21 INDICATOR IL RIVER AT EJ&E BRIDGE 1.4 MILES WNW OF SITE	0
	H-3	12	2000	359 (2/4) (181/537)	560 (3/8) (465/621)	560 (3/4) (465/621)	D-57 CONTROL KANKAKEE RIVER AT WILL ROAD(CONTROL) 2.0 MILES SE OF SITE	0
	GAMMA	36						
	MN-54		15	<LLD	<LLD	-		0
	CO-58		15	<LLD	<LLD	-		0
	FE-59		30	<LLD	<LLD	-		0
	CO-60		15	<LLD	<LLD	-		0
	ZN-65		30	<LLD	<LLD	-		0
	NB-95		15	<LLD	<LLD	-		0

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR DRESDEN NUCLEAR POWER STATION, 2009

NAME OF FACILITY: DRESDEN **DOCKET NUMBER: 50-010 50-237 & 50-249**

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2009**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCI/LITER)	ZR-95		30	<LLD	<LLD	-		0
	I-131		15	<LLD	<LLD	-		0
	CS-134		15	<LLD	<LLD	-		0
	CS-137		18	<LLD	<LLD	-		0
	BA-140		60	<LLD	<LLD	-		0
	LA-140		15	<LLD	<LLD	-		0
GROUND WATER (PCI/LITER)	H-3	16	2000	409 (12/16) (250/725)	NA	409 (12/12) (250/725)	D-23 INDICATOR THORSEN WELL 0.7 MILES S OF SITE	0
	GAMMA	16						
	MN-54		15	<LLD	NA	-		0

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FRACTION OF DETECTABLE MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (F)

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR DRESDEN NUCLEAR POWER STATION, 2009

NAME OF FACILITY: DRESDEN				DOCKET NUMBER:		50-010	50-237 & 50-249	
LOCATION OF FACILITY: MORRIS IL				REPORTING PERIOD:		ANNUAL 2009		
				INDICATOR LOCATIONS	CONTROL LOCATION	LOCATION WITH HIGHEST ANNUAL MEAN (M)		
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
GROUND WATER (PCI/LITER)	CO-58		15	<LLD	NA	-		0
	FE-59		30	<LLD	NA	-		0
	CO-60		15	<LLD	NA	-		0
	ZN-65		30	<LLD	NA	-		0
	NB-95		15	<LLD	NA	-		0
	ZR-95		30	<LLD	NA	-		0
	I-131		15	<LLD	NA	-		0
	CS-134		15	<LLD	NA	-		0

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MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
GROUND WATER (PCI/LITER)	CS-137		18	<LLD	NA	-		0
	BA-140		60	<LLD	NA	-		0
	LA-140		15	<LLD	NA	-		0
FISH (PCI/KG WET)	GAMMA	8						
	MN-54		130	<LLD	<LLD	-		0
	CO-58		130	<LLD	<LLD	-		0
	FE-59		260	<LLD	<LLD	-		0
	CO-60		130	<LLD	<LLD	-		0
	ZN-65		260	<LLD	<LLD	-		0

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LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2009**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
FISH (PCI/KG WET)	NB-95		NA	<LLD	<LLD	-		0
	ZR-95		NA	<LLD	<LLD	-		0
	CS-134		130	<LLD	<LLD	-		0
	CS-137		150	<LLD	<LLD	-		0
	BA-140		NA	<LLD	<LLD	-		0
	LA-140		NA	<LLD	<LLD	-		0
SEDIMENT (PCI/KG DRY)	GAMMA	2						
	MN-54		NA	<LLD	NA	-		0
	CO-58		NA	<LLD	NA	-		0

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LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2009**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SEDIMENT (PCI/KG DRY)	FE-59		NA	<LLD	NA	-		0
	CO-60		NA	<LLD	NA	-		0
	ZN-65		NA	<LLD	NA	-		0
	NB-95		NA	<LLD	NA	-		0
	ZR-95		NA	<LLD	NA	-		0
	CS-134		150	<LLD	NA	-		0
	CS-137		180	87 (1/2)	NA	87 (1/2)	D-27 INDICATOR DRESDEN LOCK AND DAM - DOWNSTREAM 0.8 MILES NW OF SITE	0
	BA-140		NA	<LLD	NA	-		0

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LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2009**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SEDIMENT (PCI/KG DRY)	LA-140		NA	<LLD	NA	-		0
DREDGE SPOILS (PCI/KG DRY)	GAMMA	6						
	MN-54		NA	<LLD	NA	-		0
	CO-58		NA	<LLD	NA	-		0
	FE-59		NA	<LLD	NA	-		0
	CO-60		NA	<LLD	NA	-		0
	ZN-65		NA	<LLD	NA	-		0
	NB-95		NA	<LLD	NA	-		0
	ZR-95		NA	<LLD	NA	-		0

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LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2009**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
DREDGE SPOILS (PCI/KG DRY)	CS-134		150	<LLD	NA	-		0
	CS-137		180	122 (4/6) (95/142)	NA	142 (1/1)	S-01D-NORTH SIDE INDICATOR PILE AT DRESDEN LOCK AND DAM 0.8 MILES NW OF SITE	0
	BA-140		NA	<LLD	NA	-		0
	LA-140		NA	<LLD	NA	-		0
AIR PARTICULATE (E-3 PCI/CU.METER)	GR-B	676	10	20 (623/624) (7/43)	20 (52/52) (8/42)	21 (52/52) (8/41)	D-55 INDICATOR RIDGE ROAD 4.3 MILES N OF SITE	0
	GAMMA MN-54	52	NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	FE-59		NA	<LLD	<LLD	-		0

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NAME OF FACILITY: DRESDEN **DOCKET NUMBER: 50-010 50-237 & 50-249**

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2009**

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
AIR PARTICULATE (E-3 PCI/CU.METER)	CO-60		NA	<LLD	<LLD	-		0
	ZN-65		NA	<LLD	<LLD	-		0
	NB-95		NA	<LLD	<LLD	-		0
	ZR-95		NA	<LLD	<LLD	-		0
	CS-134		50	<LLD	<LLD	-		0
	CS-137		60	<LLD	<LLD	-		0
	BA-140		NA	<LLD	<LLD	-		0
	LA-140		NA	<LLD	<LLD	-		0

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MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (M) (F) RANGE	CONTROL LOCATION MEAN (M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
AIR IODINE (E-3 PCI/CU.METER)	GAMMA I-131	676	70	<LLD	<LLD	-		0
MILK (PCI/LITER)	I-131	19	1	NA	<LLD	-		0
	GAMMA MN-54	19	NA	NA	<LLD	-		0
	CO-58		NA	NA	<LLD	-		0
	FE-59		NA	NA	<LLD	-		0
	CO-60		NA	NA	<LLD	-		0
	ZN-65		NA	NA	<LLD	-		0
	NB-95		NA	NA	<LLD	-		0

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MILK (PCI/LITER)	ZR-95		NA	NA	<LLD	-		0
	CS-134		15	NA	<LLD	-		0
	CS-137		18	NA	<LLD	-		0
	BA-140		60	NA	<LLD	-		0
	LA-140		15	NA	<LLD	-		0
VEGETATION (PCI/KG WET)	GAMMA	10						
	MN-54		NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	FE-59		NA	<LLD	<LLD	-		0

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NAME OF FACILITY: DRESDEN				DOCKET NUMBER:		50-010	50-237 & 50-249	
LOCATION OF FACILITY: MORRIS IL				REPORTING PERIOD:		ANNUAL 2009		
				INDICATOR LOCATIONS	CONTROL LOCATION	LOCATION WITH HIGHEST ANNUAL MEAN (M)		
MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	MEAN (M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
VEGETATION (PCI/KG WET)	CO-60		NA	<LLD	<LLD	-		0
	ZN-65		NA	<LLD	<LLD	-		0
	NB-95		NA	<LLD	<LLD	-		0
	ZR-95		NA	<LLD	<LLD	-		0
	I-131		60	<LLD	<LLD	-		0
	CS-134		60	<LLD	<LLD	-		0
	CS-137		80	<LLD	<LLD	-		0
	BA-140		NA	<LLD	<LLD	-		0

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VEGETATION (PCI/KG WET)	LA-140		NA	<LLD	<LLD	-		0
DIRECT RADIATION (MILLI-ROENTGEN/QTR.)	TLD-QUARTERLY	360	NA	24.2 (352/352) (19/35)	21.6 (8/8) (20/24)	29.5 (4/4) (26/35)	D-201-2 INDICATOR (1) 4.8 MILES N	0

(1) STATION D-214-2 ALSO HAD THE HIGHEST DOSE WITH A MEAN OF 29.5 MREM

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APPENDIX B

LOCATION DESIGNATION, DISTANCE & DIRECTION, AND SAMPLE COLLECTION & ANALYTICAL METHODS

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Dresden Nuclear Power Station, 2009

Location	Location Description	Distance & Direction From Site
A.	Surface Water	
D-21	Illinois River at EJ&E Bridge (indicator)	1.4 miles WNW
D-52	DesPlaines River, Upstream (control)	1.1 miles ESE
D-57	Kankakee River at Will Road (control)	2.0 miles SE
B.	Ground/Well Water	
D-23	Thorsen Well (indicator)	0.7 miles S
D-35	Dresden Lock and Dam (indicator)	0.8 miles NW
C.	Milk - bi-weekly / monthly	
D-25	Biros Farm (control)	11.3 miles SW
D.	Air Particulates / Air Iodine	
D-01	Onsite 1 (indicator)	0.8 miles NW
D-02	Onsite 2 (indicator)	0.3 miles NNE
D-03	Onsite 3 (indicator)	0.4 miles S
D-04	Collins Road (indicator)	0.8 miles W
D-07	Clay Products (indicator)	2.6 miles S
D-08	Prairie Park (indicator)	3.8 miles SW
D-10	Goose Lake Village (indicator)	3.5 miles SSW
D-12	Lisbon (control)	10.5 miles NW
D-14	Channahon (indicator)	3.7 miles NE
D-45	McKinley Woods Road (indicator)	1.7 miles ENE
D-53	Grundy County Road (indicator)	2.1 miles SSE
D-55	Ridge Road (indicator)	4.3 miles N
D-56	Wildfeather (indicator)	1.7 miles SE
E.	Fish	
D-28	Dresden Pool of Illinois River, Downstream (indicator)	0.9 miles NNW
D-46	DesPlaines River, Upstream (control)	1.2 miles ESE
F.	Sediment	
D-27	Dresden Lock and Dam, Downstream (indicator)	0.8 miles NW
G.	Dredging Spoils	
S-01	Pile of dirt at Dresden Lock and Dam	0.8 miles NW
T-01	Pile of dirt at Dresden Lock and Dam	0.8 miles NW
H.	Vegetation	
Quadrant 1	Chris Locknar	2.8 miles NE
Quadrant 2	Robert Pagliano	3.2 miles SSE
Quadrant 3	Jim Bloom	3.9 miles SSW
Quadrant 4	J.D. Carmichael	1.6 miles NNW
Control	Glasscock Farm	12.8 miles ENE

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Dresden Nuclear Power Station, 2009

Location	Location Description	Distance & Direction From Site
I. Environmental Dosimetry - TLD		
Inner Ring		
D-101-1 and -2		1.0 miles N
D-102-1 and -2		1.3 miles NNE
D-103-1 and -2		1.2 miles NE
D-104-1 and -2		1.7 miles ENE
D-105-1 and –2		1.5 miles E
D-106-1 and -2		1.1 miles ESE
D-107-1 and -2		1.4 miles SE
D-108-1 and -2		1.9 miles SSE
D-109-1 and -2		0.8 miles S
D-110-3 and -4		0.9 miles SSW
D-111-1 and -2		0.6 miles SW
D-112a-1 and -2		0.7 miles WSW
D-113-1 and -2		0.9 miles W
D-114-1 and -2		0.9 miles WNW
D-115-1 and -2		0.8 miles NW
D-116-1 and -2		1.0 miles NNW
Outer Ring		
D-201-1 and -2		4.8 miles N
D-202-1 and -2		5.1 miles NNE
D-203-1 and -2		4.7 miles NE
D-204-1 and -2		5.0 miles ENE
D-205-1 and -2		4.0 miles E
D-206 -1 and -2		3.5 miles ESE
D-207-1 and -2		4.2 miles SE
D-208-1 and -2		4.9 miles SSE
D-209-1 and -2		4.1 miles S
D-210-1 and -2		4.9 miles SSW
D-211-1 and -2		4.8 miles SW
D-212-3 and -4		6.0 miles WSW
D-213-1 and -2		4.5 miles W
D-214-1 and -2		5.0 miles WNW
D-215-1 and -2		4.8 miles NW
D-216-1 and -2		4.9 miles NNW
Other		
D-01-1 and -2	Onsite 1	0.8 miles NW
D-02-1 and -2	Onsite 2	0.3 miles NNE
D-03-1 and -2	Onsite 3	0.4 miles S
D-04-1 and -2	Collins Road	0.8 miles W
D-07-1 and -2	Clay Products	2.6 miles S
D-08-1 and -2	Prairie Park	3.8 miles SW
D-10-1 and -2	Goose Lake Village	3.5 miles SSW
D-14-1 and -2	Channahon	3.7 miles NE
D-45-1 and -2	McKinley Woods Road	1.7 miles ENE
D-53-1 and -2	Grundy County Road	2.1 miles SSE
D-55-1 and -2	Ridge Road	4.3 miles N
D-56-1 and –2	Wildfeather	1.7 miles SE
Control		
D-12-1 and -2	Lisbon	10.5 miles NW

TABLE B-2: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Dresden Nuclear Power Station, 2009

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Surface Water	Gamma Spectroscopy	Monthly composite sample or monthly composite from weekly grab samples.	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual TBE, TBE-2023 Compositing of samples EIML-COMP-01 procedure for compositing water and milk samples	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis
Surface Water	Gross Beta	Monthly composite sample or monthly composite from weekly grab samples.	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual TBE, TBE-2023 Compositing of samples EIML-COMP-01 procedure for compositing water and milk samples	2 gallon	TBE, TBE-2008 Gross Alpha and/or gross beta activity in various matrices
Surface Water	Tritium	Quarterly composite of monthly composite samples.	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual TBE, TBE-2023 Compositing of samples EIML-COMP-01 procedure for compositing water and milk samples	500 ml	TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation
Ground Water	Gamma Spectroscopy	Quarterly grab samples.	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis
Ground Water	Tritium	Quarterly grab samples.	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	500 ml	TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation
Fish	Gamma Spectroscopy	Samples collected twice annually via electroshocking or other techniques	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	1000 grams (wet)	TBE-2007 Gamma emitting radioisotope analysis
Sediment	Gamma Spectroscopy	Semi-annual grab samples	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	500 grams (dry)	TBE, TBE-2007 Gamma emitting radioisotope analysis

TABLE B-2: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Dresden Nuclear Power Station, 2009

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Dredging Spoils	Gamma Spectroscopy	Annual grab samples if dredging occurred within 1 mile of Dresden Station during the year.	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	500 grams (dry)	TBE, TBE-2007 Gamma emitting radioisotope analysis
Air Particulates	Gross Beta	One-week of continuous air sampling through glass fiber filter paper	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	1 filter (approximately 280 cubic meters weekly)	TBE, TBE-2008 Gross Alpha and/or gross beta activity in various matrices
Air Particulates	Gamma Spectroscopy	Quarterly composite of each station	TBE, TBE-2023 Compositing of samples Env. Inc., AP-03 Procedure for compositing air particulate filters for gamma spectroscopic analysis	13 filters	TBE, TBE-2007 Gamma emitting radioisotope analysis
Air Iodine	Gamma Spectroscopy	One- or two-week composite of continuous air sampling through charcoal filter	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	1 filter (approximately 280 cubic meters weekly)	TBE, TBE-2007 Gamma emitting radioisotope analysis
Milk	I-131	Bi-weekly grab sample May through October. Monthly all other times	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	2 gallon	TBE, TBE-2012 Radioiodine in various matrices
Milk	Gamma Spectroscopy	Bi-weekly grab sample May through October. Monthly all other times	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis
Food Products	Gamma Spectroscopy	Annual grab samples.	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	1000 grams	TBE, TBE-2007 Gamma emitting radioisotope analysis
TLD	Thermoluminescence Dosimetry	Quarterly TLDs comprised of two Global Dosimetry TLDs, with two CaF_2 elements and two LiF elements in each TLD.	EIML-SPM-1, Environmental Incorporated Midwest Laboratory Sampling Procedures Manual	2 dosimeters	Global Dosimetry

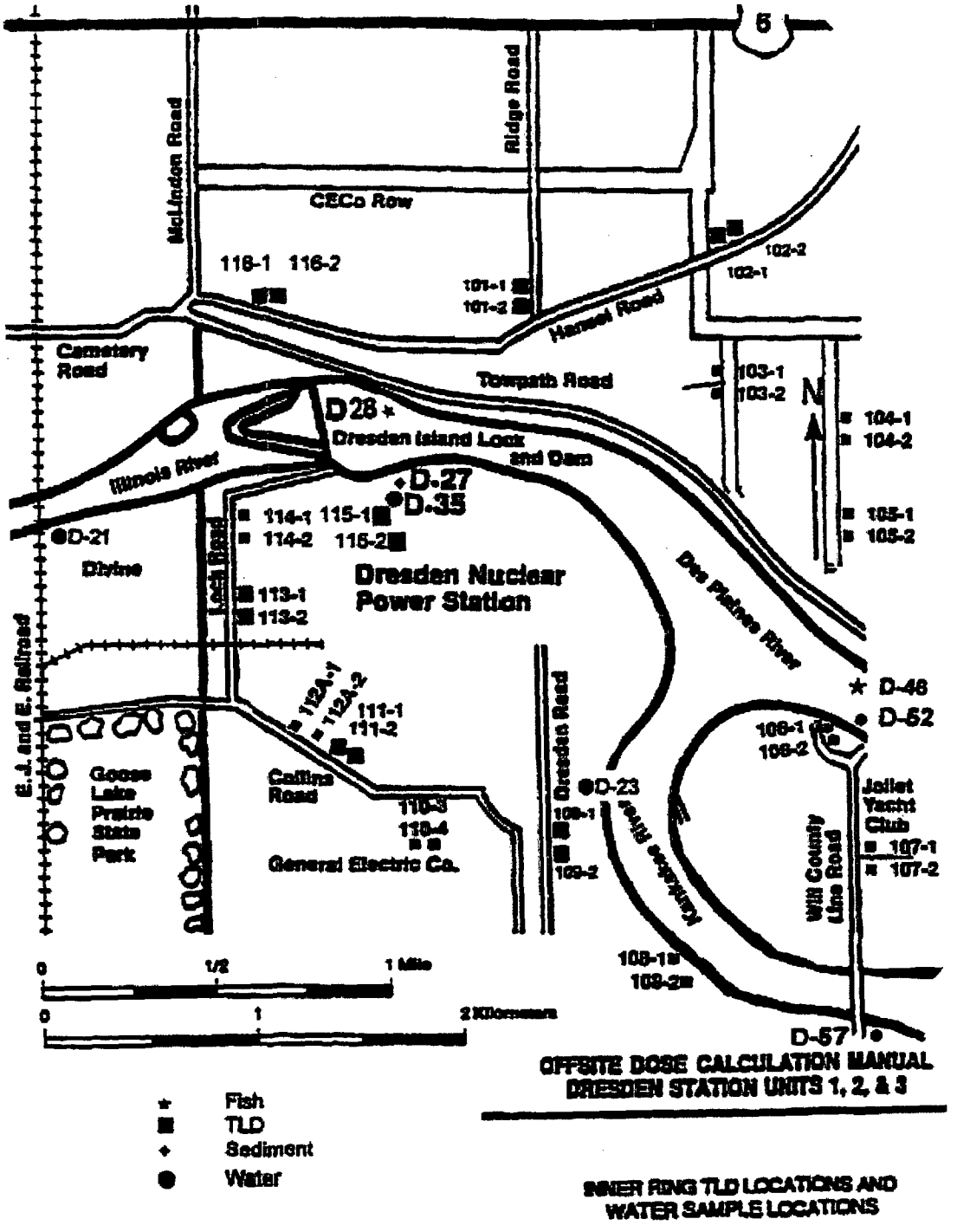


Figure B-1
Dresden Station Inner Ring TLD Locations, Fish, Water, and Sediment Location, 2009

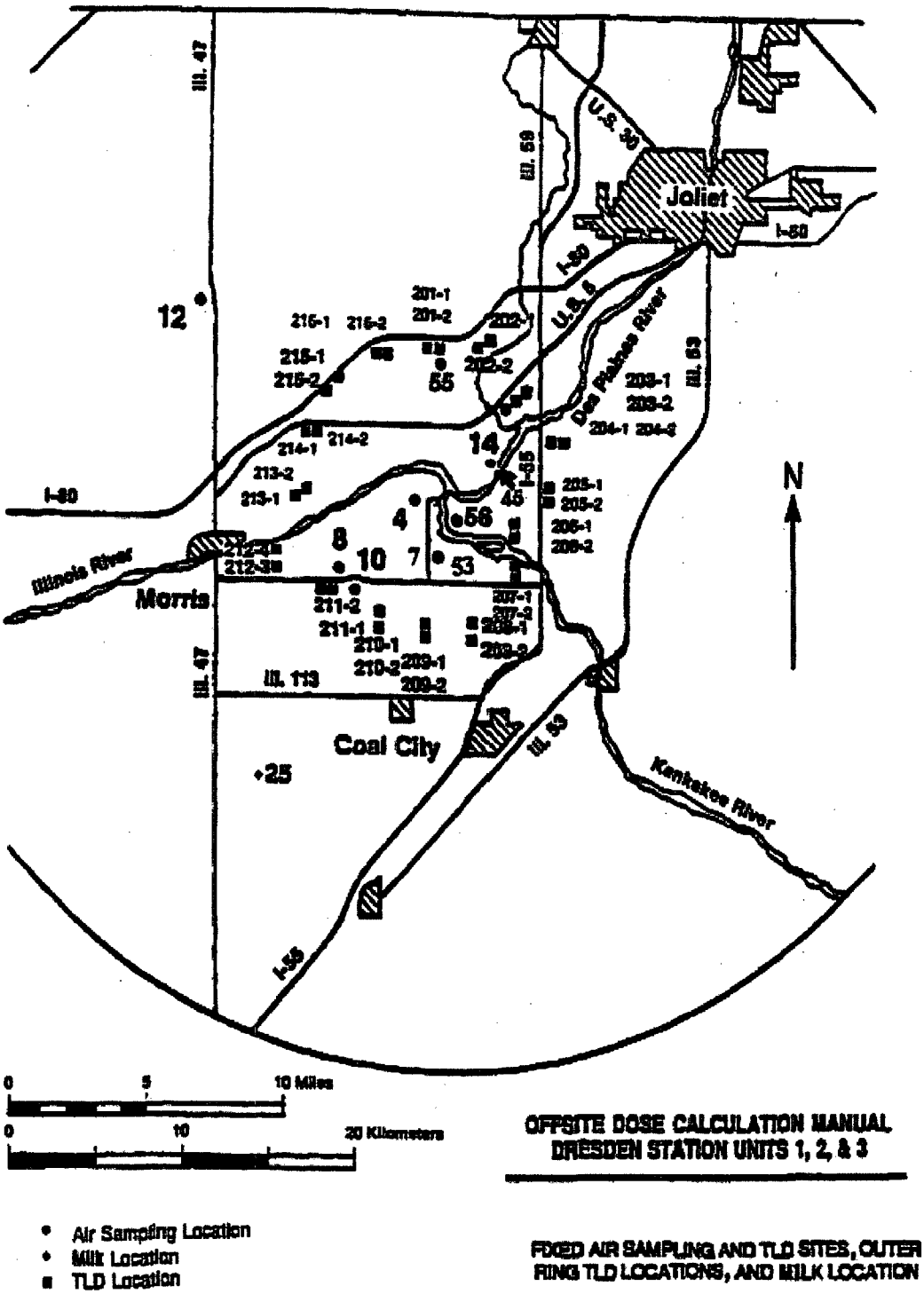


Figure B-2
Dresden Station Fixed Air Sampling and TLD Sites, Outer Ring TLD Locations and Milk Location, 2009

APPENDIX C

DATA TABLES AND FIGURES
PRIMARY LABORATORY

TABLE C-I.1 CONCENTRATIONS OF GROSS BETA IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	D-21	D-52	D-57
01/02/09 - 01/30/09	10 ± 2.3	10 ± 2.5 (1)	9.1 ± 2.4 (1)
02/06/09 - 02/27/09	11 ± 2.9	9.2 ± 2.8	5.7 ± 2.3
03/06/09 - 03/27/09	7.2 ± 2.3	7.8 ± 2.5	6.7 ± 2.2
04/03/09 - 04/24/09	7.2 ± 2.0	8.2 ± 2.2	5.2 ± 1.8
05/01/09 - 05/29/09	6.3 ± 2.2	8.2 ± 2.5	10 ± 2.5
06/05/09 - 06/26/09	4.8 ± 2.3	7.9 ± 2.7	< 3.2
07/03/09 - 07/31/09	9.0 ± 2.4	7.6 ± 2.4	4.9 ± 2.2
08/07/09 - 08/28/09	9.6 ± 2.9	4.8 ± 2.1	5.1 ± 2.1
09/04/09 - 09/25/09	8.1 ± 2.5	9.9 ± 2.5	4.1 ± 2.2
10/02/09 - 10/30/09	6.2 ± 2.4	4.7 ± 2.0	< 3.3
11/06/09 - 11/27/09	6.2 ± 2.1	6.3 ± 2.0	6.3 ± 2.2
12/04/09 - 12/24/09	7.7 ± 2.6	5.2 ± 2.3	4.0 ± 2.2
MEAN	7.8 ± 3.7	7.5 ± 3.7	6.1 ± 4.2

TABLE C-I.2 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	D-21	D-52	D-57
01/02/09 - 03/27/09	< 168	< 168	< 174
03/27/09 - 06/26/09	537 ± 133	< 182	465 ± 134
07/03/09 - 09/25/09	< 168	< 169	621 ± 135
10/02/09 - 12/24/09	181 ± 109	< 161	594 ± 129
MEAN	359 ± 503	-	560 ± 167

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES
(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
D-21	12/26/08 - 01/30/09	< 4	< 4	< 9	< 4	< 7	< 4	< 7	< 10	< 3	< 4	< 22	< 8
	01/30/09 - 02/27/09	< 4	< 5	< 10	< 6	< 8	< 5	< 9	< 14	< 4	< 4	< 31	< 9
	02/27/09 - 03/27/09	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 8	< 3	< 3	< 17	< 5
	03/27/09 - 04/24/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 10	< 1	< 1	< 15	< 5
	04/24/09 - 05/29/09	< 1	< 1	< 2	< 1	< 2	< 1	< 1	< 5	< 1	< 1	< 9	< 3
	05/29/09 - 06/26/09	< 1	< 2	< 4	< 1	< 2	< 2	< 3	< 12	< 1	< 1	< 19	< 5
	06/26/09 - 07/31/09	< 5	< 7	< 15	< 7	< 15	< 8	< 12	< 7	< 5	< 7	< 11	< 3
	07/31/09 - 08/28/09	< 5	< 5	< 10	< 5	< 10	< 7	< 8	< 9	< 5	< 6	< 24	< 10
	08/28/09 - 09/25/09	< 5	< 4	< 9	< 4	< 8	< 5	< 7	< 8	< 4	< 5	< 21	< 7
	09/25/09 - 10/30/09	< 4	< 3	< 8	< 4	< 8	< 4	< 6	< 9	< 4	< 4	< 21	< 7
	10/30/09 - 11/27/09	< 2	< 3	< 5	< 2	< 4	< 3	< 5	< 11	< 2	< 2	< 21	< 7
	11/27/09 - 12/24/09	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 24	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-52	01/02/09 - 01/30/09	< 4	< 4	< 9	< 4	< 7	< 4	< 7	< 11	< 4	< 4	< 25	< 8
	02/06/09 - 02/27/09	< 4	< 5	< 12	< 4	< 8	< 5	< 9	< 14	< 5	< 4	< 36	< 10
	03/06/09 - 03/27/09	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 6	< 2	< 2	< 14	< 5
	04/03/09 - 04/24/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 11	< 1	< 1	< 16	< 4
	05/01/09 - 05/29/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 8	< 1	< 1	< 14	< 5
	06/05/09 - 06/26/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 9	< 1	< 1	< 14	< 4
	07/03/09 - 07/31/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 11	< 1	< 1	< 17	< 6
	08/07/09 - 08/28/09	< 6	< 6	< 12	< 6	< 15	< 9	< 11	< 9	< 6	< 6	< 27	< 9
	09/04/09 - 09/25/09	< 5	< 5	< 11	< 5	< 11	< 5	< 9	< 11	< 4	< 6	< 28	< 8
	10/02/09 - 10/30/09	< 5	< 5	< 11	< 5	< 9	< 6	< 9	< 12	< 5	< 6	< 25	< 9
	11/06/09 - 11/27/09	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 13	< 2	< 3	< 24	< 8
	12/04/09 - 12/24/09	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 14	< 1	< 2	< 21	< 6
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
D-57	12/26/08 - 01/30/09	< 4	< 4	< 8	< 5	< 9	< 4	< 7	< 11	< 4	< 4	< 27	< 9
	01/30/09 - 02/27/09	< 5	< 5	< 11	< 5	< 10	< 5	< 9	< 15	< 4	< 5	< 31	< 9
	02/27/09 - 03/27/09	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 8	< 3	< 3	< 17	< 6
	03/27/09 - 04/24/09	< 1	< 2	< 3	< 1	< 2	< 2	< 3	< 11	< 1	< 1	< 17	< 5
	04/24/09 - 05/29/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 7	< 1	< 1	< 13	< 4
	05/29/09 - 06/26/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 11	< 1	< 1	< 16	< 6
	06/26/09 - 07/31/09	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 15	< 2	< 2	< 23	< 7
	07/31/09 - 08/28/09	< 6	< 7	< 12	< 6	< 11	< 7	< 9	< 9	< 5	< 7	< 27	< 9
	08/28/09 - 09/25/09	< 5	< 5	< 10	< 4	< 9	< 5	< 9	< 9	< 5	< 5	< 23	< 5
	09/25/09 - 10/30/09	< 3	< 3	< 6	< 2	< 6	< 3	< 6	< 8	< 3	< 3	< 17	< 5
	10/30/09 - 11/27/09	< 3	< 3	< 6	< 2	< 5	< 3	< 5	< 13	< 3	< 3	< 25	< 7
	11/27/09 - 12/24/09	< 1	< 2	< 3	< 2	< 3	< 2	< 3	< 10	< 1	< 2	< 14	< 5
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-II.1 CONCENTRATIONS OF TRITIUM IN GROUND WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	D-23	D-35
01/09/09	725 ± 151	< 181
02/13/09	603 ± 142	
03/13/09	337 ± 131	
04/10/09	390 ± 128	< 181
05/08/09	289 ± 122	
06/12/09	446 ± 121	
07/10/09	388 ± 140	< 178
08/07/09	250 ± 130	
09/11/09	395 ± 128	
10/09/09	346 ± 130	< 172
11/13/09	312 ± 119	
12/11/09	426 ± 125	
MEAN	409 ± 269	-

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES

TABLES C-II.2 CONCENTRATIONS OF GAMMA EMITTERS IN GROUND WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
D-23	01/09/09	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 8	< 1	< 2	< 13	< 5
	02/13/09	< 4	< 5	< 12	< 4	< 9	< 5	< 8	< 14	< 4	< 4	< 28	< 12
	03/13/09	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 14	< 3	< 3	< 26	< 10
	04/10/09	< 1	< 1	< 3	< 2	< 3	< 1	< 2	< 12	< 1	< 1	< 17	< 6
	05/08/09	< 1	< 2	< 3	< 1	< 2	< 2	< 3	< 15	< 1	< 1	< 20	< 6
	06/12/09	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 5	< 2	< 2	< 13	< 5
	07/10/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 7	< 1	< 1	< 13	< 4
	08/07/09	< 4	< 4	< 10	< 4	< 8	< 5	< 7	< 9	< 4	< 4	< 23	< 8
	09/11/09	< 4	< 4	< 9	< 5	< 9	< 5	< 8	< 10	< 4	< 4	< 29	< 7
	10/09/09	< 4	< 5	< 11	< 4	< 10	< 5	< 9	< 12	< 5	< 5	< 32	< 11
	11/13/09	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 4	< 1	< 1	< 9	< 3
	12/11/09	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 4	< 2	< 2	< 10	< 3
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-35	01/09/09	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 9	< 2	< 2	< 17	< 5
	04/10/09	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 12	< 1	< 1	< 16	< 5
	07/10/09	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 10	< 2	< 2	< 18	< 6
	10/09/09	< 4	< 5	< 12	< 5	< 12	< 5	< 9	< 10	< 4	< 5	< 27	< 10
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-III.1 **CONCENTRATIONS OF GAMMA EMITTERS IN FISH SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
D-28												
Freshwater Drum	05/06/09	< 21	< 30	< 71	< 26	< 52	< 29	< 58	< 19	< 20	< 952	< 240
Largemouth Bass	05/06/09	< 33	< 41	< 123	< 32	< 75	< 47	< 87	< 30	< 32	< 1410	< 326
Common Carp	10/14/09	< 66	< 76	< 165	< 62	< 139	< 87	< 120	< 56	< 67	< 1160	< 346
Largemouth Bass	10/14/09	< 70	< 72	< 257	< 68	< 144	< 97	< 175	< 64	< 82	< 1300	< 504
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-46												
Channel Catfish	05/06/09	< 26	< 30	< 85	< 20	< 52	< 30	< 45	< 22	< 20	< 827	< 283
Common Carp	05/06/09	< 33	< 48	< 108	< 33	< 70	< 47	< 91	< 32	< 32	< 1500	< 618
Common Carp	10/14/09	< 36	< 44	< 125	< 50	< 114	< 62	< 80	< 43	< 46	< 774	< 260
Largemouth Bass	10/14/09	< 55	< 72	< 169	< 50	< 140	< 98	< 110	< 53	< 55	< 1170	< 306
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-IV.1 CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PC/KG DRY ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
D-27	05/08/09	< 76	< 93	< 251	< 78	< 163	< 124	< 160	< 70	87 ± 69	< 1510	< 404
	10/16/09	< 35	< 39	< 109	< 35	< 89	< 48	< 69	< 30	< 37	< 478	< 168
	MEAN	-	-	-	-	-	-	-	-	87 ± 0	-	-

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES

TABLE C-IV.2 **CONCENTRATIONS OF GAMMA EMITTERS IN DREDGING SPOILS SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF PC/KG DRY ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
S-01D-NORTH SIDE	05/15/09	< 40	< 55	< 131	< 50	< 113	< 64	< 106	< 43	142 ± 49	< 676	< 135
S-01D-SOUTH SIDE	05/15/09	< 57	< 64	< 172	< 59	< 120	< 86	< 123	< 49	< 74	< 710	< 234
S-01S-NORTH SIDE	05/15/09	< 77	< 74	< 193	< 84	< 167	< 99	< 159	< 74	< 99	< 847	< 253
S-01S-SOUTH SIDE	05/15/09	< 81	< 86	< 247	< 98	< 201	< 111	< 189	< 78	95 ± 65	< 1130	< 322
T-01D	05/15/09	< 54	< 60	< 148	< 56	< 128	< 76	< 111	< 51	127 ± 56	< 716	< 204
T-01S	05/15/09	< 86	< 93	< 270	< 78	< 196	< 107	< 187	< 67	123 ± 73	< 1080	< 288
	MEAN	-	-	-	-	-	-	-	-	122 ± 39	-	-

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES

TABLE C-V.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

COLLECTION PERIOD	GROUP I			GROUP II				
	D-01	D-02	D-03	D-04	D-07	D-45	D-53	D-56
01/02/09 - 01/09/09	39 ± 6	36 ± 6	32 ± 5	27 ± 5	36 ± 6	39 ± 6	32 ± 5	37 ± 6
01/09/09 - 01/16/09	30 ± 5	24 ± 4	33 ± 5	35 ± 5	29 ± 5	26 ± 5	25 ± 5	30 ± 5
01/16/09 - 01/23/09	35 ± 5	38 ± 5	35 ± 5	32 ± 5	36 ± 5	34 ± 5	35 ± 5	33 ± 5
01/23/09 - 01/30/09	31 ± 5	34 ± 5	35 ± 5	33 ± 5	34 ± 5	32 ± 5	38 ± 6	36 ± 5
01/30/09 - 02/06/09	14 ± 4	14 ± 4	14 ± 4	15 ± 4	19 ± 4	18 ± 4	13 ± 4	18 ± 4
02/06/09 - 02/13/09	25 ± 5	25 ± 5	24 ± 5	23 ± 5	22 ± 5	22 ± 5	25 ± 5	24 ± 5
02/13/09 - 02/20/09	23 ± 5	19 ± 4	22 ± 5	19 ± 4	22 ± 5	19 ± 4	23 ± 5	21 ± 5
02/20/09 - 02/27/09	26 ± 5	27 ± 5	25 ± 5	29 ± 5	20 ± 5	31 ± 5	24 ± 5	28 ± 5
02/27/09 - 03/06/09	22 ± 5	(1) 18 ± 4	25 ± 5	22 ± 4	23 ± 5	23 ± 5	20 ± 4	18 ± 4
03/06/09 - 03/13/09	15 ± 4	17 ± 4	18 ± 4	21 ± 4	19 ± 4	21 ± 4	18 ± 4	19 ± 4
03/13/09 - 03/20/09	19 ± 4	22 ± 4	22 ± 4	21 ± 4	23 ± 4	24 ± 5	22 ± 4	25 ± 5
03/20/09 - 03/27/09	23 ± 4	18 ± 4	21 ± 4	21 ± 4	20 ± 4	23 ± 4	22 ± 4	21 ± 4
03/27/09 - 04/03/09	10 ± 4	14 ± 4	12 ± 4	15 ± 4	12 ± 4	15 ± 4	12 ± 4	14 ± 4
04/03/09 - 04/10/09	14 ± 4	(1) 20 ± 5	17 ± 4	16 ± 4	25 ± 6	(1) 16 ± 4	13 ± 4	15 ± 4
04/10/09 - 04/17/09	22 ± 4	17 ± 4	20 ± 4	17 ± 4	22 ± 4	21 ± 4	19 ± 4	16 ± 4
04/17/09 - 04/24/09	14 ± 4	16 ± 4	16 ± 4	13 ± 4	16 ± 4	16 ± 4	15 ± 4	15 ± 4
04/24/09 - 05/01/09	7 ± 3	11 ± 3	12 ± 4	10 ± 3	10 ± 3	13 ± 4	12 ± 4	13 ± 4
05/01/09 - 05/08/09	19 ± 4	18 ± 4	22 ± 5	23 ± 5	(1) 14 ± 4	24 ± 5	22 ± 5	20 ± 4
05/08/09 - 05/15/09	8 ± 4	10 ± 4	8 ± 4	7 ± 4	8 ± 4	9 ± 4	7 ± 4	9 ± 4
05/15/09 - 05/22/09	11 ± 4	18 ± 4	14 ± 4	13 ± 4	21 ± 5	17 ± 4	15 ± 4	15 ± 4
05/22/09 - 05/29/09	11 ± 4	16 ± 4	15 ± 4	15 ± 4	14 ± 4	12 ± 4	15 ± 4	16 ± 4
05/29/09 - 06/05/09	13 ± 4	15 ± 4	15 ± 4	13 ± 4	16 ± 4	18 ± 4	12 ± 4	15 ± 4
06/05/09 - 06/12/09	9 ± 4	18 ± 4	14 ± 4	14 ± 4	15 ± 4	16 ± 4	13 ± 4	13 ± 4
06/12/09 - 06/19/09	13 ± 4	14 ± 4	14 ± 4	13 ± 4	19 ± 4	15 ± 4	16 ± 4	18 ± 4
06/19/09 - 06/26/09	24 ± 4	22 ± 4	22 ± 4	22 ± 4	25 ± 4	21 ± 4	20 ± 4	17 ± 4
06/26/09 - 07/03/09	8 ± 4	7 ± 4	8 ± 4	8 ± 4	9 ± 4	7 ± 4	16 ± 4	10 ± 4
07/03/09 - 07/10/09	16 ± 4	17 ± 5	16 ± 4	13 ± 4	15 ± 4	11 ± 4	15 ± 4	15 ± 4
07/10/09 - 07/17/09	13 ± 4	11 ± 4	13 ± 4	15 ± 4	16 ± 4	15 ± 4	17 ± 5	17 ± 5
07/17/09 - 07/24/09	15 ± 4	19 ± 4	21 ± 5	15 ± 4	16 ± 4	15 ± 4	15 ± 4	16 ± 4
07/24/09 - 07/31/09	16 ± 4	17 ± 4	17 ± 4	12 ± 4	19 ± 4	16 ± 4	19 ± 4	13 ± 4
07/31/09 - 08/07/09	11 ± 4	20 ± 5	19 ± 5	19 ± 5	18 ± 4	19 ± 4	21 ± 5	18 ± 4
08/07/09 - 08/14/09	17 ± 4	20 ± 5	20 ± 5	21 ± 5	23 ± 5	20 ± 5	22 ± 5	19 ± 5
08/14/09 - 08/21/09	17 ± 4	21 ± 5	24 ± 5	18 ± 4	19 ± 4	16 ± 4	18 ± 4	17 ± 4
08/21/09 - 08/28/09	7 ± 3	13 ± 4	15 ± 4	14 ± 4	13 ± 4	10 ± 4	9 ± 4	13 ± 4
08/28/09 - 09/04/09	21 ± 4	15 ± 4	19 ± 4	14 ± 4	16 ± 4	15 ± 4	17 ± 4	17 ± 4
09/04/09 - 09/11/09	34 ± 4	34 ± 4	36 ± 5	31 ± 4	34 ± 5	34 ± 5	32 ± 4	33 ± 4
09/11/09 - 09/18/09	27 ± 5	32 ± 5	24 ± 5	23 ± 5	24 ± 5	25 ± 5	25 ± 5	26 ± 5
09/18/09 - 09/25/09	25 ± 5	21 ± 4	22 ± 4	22 ± 4	25 ± 5	23 ± 5	21 ± 5	27 ± 5
09/25/09 - 10/02/09	12 ± 4	13 ± 4	9 ± 4	12 ± 4	13 ± 4	13 ± 4	18 ± 4	13 ± 4
10/02/09 - 10/09/09	11 ± 4	10 ± 4	8 ± 3	12 ± 4	8 ± 4	11 ± 4	13 ± 4	11 ± 4
10/09/09 - 10/16/09	20 ± 5	19 ± 5	15 ± 5	17 ± 5	17 ± 5	11 ± 4	12 ± 4	14 ± 5
10/16/09 - 10/23/09	15 ± 4	18 ± 4	19 ± 4	19 ± 4	21 ± 4	16 ± 4	22 ± 5	19 ± 4
10/23/09 - 10/30/09	17 ± 5	14 ± 4	13 ± 4	17 ± 5	20 ± 5	15 ± 4	18 ± 5	13 ± 4
10/30/09 - 11/06/09	16 ± 4	19 ± 4	18 ± 4	14 ± 4	15 ± 4	17 ± 4	16 ± 4	16 ± 4
11/06/09 - 11/13/09	18 ± 5	21 ± 5	24 ± 5	22 ± 5	23 ± 5	25 ± 5	22 ± 5	23 ± 5
11/13/09 - 11/20/09	18 ± 4	16 ± 4	12 ± 4	17 ± 4	15 ± 4	23 ± 4	14 ± 4	17 ± 4
11/20/09 - 11/27/09	25 ± 5	24 ± 5	20 ± 4	26 ± 5	29 ± 5	25 ± 5	27 ± 5	22 ± 5
11/27/09 - 12/04/09	19 ± 4	21 ± 5	22 ± 5	19 ± 4	24 ± 5	20 ± 5	22 ± 5	19 ± 4
12/04/09 - 12/11/09	22 ± 4	24 ± 4	26 ± 4	23 ± 4	26 ± 4	21 ± 4	27 ± 4	21 ± 4
12/11/09 - 12/18/09	32 ± 4	28 ± 4	30 ± 4	31 ± 4	30 ± 4	30 ± 4	29 ± 4	32 ± 4
12/18/09 - 12/24/09	32 ± 6	37 ± 6	(1) 28 ± 6	32 ± 6	34 ± 6	34 ± 6	30 ± 6	42 ± 6
12/24/09 - 01/01/10	26 ± 4	26 ± 4	26 ± 4	26 ± 4	27 ± 4	26 ± 4	22 ± 4	27 ± 4
MEAN	19 ± 16	20 ± 14	20 ± 14	19 ± 14	21 ± 14	20 ± 14	20 ± 13	20 ± 15

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-V.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

COLLECTION PERIOD	GROUP III				GROUP IV	
	D-08	D-10	D-14	D-55	D-12	
01/02/09 - 01/09/09	34 ± 6	38 ± 6	34 ± 5	37 ± 6	42 ± 6	
01/09/09 - 01/16/09	26 ± 5	28 ± 5	22 ± 4	28 ± 5	26 ± 5	
01/16/09 - 01/23/09	39 ± 5	30 ± 5	35 ± 5	35 ± 5	30 ± 5	
01/23/09 - 01/30/09	39 ± 6	34 ± 5	33 ± 5	37 ± 6	35 ± 5	
01/30/09 - 02/06/09	19 ± 4	14 ± 4	22 ± 5	16 ± 4	19 ± 4	
02/06/09 - 02/13/09	25 ± 5	24 ± 5	28 ± 5	28 ± 5	26 ± 5	
02/13/09 - 02/20/09	22 ± 5	17 ± 4	21 ± 4	21 ± 4	23 ± 5	
02/20/09 - 02/27/09	25 ± 5	24 ± 5	37 ± 6	28 ± 5	30 ± 5	
02/27/09 - 03/06/09	22 ± 4	22 ± 4	21 ± 4	20 ± 4	19 ± 4	
03/06/09 - 03/13/09	19 ± 4	21 ± 4	17 ± 4	23 ± 5	20 ± 4	
03/13/09 - 03/20/09	24 ± 5	23 ± 4	26 ± 5	18 ± 4	25 ± 5	
03/20/09 - 03/27/09	22 ± 4	(1) 18 ± 4	21 ± 4	17 ± 4	(1) 22 ± 4	
03/27/09 - 04/03/09	12 ± 4	17 ± 4	13 ± 4	8 ± 4	13 ± 4	(1)
04/03/09 - 04/10/09	15 ± 4	15 ± 4	17 ± 4	12 ± 4	17 ± 4	
04/10/09 - 04/17/09	18 ± 4	21 ± 4	21 ± 4	19 ± 4	21 ± 4	
04/17/09 - 04/24/09	16 ± 4	18 ± 4	19 ± 4	18 ± 4	14 ± 4	
04/24/09 - 05/01/09	16 ± 4	12 ± 4	16 ± 4	14 ± 4	13 ± 4	
05/01/09 - 05/08/09	24 ± 5	21 ± 5	24 ± 5	20 ± 4	20 ± 4	
05/08/09 - 05/15/09	8 ± 4	8 ± 4	9 ± 4	10 ± 4	12 ± 4	(1)
05/15/09 - 05/22/09	16 ± 4	14 ± 4	15 ± 4	16 ± 4	16 ± 4	
05/22/09 - 05/29/09	13 ± 4	15 ± 4	16 ± 4	17 ± 4	14 ± 4	
05/29/09 - 06/05/09	18 ± 4	14 ± 4	17 ± 4	14 ± 4	17 ± 4	
06/05/09 - 06/12/09	13 ± 4	15 ± 4	14 ± 4	12 ± 4	12 ± 4	
06/12/09 - 06/19/09	19 ± 4	17 ± 4	14 ± 4	16 ± 4	18 ± 4	
06/19/09 - 06/26/09	20 ± 4	19 ± 4	24 ± 5	20 ± 4	18 ± 4	
06/26/09 - 07/03/09	10 ± 4	< 5	10 ± 4	12 ± 4	8 ± 4	
07/03/09 - 07/10/09	13 ± 4	16 ± 4	16 ± 4	14 ± 4	10 ± 4	
07/10/09 - 07/17/09	14 ± 4	15 ± 4	17 ± 5	17 ± 5	14 ± 4	
07/17/09 - 07/24/09	16 ± 4	11 ± 4	19 ± 5	17 ± 4	15 ± 4	
07/24/09 - 07/31/09	17 ± 4	15 ± 4	17 ± 4	16 ± 4	19 ± 4	
07/31/09 - 08/07/09	17 ± 4	18 ± 4	18 ± 4	24 ± 5	20 ± 5	
08/07/09 - 08/14/09	20 ± 5	19 ± 5	27 ± 5	23 ± 5	19 ± 5	
08/14/09 - 08/21/09	18 ± 4	20 ± 5	16 ± 4	19 ± 4	22 ± 5	
08/21/09 - 08/28/09	12 ± 4	12 ± 4	13 ± 4	15 ± 4	15 ± 4	
08/28/09 - 09/04/09	18 ± 4	17 ± 4	15 ± 4	17 ± 4	20 ± 4	
09/04/09 - 09/11/09	37 ± 5	33 ± 4	43 ± 5	41 ± 5	33 ± 4	
09/11/09 - 09/18/09	30 ± 5	25 ± 5	29 ± 5	30 ± 5	28 ± 5	
09/18/09 - 09/25/09	28 ± 5	26 ± 5	23 ± 5	26 ± 5	25 ± 5	
09/25/09 - 10/02/09	13 ± 4	17 ± 4	12 ± 4	14 ± 4	14 ± 4	
10/02/09 - 10/09/09	11 ± 4	10 ± 4	10 ± 4	13 ± 4	9 ± 4	
10/09/09 - 10/16/09	11 ± 4	10 ± 4	14 ± 5	15 ± 5	15 ± 5	
10/16/09 - 10/23/09	20 ± 4	20 ± 4	17 ± 4	18 ± 4	19 ± 4	
10/23/09 - 10/30/09	13 ± 4	13 ± 4	15 ± 4	18 ± 5	16 ± 4	
10/30/09 - 11/06/09	12 ± 4	17 ± 4	18 ± 4	22 ± 5	12 ± 4	
11/06/09 - 11/13/09	19 ± 5	23 ± 5	19 ± 5	26 ± 5	20 ± 5	
11/13/09 - 11/20/09	19 ± 4	14 ± 4	14 ± 4	17 ± 4	17 ± 4	
11/20/09 - 11/27/09	20 ± 4	27 ± 5	25 ± 5	27 ± 5	23 ± 5	
11/27/09 - 12/04/09	21 ± 5	20 ± 5	19 ± 5	24 ± 5	19 ± 5	
12/04/09 - 12/11/09	23 ± 4	22 ± 4	27 ± 4	27 ± 4	20 ± 4	
12/11/09 - 12/18/09	29 ± 4	35 ± 5	28 ± 4	34 ± 5	31 ± 4	
12/18/09 - 12/24/09	28 ± 6	30 ± 6	32 ± 6	39 ± 6	36 ± 6	
12/24/09 - 01/01/10	25 ± 4	29 ± 4	27 ± 4	23 ± 4	25 ± 4	
MEAN	20 ± 15	20 ± 14	21 ± 15	21 ± 16	20 ± 14	

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-V.2 MONTHLY AND YEARLY MEAN VALUES OF GROSS BETA CONCENTRATIONS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

GROUP I - ON-SITE LOCATIONS				GROUP II - NEAR-FIELD LOCATIONS				GROUP III - FAR-FIELD LOCATIONS				GROUP IV - CONTROL LOCATION			
COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD
01/02/09 - 01/30/09	24	39	33 ± 8	01/02/09 - 01/30/09	25	39	33 ± 8	01/02/09 - 01/30/09	22	39	33 ± 10	01/02/09 - 01/30/09	26	42	33 ± 13
01/30/09 - 02/27/09	14	27	21 ± 10	01/30/09 - 02/27/09	13	31	22 ± 9	01/30/09 - 02/27/09	14	37	23 ± 11	01/30/09 - 02/27/09	19	30	25 ± 10
02/27/09 - 04/03/09	10	25	18 ± 8	02/27/09 - 04/03/09	12	25	20 ± 7	02/27/09 - 04/03/09	8	26	19 ± 9	02/27/09 - 04/03/09	13	25	20 ± 9
04/03/09 - 05/01/09	7	22	16 ± 8	04/03/09 - 05/01/09	10	25	16 ± 8	04/03/09 - 05/01/09	12	21	17 ± 5	04/03/09 - 05/01/09	13	21	16 ± 7
05/01/09 - 05/29/09	8	22	14 ± 9	05/01/09 - 05/29/09	7	24	15 ± 10	05/01/09 - 05/29/09	8	24	15 ± 10	05/01/09 - 05/29/09	12	20	15 ± 7
05/29/09 - 07/03/09	7	24	14 ± 11	05/29/09 - 07/03/09	7	25	15 ± 8	05/29/09 - 07/03/09	10	24	16 ± 8	05/29/09 - 07/03/09	8	18	15 ± 9
07/03/09 - 07/31/09	11	21	16 ± 5	07/03/09 - 07/31/09	11	19	15 ± 4	07/03/09 - 07/31/09	11	19	16 ± 4	07/03/09 - 07/31/09	10	19	14 ± 7
07/31/09 - 08/28/09	7	24	17 ± 10	07/31/09 - 08/28/09	9	23	17 ± 7	07/31/09 - 08/28/09	12	27	18 ± 8	07/31/09 - 08/28/09	15	22	19 ± 6
08/28/09 - 10/02/09	9	36	23 ± 17	08/28/09 - 10/02/09	12	34	22 ± 14	08/28/09 - 10/02/09	12	43	25 ± 18	08/28/09 - 10/02/09	14	33	24 ± 15
10/02/09 - 10/30/09	8	20	15 ± 8	10/02/09 - 10/30/09	8	22	15 ± 8	10/02/09 - 10/30/09	10	20	14 ± 7	10/02/09 - 10/30/09	9	19	15 ± 8
10/30/09 - 11/27/09	12	25	19 ± 8	10/30/09 - 11/27/09	14	29	20 ± 10	10/30/09 - 11/27/09	12	27	20 ± 10	10/30/09 - 11/27/09	12	23	18 ± 9
11/27/09 - 01/01/10	19	37	26 ± 9	11/27/09 - 01/01/10	19	42	27 ± 11	11/27/09 - 01/01/10	19	39	27 ± 10	11/27/09 - 01/01/10	19	36	26 ± 14
01/02/09 - 01/01/10	7	39	20 ± 15	01/02/09 - 01/01/10	7	42	20 ± 14	01/02/09 - 01/01/10	8	43	20 ± 15	01/02/09 - 01/01/10	8	42	20 ± 14

* THE MEAN AND 2 STANDARD DEVIATION VALUES ARE CALCULATED USING THE POSITIVE VALUES

TABLE C-V.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
D-01	01/02/09 - 04/03/09	< 3	< 3	< 7	< 2	< 6	< 3	< 6	< 3	< 2	< 65	< 21
	04/03/09 - 07/03/09	< 3	< 5	< 15	< 3	< 10	< 5	< 9	< 3	< 2	< 541	< 237
	07/03/09 - 10/02/09	< 3	< 4	< 16	< 3	< 8	< 4	< 7	< 2	< 2	< 560	< 174
	10/02/09 - 01/01/10	< 3	< 4	< 7	< 3	< 10	< 4	< 7	< 3	< 4	< 47	< 23
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-02	01/02/09 - 04/03/09	< 4	< 5	< 13	< 4	< 8	< 4	< 7	< 4	< 3	< 76	< 28
	04/03/09 - 07/03/09	< 4	< 6	< 18	< 3	< 9	< 6	< 11	< 4	< 3	< 837	< 327
	07/03/09 - 10/02/09	< 3	< 5	< 23	< 4	< 9	< 7	< 11	< 4	< 3	< 755	< 231
	10/02/09 - 01/01/10	< 4	< 5	< 13	< 5	< 9	< 6	< 7	< 4	< 4	< 54	< 25
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-03	01/02/09 - 04/03/09	< 4	< 3	< 10	< 3	< 8	< 4	< 8	< 3	< 3	< 95	< 30
	04/03/09 - 07/03/09	< 2	< 4	< 12	< 2	< 6	< 5	< 9	< 3	< 2	< 501	< 135
	07/03/09 - 10/02/09	< 3	< 5	< 14	< 3	< 8	< 6	< 8	< 3	< 2	< 472	< 297
	10/02/09 - 01/01/10	< 3	< 3	< 7	< 5	< 6	< 4	< 6	< 3	< 2	< 48	< 20
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-04	01/02/09 - 04/03/09	< 2	< 3	< 7	< 2	< 6	< 3	< 5	< 2	< 2	< 61	< 11
	04/03/09 - 07/03/09	< 4	< 6	< 16	< 4	< 7	< 7	< 14	< 3	< 3	< 662	< 280
	07/03/09 - 10/02/09	< 3	< 5	< 14	< 3	< 8	< 6	< 8	< 3	< 2	< 471	< 296
	10/02/09 - 01/01/10	< 4	< 5	< 9	< 2	< 11	< 5	< 9	< 4	< 4	< 63	< 24
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-V.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
D-07	01/02/09 - 04/03/09	< 4	< 3	< 11	< 3	< 8	< 5	< 7	< 3	< 3	< 90	< 31
	04/03/09 - 07/03/09	< 3	< 5	< 17	< 2	< 7	< 5	< 12	< 3	< 2	< 644	< 244
	07/03/09 - 10/02/09	< 5	< 7	< 20	< 4	< 10	< 9	< 15	< 5	< 3	< 816	< 320
	10/02/09 - 01/01/10	< 3	< 4	< 9	< 3	< 7	< 4	< 8	< 3	< 3	< 55	< 21
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-08	01/02/09 - 04/03/09	< 3	< 4	< 11	< 3	< 7	< 4	< 8	< 3	< 2	< 84	< 34
	04/03/09 - 07/03/09	< 3	< 5	< 9	< 2	< 7	< 5	< 10	< 3	< 3	< 671	< 245
	07/03/09 - 10/02/09	< 3	< 6	< 17	< 3	< 8	< 6	< 10	< 3	< 2	< 502	< 285
	10/02/09 - 01/01/10	< 5	< 5	< 12	< 5	< 7	< 5	< 9	< 4	< 4	< 67	< 31
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-10	01/02/09 - 04/03/09	< 2	< 4	< 9	< 3	< 6	< 4	< 6	< 3	< 2	< 68	< 24
	04/03/09 - 07/03/09	< 3	< 6	< 27	< 3	< 7	< 8	< 13	< 3	< 4	< 826	< 198
	07/03/09 - 10/02/09	< 4	< 7	< 22	< 4	< 13	< 7	< 12	< 4	< 4	< 774	< 348
	10/02/09 - 01/01/10	< 2	< 3	< 7	< 2	< 7	< 3	< 6	< 3	< 3	< 57	< 23
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-12	01/02/09 - 04/03/09	< 3	< 5	< 12	< 3	< 10	< 5	< 8	< 3	< 3	< 84	< 34
	04/03/09 - 07/03/09	< 3	< 5	< 14	< 3	< 6	< 6	< 10	< 3	< 3	< 590	< 216
	07/03/09 - 10/02/09	< 4	< 6	< 20	< 3	< 7	< 6	< 10	< 3	< 3	< 758	< 303
	10/02/09 - 01/01/10	< 3	< 4	< 12	< 2	< 6	< 5	< 7	< 3	< 3	< 61	< 25
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-V.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
D-14	01/02/09 - 04/03/09	< 3	< 4	< 10	< 3	< 7	< 5	< 8	< 3	< 3	< 100	< 24
	04/03/09 - 07/03/09	< 4	< 6	< 18	< 3	< 11	< 4	< 10	< 4	< 3	< 764	< 203
	07/03/09 - 10/02/09	< 3	< 4	< 14	< 3	< 7	< 6	< 9	< 3	< 3	< 453	< 265
	10/02/09 - 01/01/10	< 4	< 3	< 8	< 3	< 7	< 3	< 6	< 3	< 4	< 58	< 22
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-45	01/02/09 - 04/03/09	< 2	< 3	< 8	< 2	< 6	< 3	< 5	< 2	< 2	< 44	< 11
	04/03/09 - 07/03/09	< 2	< 4	< 15	< 3	< 7	< 5	< 8	< 2	< 2	< 532	< 182
	07/03/09 - 10/02/09	< 4	< 5	< 17	< 3	< 12	< 7	< 11	< 5	< 3	< 781	< 313
	10/02/09 - 01/01/10	< 4	< 3	< 14	< 3	< 8	< 5	< 8	< 4	< 4	< 68	< 30
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-53	01/02/09 - 04/03/09	< 3	< 5	< 11	< 2	< 8	< 5	< 9	< 3	< 3	< 102	< 22
	04/03/09 - 07/03/09	< 3	< 7	< 18	< 3	< 9	< 7	< 11	< 3	< 3	< 811	< 281
	07/03/09 - 10/02/09	< 3	< 7	< 20	< 4	< 11	< 6	< 11	< 4	< 3	< 791	< 315
	10/02/09 - 01/01/10	< 3	< 4	< 9	< 3	< 5	< 3	< 4	< 3	< 3	< 43	< 19
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-55	01/02/09 - 04/03/09	< 3	< 3	< 8	< 3	< 9	< 5	< 8	< 3	< 3	< 85	< 31
	04/03/09 - 07/03/09	< 2	< 6	< 18	< 2	< 6	< 5	< 10	< 3	< 2	< 635	< 244
	07/03/09 - 10/02/09	< 2	< 4	< 17	< 2	< 9	< 5	< 8	< 3	< 2	< 680	< 142
	10/02/09 - 01/01/10	< 3	< 6	< 10	< 4	< 11	< 6	< 10	< 6	< 3	< 73	< 14
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-V.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
D-56	01/02/09 - 04/03/09	< 2	< 3	< 6	< 2	< 6	< 3	< 7	< 3	< 2	< 64	< 21
	04/03/09 - 07/03/09	< 4	< 5	< 19	< 3	< 8	< 7	< 15	< 3	< 3	< 997	< 254
	07/03/09 - 10/02/09	< 2	< 5	< 18	< 2	< 10	< 8	< 11	< 3	< 3	< 757	< 226
	10/02/09 - 01/01/10	< 4	< 4	< 10	< 5	< 10	< 5	< 8	< 4	< 4	< 71	< 31
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-VI.1 CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

COLLECTION PERIOD	GROUP I			GROUP II				
	D-01	D-02	D-03	D-04	D-07	D-45	D-53	D-56
01/02/09 - 01/09/09	< 37	< 67	< 67	< 67	< 68	< 56	< 68	< 67
01/09/09 - 01/16/09	< 32	< 57	< 57	< 57	< 58	< 55	< 64	< 64
01/16/09 - 01/23/09	< 15	< 8	< 15	< 15	< 15	< 25	< 25	< 25
01/23/09 - 01/30/09	< 36	< 61	< 61	< 61	< 62	< 66	< 64	< 63
01/30/09 - 02/06/09	< 38	< 39	< 30	< 38	< 39	< 33	< 43	< 44
02/06/09 - 02/13/09	< 14	< 25	< 25	< 25	< 26	< 29	< 41	< 41
02/13/09 - 02/20/09	< 45	< 45	< 45	< 25	< 45	< 52	< 65	< 65
02/20/09 - 02/27/09	< 15	< 23	< 23	< 23	< 23	< 25	< 23	< 23
02/27/09 - 03/06/09	< 46 (1)	< 45	< 45	< 45	< 26	< 27	< 55	< 55
03/06/09 - 03/13/09	< 10	< 18	< 18	< 18	< 19	< 19	< 25	< 25
03/13/09 - 03/20/09	< 20	< 37	< 37	< 37	< 37	< 42	< 41	< 41
03/20/09 - 03/27/09	< 15	< 26	< 27	< 27	< 27	< 21	< 27	< 27
03/27/09 - 04/03/09	< 37	< 69	< 69	< 68	< 68	< 61	< 58	< 58
04/03/09 - 04/10/09	< 29 (1)	< 52	< 52	< 52	< 66 (1)	< 47	< 64	< 64
04/10/09 - 04/17/09	< 18	< 32	< 32	< 32	< 33	< 53	< 32	< 32
04/17/09 - 04/24/09	< 28	< 42	< 42	< 42	< 42	< 63	< 62	< 61
04/24/09 - 05/01/09	< 38	< 69	< 69	< 69	< 70	< 67	< 64	< 64
05/01/09 - 05/08/09	< 43	< 65	< 65	< 65 (1)	< 65	< 69	< 66	< 66
05/08/09 - 05/15/09	< 27	< 63	< 63	< 63	< 64	< 34	< 37	< 37
05/15/09 - 05/22/09	< 36	< 65	< 65	< 65	< 66	< 48	< 40	< 37
05/22/09 - 05/29/09	< 40	< 59	< 59	< 59	< 61	< 26	< 19	< 25
05/29/09 - 06/05/09	< 14	< 26	< 26	< 26	< 26	< 19	< 13	< 13
06/05/09 - 06/12/09	< 27	< 28	< 27	< 27	< 54	< 58	< 57	< 57
06/12/09 - 06/19/09	< 67	< 68	< 68	< 67	< 38	< 40	< 56	< 56
06/19/09 - 06/26/09	< 68	< 68	< 68	< 65	< 65	< 54	< 54	< 30
06/26/09 - 07/03/09	< 35	< 35	< 26	< 35	< 35	< 39	< 38	< 38
07/03/09 - 07/10/09	< 43	< 57	< 57	< 57	< 68	< 47	< 45	< 25
07/10/09 - 07/17/09	< 64	< 28	< 65	< 64	< 64	< 53	< 53	< 53
07/17/09 - 07/24/09	< 65	< 65	< 65	< 65	< 57	< 38	< 37	< 37
07/24/09 - 07/31/09	< 25	< 14	< 25	< 25	< 25	< 16	< 16	< 16
07/31/09 - 08/07/09	< 37	< 39	< 26	< 39	< 39	< 38	< 37	< 37
08/07/09 - 08/14/09	< 39	< 39	< 39	< 39	< 42	< 41	< 41	< 41
08/14/09 - 08/21/09	< 32	< 32	< 32	< 18	< 32	< 26	< 29	< 29
08/21/09 - 08/28/09	< 34	< 34	< 34	< 34	< 38	< 36	< 35	< 35
08/28/09 - 09/04/09	< 29	< 66	< 69	< 69	< 68	< 65	< 64	< 64
09/04/09 - 09/11/09	< 60	< 60	< 60	< 60	< 32	< 43	< 41	< 41
09/11/09 - 09/18/09	< 49	< 49	< 49	< 49	< 27	< 48	< 47	< 47
09/18/09 - 09/25/09	< 60	< 62	< 61	< 63	< 64	< 47	< 26	< 46
09/25/09 - 10/02/09	< 69	< 39	< 70	< 69	< 69	< 28	< 30	< 30
10/02/09 - 10/09/09	< 68	< 68	< 68	< 68	< 53	< 25	< 41	< 41
10/09/09 - 10/16/09	< 65	< 37	< 66	< 65	< 66	< 44	< 42	< 43
10/16/09 - 10/23/09	< 68	< 68	< 68	< 68	< 30	< 67	< 65	< 65
10/23/09 - 10/30/09	< 25	< 26	< 26	< 25	< 68	< 35	< 34	< 34
10/30/09 - 11/06/09	< 54	< 32	< 57	< 57	< 58	< 60	< 58	< 60
11/06/09 - 11/13/09	< 58	< 58	< 58	< 58	< 58	< 27	< 63	< 63
11/13/09 - 11/20/09	< 29	< 29	< 29	< 29	< 20	< 14	< 13	< 13
11/20/09 - 11/27/09	< 61	< 61	< 61	< 61	< 59	< 61	< 26	< 60
11/27/09 - 12/04/09	< 52	< 53	< 53	< 51	< 30	< 65	< 62	< 62
12/04/09 - 12/11/09	< 69	< 69	< 69	< 69	< 59	< 56	< 55	< 55
12/11/09 - 12/18/09	< 56	< 32	< 56	< 56	< 57	< 55	< 54	< 53
12/18/09 - 12/24/09	< 52	< 22 (1)	< 52	< 52	< 51	< 49	< 48	< 48
12/24/09 - 01/01/10	< 38	< 69	< 69	< 69	< 70	< 53	< 49	< 49
MEAN	-	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VI.1 CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF E-3 PCI/CU METER ± 2 SIGMA

COLLECTION PERIOD	GROUP III				GROUP IV	
	D-08	D-10	D-14	D-55	D-12	
01/02/09 - 01/09/09	< 47	< 59	< 58	< 69	< 59	
01/09/09 - 01/16/09	< 43	< 54	< 53	< 66	< 54	
01/16/09 - 01/23/09	< 15	< 15	< 15	< 25	< 15	
01/23/09 - 01/30/09	< 40	< 66	< 66	< 66	< 66	
01/30/09 - 02/06/09	< 18	< 32	< 33	< 43	< 32	
02/06/09 - 02/13/09	< 23	< 30	< 29	< 42	< 29	
02/13/09 - 02/20/09	< 41	< 52	< 50	< 66	< 52	
02/20/09 - 02/27/09	< 14	< 25	< 25	< 24	< 25	
02/27/09 - 03/06/09	< 21	< 26	< 27	< 57	< 26	
03/06/09 - 03/13/09	< 15	< 19	< 19	< 27	< 19	
03/13/09 - 03/20/09	< 23	< 42	< 42	< 42	< 42	
03/20/09 - 03/27/09	< 13	< 21	< 21	< 27	< 21	
03/27/09 - 04/03/09	< 62	< 49	< 61	< 60	< 66	(1)
04/03/09 - 04/10/09	< 37	< 47	< 47	< 65	< 47	
04/10/09 - 04/17/09	< 53	< 53	< 53	< 33	< 22	
04/17/09 - 04/24/09	< 51	< 51	< 52	< 59	< 52	
04/24/09 - 05/01/09	< 67	< 67	< 54	< 67	< 67	
05/01/09 - 05/08/09	< 35	< 69	< 69	< 66	< 69	
05/08/09 - 05/15/09	< 61	< 60	< 61	< 38	< 65	(1)
05/15/09 - 05/22/09	< 39	< 49	< 48	< 37	< 48	
05/22/09 - 05/29/09	< 59	< 59	< 60	< 26	< 60	
05/29/09 - 06/05/09	< 15	< 19	< 19	< 14	< 19	
06/05/09 - 06/12/09	< 56	< 54	< 58	< 35	< 54	
06/12/09 - 06/19/09	< 53	< 52	< 53	< 58	< 53	
06/19/09 - 06/26/09	< 66	< 64	< 54	< 53	< 28	
06/26/09 - 07/03/09	< 36	< 36	< 35	< 39	< 36	
07/03/09 - 07/10/09	< 68	< 68	< 47	< 47	< 68	
07/10/09 - 07/17/09	< 57	< 57	< 57	< 53	< 57	
07/17/09 - 07/24/09	< 57	< 57	< 38	< 26	< 57	
07/24/09 - 07/31/09	< 35	< 35	< 35	< 16	< 35	
07/31/09 - 08/07/09	< 25	< 25	< 26	< 38	< 26	
08/07/09 - 08/14/09	< 42	< 42	< 42	< 41	< 24	
08/14/09 - 08/21/09	< 11	< 26	< 26	< 29	< 26	
08/21/09 - 08/28/09	< 22	< 38	< 38	< 36	< 38	
08/28/09 - 09/04/09	< 39	< 39	< 40	< 65	< 39	
09/04/09 - 09/11/09	< 32	< 32	< 19	< 42	< 32	
09/11/09 - 09/18/09	< 54	< 54	< 53	< 48	< 54	
09/18/09 - 09/25/09	< 66	< 66	< 47	< 46	< 66	
09/25/09 - 10/02/09	< 61	< 61	< 58	< 29	< 60	
10/02/09 - 10/09/09	< 54	< 54	< 45	< 44	< 54	
10/09/09 - 10/16/09	< 54	< 54	< 54	< 44	< 30	
10/16/09 - 10/23/09	< 65	< 65	< 65	< 67	< 65	
10/23/09 - 10/30/09	< 68	< 68	< 38	< 35	< 68	
10/30/09 - 11/06/09	< 52	< 52	< 52	< 60	< 52	
11/06/09 - 11/13/09	< 58	< 58	< 64	< 64	< 58	
11/13/09 - 11/20/09	< 27	< 28	< 28	< 14	< 28	
11/20/09 - 11/27/09	< 59	< 59	< 61	< 61	< 59	
11/27/09 - 12/04/09	< 61	< 61	< 61	< 64	< 61	
12/04/09 - 12/11/09	< 63	< 63	< 56	< 31	< 63	
12/11/09 - 12/18/09	< 61	< 61	< 61	< 55	< 61	
12/18/09 - 12/24/09	< 45	< 45	< 45	< 48	< 45	
12/24/09 - 01/01/10	< 67	< 67	< 69	< 53	< 69	
MEAN	-	-	-	-	-	

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VII.1 CONCENTRATIONS OF I-131 IN MILK SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION	CONTROL FARM
PERIOD	D-25
01/01/09	< 0.8
02/05/09	< 0.8
03/05/09	< 0.6
04/02/09	< 0.6
05/07/09	< 0.6
05/20/09	< 0.4
06/04/09	< 0.8
06/18/09	< 0.8
07/02/09	< 0.5
07/16/09	< 0.7
07/30/09	< 0.7
08/12/09	< 0.4
08/27/09	< 0.6
09/10/09	< 0.8
09/24/09	< 0.7
10/08/09	< 0.6
10/21/09	< 0.7
11/05/09	< 0.6
12/03/09	< 0.5
MEAN	-

TABLE C-VII.2 CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
D-25	01/01/09	< 4	< 5	< 13	< 5	< 10	< 5	< 8	< 4	< 4	< 43	< 12
	02/05/09	< 2	< 2	< 6	< 2	< 4	< 2	< 4	< 2	< 2	< 19	< 6
	03/05/09	< 7	< 7	< 17	< 7	< 17	< 7	< 13	< 7	< 6	< 48	< 11
	04/02/09	< 4	< 5	< 13	< 5	< 11	< 5	< 9	< 4	< 5	< 38	< 13
	05/07/09	< 2	< 3	< 7	< 2	< 5	< 3	< 4	< 2	< 2	< 43	< 14
	05/20/09	< 7	< 8	< 15	< 6	< 15	< 8	< 10	< 6	< 7	< 54	< 15
	06/04/09	< 3	< 3	< 7	< 3	< 7	< 3	< 5	< 3	< 3	< 22	< 6
	06/18/09	< 4	< 4	< 12	< 4	< 10	< 5	< 8	< 4	< 4	< 40	< 10
	07/02/09	< 4	< 5	< 11	< 4	< 9	< 5	< 9	< 4	< 4	< 39	< 11
	07/16/09	< 4	< 4	< 11	< 4	< 8	< 4	< 8	< 3	< 4	< 25	< 9
	07/30/09	< 4	< 5	< 12	< 5	< 10	< 5	< 9	< 4	< 4	< 43	< 10
	08/12/09	< 4	< 4	< 9	< 3	< 9	< 4	< 5	< 2	< 3	< 24	< 11
	08/27/09	< 6	< 6	< 15	< 7	< 14	< 7	< 10	< 6	< 7	< 30	< 9
	09/10/09	< 6	< 7	< 15	< 7	< 17	< 7	< 12	< 6	< 7	< 28	< 10
	09/24/09	< 5	< 5	< 11	< 5	< 12	< 6	< 10	< 5	< 6	< 30	< 7
	10/08/09	< 4	< 6	< 14	< 6	< 12	< 7	< 11	< 5	< 5	< 35	< 13
	10/21/09	< 4	< 5	< 10	< 5	< 10	< 4	< 8	< 4	< 5	< 22	< 7
	11/05/09	< 7	< 8	< 18	< 10	< 15	< 8	< 15	< 7	< 8	< 46	< 14
	12/03/09	< 5	< 5	< 14	< 5	< 12	< 6	< 10	< 5	< 5	< 45	< 13
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-VIII.1 **CONCENTRATIONS OF GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
D-CONTROL													
Cabbage	09/12/09	< 11	< 17	< 42	< 17	< 36	< 15	< 28	< 38	< 13	< 15	< 90	< 29
Potatoes	09/12/09	< 19	< 23	< 51	< 23	< 50	< 24	< 38	< 42	< 17	< 17	< 108	< 29
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-QUAD 1													
Cabbage	09/11/09	< 17	< 19	< 48	< 26	< 43	< 24	< 38	< 58	< 16	< 21	< 120	< 38
Carrots	09/11/09	< 19	< 18	< 42	< 16	< 45	< 21	< 35	< 42	< 15	< 17	< 100	< 34
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-QUAD 2													
Cabbage	09/11/09	< 8	< 7	< 18	< 6	< 16	< 9	< 15	< 21	< 7	< 7	< 40	< 12
Carrots	09/11/09	< 14	< 13	< 37	< 13	< 30	< 15	< 28	< 37	< 12	< 14	< 92	< 23
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-QUAD 3													
Cabbage	09/12/09	< 12	< 10	< 22	< 8	< 25	< 13	< 19	< 25	< 8	< 9	< 58	< 16
Onions	09/12/09	< 8	< 10	< 24	< 10	< 23	< 11	< 16	< 20	< 8	< 11	< 52	< 15
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-QUAD 4													
Beets	09/12/09	< 12	< 13	< 33	< 14	< 34	< 14	< 24	< 30	< 10	< 14	< 77	< 25
Cabbage	09/12/09	< 17	< 21	< 56	< 14	< 45	< 22	< 34	< 45	< 17	< 21	< 110	< 33
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-IX.1 QUARTERLY TLD RESULTS FOR DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER ± 2 STANDARD DEVIATIONS

STATION CODE	MEAN ± 2 S.D.	JAN - MAR	APR - JUN	JUL - SEP	OCT - DEC
D-01-1	24.5 ± 4.8	27	22	23	26
D-01-2	24.0 ± 4.0	27	23	23	23
D-02-1	26.8 ± 4.1	28	29	25	25
D-02-2	25.3 ± 2.5	27	25	25	24
D-03-1	21.5 ± 3.5	23	20	20	23
D-03-2	21.8 ± 6.2	26	19	20	22
D-04-1	25.8 ± 2.5	27	24	26	26
D-04-2	24.0 ± 3.7	26	22	23	25
D-07-1	24.0 ± 3.3	26	24	22	24
D-07-2	23.5 ± 2.6	24	23	22	25
D-08-1	25.3 ± 7.7	31	24	23	23
D-08-2	25.5 ± 2.6	26	24	27	25
D-10-1	25.3 ± 3.4	27	25	23	26
D-10-2	23.3 ± 3.8	26	22	22	23
D-12-1	22.3 ± 2.5	24	21	22	22
D-12-2	21.0 ± 2.8	23	20	21	20
D-14-1	21.5 ± 3.8	24	22	20	20
D-14-2	23.8 ± 2.5	25	22	24	24
D-45-1	26.0 ± 4.9	27	24	29	24
D-45-2	25.3 ± 1.9	26	25	26	24
D-53-1	21.0 ± 2.8	23	21	20	20
D-53-2	20.8 ± 3.4	23	19	20	21
D-55-1	25.0 ± 2.8	27	24	25	24
D-55-2	24.0 ± 2.8	26	23	24	23
D-56-1	21.3 ± 1.0	22	21	21	21
D-56-2	21.0 ± 4.3	24	21	19	20
D-101-1	25.0 ± 2.8	27	24	25	24
D-101-2	22.8 ± 3.4	25	22	23	21
D-102-1	28.5 ± 6.8	33	25	27	29
D-102-2	25.8 ± 2.5	27	26	24	26
D-103-1	23.5 ± 2.6	25	24	23	22
D-103-2	23.8 ± 3.0	26	23	23	23
D-104-1	27.0 ± 3.7	29	25	28	26
D-104-2	24.0 ± 7.1	29	24	22	21
D-105-1	23.8 ± 1.9	25	23	24	23
D-105-2	24.3 ± 3.0	26	23	23	25
D-106-1	23.3 ± 5.3	27	21	22	23
D-106-2	21.5 ± 2.6	23	20	22	21
D-107-1	21.8 ± 5.7	26	21	20	20
D-107-2	21.5 ± 6.2	26	21	20	19
D-108-1	24.8 ± 3.4	27	25	24	23
D-108-2	23.8 ± 2.5	25	24	24	22
D-109-1	25.3 ± 5.3	29	23	24	25
D-109-2	25.8 ± 2.5	27	26	24	26
D-110-3	28.3 ± 3.4	30	26	28	29
D-110-4	27.5 ± 2.6	28	27	26	29
D-111-1	26.8 ± 4.1	28	25	25	29
D-111-2	26.0 ± 6.7	31	24	25	24
D-113-1	21.8 ± 3.4	24	20	22	21
D-113-2	23.5 ± 5.3	24	22	27	21
D-114-1	22.5 ± 2.6	24	22	21	23
D-114-2	23.0 ± 2.3	24	22	24	22

TABLE C-IX.1 QUARTERLY TLD RESULTS FOR DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER ± 2 STANDARD DEVIATIONS

STATION CODE	MEAN ± 2 S.D.	JAN - MAR		APR - JUN	JUL - SEP	OCT - DEC
D-115-1	24.5 ± 2.6	26		23	24	25
D-115-2	25.3 ± 2.5	27		25	24	25
D-116-1	26.0 ± 3.7	27		24	25	28
D-116-2	26.0 ± 7.1	31		24	23	26
D-201-1	28.5 ± 4.8	31		27	26	30
D-201-2	29.5 ± 8.1	35		27	26	30
D-202-1	26.0 ± 1.6	26		26	25	27
D-202-2	24.0 ± 2.8	26		23	23	24
D-203-1	25.0 ± 3.7	26		24	23	27
D-203-2	22.5 ± 3.5	24		21	21	24
D-204-1	22.3 ± 4.1	25		22	20	22
D-204-2	22.8 ± 3.0	24		22	21	24
D-205-1	24.5 ± 3.8	26		22	26	24
D-205-2	23.5 ± 4.8	27		22	22	23
D-206-1	23.3 ± 4.4	24		21	22	26
D-206-2	24.3 ± 2.5	26		23	24	24
D-207-1	23.0 ± 4.9	24		26	21	21
D-207-2	23.8 ± 3.4	26	(1)	23	22	24
D-208-1	22.5 ± 6.0	27		21	21	21
D-208-2	22.5 ± 5.3	26		23	21	20
D-209-1	20.8 ± 3.0	23		20	20	20
D-209-2	21.5 ± 3.8	22		24	20	20
D-210-1	23.8 ± 4.1	26		21	24	24
D-210-2	25.8 ± 5.5	29		27	23	24
D-211-1	25.0 ± 5.4	29		23	24	24
D-211-2	25.0 ± 8.2	31		23	22	24
D-212-3	22.5 ± 4.8	26		21	22	21
D-212-4	21.8 ± 4.4	25		21	21	20
D-213-1	21.3 ± 3.8	24		20	20	21
D-213-2	20.5 ± 2.0	22		20	20	20
D-214-1	27.3 ± 3.0	28		29	26	26
D-214-2	29.5 ± 2.6	28		31	29	30
D-215-1	29.0 ± 5.9	32		26	31	27
D-215-2	27.3 ± 3.0	28		25	28	28
D-216-1	23.3 ± 3.0	25		22	22	24
D-216-2	26.0 ± 2.3	27		25	25	27
D-112A-1	22.3 ± 4.4	25		20	23	21
D-112A-2	22.3 ± 2.5	24		22	21	22

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-IX.2 MEAN QUARTERLY TLD RESULTS FOR THE INNER RING, OUTER RING, OTHER AND CONTROL LOCATIONS FOR DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER
STANDARD DEVIATIONS OF THE STATION DATA

COLLECTION PERIOD	INNER RING ± 2 S.D.	OUTER RING	OTHER	CONTROL
JAN-MAR	26.7 ± 4.7	26.5 ± 5.7	25.8 ± 4.0	23.5 ± 1.4
APR-JUN	23.3 ± 3.8	23.5 ± 5.5	22.8 ± 4.4	20.5 ± 1.4
JUL-SEP	23.8 ± 4.1	23.2 ± 5.6	23.0 ± 5.1	21.5 ± 1.4
OCT-DEC	23.9 ± 5.7	24.1 ± 6.1	23.4 ± 3.8	21.0 ± 2.8

TABLE C-IX.3 SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER

LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S.D.
INNER RING	128	19	33	24.4 ± 5.3
OUTER RING	128	20	35	24.3 ± 6.3
OTHER	96	19	31	23.7 ± 4.9
CONTROL	8	20	24	21.6 ± 2.8

INNER RING STATIONS - D-101-1, D-101-2, D-102-1, D-102-2, D-103-1, D-103-2, D-104-1, D-104-2, D-105-1, D-105-2, D-106-1, D-106-2, D-107-1, D-107-2, D-108-1, D-108-2, D-109-1, D-109-2, D-110-3, D-110-4, D-111-1, D-111-2, D-112A-1, D-112A-2, D-113-1, D-113-2, D-114-1, D-114-2, D-115-1, D-115-2, D-116-1, D-116-2

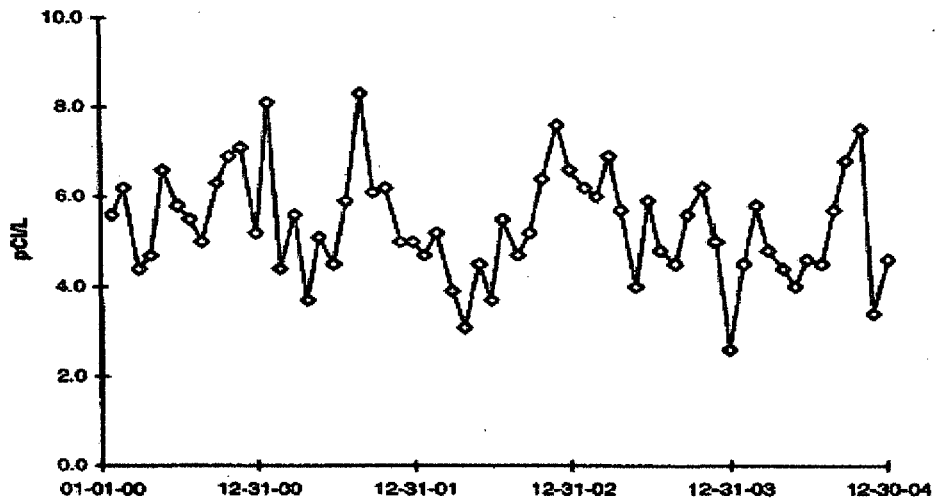
OUTER RING STATIONS - D-201-1, D-201-2, D-202-1, D-202-2, D-203-1, D-203-2, D-204-1, D-204-2, D-205-1, D-205-2, D-206-1, D-206-2, D-207-1, D-207-2, D-208-1, D-208-2, D-209-1, D-209-2, D-210-1, D-210-2, D-211-1, D-211-2, D-212-3, D-212-4, D-213-1, D-213-2, D-214-1, D-214-2, D-215-1, D-215-2, D-216-1, D-216-2

OTHER STATIONS - D-01-1, D-01-2, D-02-1, D-02-2, D-03-1, D-03-2, D-04-1, D-04-2, D-07-1, D-07-2, D-08-1, D-08-2, D-10-1, D-10-2, D-14-1, D-14-2, D-45-1, D-45-2, D-53-1, D-53-2, D-55-1, D-55-2, D-56-1, D-56-2

CONTROL STATIONS - D-12-1, D-12-2

FIGURE C-1
SURFACE WATER - GROSS BETA - STATIONS D-51 and D-52 (C) COLLECTED IN THE VICINITY OF DNPS, 2000 - 2004

D-51 Dresden Lock & Dam



D-52 (C) DesPlaines River

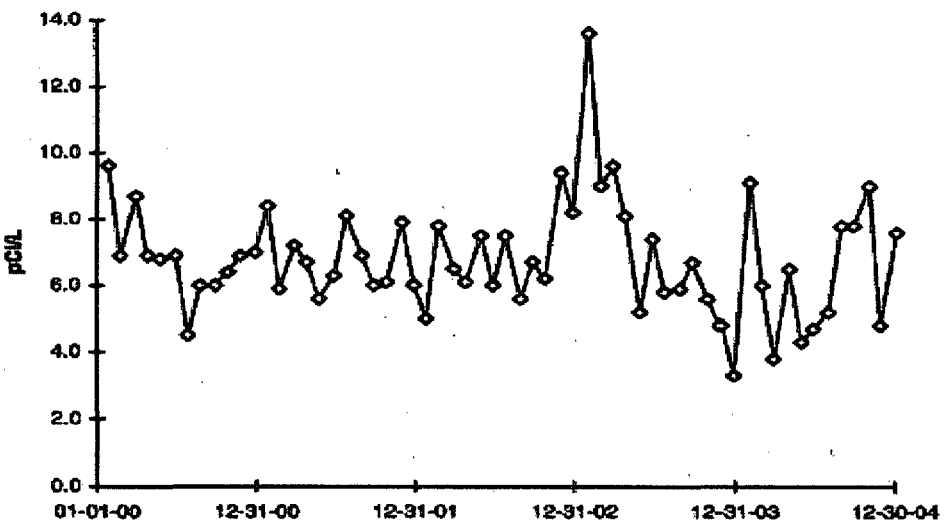
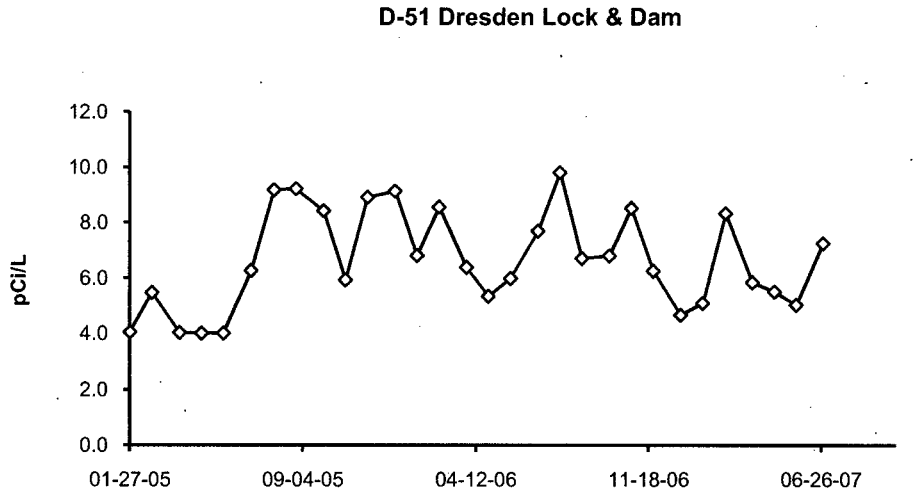
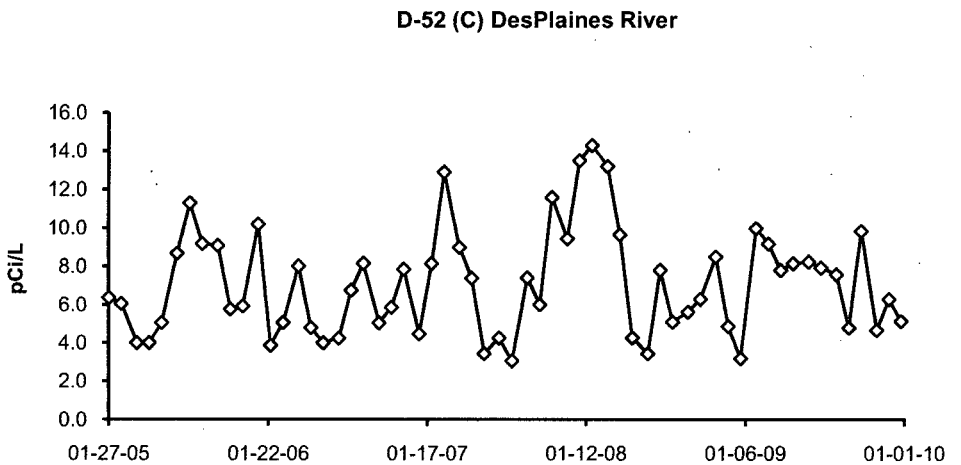


FIGURE C-1 (cont.)
SURFACE WATER - GROSS BETA - STATIONS D-51 and D-52 (C) COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009





DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY 2005

D-51 LOCATION REMOVED FROM PROGRAM JUNE 29, 2007 AND REPLACED WITH D-21

FIGURE C-2
SURFACE WATER - GROSS BETA - STATION D-54 (C)
COLLECTED IN THE VICINITY OF DNPS, 2002 - 2004

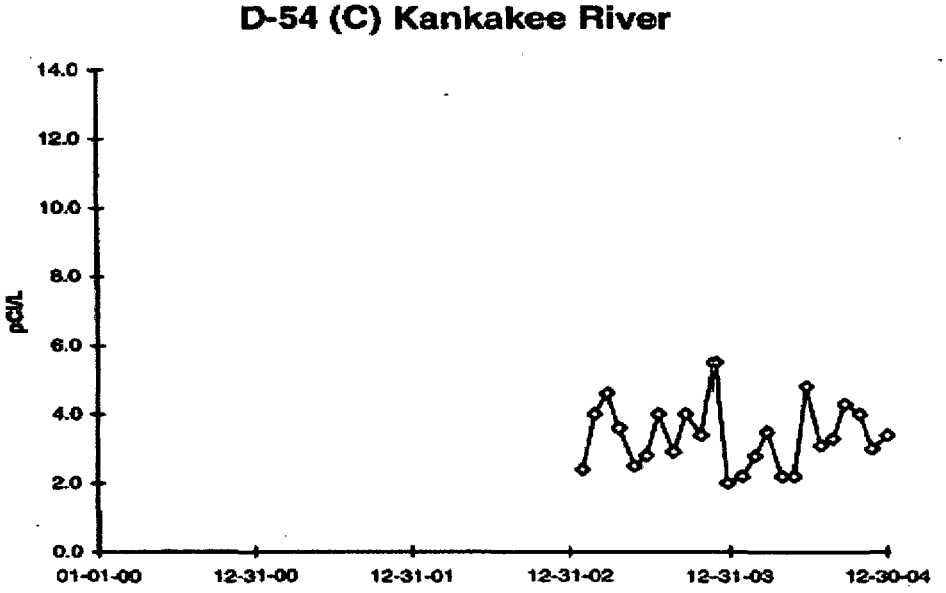
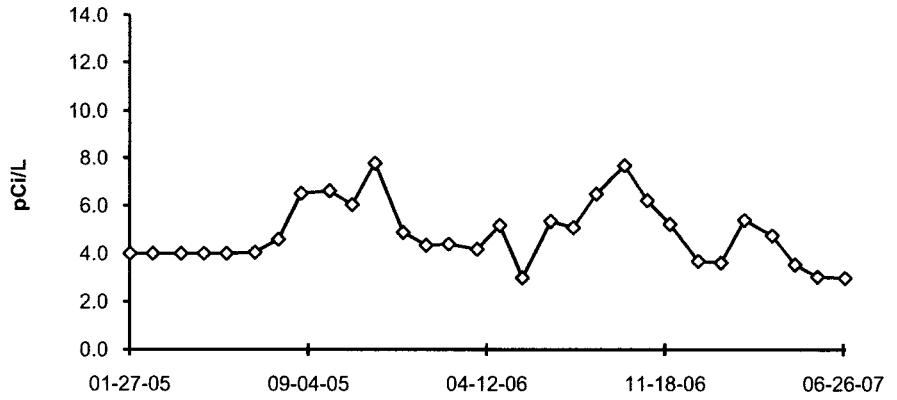
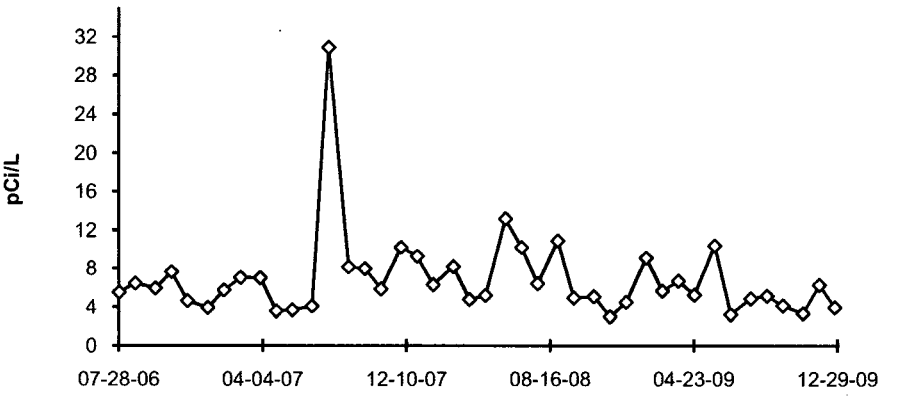


FIGURE C-2 (cont.)
SURFACE WATER - GROSS BETA - STATION D-54 (C) and D-57 (C) COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009

D-54 (C) Kankakee River



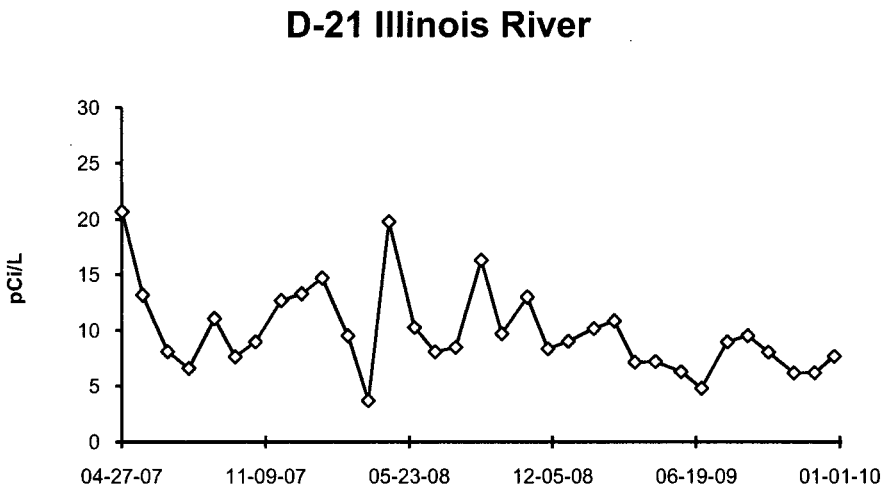
D-57 (C) Kankakee River



DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY 2005

D-54 LOCATION REMOVED FROM PROGRAM JUNE 28, 2007 AND REPLACED WITH D-57

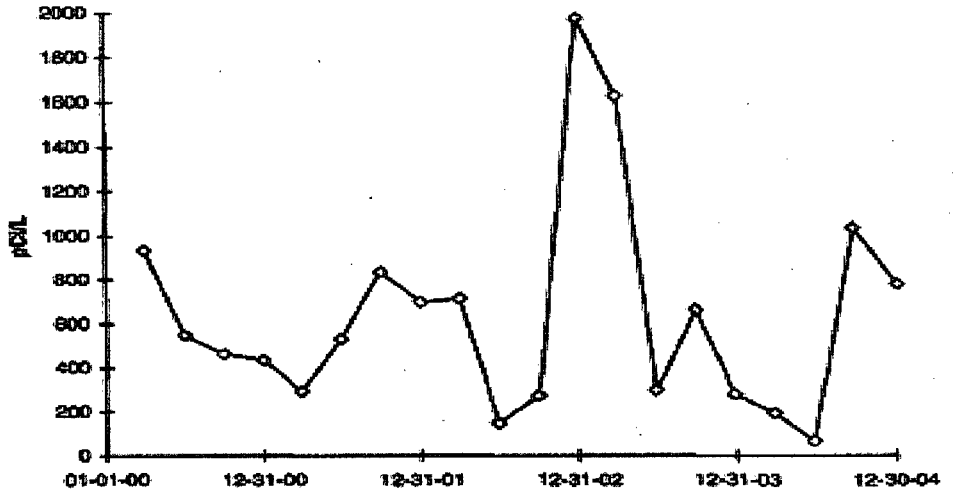
FIGURE C-3
SURFACE WATER - GROSS BETA - STATION D-21
COLLECTED IN THE VICINITY OF DNPS, 2007 - 2009



D-21 PLACED INTO SERVICE ON MARCH 30, 2007, REPLACED D-51

FIGURE C-4
SURFACE WATER - TRITIUM - STATIONS D-51 and D-52 (C) COLLECTED IN THE VICINITY OF DNPS, 2000 - 2004

D-51 Dresden Lock & Dam



D-52 (C) Des Plaines River

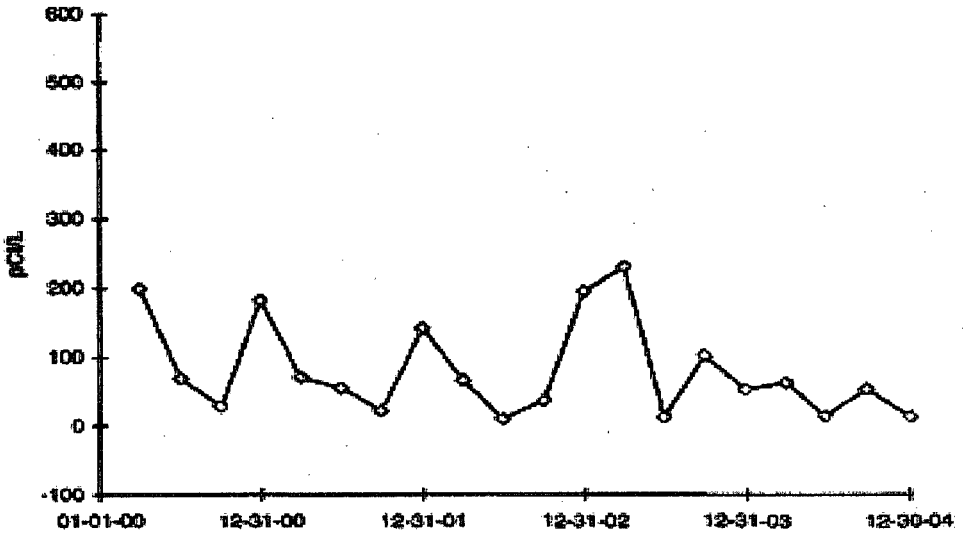
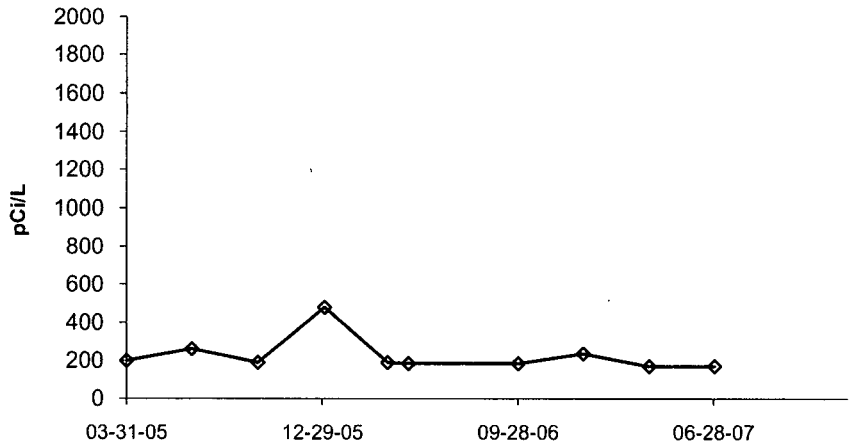
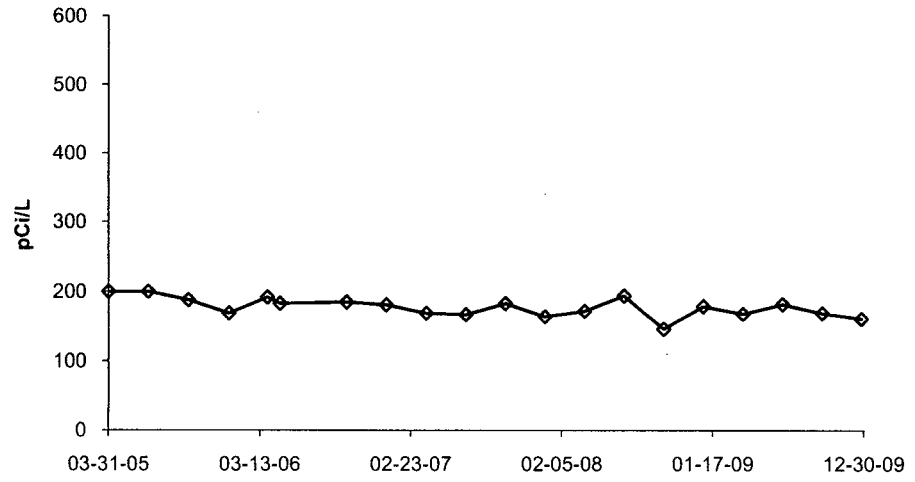


FIGURE C-4 (cont.)
SURFACE WATER - TRITIUM - STATIONS D-51 and D-52 (C) COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009

D-51 Dresden Lock & Dam



D-52 (C) Des Plaines River



DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY 2005

D-51 LOCATION REMOVED FROM PROGRAM JUNE 29, 2007 AND REPLACED WITH D-21

FIGURE C-5
SURFACE WATER - TRITIUM - STATION D-54 (C)
COLLECTED IN THE VICINITY OF DNPS, 2002 - 2004

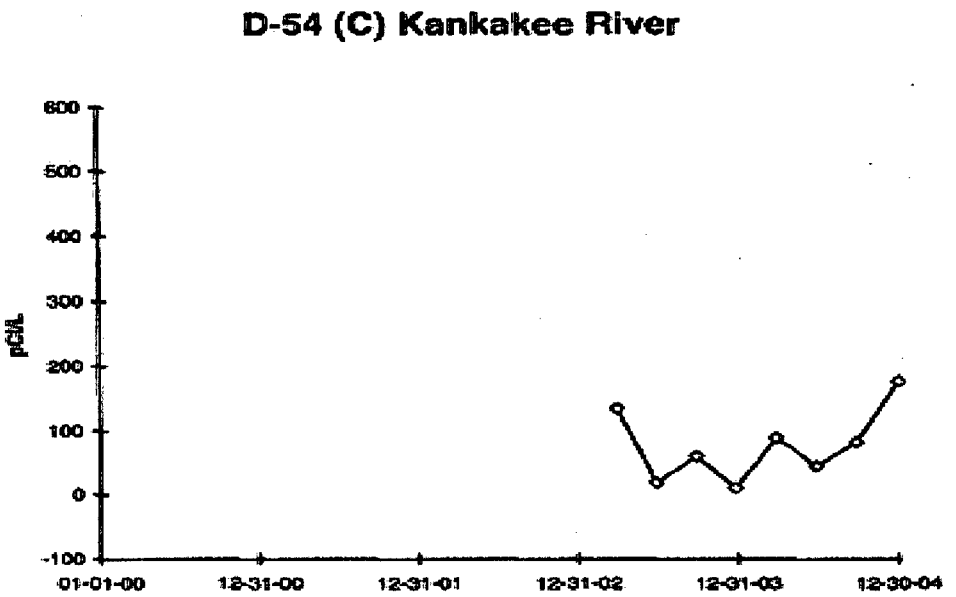
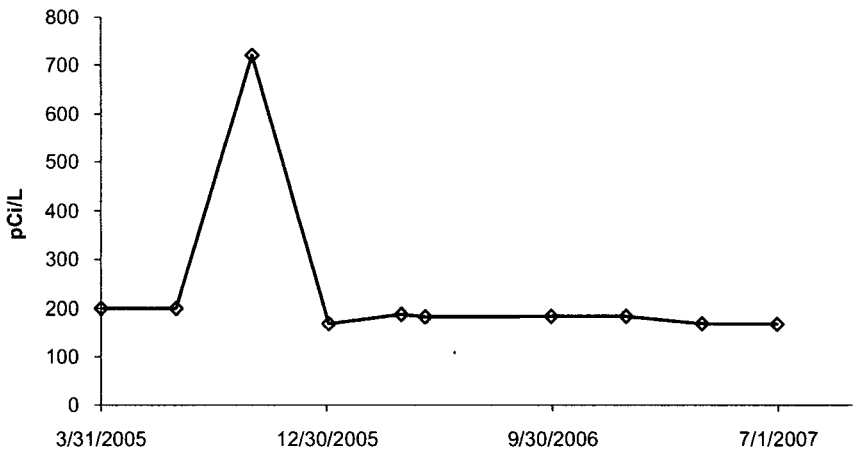


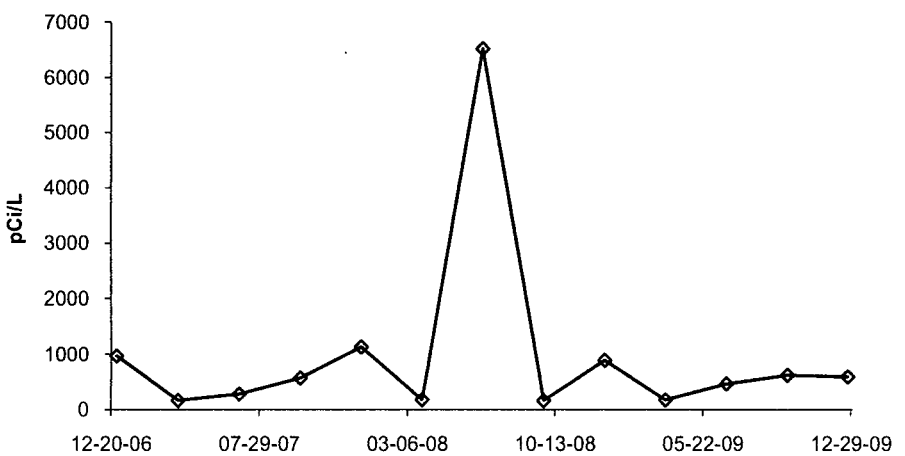
FIGURE C-5 (cont.)
SURFACE WATER - TRITIUM - STATION D-54 (C) AND D-57 (C) COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009

D-54 (C) Kankakee River



Location shared with Braidwood Station (BD-10).

D-57 (C) Kankakee River

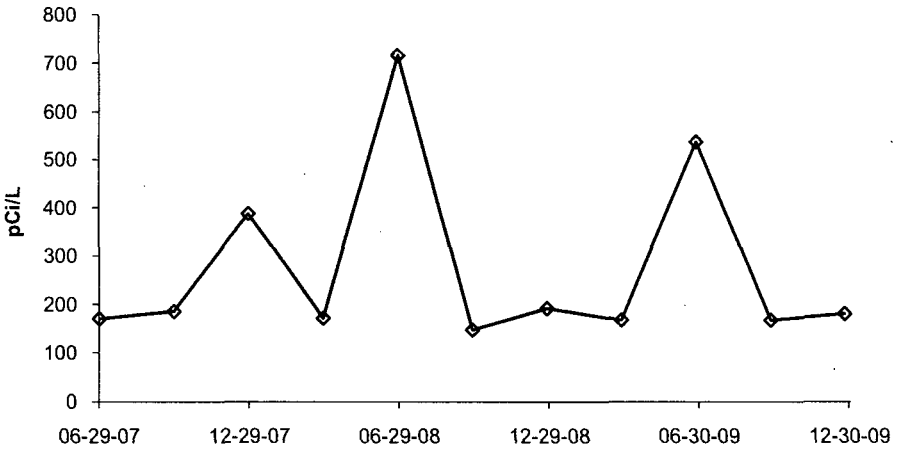


DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY 2005

D-57 NEW STATION JULY 24, 2006. REPLACED D-54 ON JUNE 28, 2007

FIGURE C-6
SURFACE WATER - TRITIUM - STATION D-21
COLLECTED IN THE VICINITY OF DNPS, 2007 - 2009

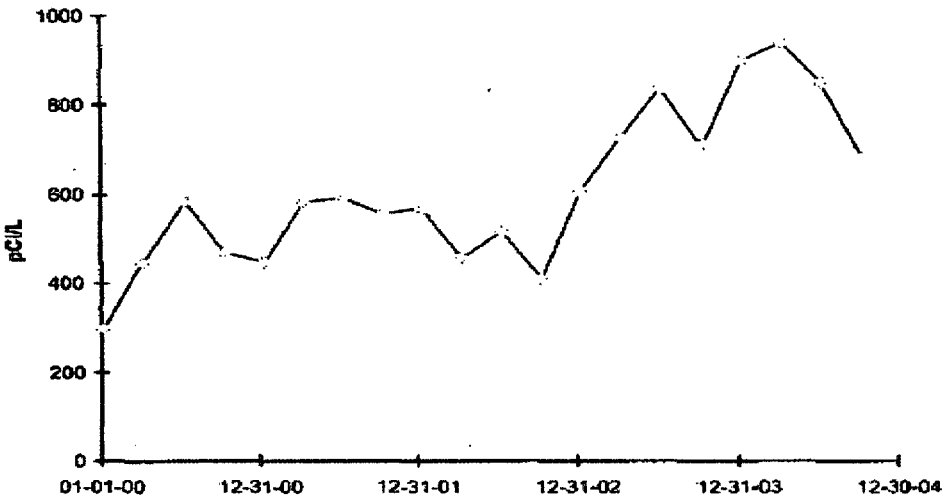
D-21 Illinois River



D-21 REPLACED D-51JUNE 29, 2007

FIGURE C-7
GROUND WATER - TRITIUM - STATIONS D-23 and D-35 COLLECTED IN THE VICINITY OF DNPS, 2000 - 2004

D-23 Thorsen



D-35 Dresden Lock and Dam

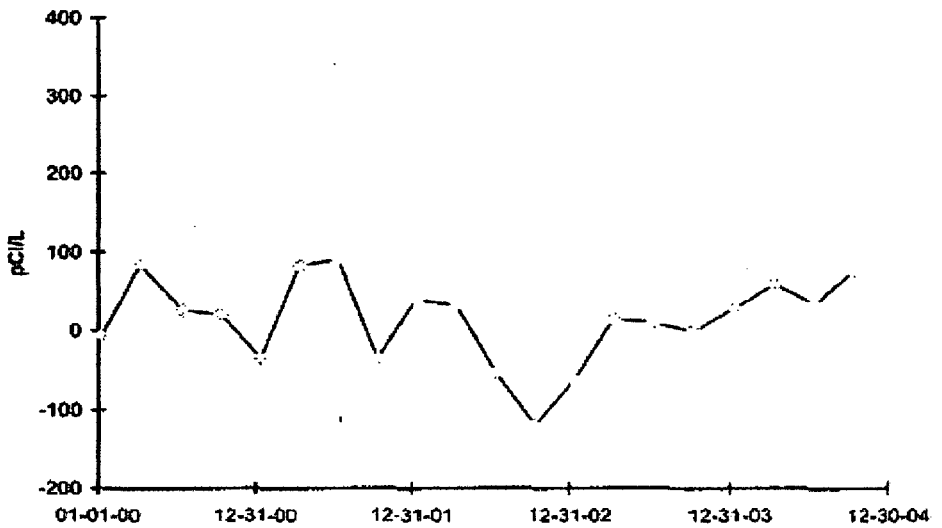
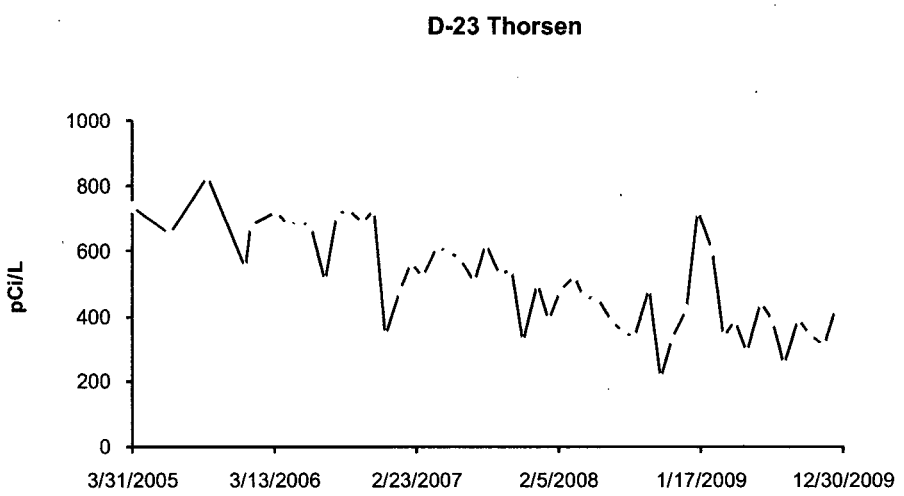
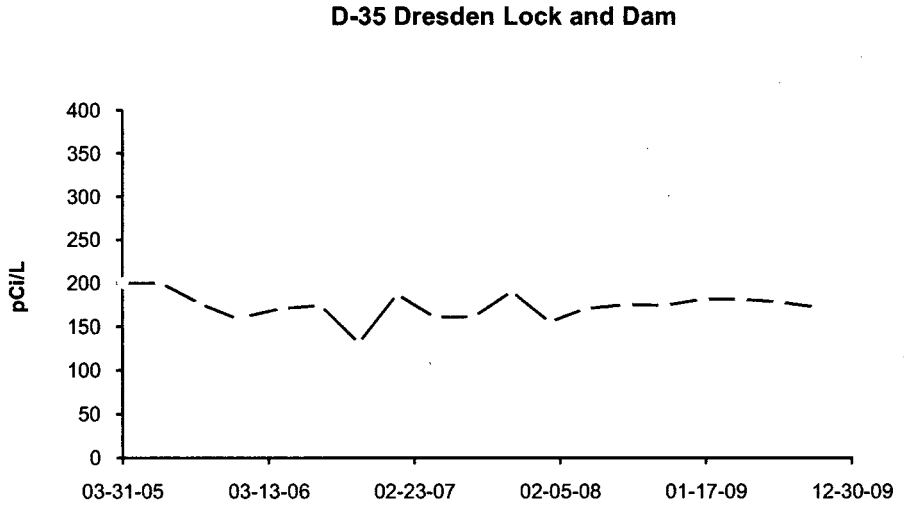


FIGURE C-7 (cont.)
GROUND WATER - TRITIUM - STATIONS D-23 and D-35 COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009

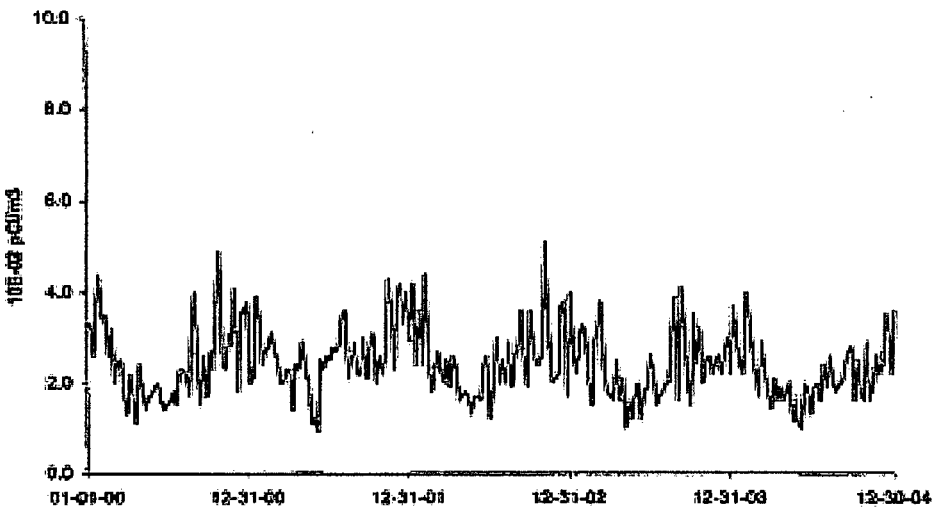




DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY 2005

FIGURE C-8
AIR PARTICULATES - GROSS BETA - STATIONS D-01 and D-02 COLLECTED IN THE VICINITY OF DNPS, 2000 - 2004

D-01 Onsite Station 1



D-02 Onsite Station 2

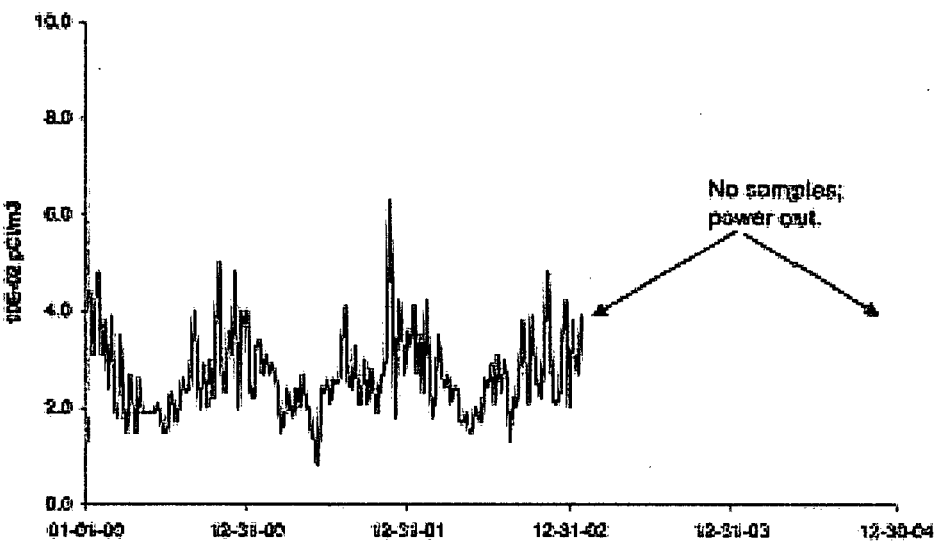
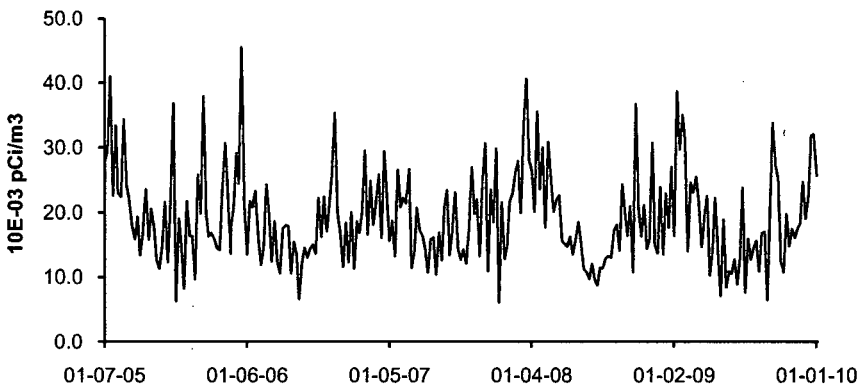
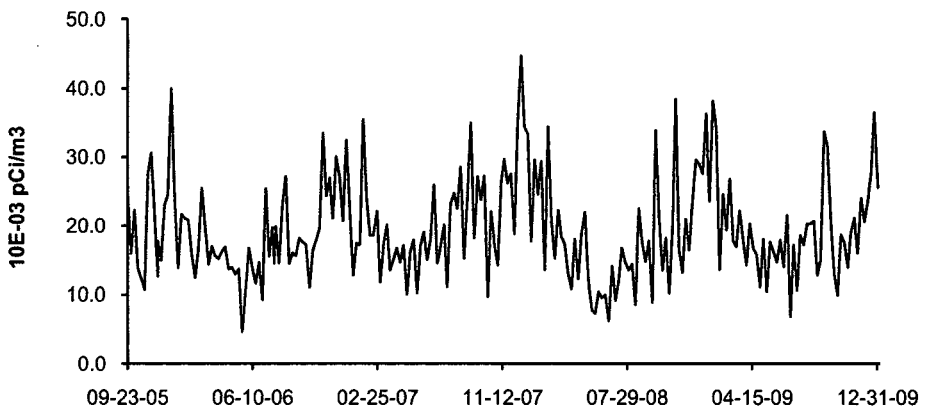


FIGURE C-8 (cont.)
AIR PARTICULATES - GROSS BETA - STATIONS D-01 and D-02 COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009

D-01 Onsite Station 1



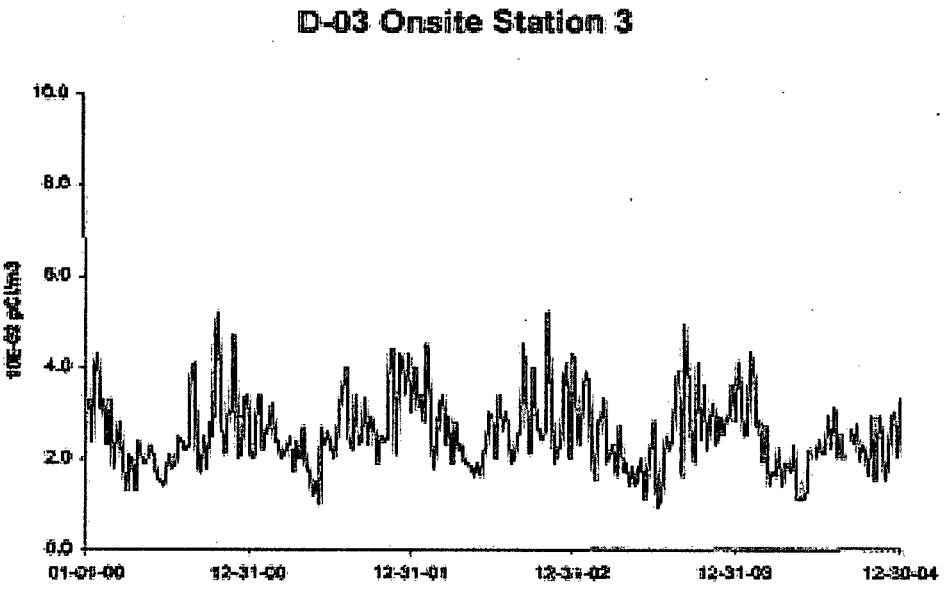
D-02 Onsite Station 2



D-02 No samples; power was restored on 09-16-05.

DUE TO VENDOR CHANGE IN 2005, THE REPORTED UNITS CHANGED FROM E-02 PCI/M3 TO E-03 PCI/M3

FIGURE C-9
AIR PARTICULATES - GROSS BETA - STATIONS D-03 and D-04 COLLECTED IN THE VICINITY OF DNPS, 2000 - 2004



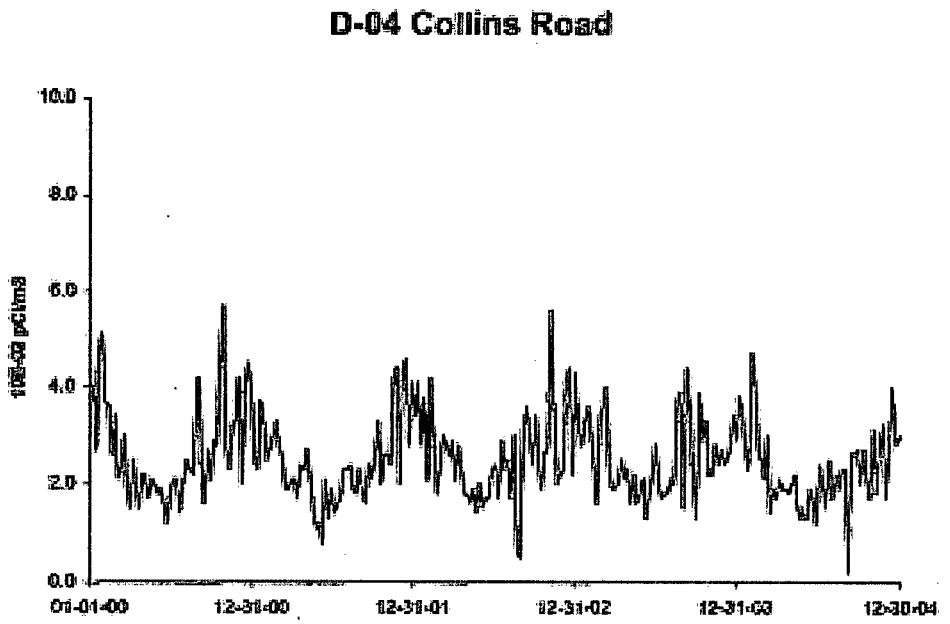
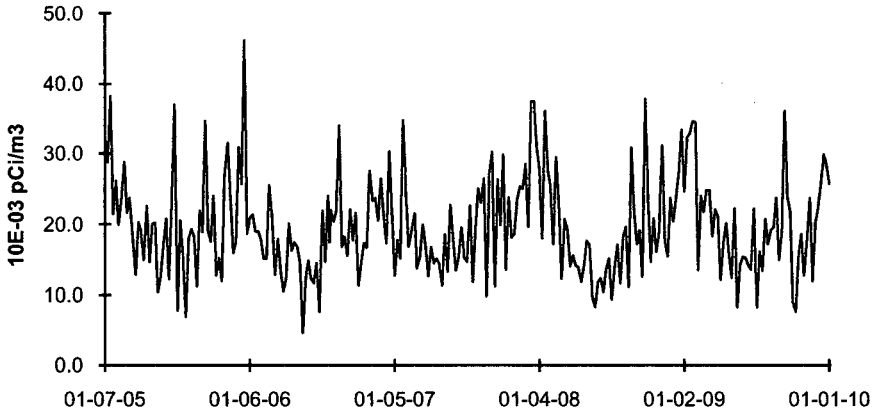
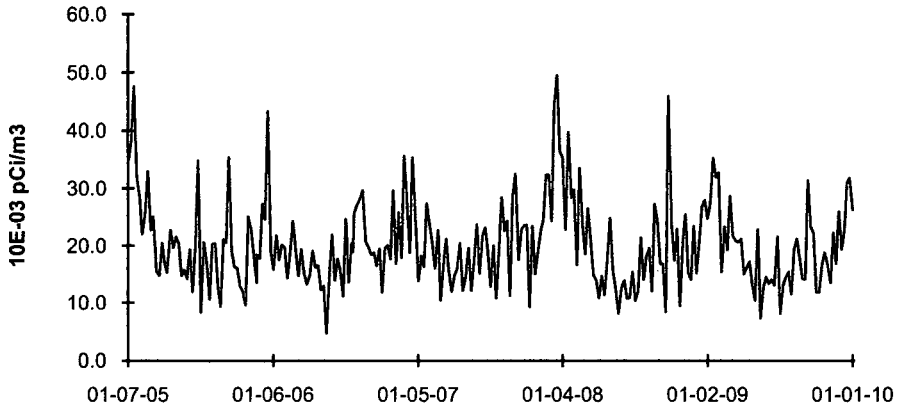


FIGURE C-9 (cont.)
AIR PARTICULATES - GROSS BETA - STATIONS D-03 and D-04 COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009

D-03 Onsite Station 3

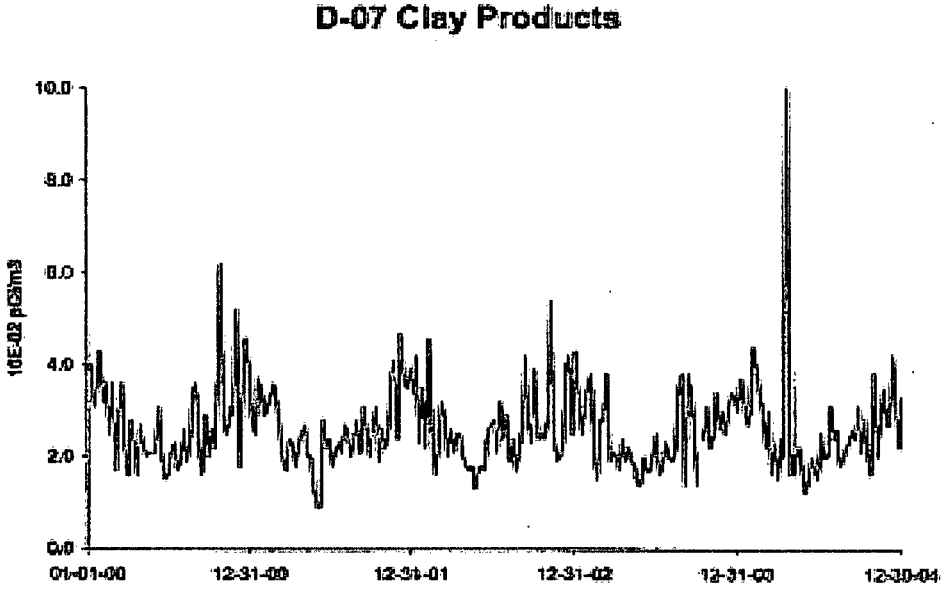


D-04 Collins Road



DUE TO VENDOR CHANGE IN 2005, THE REPORTED UNITS CHANGED FROM E-02 PCI/M3 TO E-03 PCI/M3

FIGURE C-10
AIR PARTICULATES - GROSS BETA - STATIONS D-07 and D-12 (C) COLLECTED IN THE VICINITY OF DNPS, 2000 - 2004



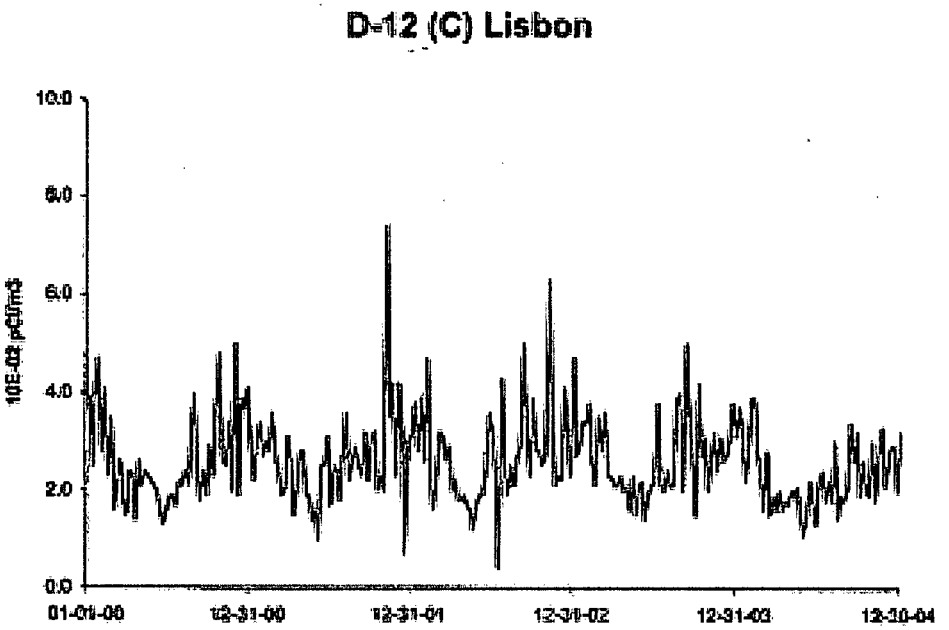
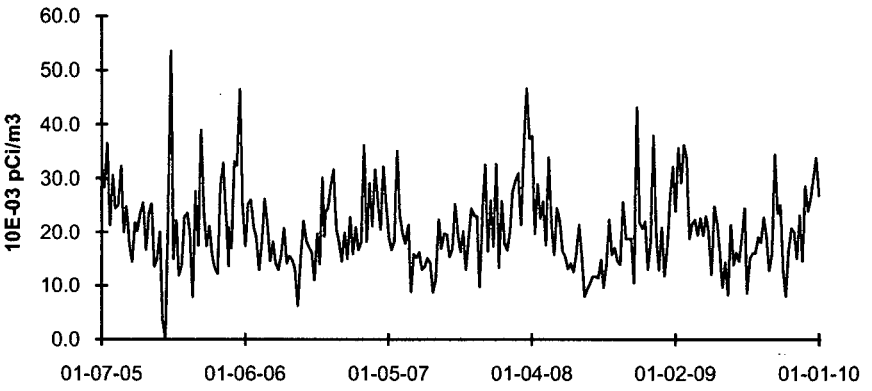


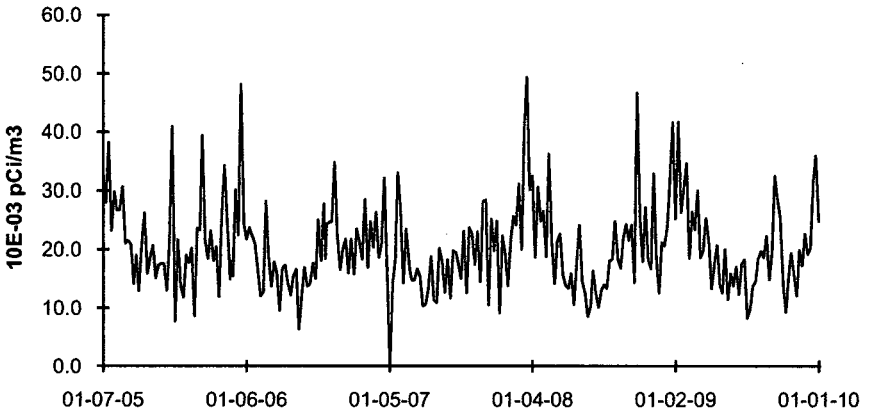
FIGURE C-10 (cont.)
AIR PARTICULATES - GROSS BETA - STATIONS D-07 and D-12 (C) COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009

D-07 Clay Products



06/10/05 - 06/17/05 no sample due to pump malfunction

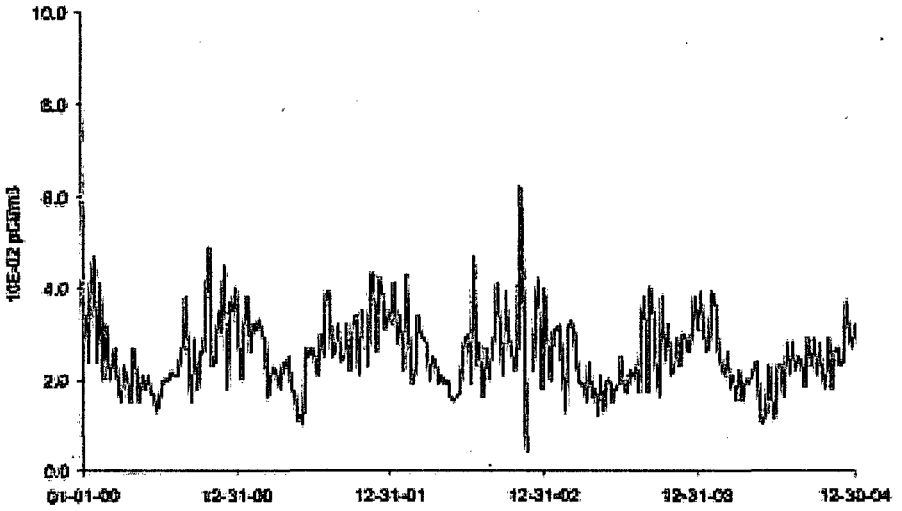
D-12 (C) Lisbon



DUE TO VENDOR CHANGE IN 2005, THE REPORTED UNITS CHANGED FROM E-02 PCI/M3 TO E-03 PCI/M3

FIGURE C-11
AIR PARTICULATES - GROSS BETA - STATIONS D-45 and D-53 COLLECTED IN THE VICINITY OF DNPS, 2000 - 2004

D-45 McKinley Woods Road



D-53 Grundy County Road

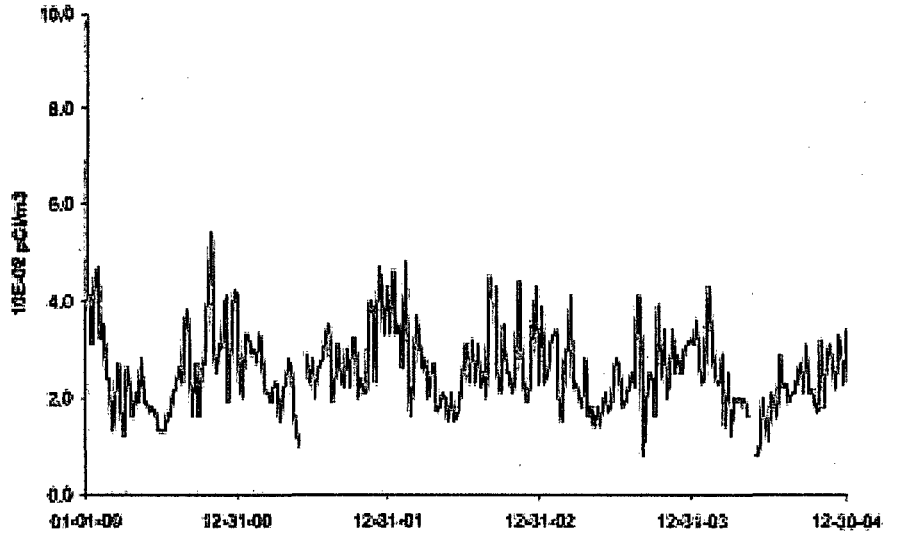
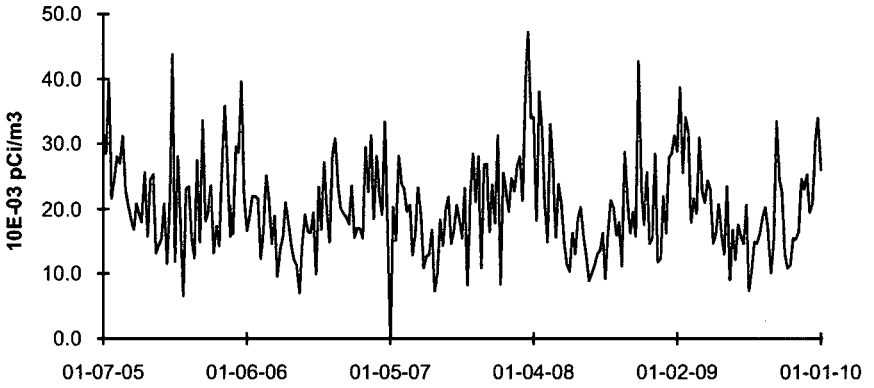
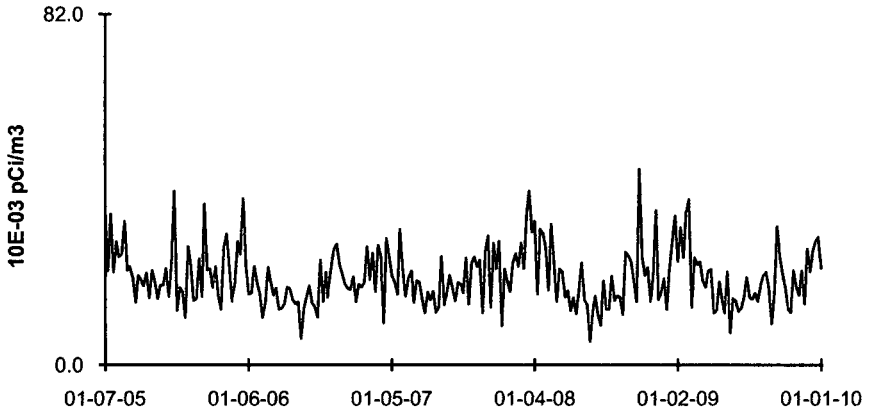


FIGURE C-11 (cont.)
AIR PARTICULATES - GROSS BETA - STATIONS D-45 and D-53 COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009

D-45 McKinley Woods Road



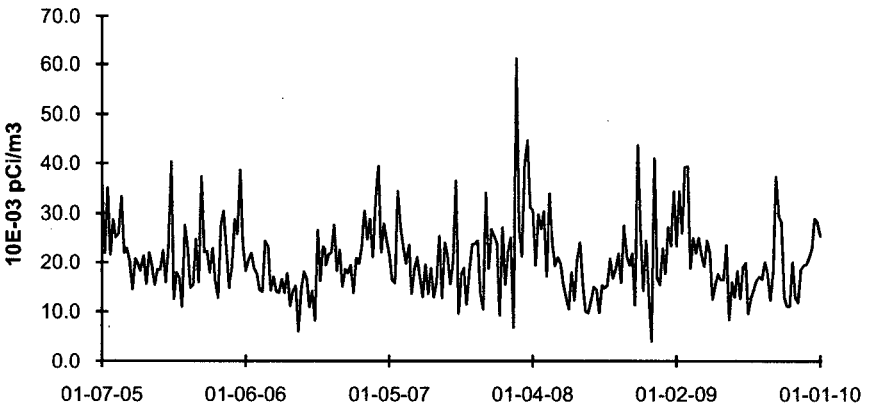
D-53 Grundy County Road



DUE TO VENDOR CHANGE, THE REPORTED UNITS CHANGED FROM E-02 PCI/M3 TO E-03 PCI/M3

FIGURE C-12
AIR PARTICULATES - GROSS BETA - STATIONS D-08 and D-10 COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009

D-08 Prairie Park



D-10 Goose Lake Village

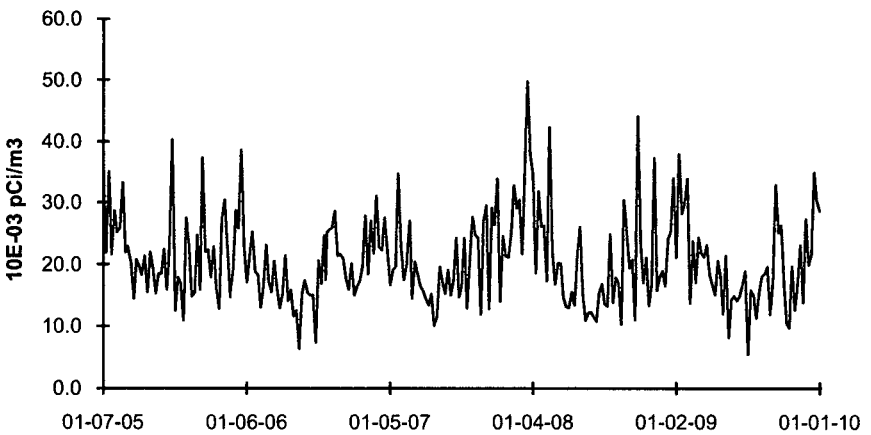
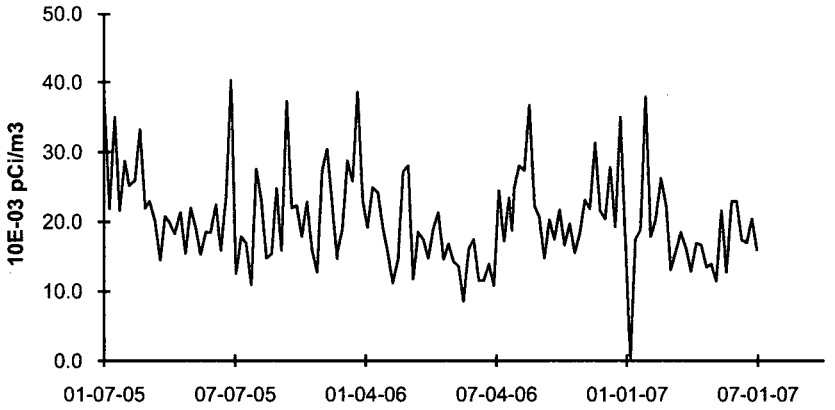
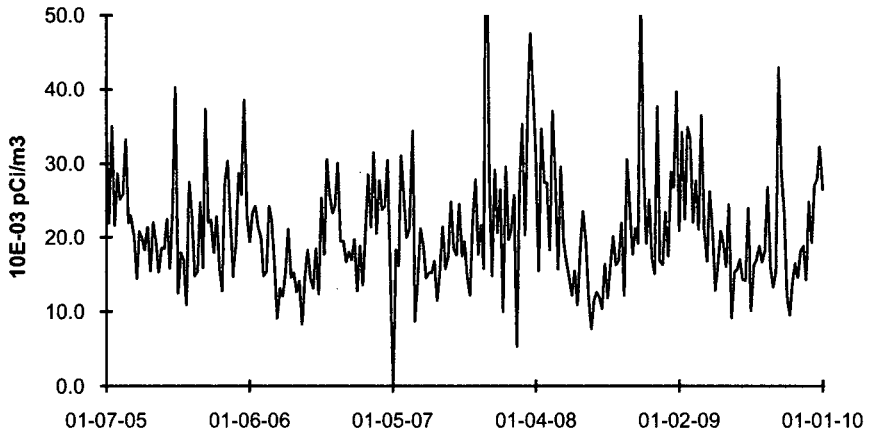


FIGURE C-13
AIR PARTICULATES - GROSS BETA - STATIONS D-13 and D-14 COLLECTED IN THE VICINITY OF DNPS, 2005 - 2009

D-13 Minooka



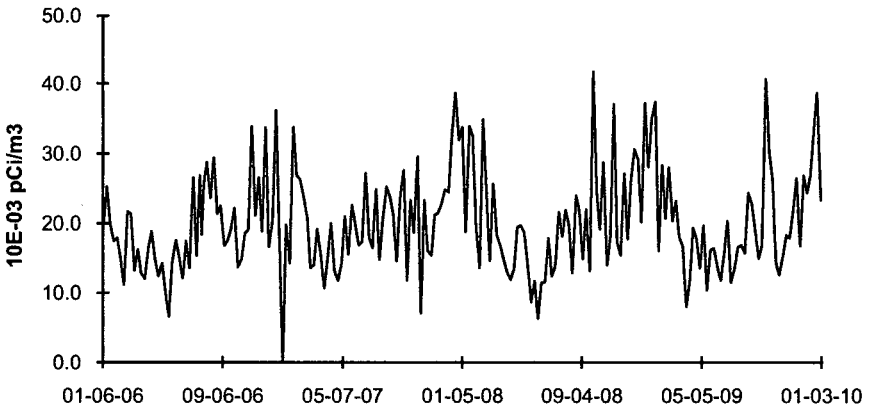
D-14 Channahon



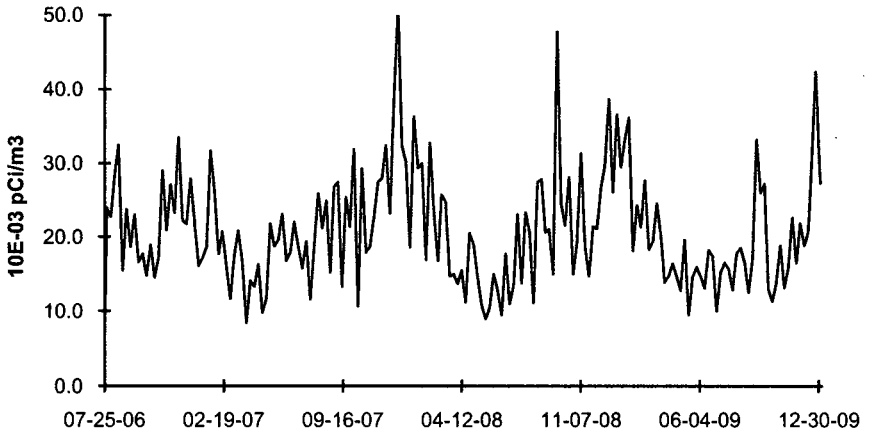
D-13 TAKEN OUT OF SERVICE JUNE 29, 2007 AND REPLACED WITH D-55

FIGURE C-14
AIR PARTICULATES - GROSS BETA - STATIONS D-55 and D-56 COLLECTED IN THE VICINITY OF DNPS, 2006-2009

D-55 Ridge Road



D-56 Wildfeather



D-55 NEW STATION DECEMBER 30, 2005 REPLACED D-13 JUNE 29, 2007
D-56 NEW STATION JULY 25, 2006

APPENDIX D

INTER-LABORATORY COMPARISON PROGRAM

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 1 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
March 2009	E6533-396	Milk	Sr-89	pCi/L	102	97.7	1.04	A
			Sr-90	pCi/L	14.9	15.6	0.96	A
	E6534-396	Milk	I-131	pCi/L	66.7	79.3	0.84	A
			Ce-141	pCi/L	87.5	94.9	0.92	A
			Cr-51	pCi/L	275	305	0.90	A
			Cs-134	pCi/L	82.0	93.7	0.88	A
			Cs-137	pCi/L	111	111	1.00	A
			Co-58	pCi/L	114	119	0.96	A
			Mn-54	pCi/L	136	128	1.06	A
			Fe-59	pCi/L	112	99.9	1.12	A
			Zn-65	pCi/L	160	156	1.03	A
			Co-60	pCi/L	142	142	1.00	A
	E6536-396	AP	Ce-141	pCi	120	115	1.04	A
			Cr-51	pCi	385	371	1.04	A
			Cs-134	pCi	113	114	0.99	A
			Cs-137	pCi	149	135	1.10	A
			Co-58	pCi	153	145	1.06	A
			Mn-54	pCi	155	155	1.00	A
			Fe-59	pCi	118	121	0.98	A
			Zn-65	pCi	195	189	1.03	A
			Co-60	pCi	190	173	1.10	A
	E6535-396	Charcoal	I-131	pCi	82.8	79.4	1.04	A
June 2009	E6742-396	Milk	Sr-89	pCi/L	107	112	0.96	A
			Sr-90	pCi/L	19.0	16.7	1.14	A
	E6743-396	Milk	I-131	pCi/L	98.1	102.0	0.96	A
			Ce-141	pCi/L	260	284	0.92	A
			Cr-51	pCi/L	389	400	0.97	A
			Cs-134	pCi/L	144.0	166	0.87	A
			Cs-137	pCi/L	185	192	0.96	A
			Co-58	pCi/L	86.9	91.9	0.95	A
			Mn-54	pCi/L	133	137	0.97	A
			Fe-59	pCi/L	126	122	1.03	A
			Zn-65	pCi/L	173	175	0.99	A
			Co-60	pCi/L	298	312	0.96	A
	E6745-396	AP	Ce-141	pCi	186	163	1.14	A
			Cr-51	pCi	262	231	1.13	A
			Cs-134	pCi	101	95	1.06	A
			Cs-137	pCi	135	111	1.22	W
			Co-58	pCi	61	53	1.16	A
			Mn-54	pCi	83.1	79	1.05	A
			Fe-59	pCi	84	70	1.19	A
			Zn-65	pCi	137	101	1.36	N (1)
			Co-60	pCi	202	180	1.12	A
	E6744-396	Charcoal	I-131	pCi	92.2	95.8	0.96	A

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 2 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
September 2009	E6897-396	Milk	Sr-89	pCi/L	113	107	1.06	A
			Sr-90	pCi/L	17.4	18.8	0.93	A
	E6898-396	Milk	I-131	pCi/L	89.2	98.6	0.90	A
			Ce-141	pCi/L	249	275	0.91	A
			Cr-51	pCi/L	213	221	0.96	A
			Cs-134	pCi/L	104.0	123	0.85	A
			Cs-137	pCi/L	172	185	0.93	A
			Co-58	pCi/L	96.3	99.4	0.97	A
			Mn-54	pCi/L	201	206	0.98	A
			Fe-59	pCi/L	154	147	1.05	A
			Zn-65	pCi/L	213	204	1.04	A
			Co-60	pCi/L	154	160	0.96	A
	E6900-396	AP	Ce-141	pCi	181	161	1.12	A
			Cr-51	pCi	145	130	1.12	A
			Cs-134	pCi	71.8	72	0.99	A
			Cs-137	pCi	115	109	1.06	A
			Co-58	pCi	62	58	1.06	A
			Mn-54	pCi	129	121	1.07	A
			Fe-59	pCi	97	98	0.98	A
			Zn-65	pCi	110	120	0.92	A
			Co-60	pCi	98.7	94.1	1.05	A
	E6899-396	Charcoal	I-131	pCi	89.5	92.3	0.97	A
December 2009	E6946-396	Milk	Sr-89	pCi/L	131	131	1.00	A
			Sr-90	pCi/L	19.3	17.9	1.08	A
	E6947-396	Milk	I-131	pCi/L	79.2	87.3	0.91	A
			Ce-141	pCi/L	193	202	0.96	A
			Cr-51	pCi/L	512	548	0.93	A
			Cs-134	pCi/L	222	253	0.88	A
			Cs-137	pCi/L	163	179	0.91	A
			Co-58	pCi/L	200	211	0.95	A
			Mn-54	pCi/L	178	178	1.00	A
			Fe-59	pCi/L	176	178	0.99	A
			Zn-65	pCi/L	326	345	0.94	A
			Co-60	pCi/L	240	256	0.94	A
	E6949-396	AP	Ce-141	pCi	103	103	1.00	A
			Cr-51	pCi	290	280	1.04	A
			Cs-134	pCi	116	129	0.90	A
			Cs-137	pCi	93.4	91.5	1.02	A
			Co-58	pCi	111	108	1.03	A
			Mn-54	pCi	81.0	90.8	0.89	A
			Fe-59	pCi	106	90.8	1.17	A
			Zn-65	pCi	155	176	0.88	A
			Co-60	pCi	135	131	1.03	A

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 3 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
December 2009	E6948-396	Charcoal	I-131	pCi	93.3	93.9	0.99	A

(1) Detector 7 appears to have a slightly high bias. Detector 7 was removed from service until it can be recalibrated. NCR 09-23

(a) Teledyne Brown Engineering reported result.

(b) The Analytics known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.

(c) Ratio of Teledyne Brown Engineering to Analytics results.

(d) Analytics evaluation based on TBE internal QC limits: A= Acceptable. Reported result falls within ratio limits of 0.80-1.20. W-Acceptable with warning. Reported result falls within 0.70-0.80 or 1.20-1.30. N = Not Acceptable. Reported result falls outside the ratio limits of < 0.70 and > 1.30.

TABLE D-2 **ERA ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM**
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 1 OF 1)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Control Limits	Evaluation (c)
April 2009	RAD 77	Water	Sr-89	pCi/L	57.4	48.3	37.8 - 55.7	N (1)
			Sr-90	pCi/L	30.6	31.4	22.9 - 36.4	A
			Ba-133	pCi/L	55.2	52.7	43.4 - 58.3	A
			Cs-134	pCi/L	65.8	72.9	59.5 - 80.2	A
			Cs-137	pCi/L	157	168	151 - 187	A
			Co-60	pCi/L	86.4	88.9	80.0 - 100	A
			Zn-65	pCi/L	85.5	84.4	76.0 - 101	A
			Gr-A	pCi/L	47.7	54.2	28.3 - 67.7	A
			Gr-B	pCi/L	45.2	43.5	29.1 - 50.8	A
			I-131	pCi/L	25.2	26.1	21.7 - 30.8	A
			H-3	pCi/L	19733	20300	17800 - 22300	A
October 2009	RAD 79	Water	Sr-89	pCi/L	64.75	62.2	50.2 - 70.1	A
			Sr-90	pCi/L	30.30	30.7	22.4 - 35.6	A
			Ba-133	pCi/L	97.9	92.9	78.3 - 102	A
			Cs-134	pCi/L	76.8	79.4	65.0 - 87.3	A
			Cs-137	pCi/L	59.9	54.6	49.1 - 62.9	A
			Co-60	pCi/L	121	117	105 - 131	A
			Zn-65	pCi/L	115	99.5	89.6 - 119	A
			Gr-A	pCi/L	19.6	23.2	11.6 - 31.1	A
			Gr-B	pCi/L	28.5	26.0	16.2 - 33.9	A
			I-131	pCi/L	22.1	22.2	18.4 - 26.5	A
			H-3	pCi/L	16133	16400	14300 - 18000	A

(1) Calculation did not allow for Y-90 ingrowth on the Sr-89 mount. NCR 09-14

(a) Teledyne Brown Engineering reported result.

(b) The ERA known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.

(c) ERA evaluation: A=acceptable. Reported result falls within the Warning Limits. NA=not acceptable. Reported result falls outside of the Control Limits. CE=check for Error. Reported result falls within the Control Limits and outside of the Warning Limit.

TABLE D-3 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 1 OF 2)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
March 2009	09-MaW20	Water	Cs-134	Bq/L	18.8	22.5	18.5 - 29.3	A
			Cs-137	Bq/L	0.0601		(1)	A
			Co-57	Bq/L	17.0	18.9	13.2 - 24.6	A
			Co-60	Bq/L	16.1	17.21	12.05 - 22.37	A
			H-3	Bq/L	332	330.9	231.6 - 430.2	A
			Mn-54	Bq/L	13.8	14.7	10.26 - 19.06	A
			Sr-90	Bq/L	6.88	7.21	5.05- 9.37	A
			Zn-65	Bq/L	13.2	13.6	9.5 - 17.7	A
	09-GrW20	Water	Gr-A	Bq/L	0.529	0.635	>0.0 - 1.270	A
			Gr-B	Bq/L	1.87	1.27	0.64 - 1.91	A
	09-MaS20	Soil	Cs-134	Bq/kg	433	467	327 - 607	A
			Cs-137	Bq/kg	649	605	424 - 787	A
			Co-57	Bq/kg	-0.120		(1)	A
			Co-60	Bq/kg	3.91	4.113	(2)	A
			Mn-54	Bq/kg	339	307	215 - 399	A
			K-40	Bq/kg	644	570	399 - 741	A
			Sr-90	Bq/kg	245	257	180 - 334	A
			Zn-65	Bq/kg	272	242	169 - 315	A
	09-RdF20	AP	Cs-134	Bq/sample	2.77	2.93	2.05 - 3.81	A
			Cs-137	Bq/sample	1.41	1.52	1.06 - 1.98	A
			Co-57	Bq/sample	1.24	1.30	0.91 - 1.69	A
			Co-60	Bq/sample	1.33	1.22	0.85 - 1.59	A
			Mn-54	Bq/sample	2.42	2.2709	1.5898 - 2.9522	A
			Sr-90	Bq/sample	0.713	0.64	0.448 - 0.832	A
			Zn-65	Bq/sample	1.30	1.36	0.95 - 1.77	A
	09-GrF20	AP	Gr-A	Bq/sample	0.188	0.348	>0.0 - 0.696	A
			Gr-B	Bq/sample	0.313	0.279	0.140 - 0.419	A
March 2009	09-RdV20	Vegetation	Cs-134	Bq/sample	3.48	3.40	2.38 - 4.42	A
			Cs-137	Bq/sample	1.15	0.93	0.65 - 1.21	W
			Co-57	Bq/sample	3.12	2.36	1.65 - 3.07	N (3)
			Co-60	Bq/sample	-0.0105		(1)	A
			Mn-54	Bq/sample	2.98	2.3	1.61 - 2.99	W
			K-40	Bq/sample	64.1		(4)	
			Sr-90	Bq/sample	1.09	1.260	0.882 - 1.638	A
			Zn-65	Bq/sample	1.73	1.3540	0.948 - 1.760	W
September 2009	09-MaW21	Water	Cs-134	Bq/L	26.5	32.2	22.5 - 41.9	A
			Cs-137	Bq/L	37.2	41.2	28.8 - 53.6	A
			Co-57	Bq/L	32.2	36.6	25.6 - 47.6	A
			Co-60	Bq/L	14.0	15.40	10.8 - 20.0	A
			H-3	Bq/L	705	634.1	443.9 - 824.3	A
			Mn-54	Bq/L	-0.1015		(1)	A
			Sr-90	Bq/L	13.9	12.99	9.09- 16.89	A
			Zn-65	Bq/L	26.2	26.9	18.8 - 35.0	A
	09-GrW21	Water	Gr-A	Bq/L	1.27	1.047	>0.0 - 2.094	A
			Gr-B	Bq/L	9.70	7.53	3.77 - 11.30	A

TABLE D-3 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2009
(PAGE 2 OF 2)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
September 2009	09-MaS21	Soil	Am-241	Bq/kg	74.7	89.8	62.9 - 116.7	A
			Cs-134	Bq/kg	0.554		(1)	A
			Cs-137	Bq/kg	706	669	468 - 870	A
			Co-57	Bq/kg	606	586	410 - 762	A
			Co-60	Bq/kg	350	327.000	229 - 425	A
			Mn-54	Bq/kg	876	796	557 - 1035	A
			K-40	Bq/kg	425	375	263 - 488	A
			Sr-90	Bq/kg	505	455	319 - 592	A
			Zn-65	Bq/kg	1370	1178	825 - 1531	A
	09-RdF21	AP	Cs-134	Bq/sample	-0.02		(1)	A
			Cs-137	Bq/sample	1.4	1.4	0.98 - 1.82	A
			Co-57	Bq/sample	5.98	6.48	4.54 - 8.42	A
			Co-60	Bq/sample	1.01	1.03	0.72 - 1.34	A
			Mn-54	Bq/sample	5.16	5.49	3.84 - 7.14	A
			Sr-90	Bq/sample	0.925	0.0835	0.585 - 1.086	A
			Zn-65	Bq/sample	4.39	3.93	2.75 - 5.11	A
	09-GrF21	AP	Gr-A	Bq/sample	0.357	0.659	>0.0 - 1.318	A
			Gr-B	Bq/sample	1.403	1.320	0.66 - 1.98	A
	09-RdV21	Vegetation	Cs-134	Bq/sample	-0.0027		(1)	A
			Cs-137	Bq/sample	2.36	2.43	1.70 - 3.16	A
			Co-60	Bq/sample	2.58	2.57	1.80 - 3.34	A
			Mn-54	Bq/sample	8.36	7.9	5.5 - 10.3	A
			K-40	Bq/sample	57.8		(4)	
			Sr-90	Bq/sample	1.73	1.78	1.25 - 2.31	A
			Zn-65	Bq/sample	-0.59		(1)	A

(1) False positive test.

(2) Sensativity evaluation.

(3) Homogeniety problem. MAPEP requires using entire sample but due to geometry limitations we can only use part of the sample. NCR 09-13

(4) Not evaluated by MAPEP.

(a) Teledyne Brown Engineering reported result.

(b) The MAPEP known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.

(c) DOE/MAPEP evaluation: A=acceptable, W=acceptable with warning, N=not acceptable.

APPENDIX E

ERRATA DATA

There is no errata data for 2009.

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APPENDIX F

ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

Docket No: 50-010
50-237
50-249

DRESDEN NUCLEAR POWER STATION
UNITS 1, 2 and 3

Annual Radiological
Groundwater Protection Program Report

1 January Through 31 December 2009

Prepared By

Teledyne Brown Engineering
Environmental Services

Exelon SM
Nuclear

Dresden Nuclear Power Station
Norris, IL 60450

May 2010

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Appendices

I. Summary and Conclusions

Dresden Station is situated on approximately 600 acres of land that borders the Illinois River to the north and the Kankakee River to the east. This land is referred to as the owner-controlled area. The Dresden power plant itself takes up a small parcel of the owner-controlled area and is surrounded by a security fence. The security fence defines what is known as the Protected Area (P.A.).

The Dresden power plant has experienced a number of leaks from underground lines and spills from above ground systems containing radioactive water over its 40-year history. These incidents have created a number of areas of localized contamination within the P.A. Isotopic analyses of groundwater in many of these areas show measurable concentrations of tritium (H-3).

Dresden participated in a fleetwide hydrogeologic investigation in during the summer of 2006 in an effort to characterized groundwater movement at each site. This investigation also compiled a list of the historic spills and leaks. Combining the tritium concentration in a locally contaminated area with the speed and direction of groundwater in the vicinity can produce a contaminated groundwater plume projection. If the plume of contaminated groundwater passes through the path of a groundwater monitoring well, it can be anticipated that the tritium concentration in this well will increase to some maximum concentration, then decrease over time.

The fleetwide Hydrogeologic Investigation Report (HIR) shows that groundwater movement on the Dresden site is very slow. In addition, there is a confining rock layer, the Maquoketa Shale layer, about 55 feet below the surface that impedes groundwater movement below this depth. The results of the HIR are available on: [http://www.exeloncorp.com/ourcompanies/powergen/nuclear/Tritium.htm].

Dresden has a domestic water system that is supplied by two deep wells (1500 feet deep) that were installed about 50 years ago south of the P.A. Samples taken from domestic water supply and have never shown any detectable tritium concentration.

Tritium has a half-life of 12.3 years. This means that 40 years from now 90% of the tritium on site today will have decayed away to more stable elements.
Given the limited volume of contaminated groundwater on site, radioactive decay, slow groundwater movement, and dilution effects the conclusion of the HIR is that the operation of Dresden Nuclear Power Station had no adverse radiological impact on the environment. As a result there is little potential for contaminated groundwater on site to affect off-site drinking water.

II. Introduction

Radiological Groundwater Monitoring Program (RGPP):

Dresden has a Radiological Groundwater Monitoring Program (RGPP) that provides long-term monitoring intended to verify the fleet-wide hydrogeologic study conclusions. Dresden uses developed groundwater wells and surface water sample points in the RGPP.

The Dresden RGPP was established in 2006 and there have been no significant changes to this program. This program does not impact the operation of the plant and is independent of the REMP.

Developed groundwater wells are wells that were installed specifically for monitoring groundwater. These wells are equipped with screens and are properly sealed near the surface to avoid surface water intrusion. The wells were designed in accordance with appropriate codes and developed in accordance with appropriate standards and procedures. Dresden has groundwater monitoring wells identified as "shallow" (depths from 15 to 35 feet), "Intermediate" (depths from 35 to 55 feet) and "deep" (depths beyond 100 feet). All wells installed to a depth greater than 100 feet ("deep" wells) were found to be dry and removed from the RGPP. Surface water sample points are identified sample locations in the station's canals and cooling pond.

There are 71 sampling points in the RGPP:

*Dresden has 39 developed groundwater monitoring wells within the Protected Area. Some of these wells form a ring just inside the security fence and the remaining wells were installed near underground plant system piping that contains radioactive water.

*Dresden has 26 developed groundwater monitoring wells outside the P.A. the majority of which form a ring just within the perimeter of the property.

*Dresden has 6 surface water monitoring locations on the owner-controlled area sampled as part of the Dresden RGPP. These consist of one sample from each of the 5 different canals and one sample from the cooling pond.

The Dresden site-specific RGPP procedure identifies the historic 'events' that would affect the individual RGPP sample results. This procedure identifies threshold values for each sample point, which if exceeded, could be an indication of a new spill from an above ground system or a new leak in an underground pipe containing tritiated water.

The RGPP sample points are currently sampled on a frequency of twice per year.

During 2009, there were 213 analyses that were performed on 142 samples from 71 sampling points.

Supplemental Radiological Groundwater Monitoring Program (SRGPP):

Dresden also has a Supplemental Radiological Groundwater Monitoring Program (SRGPP) that provides short-term monitoring of a limited selection of monitoring points, mostly within the P.A., intended to identity relatively rapid changes in the groundwater tritium concentrations.

Sentinel Wells, sometimes referred to as "baby wells" are wells that were installed to monitor local shallow groundwater; typically in associated with a historic underground pipe leak. These wells are not constructed to code or developed to a standard. Most sentinel wells are from 6 to 12 feet deep and consist of 2" PVC pipe without screens. Many sentinel wells were installed near an underground HPCI suction line and were subsequently removed as part of the excavation and repair of that line.

Dresden has two basic storm water runoff sewer systems within the P.A: one sewer-system routes to the east, then north, and discharges into the Unit 1 intake canal, the second sewer-system routes to the west, then north, through a large Oil/Water Separator, and discharges to the hot canal. Both the Unit 1 intake canal and the hot canal eventually route to the cooling pond.

A. Objectives of the RGPP

The Objective of the RGPP is to provide long-term monitoring intended to verify the fleet-wide hydrogeologic study conclusions. The objective of the site-specific RGPP is to provide indication of short-term changes to groundwater tritium concentrations within the P.A.

If isotopic results of groundwater samples exceed the thresholds specified in this procedure it could be an indication of a new spill from an above ground system or a new leak in an underground pipe containing tritiated water.

Specific Objectives include:

1. Perform routine water sampling and radiological analysis of water from selected locations.

2. Report new leaks, spills, or other detections with potential radiological significance to stakeholders in a timely manner.

3. Regularly assess analytical results to identify adverse trends.

4. Take necessary corrective actions to protect groundwater resources.

B. Implementation of the Objectives

1. Dresden Nuclear Power Station will continue to perform routine sampling and radiological analysis of water from selected locations.

2. Dresden Nuclear Power Station has implemented procedures to identify and report new leaks, spills, or other detections with potential radiological significance in a timely manner.

3. Dresden Nuclear Power Station staff and consulting hydrogeologist assess analytical results on an ongoing basis to identify adverse trends.

4. If an adverse trend in groundwater monitoring analytical results is identified, further investigation will be undertaken. If the investigation identifies a leak or unidentified spill, corrective actions will be implemented.

C. Program Description

Dresden has a Radiological Groundwater Monitoring Program (RGPP) that provides long-term monitoring intended to verify the fleet-wide hydrogeologic study conclusions. Dresden uses 71 developed groundwater wells and surface water sample points in the RGPP.

1. Sample Collection

   Sample locations can be found in Table A–1, Figures A–1 and A–2, and, Appendix A.

   Groundwater and Surface Water

   Water samples are collected in accordance with the schedule delineated in the Dresden site-specific RGPP procedures. Analytical laboratories are subject to internal quality assurance programs, industry crosscheck programs, as well as nuclear industry audits. Station personnel review and evaluate the analytical results.

D. Characteristics of Tritium (H-3)

Tritium (chemical symbol H-3) is a radioactive isotope of hydrogen. The most

common form of tritium is tritium oxide, which is also called "tritiated water." The chemical properties of tritium are essentially those of ordinary hydrogen.

Tritiated water behaves the same as ordinary water in both the environment and the body. Tritium can be taken into the body by drinking water, breathing air, eating food, or absorption through skin. Once tritium enters the body, it disperses quickly and is uniformly distributed throughout the body. Tritium is excreted primarily through urine with a clearance rate characterized by an effective biological half-life of about 14 days. Within one month or so after ingestion, essentially all tritium is cleared. Organically bound tritium (tritium that is incorporated in organic compounds) can remain in the body for a longer period.

Tritium is produced naturally in the upper atmosphere when cosmic rays strike air molecules. Tritium is also produced during nuclear weapons explosions, as a by-product in reactors producing electricity, and in special production reactors, where the isotopes lithium-7 and/or boron-10 are activated to produce tritium. Like normal water, tritiated water is colorless and odorless. Tritiated water behaves chemically and physically like non-tritiated water in the subsurface, and therefore tritiated water will travel at the same velocity as the average groundwater velocity.

Tritium has a half-life of approximately 12.3 years. It decays spontaneously to helium-3 (3He). This radioactive decay releases a beta particle (low-energy electron). The radioactive decay of tritium is the source of the health risk from exposure to tritium. Tritium is one of the least dangerous radionuclides because it emits very weak radiation and leaves the body relatively quickly. Since tritium is almost always found as water, it goes directly into soft tissues and organs. The associated dose to these tissues is generally uniform and is dependent on the water content of the specific tissue.

III. Program Description

A. Sample Analysis

This section describes the general analytical methodologies used by Teledyne Brown Engineers (TBE) to analyze the environmental samples for radioactivity for the Dresden Nuclear Power Station RGPP in 2009.
In order to achieve the stated objectives, the current program includes the following analyses:

1. Concentrations of gamma emitters in groundwater and surface water.

2. Concentrations of tritium in groundwater and surface water.

B. Data Interpretation

The radiological data collected prior to Dresden Nuclear Power Station becoming operational were used as a baseline with which these operational data were compared. For the purpose of this report, Dresden Nuclear Power Station was considered operational at initial criticality. Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

   The Lower Limit of Detection (LLD) is the minimum sensitivity value that must be achieved routinely by the analytical parameter.

2. Laboratory Measurements Uncertainty

   The estimated uncertainty in measurement of tritium in environmental samples is frequently on the order of 50% of the measurement value.
   Statistically, the exact value of a measurement is expressed as a range with a stated level of confidence. The convention is to report results with a 95% level of confidence. The uncertainty comes from calibration standards, sample volume or weight measurements, sampling uncertainty and other factors. Exelon reports the uncertainty of a measurement created by statistical process (counting error) as well as all sources of error (Total Propagated Uncertainty or TPU). Each result has two values calculated. Exelon reports the TPU by following the result with plus or minus ± the estimated sample standard deviation, as TPU, that is obtained by propagating all sources of analytical uncertainty in measurements.

   Analytical uncertainties are reported at the 95% confidence level in this report for reporting consistency with the AREOR.
   Gamma spectroscopy results for each type of sample were grouped as follows:

   For groundwater 14 nuclides, Be-7, K-40, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Nb-95, Zr-95, I-131, Cs-134, Cs-137, Ba-140 and La-140 were reported.

C. Background Analysis

A pre-operational radiological environmental monitoring program (pre-operational REMP) was conducted to establish background radioactivity levels prior to operation of the Station. The environmental media sampled and analyzed during the pre-operational REMP were atmospheric radiation, fall-out, domestic water, surface water, marine life, and foodstuffs. The results of the monitoring were detailed in the report entitled, Environmental Radiological Monitoring for Dresden Nuclear Power Nuclear Power Station, Commonwealth Edison Company, Annual Report 1986, May 1987.

1. Background Concentrations of Tritium

   The purpose of the following discussion is to summarize background measurements of tritium in various media performed by others. Additional detail may be found by consulting references (CRA 2006).

   a. Tritium Production

      Tritium is created in the environment from naturally occurring processes both cosmic and subterranean, as well as from anthropogenic (i.e., man-made) sources. In the upper atmosphere, "Cosmogenic" tritium is produced from the bombardment of stable nuclides and combines with oxygen to form tritiated water, which will then enter the hydrologic cycle. Below ground, "lithogenic" tritium is produced by the bombardment of natural lithium present in crystalline rocks by neutrons produced by the radioactive decay of naturally abundant uranium and thorium. Lithogenic production of tritium is usually negligible compared to other sources due to the limited abundance of lithium in rock. The lithogenic tritium is introduced directly to groundwater.

      A major anthropogenic source of tritium and strontium-90 comes from the former atmospheric testing of thermonuclear weapons. Levels of tritium in precipitation increased significantly during the 1950s and early 1960s, and later with additional testing, resulting in the release of significant amounts of tritium to the atmosphere. The Canadian heavy water nuclear power reactors, other commercial power reactors, nuclear research and weapons production continue to influence tritium concentrations in the environment.

b. Precipitation Data

Precipitation samples are routinely collected at stations around the world for the analysis of tritium and other radionuclides. Two publicly available databases that provide tritium concentrations in precipitation are Global Network of Isotopes in Precipitation (GNIP) and USEPA's RadNet database. GNIP provides tritium precipitation concentration data for samples collected world wide from 1960 to 2006. RadNet provides tritium precipitation concentration data for samples collected at stations through out the U.S. from 1960 up to and including 2006. Based on GNIP data for sample stations located in the U.S. Midwest, tritium concentrations peaked around 1963. This peak, which approached 10,000 pCi/L for some stations, coincided with the atmospheric testing of thermonuclear weapons.

Tritium concentrations in surface water showed a sharp decline up until 1975 followed by a gradual decline since that time. Tritium concentrations in Midwest precipitation have typically been below 100 pCi/L since around 1980.

Tritium concentrations in wells may still be above the 200-pCi/L detection limit from the external causes described above. Water from previous years and decades is naturally captured in groundwater, so some well water sources today are affected by the surface water from the 1960s that was elevated in tritium.

c. Surface Water Data

Tritium concentrations are routinely measured in large surface water bodies, including Lake Michigan and the Mississippi River. Illinois surface water data were typically less than 100 pCi/L.

The radio-analytical laboratory is counting tritium results to an Exelon specified LLD of 200 pCi/L. Typically, the lowest positive measurement will be reported within a range of 40 – 240 pCi/L or 140 ± 100 pCi/L. These sample results cannot be distinguished as different from background at this concentration.

IV. Results and Discussion

Dresden Station initiated a Radiological Groundwater Protection Program (RGPP) in 2006.

A. Groundwater Results

Groundwater

Samples were collected from on-site wells throughout the year in accordance with Dresden's RGPP. Analytical results and anomalies are discussed below.

Tritium

Inside the Protected Area:

Of the 39 developed groundwater-monitoring wells inside the Protected Area, a little more than half (22 wells) show some level of tritium contamination ranging from just above LLD to ~ 100,000 pCi/L. Although tritium is detected in a large number of these wells, it is important to note that the majority were installed in areas of historic spills or close to piping containing tritiated water.

Outside the Protected Area:

Of the 26 developed groundwater-monitoring wells on station property outside the Protected Area, 5 wells have a tritium concentration at or just slightly above the level of detectability (208 pCi/L to 322 pCi/L).

Three (3) of the five wells with detectable tritium were installed in a cluster just north of the Protected Area near a historic Radwaste line break. The concentration of tritium in one of these wells reached a maximum of 75,000 pCi/L in March of 2003. The tritium concentration has been trending down and all three are now very near the lower limit of detectability.

One (1) of the five wells with detectable tritium is about 200 yards south of the security access Check Point adjacent to the cold canal. It is believed that the tritium concentration in the cold canal is influenced by an upstream source. The tritium concentration reached a maximum of 780 pCi/L in late 2005 and has been trending down since.

One (1) of the five wells with detectable tritium is just south of the Protected Area fencing adjacent to the cold canal. It is believed that the tritium concentration in the cold canal is influenced by an upstream source. The tritium concentration reached a maximum of 350 pCi/L in May of 2007 and has been trending down since.

Gamma Emitters

Potassium-40 was detected in six of 65 samples. The concentrations ranged from 40 pCi/liter to 95 pCi/liter. No other gamma emitting nuclides were detected. (Table B–I.2, Appendix B).

B. Surface Water Results

Surface Water

Samples were collected from six surface water locations throughout the year in accordance with the station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from all locations were analyzed for tritium activity (Table B-II.1, Appendix B). Tritium values ranged from the detection limit to 690 pCi/l. The measurable concentrations of tritium are from an upstream source.

Gamma Emitters

Potassium-40 was detected in one of six samples, at a concentration of 75 pCi/liter. No other gamma emitting nuclides were detected. (Table B–II.2, Appendix B).

C. Drinking Water Well Survey

A drinking water well survey was conducted during the summer 2006 by CRA (CRA 2006) around the Dresden Nuclear Power Station. No tritium was detected in the drinking water source.

D. Summary of Results – Inter-Laboratory Comparison Program

Inter-Laboratory Comparison Program results for TBE and Environmental Inc. (Midwest Labs) are presented in the AREOR.

E. Leaks, Spills, and Releases

In the summer of 2004 elevated tritium concentrations were identified in sentinel wells within the Protected Area by the HPCI suction line near the HPCI room adjacent to the Reactor Building. This line was found leaking and about one-half of the line was excavated and replaced.

In January of 2006 there was an increase in tritium concentration in two sentinel wells within the Protected Area near the HPCI suction line adjacent to the 2/3B Contaminated Storage Tank (2/3B CST), about 100 feet from the Reactor Building. This suggested that the other half of the HPCI suction line was leaking. The line was excavated and pressure tested. It was determined that this line was not leaking. The line did show some indications of degradation and as a result, this half of the line was replaced.

In June of 2009 a slightly elevated tritium concentration was detected in a sewer within the Protected Area. The sewer was isolated and an investigation identified a small leak in an underground 24-inch cross-tie line that connected Unit 1 and Unit 2/3 CSTs. The leak was found just east of the Reactor Building wall. The line was excavated and a carbon-fiber rap was selected as the permanent repair option. The excavation was backfilled in September of 2009.

F. Trends

The tritium concentration in the water found near the 2004 HPCI leak is traveling to the west. Wells in the vicinity show that tritium levels have been trending down slightly.

G. Investigations

Following a heavy rain in August of 2007, water was flowing into the Cribhouse basement through an underground electrical penetration. The water contained tritium at a concentration above LLD. Samples taken the next day showed higher concentrations of tritium suggesting an increasing trend.

Further monitoring showed the tritium concentration was steady for a few days then started decreasing. The flow decrease over the next several days then stopped completely. If this were a leak of an underground piping system we would expect that the flow would continue and the tritium concentration would continue to increase by several orders of magnitude. Therefore, the detected tritium is believed to be from a

historic spill, possibly from the RadWaste Tank Farm which is in the vicinity. In 2008 berms were installed under the tanks in the RadWaste Tank Farm. This berm is designed to capture any possible future spills.

Following a heavy rain in September of 2008 water was again detected entering the Cribhouse through the electrical penetration. Analysis of the samples collected showed no detectible tritium.

There is currently no flow through any Cribhouse electrical penetrations and Dresden continues to monitor in the vicinity of the Cribhouse basement.

H. Actions Taken

1. Compensatory Actions

A groundwater collection and treatment system was used during the excavation and repair of the 24-inch underground cross-tie line between the Unit 1 to Unit 2/3 CSTs. As with the groundwater collection and treatment systems employed during the excavation work associated with the 2004 and 2006 leak repairs, the groundwater was processed through the RadWaste System.

These compensatory actions were particularly effective in that the measured tritium contamination in vicinity of the 24-inch underground cross-tie line is near the lower limits of detectability.

2. Actions to Recover/Reverse Plumes

No actions were taken in 2009 by Dresden Station in an effort to reverse plume movement.

APPENDIX A

LOCATION DISTANCE

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Dresden Nuclear Power Station, 2009

Site	Site Type	Location
DSP-105	Monitoring Well	30 feet east of the east wall of the EM Shop
DSP-106	Monitoring Well	65 feet east of east wall of EM Shop
DSP-107	Monitoring Well	9 feet east of the east Unit 1 Fuel Pool wall
DSP-108	Monitoring Well	40 ft east of the Unit 1 Sphere
DSP-117	Monitoring Well	Northeast of Unit 1 Sphere; 825 feet west of Ross Bridge
DSP-121	Monitoring Well	72 feet north of 2/3 Intake Canal fence
DSP-122	Monitoring Well	50 feet north of the Radwaste Tank Farm
DSP-123	Monitoring Well	Northeast corner of the Unit 1 Off-gas Building
DSP-124	Monitoring Well	9 feet south of Floor Drain Collector Tank
DSP-125	Monitoring Well	Northeast corner of the Unit 2/3A CST
DSP-126	Monitoring Well	21 feet northwest of the northwest bend in road behind Training Building
DSP-147	Monitoring Well	325 feet west of Telemetry Bridge
DSP-148	Monitoring Well	130 feet southeast of the Flow Regulating Station building
DSP-149R	Monitoring Well	35 feet south by southwest of the 138 KV yard fence
DSP-150	Monitoring Well	85 feet east of the northeast corner of the Unit 1 Spent Fuel Pool pad
DSP-151	Monitoring Well	65 feet north of the northeast corner of the Storeroom
DSP-152	Monitoring Well	210 feet south by southeast of the southeast corner of Maintenance Garage
DSP-153	Monitoring Well	150 feet east of the southeast corner of liquid hydrogen tank farm fence
DSP-154	Monitoring Well	33 feet west of the track; 165 feet east of the Security Checkpoint
DSP-156	Monitoring Well	70 feet east by northeast of the northwest corner of 138 KV yard fence
DSP-157-I	Monitoring Well	25 feet south of the south edge of the Employee Parking lot
DSP-157-S	Monitoring Well	25 feet south of the south edge of the Employee Parking lot
DSP-158-I	Monitoring Well	53 feet west of the Kankakee River; 33 feet west of the cinder track
DSP-158-S	Monitoring Well	50 feet west of the Kankakee River; 33 feet west of the cinder track
DSP-159-I	Monitoring Well	250 feet west of the Thorsen house; 450 ft south of the plant access gate
DSP-159-S	Monitoring Well	251 feet west of the Thorsen house; 450 ft south of the plant access gate
MW-DN-101-I	Monitoring Well	60 feet north of the Unit 1 Diesel Fuel Storage
MW-DN-101-S	Monitoring Well	60 feet north of the Unit 1 Diesel Fuel Storage
MW-DN-102-I	Monitoring Well	12 feet south of the southeast corner of the MUDS Building
MW-DN-102-S	Monitoring Well	13 feet south of the southeast corner of the MUDS Building
MW-DN-103-I	Monitoring Well	280 feet west of the northwest corner of N-GET Building
MW-DN-103-S	Monitoring Well	281 feet west of the northwest corner of N-GET Building
MW-DN-104-S	Monitoring Well	50 feet north of Radwaste Tank Farm
MW-DN-105-S	Monitoring Well	65 feet north of the northeast corner of the Storeroom
MW-DN-106-S	Monitoring Well	75 feet north of the 2/3 Intake Canal fence; east of the Unit 1 Intake Canal
MW-DN-107-S	Monitoring Well	15 feet west by southwest of the Unit 1 CST
MW-DN-108-I	Monitoring Well	7 feet southwest of the southwest corner of the Unit 1 Cribhouse
MW-DN-109-I	Monitoring Well	8 feet north of Chemistry Building
MW-DN-109-S	Monitoring Well	8 feet north of Chemistry Building
MW-DN-110-I	Monitoring Well	25 feet west of the Waste Water Treatment (WWT) Building
MW-DN-110-S	Monitoring Well	25 feet west of the Waste Water Treatment (WWT) Building
MW-DN-111-S	Monitoring Well	9 feet east of the Floor Drain Collector Tank
MW-DN-112-I	Monitoring Well	100 feet south of the Chemistry Building
MW-DN-112-S	Monitoring Well	100 feet south of the Chemistry Building
MW-DN-113-I	Monitoring Well	90 feet west of the southwest corner of the Administration Building
MW-DN-113-S	Monitoring Well	91 feet west of the southwest corner of the Administration Building
MW-DN-114-I	Monitoring Well	50 feet east of the Unit 1 Clean Demineralized Water Tank
MW-DN-114-S	Monitoring Well	8 feet southwest of the Radiation protection Dept west access doors
MW-DN-115-I	Monitoring Well	11 feet south of Instrument Maintenance Shop
MW-DN-115-S	Monitoring Well	12 feet south of Instrument Maintenance Shop
MW-DN-116-I	Monitoring Well	75 feet south of the Calgon Building roll-up door
MW-DN-116-S	Monitoring Well	75 feet south of the Calgon Building roll-up door
MW-DN-117-I	Monitoring Well	35 feet east by northeast of the Unit 1 Stack
MW-DN-118-S	Monitoring Well	Southeast corner of the Unit 1 Fuel Pool
MW-DN-119-I	Monitoring Well	20 feet east by northeast of the Unit 1 Sewage Ejector Building
MW-DN-119-S	Monitoring Well	21 feet east by northeast of the Unit 1 Sewage Ejector Building
MW-DN-120-I	Monitoring Well	45 feet north by northeast of the Ross Bridge railing
MW-DN-120-S	Monitoring Well	46 feet north by northeast of the Ross Bridge railing
MW-DN-121-S	Monitoring Well	7 feet west of the dirt road; 42 feet east of the 345KV yard fence
MW-DN-122-I	Monitoring Well	150 feet north of Heineke Road; northeast of the G.E. Fuel Storage Facility
MW-DN-122-S	Monitoring Well	150 feet north of Heineke Road; northeast of the G.E. Fuel Storage Facility
MW-DN-123-I	Monitoring Well	400 feet west of the Thorsen house; west of the Cold Canal

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Dresden Nuclear Power Station, 2009

Site	Site Type	Location
MW-DN-123-S	Monitoring Well	400 feet west of the Thorsen house; west of the Cold Canal
MW-DN-124-I	Monitoring Well	10 feet south of the liquid nitrogen inerting tanks
MW-DN-124-S	Monitoring Well	10 feet south of the liquid nitrogen inerting tanks
SW-DN-101	Surface Water	Unit 2/3 Intake (DSP50) at the Ross Bridge
SW-DN-102	Surface Water	Unit 2/3 Discharge (DSP20) at the Telemetry Bridge
SW-DN-103	Surface Water	Unit 2/3 Return Canal at the Discharge to the Intake Canal
SW-DN-104	Surface Water	Cold Canal (DSP34A) at the Cooling Tower walkway bridge
SW-DN-105	Surface Water	Hot Canal (DSP34B) at the Cooling Tower walkway bridge
SW-DN-106	Surface Water	Cooling Pond - Pool II at the east side of the Covered Bridge

APPENDIX B

DATA TABLES

TABLE B-I.1 CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3
DN-DSP-105	05/21/09	298 ± 115
DN-DSP-105	10/01/09	< 196
DN-DSP-106	05/21/09	3390 ± 388
DN-DSP-106	10/01/09	2870 ± 332
DN-DSP-107	05/22/09	6420 ± 689
DN-DSP-107	10/01/09	5720 ± 614
DN-DSP-108	05/22/09	1250 ± 181
DN-DSP-108	09/30/09	985 ± 191
DN-DSP-117	05/26/09	< 170
DN-DSP-117	10/05/09	< 187
DN-DSP-121	05/26/09	< 185
DN-DSP-121	10/05/09	< 183
DN-DSP-122	05/19/09	3780 ± 427
DN-DSP-122	09/29/09	2730 ± 322
DN-DSP-123	05/22/09	10900 ± 1130
DN-DSP-123	09/30/09	8570 ± 895
DN-DSP-124	05/22/09	6880 ± 735
DN-DSP-124	10/02/09	16600 ± 1690
DN-DSP-125	05/21/09	200 ± 109
DN-DSP-125	10/02/09	< 188
DN-DSP-126	05/27/09	< 185
DN-DSP-126	10/06/09	< 182
DN-DSP-147	05/26/09	< 182
DN-DSP-147	10/06/09	< 181
DN-DSP-148	05/26/09	341 ± 130
DN-DSP-148	10/05/09	209 ± 122
DN-DSP-149R	05/26/09	357 ± 116
DN-DSP-149R	10/05/09	322 ± 129
DN-DSP-150	05/18/09	< 163
DN-DSP-150	10/01/09	< 179
DN-DSP-151	05/18/09	< 164
DN-DSP-151	10/01/09	< 194
DN-DSP-152	05/27/09	< 135
DN-DSP-152	10/06/09	< 183
DN-DSP-153	05/27/09	< 138
DN-DSP-153	10/06/09	< 182
DN-DSP-154	05/27/09	< 137
DN-DSP-154	10/06/09	< 187
DN-DSP-156	05/26/09	312 ± 113
DN-DSP-156	10/05/09	275 ± 126
DN-DSP-157-I	05/27/09	< 134
DN-DSP-157-I	10/07/09	< 179
DN-DSP-157-S	05/27/09	< 138
DN-DSP-157-S	10/07/09	< 177
DN-DSP-158-I	05/27/09	< 134

TABLE B-I.1 CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3
DN-DSP-158-I	10/06/09	< 195
DN-DSP-158-S	05/27/09	< 136
DN-DSP-158-S	10/06/09	< 194
DN-DSP-159-I	05/27/09	308 ± 129
DN-DSP-159-I	10/07/09	243 ± 127
DN-DSP-159-S	05/27/09	< 139
DN-DSP-159-S	10/07/09	< 196
MW-DN-101-I	05/18/09	1750 ± 229
MW-DN-101-I	09/30/09	1780 ± 239
MW-DN-101-S	05/18/09	< 185
MW-DN-101-S	09/30/09	< 183
MW-DN-102-I	05/20/09	< 185
MW-DN-102-I	10/02/09	< 185
MW-DN-102-S	05/20/09	250 ± 123
MW-DN-102-S	10/02/09	< 189
MW-DN-103-I	05/27/09	< 162
MW-DN-103-I	10/07/09	208 ± 123
MW-DN-103S	05/27/09	< 164
MW-DN-103S	10/07/09	< 183
MW-DN-104-S	05/19/09	< 184
MW-DN-104-S	09/29/09	246 ± 124
MW-DN-105-S	05/18/09	< 186
MW-DN-105-S	10/01/09	< 178
MW-DN-106-S	05/26/09	< 165
MW-DN-106-S	10/05/09	< 182
MW-DN-107-S	05/20/09	243 ± 112
MW-DN-107-S	10/02/09	1120 ± 180
MW-DN-108-I	05/19/09	< 183
MW-DN-108-I	09/30/09	< 181
MW-DN-109-I	05/19/09	< 184
MW-DN-109-I	09/29/09	< 187
MW-DN-109-S	05/19/09	246 ± 121
MW-DN-109-S	09/29/09	224 ± 123
MW-DN-110-I	05/19/09	< 174
MW-DN-110-I	09/29/09	203 ± 120
MW-DN-110-S	05/19/09	< 169
MW-DN-110-S	09/29/09	< 181
MW-DN-111-S	05/21/09	452 ± 128
MW-DN-111-S	10/02/09	522 ± 127
MW-DN-112-I	05/19/09	1450 ± 200
MW-DN-112-I	09/29/09	1250 ± 192
MW-DN-112-S	05/19/09	< 170
MW-DN-112-S	09/29/09	< 185
MW-DN-113-I	05/20/09	< 160
MW-DN-113-I	10/02/09	< 188

TABLE B-I.1 CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3
MW-DN-113-S	05/20/09	328 ± 119
MW-DN-113-S	10/02/09	< 189
MW-DN-114-I	05/21/09	8650 ± 903
MW-DN-114-I	10/01/09	7140 ± 755
MW-DN-114-S	05/20/09	1950 ± 242
MW-DN-114-S	10/01/09	1320 ± 211
MW-DN-115-I	05/20/09	413 ± 125
MW-DN-115-I	10/01/09	273 ± 145
MW-DN-115-S	05/20/09	172 ± 111
MW-DN-115-S	10/01/09	< 196
MW-DN-116-I	05/19/09	1950 ± 242
MW-DN-116-I	09/30/09	3310 ± 378
MW-DN-116-S	05/19/09	398 ± 123
MW-DN-116-S	09/30/09	262 ± 141
MW-DN-117-I	05/18/09	< 162
MW-DN-117-I	09/30/09	< 190
MW-DN-118-S	05/21/09	3120 ± 356
MW-DN-118-S	10/01/09	1240 ± 203
MW-DN-119-I	05/18/09	1810 ± 238
MW-DN-119-I	09/30/09	536 ± 160
MW-DN-119-S	05/18/09	< 179
MW-DN-119-S	09/30/09	< 187
MW-DN-120-I	05/26/09	490 ± 139
MW-DN-120-I	10/05/09	< 149
MW-DN-120-S	05/26/09	< 169
MW-DN-120-S	10/05/09	< 198
MW-DN-121-S	05/26/09	< 167
MW-DN-121-S	10/06/09	< 153
MW-DN-122-I	05/26/09	< 166
MW-DN-122-I	10/06/09	< 200
MW-DN-122-S	05/26/09	< 165
MW-DN-122-S	10/06/09	< 196
MW-DN-123-I	05/26/09	< 162
MW-DN-123-I	10/07/09	< 148
MW-DN-123-S	05/26/09	< 164
MW-DN-123-S	10/07/09	< 178
MW-DN-124-I	05/22/09	108000 ± 10700
MW-DN-124-I	10/02/09	84200 ± 8390
MW-DN-124-S	05/22/09	65100 ± 5920
MW-DN-124-S	10/02/09	68500 ± 6870

TABLE B-I.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
DSP-103S	10/07/09	< 43	< 70	< 5	< 4	< 8	< 4	< 9	< 5	< 7	< 11	< 4	< 4	< 32	< 8
DSP-105	10/01/09	< 34	< 62	< 4	< 4	< 8	< 3	< 5	< 4	< 7	< 9	< 3	< 4	< 21	< 6
DSP-106	10/01/09	< 43	< 96	< 4	< 5	< 11	< 4	< 9	< 5	< 8	< 11	< 4	< 4	< 28	< 9
DSP-107	10/01/09	< 45	< 38	< 5	< 5	< 12	< 6	< 11	< 6	< 8	< 13	< 5	< 6	< 29	< 7
DSP-108	09/30/09	< 43	< 97	< 5	< 5	< 9	< 4	< 8	< 5	< 10	< 13	< 4	< 5	< 32	< 8
DSP-117	10/05/09	< 34	< 31	< 3	< 3	< 8	< 4	< 7	< 4	< 7	< 12	< 3	< 3	< 26	< 8
DSP-121	10/05/09	< 37	< 36	< 4	< 4	< 9	< 5	< 7	< 4	< 7	< 15	< 3	< 4	< 28	< 11
DSP-122	09/29/09	< 46	< 49	< 6	< 4	< 11	< 4	< 10	< 5	< 9	< 14	< 4	< 6	< 32	< 9
DSP-123	09/30/09	< 30	< 35	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 9	< 3	< 3	< 19	< 6
DSP-124	10/02/09	< 38	< 45	< 4	< 4	< 9	< 3	< 10	< 4	< 9	< 9	< 4	< 5	< 20	< 9
DSP-125	10/02/09	< 33	< 29	< 3	< 3	< 8	< 3	< 5	< 4	< 7	< 8	< 3	< 4	< 22	< 6
DSP-126	10/06/09	< 35	< 75	< 4	< 3	< 9	< 4	< 8	< 4	< 8	< 14	< 4	< 4	< 28	< 9
DSP-147	10/06/09	< 33	70 ± 42	< 4	< 4	< 7	< 4	< 7	< 4	< 7	< 13	< 3	< 3	< 31	< 6
DSP-148	10/05/09	< 28	< 27	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 12	< 3	< 3	< 23	< 8
DSP-149R	10/05/09	< 30	< 61	< 3	< 3	< 8	< 3	< 6	< 4	< 6	< 12	< 3	< 3	< 25	< 9
DSP-150	10/01/09	< 41	< 96	< 4	< 5	< 10	< 5	< 9	< 6	< 9	< 11	< 5	< 5	< 26	< 10
DSP-151	10/01/09	< 44	< 49	< 4	< 5	< 11	< 5	< 10	< 7	< 9	< 12	< 4	< 5	< 30	< 11
DSP-152	10/06/09	< 34	< 76	< 4	< 4	< 10	< 4	< 9	< 5	< 7	< 14	< 4	< 4	< 28	< 10
DSP-153	10/06/09	< 28	< 61	< 3	< 4	< 9	< 4	< 8	< 4	< 7	< 13	< 3	< 4	< 27	< 9
DSP-154	10/06/09	< 34	< 82	< 4	< 4	< 10	< 5	< 9	< 5	< 8	< 14	< 4	< 4	< 32	< 10
DSP-156	10/05/09	< 31	< 29	< 3	< 3	< 7	< 3	< 7	< 3	< 7	< 15	< 3	< 3	< 26	< 9
DSP-157-I	10/07/09	< 38	< 27	< 4	< 4	< 7	< 4	< 8	< 5	< 7	< 14	< 4	< 4	< 29	< 9
DSP-157-S	10/07/09	< 33	< 39	< 4	< 4	< 8	< 4	< 7	< 5	< 7	< 14	< 4	< 4	< 28	< 8
DSP-158-I	10/06/09	< 30	< 30	< 3	< 3	< 6	< 4	< 6	< 3	< 5	< 12	< 3	< 3	< 22	< 7
DSP-158-S	10/06/09	< 31	< 27	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 12	< 3	< 3	< 25	< 9
DSP-159-I	10/07/09	< 29	75 ± 38	< 3	< 3	< 6	< 3	< 5	< 3	< 5	< 11	< 3	< 3	< 23	< 7
DSP-159-S	10/07/09	< 25	< 25	< 2	< 3	< 7	< 3	< 6	< 3	< 5	< 9	< 3	< 3	< 21	< 7
MW-DN-101-I	09/30/09	< 44	< 36	< 5	< 5	< 11	< 4	< 9	< 6	< 10	< 15	< 4	< 5	< 33	< 12
MW-DN-101-S	09/30/09	< 26	60 ± 32	< 3	< 3	< 6	< 2	< 5	< 3	< 5	< 10	< 2	< 2	< 20	< 7
MW-DN-102-I	10/02/09	< 32	< 36	< 4	< 3	< 8	< 4	< 7	< 4	< 6	< 11	< 3	< 4	< 22	< 10
MW-DN-102-S	10/02/09	< 28	< 58	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 9	< 3	< 3	< 22	< 8
MW-DN-103-I	10/07/09	< 42	< 46	< 5	< 5	< 12	< 5	< 11	< 6	< 9	< 13	< 5	< 5	< 30	< 11

TABLE B-I.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
MW-DN-104-S	09/29/09	< 31	72 ± 41	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 13	< 3	< 3	< 25	< 8
MW-DN-105-S	10/01/09	< 40	< 79	< 4	< 5	< 11	< 4	< 9	< 5	< 8	< 14	< 4	< 4	< 34	< 11
MW-DN-106-S	10/05/09	< 40	< 76	< 4	< 4	< 9	< 4	< 7	< 4	< 8	< 15	< 3	< 4	< 30	< 10
MW-DN-107-S	10/02/09	< 42	95 ± 57	< 4	< 5	< 10	< 5	< 9	< 5	< 7	< 13	< 4	< 4	< 28	< 9
MW-DN-108-I	09/30/09	< 37	< 39	< 4	< 3	< 8	< 3	< 8	< 4	< 7	< 12	< 3	< 3	< 25	< 8
MW-DN-109-I	09/29/09	< 30	< 27	< 3	< 4	< 7	< 3	< 6	< 3	< 6	< 13	< 3	< 3	< 27	< 7
MW-DN-109-S	09/29/09	< 27	< 20	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 12	< 3	< 3	< 25	< 8
MW-DN-110-I	09/29/09	< 48	< 45	< 5	< 5	< 12	< 4	< 9	< 5	< 9	< 23	< 5	< 4	< 49	< 15
MW-DN-110-S	09/29/09	< 38	< 67	< 4	< 4	< 9	< 4	< 8	< 5	< 8	< 18	< 3	< 4	< 38	< 12
MW-DN-111-S	10/02/09	< 53	< 46	< 4	< 5	< 10	< 7	< 10	< 6	< 10	< 21	< 5	< 5	< 43	< 10
MW-DN-112-I	09/29/09	< 32	< 74	< 4	< 4	< 9	< 4	< 8	< 5	< 8	< 17	< 3	< 4	< 32	< 13
MW-DN-112-S	09/29/09	< 53	< 80	< 4	< 5	< 10	< 6	< 9	< 6	< 9	< 23	< 4	< 5	< 44	< 12
MW-DN-113-I	10/02/09	< 47	< 41	< 4	< 6	< 10	< 5	< 9	< 6	< 10	< 12	< 5	< 5	< 29	< 11
MW-DN-113-S	10/02/09	< 46	< 119	< 5	< 5	< 11	< 5	< 11	< 6	< 9	< 12	< 5	< 5	< 34	< 6
MW-DN-114-I	10/01/09	< 42	< 91	< 4	< 4	< 7	< 5	< 10	< 6	< 8	< 13	< 4	< 4	< 31	< 10
MW-DN-114-S	10/01/09	< 48	< 38	< 5	< 5	< 11	< 4	< 9	< 6	< 9	< 13	< 4	< 5	< 33	< 9
MW-DN-115-I	10/01/09	< 38	< 79	< 4	< 4	< 8	< 3	< 6	< 4	< 8	< 10	< 4	< 4	< 25	< 7
MW-DN-115-S	10/01/09	< 21	< 19	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 13	< 2	< 2	< 22	< 6
MW-DN-116-I	09/30/09	< 15	< 13	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 9	< 1	< 2	< 16	< 5
MW-DN-116-S	09/30/09	< 16	< 28	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 10	< 1	< 2	< 18	< 6
MW-DN-120-I	10/05/09	< 29	< 62	< 3	< 4	< 8	< 4	< 6	< 4	< 7	< 14	< 4	< 3	< 24	< 11
MW-DN-120-S	10/05/09	< 40	< 79	< 4	< 4	< 10	< 4	< 9	< 5	< 9	< 14	< 4	< 4	< 31	< 9
MW-DN-121-S	10/06/09	< 45	< 44	< 4	< 4	< 9	< 6	< 8	< 5	< 6	< 14	< 4	< 4	< 32	< 10
MW-DN-122-I	10/06/09	< 45	< 131	< 6	< 5	< 11	< 4	< 9	< 5	< 6	< 15	< 4	< 4	< 25	< 10
MW-DN-122-S	10/06/09	< 35	< 85	< 4	< 4	< 9	< 4	< 7	< 5	< 8	< 14	< 4	< 5	< 30	< 9
MW-DN-123-I	10/07/09	< 40	< 37	< 5	< 5	< 10	< 4	< 8	< 5	< 9	< 13	< 4	< 4	< 29	< 9
MW-DN-123-S	10/07/09	< 45	< 44	< 4	< 4	< 9	< 3	< 8	< 5	< 8	< 14	< 4	< 4	< 30	< 10
MW-DN-124-I	10/02/09	< 24	< 16	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 13	< 2	< 2	< 23	< 7
MW-DN-124-S	10/02/09	< 22	< 18	< 2	< 2	< 5	< 2	< 4	< 3	< 5	< 13	< 2	< 2	< 23	< 7
MW-DN-117-I	09/30/09	< 18	< 18	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 19	< 6
MW-DN-118-S	10/01/09	< 17	40 ± 25	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 11	< 2	< 2	< 17	< 5
MW-DN-119-I	09/30/09	< 20	< 19	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 12	< 2	< 2	< 21	< 6
MW-DN-119-S	09/30/09	< 17	< 15	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 11	< 2	< 2	< 18	< 5

TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3
SW-DN-101	05/26/09	175 ± 110
SW-DN-101	10/05/09	< 188
SW-DN-102	05/26/09	< 163
SW-DN-102	10/05/09	< 184
SW-DN-103	05/26/09	260 ± 116
SW-DN-103	10/05/09	< 184
SW-DN-104	05/26/09	690 ± 137
SW-DN-104	10/05/09	< 180
SW-DN-105	05/26/09	245 ± 115
SW-DN-105	10/05/09	< 182
SW-DN-106	05/26/09	245 ± 113
SW-DN-106	10/05/09	< 182

TABLE B-II.2 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2009**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-DN-101	10/05/09	< 41	< 84	< 4	< 5	< 12	< 5	< 8	< 5	< 8	< 15	< 4	< 4	< 33	< 11
SW-DN-102	10/05/09	< 36	< 90	< 4	< 5	< 10	< 5	< 8	< 5	< 8	< 13	< 4	< 4	< 28	< 10
SW-DN-103	10/05/09	< 35	< 61	< 3	< 4	< 9	< 3	< 8	< 4	< 6	< 13	< 3	< 4	< 25	< 10
SW-DN-104	10/05/09	< 37	< 27	< 4	< 4	< 9	< 4	< 9	< 5	< 8	< 14	< 4	< 4	< 33	< 10
SW-DN-105	10/05/09	< 44	75 ± 50	< 5	< 4	< 12	< 4	< 9	< 5	< 9	< 15	< 4	< 5	< 29	< 10
SW-DN-106	10/05/09	< 41	< 82	< 4	< 4	< 11	< 4	< 7	< 5	< 9	< 14	< 4	< 4	< 30	< 11