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May 11, 2012

SVPLTR # 12-0025

U. S. Nuclear Regulatory Commission
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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 2011 Annual Radiological Environmental Operating Report

Enclosed is the Exelon Dresden Nuclear Power Station 2011 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 monitoring program for the 2011 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 2006. This information is being reported in accordance with a nuclear industry initiative.

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

Respectfully,

David M. Czufin
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
FSME20
NRR

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 2011

Prepared By

Teledyne Brown Engineering
Environmental Services

Exelon SM

Nuclear

Dresden Nuclear Power Station
Morris, IL 60450

May 2012

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Table Of Contents

Appendices

Figures

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 2011 through 31 December 2011. During that time period, 2,019 analyses were performed on 1,875 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.

On March 11, 2011 an earthquake off the Japanese islands produced a massive tsunami that caused a nuclear accident at four of the six Fukushima Daiichi reactors. In planning for the potential radioactive plume reaching the United States, Exelon Nuclear increased the sampling frequency and added additional analyses of select media from pathways that were expected to be the most sensitive to any increase in ambient radiation levels. Low level I-131 analyses and gamma spectroscopy analyses were performed on air particulates, air iodine, and milk, as appropriate.

The resulting radioactive plume was first detected in the environs of Dresden Nuclear Power Station on March 18, 2011. The final date of positive detection was April 08, 2011. The radionuclide identified was Iodine-131. Maximum activity levels found by media were 115 E-3 pCi/m^3 for air iodine. Samples collected were compared to offsite control locations to verify that these positive detections were not attributable to licensed activities. All other radionuclides analyzed for were below MDL.

The radioactive half-life of I-131 is about 8 days. This short half-life allowed the affects of this radioactive plume to subside over about 3 weeks. As of April 09, 2011 no further impacts from the Fukushima Daiichi accident was evident.

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), and sediment samples were analyzed for concentrations of gamma emitting nuclides. No fission or activation products were detected in fish. Cesium-137 was detected in one sediment sample at a concentration 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, with the exception of 36

samples which were positive for I-131. These positive results are directly attributed to the Fukushima event in March 2011.

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.

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), Mirion Technologies, and Environmental Inc. Midwest Laboratory (EIML) on samples collected during the period 1 January 2011 through 31 December 2011.

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 2011. Sample locations and descriptions can be found in Appendix B, Table B–1 and Figures B–1 and B-2. 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 (SW), ground water (GW), fish (FI), and sediment (SS). 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.

Atmospheric Environment

The atmospheric environment was evaluated by performing radiological analyses on samples of air particulate and airborne iodine (AP/I). Airborne iodine and particulate samples were collected at fourteen 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, D-56, and D-58). 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.

Terrestrial Environment

Milk (M) samples were collected biweekly at one control location (D-25) from March through October, and monthly from November through February. 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 (FL) 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 17 locations (D-58, 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 13 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, D-56, and D-58).

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 Mirion Technologies 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 2011. The analytical procedures used by the laboratories are listed in Appendix B 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, Nb-95, Zr-95, I-131, Cs-134, Cs-137, Ba-140, and La-140 were reported.

For fish, sediment, 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 2011 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-53	01/07/11 – 01/14/11	Low reading of 166.9 hours due to work at substation.
AP/I	D-53	01/14/11 – 01/21/11	Low reading of 144.5 hours due to work at substation.
AP/I	D-04	01/28/11 – 02/04/11	No apparent reason for low reading of 150.6 hours; possibly due to power outage from station.
TLD	D-205-1, D-205-2	02/04/11	TLDs moved to fence across road; utility poles TLDs were mounted on were removed.
AP/I	D-03	03/11/11 – 03/18/11	No apparent reason for low reading of 162.8 hours.
AP/I	D-08	04/15/11 – 04/22/11	Low reading of 158.9 hours from power outage due to storms in the area.
AP/I	D-10	04/15/11 – 04/22/11	Low reading of 144.9 hours from power outage due to storms in the area.

Table D-1 LISTING OF SAMPLE ANOMALIES (continued)

Sample Type	Location Code	Collection Date	Reason
AP/I	D-12	04/15/11 – 04/22/11	Low reading of 149.8 hours from power outage due to storms in the area.
AP/I	D-10	04/22/11 – 04/29/11	No apparent reason for low reading of 125.0 hours.
AP/I	D-10	05/06/11 – 05/13/11	Air particulate filter shifted during collection period.
AP/I	D-12	05/06/11 – 05/13/11	No apparent reason for low reading of 166.7 hours.
AP/I	D-45	05/06/11 – 05/13/11	No apparent reason for low reading of 164.7 hours.
AP/I	D-58	05/27/11 – 06/03/11	Low reading of 105.7 hours due to recent startup.
AP/I	D-03	06/03/11 – 06/10/11	No apparent reason for low reading of 148.4 hours.
SW	D-21	07/01/11	Grab sample collected on 07/01/11; compositor back in service on 07/08/11.
AP/I	D-07	08/05/11 – 08/12/11	Estimated run time of 161.0 hours; timer replaced.
AP/I	D-45	08/19/11 – 08/26/11	Estimated run time of 168.0 hours; timer replaced.
AP/I	D-53	08/19/11 – 08/26/11	Low reading of 15.1 hours due to blown fuse; fuse replaced.
SW	D-21	09/30/11	Compositor not circulating, collector will check next week.
SW	D-21	11/25/11	Compositor not circulating, collector will check next week.
SW	D-57	11/25/11	No electricity to unit; collector will check next week.

Table D-1 LISTING OF SAMPLE ANOMALIES (continued)

Sample Type	Location Code	Collection Date	Reason
AP/I	D-12	12/02/11 – 12/09/11	No apparent reason for low reading of 102.9 hours.

Table D-2 LISTING OF MISSED SAMPLES

Sample Type	Location Code	Collection Date	Reason

There were no missed samples in 2011.

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

Air particulate/iodine station D-58 was added to the REMP program on May 27, 2011.

TLD locations D-58-1 and D-58-2 were added to the REMP program in the first quarter of 2011.

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 4.4 to 12.6 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). One sample at control station D-57 was positive for tritium at a concentration of 256 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). Tritium was detected in 11 of 16 samples. The concentrations ranged from 194 to 387 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 2,360 to 4,280 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 at a concentrationof 51 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 14 locations on a weekly basis. The 14 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, D-56 and D-58), 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 6 to 42 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 44 E–3 pCi/m^3 with a mean of 21 E–3 pCi/m^3. The results from the Far-Field locations ranged from 7 to 53 E–3 pCi/m^3 with a mean of 21 E–3 pCi/m^3. The results from the Control location ranged from 8 to 43 E–3 pCi/m^3 with a mean of 21 E–3 pCi/m^3. Comparison of the 2011 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 2011 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 50 of 55 samples and ranged from 38.5 to 151 E–3 pCi/m^3. K-40 was also detected in 2 of 55 samples. The concentration ranged from 14.5 to 17.2 E–3 pCi/ m^3. No anthropogenic nuclides were detected, and all required LLDs were met. Additional sampling occurred in the weeks immediately following the Fukushima event in 2011. All results were less than the MDC except for two samples that were positive for Be-7. The concentrations ranged from 259 to 261 E-03 pCi/m^3. These samples were consistent with historical quarterly results. All other nuclides were less than the MDC.

b. Airborne Iodine

Continuous air samples were collected from 14 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, D-56 and D-58) and analyzed weekly for I-131 (Table C–VI.1, Appendix C). All results were less than the MDC except for 36 samples that were positive for I-131. These positive results are directly attributed to the Fukushima event in March of 2011.

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 March through October and monthly November through February. 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 1,130 to 1,420 pCi/l. No other nuclides were detected, and all required LLDs were met. Additional sampling occurred in the weeks following the Fukushima event. All results were less than the MDC with the exception of naturally occurring K-40. The concentrations ranged from 1,210 to 1,490 pCi/l.

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 occurring nuclides were detected, and all required LLDs were met.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Mirion Technologies 110 Environmental (CaF_2 and LiF) thermoluminescent dosimeters. Forty-six 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 14 to 38 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 03 August 2011 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 2011.

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, 14 out of 18 analytes met the specified acceptance criteria. Four analytes did not meet the specified acceptance criteria for the following reason:

1. Teledyne Brown Engineering's Analytics March 2011 Cr-51 in milk result of 398 pCi/L was higher than the known value of 298 pCi/L, resulting in a found to known ratio of 1.34. NCR 11-13 was initiated to investigate this failure. There was a slightly high bias in all the gamma activities. The June gamma results in milk did not show a high bias. No further action was required.
2. Teledyne Brown Engineering's ERA May 2011 Gross Alpha in water result of 64.1 pCi/L was higher than the known value of 50.1 pCi/L, which exceeded the upper control limit of 62.9 pCi/L. NCR 11-08 was initiated to investigate this failure. The solids on the planchet exceeded 100 mg, which was beyond the range of the efficiency curve.

   Teledyne Brown Engineering's MAPEP March 2011 Gross Alpha in air particulate result of 0.101 Bq/sample was lower than the known value of 0.659 Bq/sample, which exceeded the lower control limit of 0.198 Bq/sample. NCR 11-11 was initiated to investigate this failure. The air particulate filter was counted on the wrong side.
3. Teledyne Brown Engineering's ERA November 2011 Sr-89 in water result of 81.0 pCi/L was higher than the known value of 69.7 pCi/L, which exceeded the upper control limit of 77.9 pCi/L. NCR 11-16 was initiated to investigate this failure. The TBE reported value to

known ratio of 1.16 fell within the acceptable range of ± 20%, which TBE considers acceptable.

4. Teledyne Brown Engineering's MAPEP March 2011 Sr-90 in soil, air particulate and vegetation were non-reports that were evaluated as failed. NCR 11-11 was initiated to investigate these failures. MAPEP evaluated the non-reports as failed due to not reporting a previously reported analyte.

For the secondary laboratory, Environmental, Inc., 12 out of 14 analytes met the specified acceptance criteria. Two analytes did not meet the specified acceptance criteria for the following reason:

1. Environmental Inc.'s ERA October 2011 Cs-134 in water result of 38.8 pCi/L was higher than the known value of 33.4 pCi/L, which exceeded the upper control limit of 36.7 pCi/L. The sample was reanalyzed. The reanalyzed result of 32.9 was acceptable.
2. Environmental Inc.'s MAPEP February 2011 Sr-90 in air particulate result of 1.89 Bq/sample was higher than the known value of 1.36 Bq/sample, which exceeded the upper control limit of 1.77 Bq/sample. No errors were found in the calculation or procedure. The reanalyzed result of 1.73 Bq/sample was acceptable.

   Environmental Inc.'s MAPEP August 2011 Sr-90 in soil result of 219.4 Bq/kg, less than the known value of 320 Bq/kg, was below the lower control limit of 224 Bq/kg. The sample was reanalyzed in triplicate through a strontium column. The reanalyzed result of 304.2 Bq/kg was acceptable.

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

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APPENDIX A

RADIOLOGICAL ENVIRONMENTAL MONITORING REPORT SUMMARY

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TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR DRESDEN NUCLEAR POWER STATION, 2011

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

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2011**

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
SURFACE WATER (PCI/LITER)	GR-B	36	4	8.7 (12/12) (6.0/12.1)	8.4 (24/24) (4.4/12.6)	9.8 (12/12) (6.8/12.6)	D-52 CONTROL DESPLAINES RIVER - UPSTREAM 1.1 MILES ESE OF SITE	0
	H-3	12	2000	<LLD	256 (1/8)	256 (1/4)	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

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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, 2011

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

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2011**

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	288 (11/16) (194/387)	NA	288 (11/12) (194/387)	D-23 INDICATOR THORSEN WELL 0.7 MILES S OF SITE	0
	GAMMA	16						
	MN-54		15	<LLD	NA	-		0

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TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR DRESDEN NUCLEAR POWER STATION, 2011

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

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2011**

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
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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TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR DRESDEN NUCLEAR POWER STATION, 2011

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

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2011**

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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TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR DRESDEN NUCLEAR POWER STATION, 2011

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

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2011**

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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TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR DRESDEN NUCLEAR POWER STATION, 2011

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

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2011**

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	51 (1/2)	NA	51 (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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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, 2011

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

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2011**

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)	LA-140		NA	<LLD	NA	-		0
AIR PARTICULATE (E-3 PCI/CU.METER)	GR-B	707	10	21 (650/655) (6/53)	21 (52/52) (8/43)	22 (51/52) (8/46)	D-10 INDICATOR GOOSE LAKE VILLAGE 3.5 MILES SSW OF SITE	0
	GAMMA	55						
	MN-54		NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	FE-59		NA	<LLD	<LLD	-		0
	CO-60		NA	<LLD	<LLD	-		0
	ZN-65		NA	<LLD	<LLD	-		0
	NB-95		NA	<LLD	<LLD	-		0

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TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR DRESDEN NUCLEAR POWER STATION, 2011

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

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2011**

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
AIR PARTICULATE (E-3 PCI/CU.METER)	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
AIR IODINE (E-3 PCI/CU.METER)	GAMMA I-131	707	70	62 (33/655) (32/115)	56 (3/52) (46/73)	76 (2/52) (56/96)	D-14 INDICATOR CHANNAHON 3.7 MILES NE OF SITE	0
MILK (PCI/LITER)	I-131	19	1	NA	<LLD	-		0

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MILK (PCI/LITER)	GAMMA	19						
	MN-54		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
	ZR-95		NA	NA	<LLD	-		0
	CS-134		15	NA	<LLD	-		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, 2011

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

LOCATION OF FACILITY: MORRIS IL **REPORTING PERIOD: ANNUAL 2011**

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
MILK (PCI/LITER)	CS-137		18	NA	<LLD	-		0
	BA-140		60	NA	<LLD	-		0
	LA-140		15	NA	<LLD	-		0
VEGETATION (PCI/KG WET)	GAMMA MN-54	10	NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	FE-59		NA	<LLD	<LLD	-		0
	CO-60		NA	<LLD	<LLD	-		0
	ZN-65		NA	<LLD	<LLD	-		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, 2011

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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	LOCATION WITH HIGHEST ANNUAL MEAN (M) STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
VEGETATION (PCI/KG WET)	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
	LA-140		NA	<LLD	<LLD	-		0
DIRECT RADIATION (MILLI-ROENTGEN/QTR.)	TLD-QUARTERLY	368	NA	22 (360/360) (14/38)	20 (8/8) (16/24)	27 (4/4) (22/33)	D-201-1 INDICATOR 4.8 MILES N	0

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

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APPENDIX B

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

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TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Dresden Nuclear Power Station, 2011

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 at Will Road, 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, Dresden Road (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 Station 1 (indicator)	0.8 miles NW
D-02	Onsite Station 2 (indicator)	0.3 miles NNE
D-03	Onsite Station 3 (indicator)	0.4 miles S
D-04	Collins Road, on Station property(indicator)	0.8 miles W
D-07	Clay Products, Dresden Road (indicator)	2.6 miles S
D-08	Jugtown Road, Prairie Parks (indicator)	3.8 miles SW
D-10	Goose Lake Road, Goose Lake Village (indicator)	3.5 miles SSW
D-12	Quarry Road, Lisbon (control)	10.5 miles NW
D-14	Center Street, Channahon (indicator)	3.7 miles NE
D-45	McKinley Woods Road, Channahon (indicator)	1.7 miles ENE
D-53	Will Road at Hollyhock (indicator)	2.1 miles SSE
D-55	Ridge Road, Minooka (indicator)	4.3 miles N
D-56	Will Road, Wildfeather (indicator)	1.7 miles SE
D-58	Will Road, Marina (indicator)	1.1 miles ESE
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	Illinois River at Dresden Lock and Dam, Downstream (indicator)	0.8 miles NW
G.	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, 2011

Location	Location Description	Distance & Direction From Site
H. Environmental Dosimetry - TLD		
Inner Ring		
D-58-1 and -2		1.1 miles ESE
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, on Station property	0.8 miles W
D-07-1 and -2	Clay Products, Dresden Road	2.6 miles S
D-08-1 and -2	Jugtown Road, Prairie Parks	3.8 miles SW
D-10-1 and -2	Goose Lake Road, Goose Lake Village	3.5 miles SSW
D-14-1 and -2	Center Street, Channahon	3.7 miles NE
D-45-1 and -2	McKinley Woods Road, Channahon	1.7 miles ENE
D-53-1 and -2	Will Road at Hollyhock	2.1 miles SSE
D-55-1 and -2	Ridge Road, Minooka	4.3 miles N
D-56-1 and -2	Will Road, 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, 2011

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, 2011

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 Mirion Technologies 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	Mirion Technologies

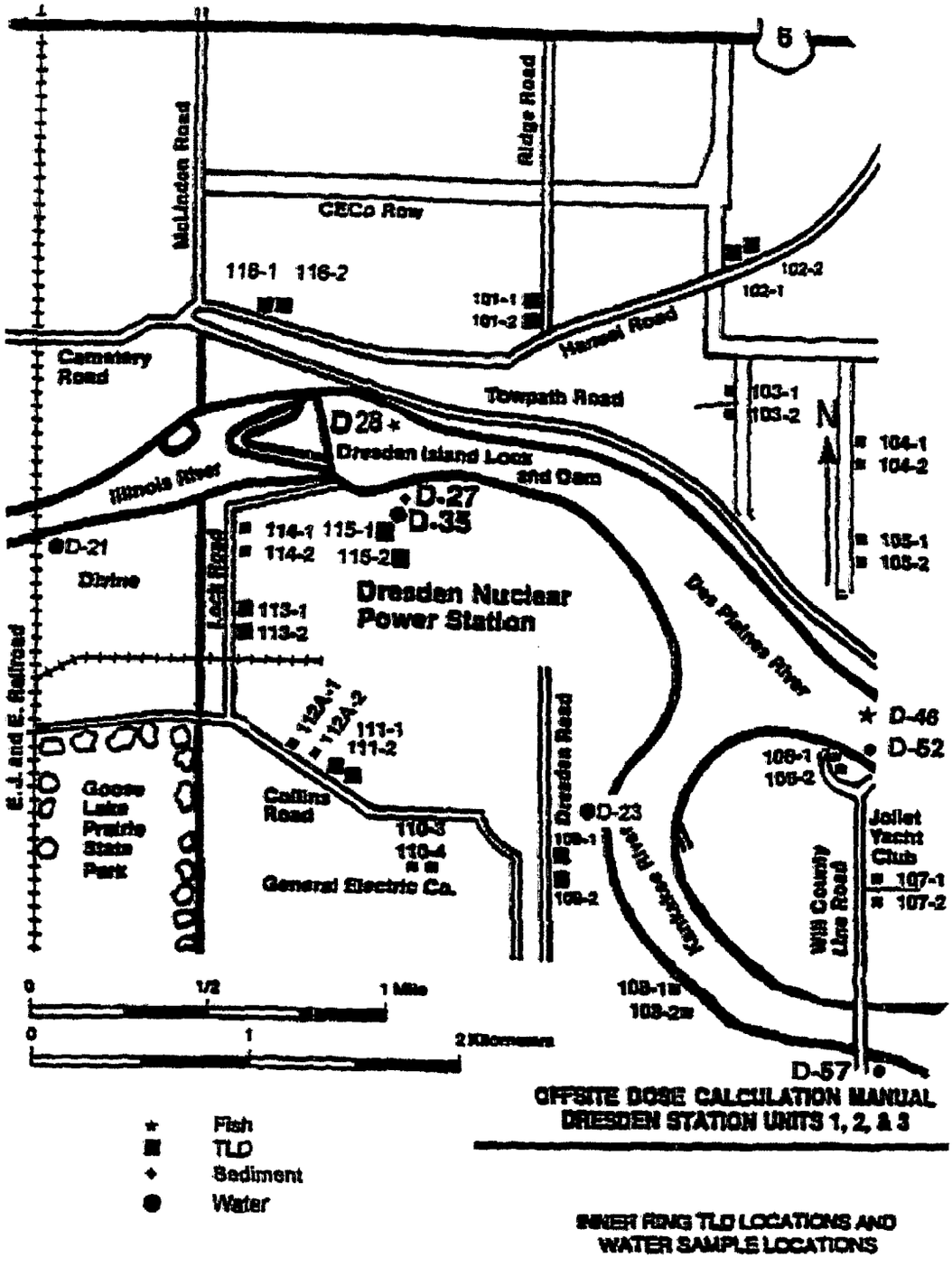

Figure B-1
Dresden Station Inner Ring TLD Locations, Fish, Water, and Sediment Location, 2011

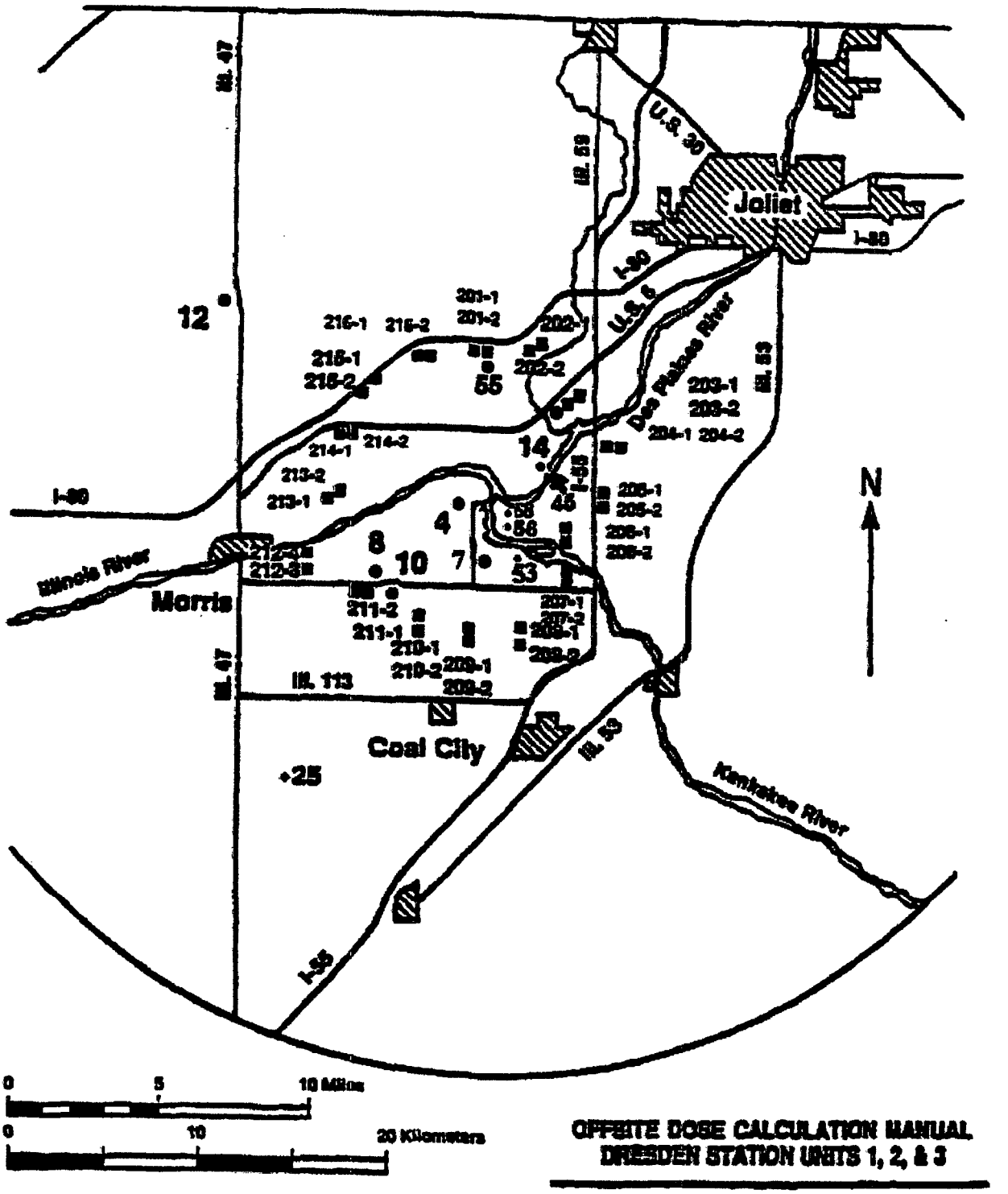

Figure B-2
Dresden Station Fixed Air Sampling and TLD Sites, Outer Ring TLD Locations and Milk Location, 2011

APPENDIX C

DATA TABLES AND FIGURES
PRIMARY LABORATORY

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TABLE C-I.1 **CONCENTRATIONS OF GROSS BETA IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	D-21	D-52	D-57
01/07/11 - 01/28/11	7.9 ± 3.6	10.0 ± 3.8	11.6 ± 3.4
02/04/11 - 02/25/11	7.1 ± 2.4	12.5 ± 3.0	5.0 ± 2.1
03/04/11 - 03/25/11	7.1 ± 3.0	9.0 ± 3.4	4.5 ± 2.0
04/01/11 - 04/29/11	9.9 ± 3.0	9.6 ± 3.3	7.1 ± 3.1
05/06/11 - 05/27/11	12.1 ± 3.2	10.8 ± 3.3	6.5 ± 2.9
05/27/11 - 06/24/11	8.3 ± 2.9	7.7 ± 2.9	11.7 ± 2.9
07/01/11 - 07/29/11	9.8 ± 2.6 (1)	10.8 ± 2.6	8.1 ± 2.5
08/05/11 - 08/26/11	7.5 ± 2.9	6.8 ± 2.9	5.5 ± 2.6
09/02/11 - 09/30/11	9.5 ± 1.7 (1)	8.8 ± 1.5	5.2 ± 1.4
10/07/11 - 10/28/11	7.3 ± 2.0	11.9 ± 2.3	4.4 ± 1.9
11/04/11 - 11/25/11	11.9 ± 3.2 (1)	12.6 ± 3.2 (1)	8.2 ± 2.9
12/02/11 - 12/30/11	6.0 ± 2.0	7.4 ± 2.1	6.6 ± 2.1
MEAN	8.7 ± 3.9	9.8 ± 3.9	7.0 ± 5.0

TABLE C-I.2 **CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	D-21	D-52	D-57
01/07/11 - 03/25/11	< 166	< 174	< 165
04/01/11 - 06/24/11	< 167	< 166	256 ± 106
07/01/11 - 09/30/11	< 189 (1)	< 191	< 189
10/07/11 - 12/30/11	< 182 (1)	< 183 (1)	< 182
MEAN	-	-	-

(1) SEE PROGRAM EXCPETIONS SECTION FOR EXPLANATION

TABLE C-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	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	12/31/10 - 01/28/11		< 5	< 5	< 13	< 5	< 12	< 5	< 8	< 13	< 4	< 5	< 33	< 10
	01/28/11 - 02/25/11		< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 6	< 2	< 2	< 13	< 4
	02/25/11 - 03/25/11		< 4	< 4	< 9	< 4	< 9	< 4	< 7	< 15	< 5	< 4	< 32	< 12
	03/25/11 - 04/29/11		< 1	< 1	< 2	< 1	< 1	< 1	< 2	< 11	< 1	< 1	< 14	< 4
	04/29/11 - 05/27/11		< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 11	< 2	< 3	< 20	< 7
	05/27/11 - 06/24/11		< 4	< 5	< 13	< 5	< 10	< 6	< 9	< 14	< 5	< 5	< 34	< 10
	06/24/11 - 07/29/11	(1)	< 8	< 7	< 14	< 7	< 15	< 10	< 13	< 13	< 8	< 8	< 38	< 11
	07/29/11 - 08/26/11		< 4	< 5	< 10	< 4	< 7	< 4	< 8	< 12	< 5	< 4	< 29	< 9
	08/26/11 - 09/30/11	(1)	< 4	< 4	< 10	< 4	< 9	< 5	< 9	< 7	< 5	< 5	< 21	< 6
	09/30/11 - 10/28/11		< 5	< 6	< 9	< 4	< 11	< 6	< 9	< 13	< 4	< 5	< 27	< 8
	10/28/11 - 11/25/11	(1)	< 6	< 6	< 11	< 5	< 12	< 6	< 10	< 11	< 5	< 6	< 28	< 9
	11/25/11 - 12/30/11		< 3	< 4	< 8	< 4	< 8	< 4	< 6	< 9	< 3	< 4	< 22	< 8
	MEAN		-	-	-	-	-	-	-	-	-	-	-	-
D-52	01/07/11 - 01/28/11		< 5	< 4	< 9	< 6	< 9	< 5	< 8	< 13	< 4	< 4	< 29	< 10
	02/04/11 - 02/25/11		< 1	< 2	< 3	< 2	< 3	< 2	< 3	< 5	< 1	< 1	< 10	< 3
	03/04/11 - 03/25/11		< 3	< 4	< 8	< 3	< 6	< 4	< 6	< 13	< 3	< 3	< 27	< 7
	04/01/11 - 04/29/11		< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 15	< 1	< 1	< 17	< 4
	05/06/11 - 05/27/11		< 3	< 3	< 7	< 3	< 5	< 3	< 5	< 13	< 3	< 3	< 27	< 8
	06/03/11 - 06/24/11		< 6	< 6	< 14	< 7	< 11	< 6	< 9	< 15	< 6	< 6	< 38	< 14
	07/01/11 - 07/29/11		< 5	< 5	< 15	< 6	< 11	< 7	< 11	< 10	< 5	< 6	< 27	< 8
	08/05/11 - 08/26/11		< 3	< 4	< 9	< 4	< 5	< 4	< 7	< 10	< 4	< 4	< 26	< 6
	09/02/11 - 09/30/11		< 5	< 5	< 11	< 5	< 11	< 6	< 7	< 10	< 5	< 5	< 23	< 8
	10/07/11 - 10/28/11		< 5	< 5	< 12	< 5	< 14	< 8	< 10	< 15	< 5	< 6	< 37	< 12
	11/04/11 - 11/25/11		< 4	< 5	< 11	< 3	< 9	< 7	< 9	< 10	< 5	< 6	< 24	< 8
	12/02/11 - 12/30/11		< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 9	< 3	< 3	< 19	< 5
	MEAN		-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	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	12/31/10 - 01/28/11		< 5	< 4	< 8	< 4	< 9	< 5	< 8	< 14	< 4	< 6	< 29	< 7
	01/28/11 - 02/25/11		< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 5	< 1	< 2	< 11	< 3
	02/25/11 - 03/25/11		< 3	< 4	< 7	< 4	< 7	< 4	< 7	< 15	< 3	< 4	< 29	< 8
	03/25/11 - 04/29/11		< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 10	< 1	< 1	< 13	< 4
	04/29/11 - 05/27/11		< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 14	< 3	< 3	< 28	< 7
	05/27/11 - 06/24/11		< 6	< 6	< 11	< 6	< 13	< 5	< 8	< 14	< 5	< 5	< 33	< 13
	06/24/11 - 07/29/11		< 6	< 5	< 11	< 7	< 12	< 6	< 12	< 10	< 6	< 6	< 30	< 8
	07/29/11 - 08/26/11		< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 11	< 4	< 4	< 27	< 8
	08/26/11 - 09/30/11		< 5	< 6	< 11	< 5	< 9	< 5	< 10	< 14	< 6	< 5	< 37	< 11
	09/30/11 - 10/28/11		< 6	< 5	< 13	< 6	< 11	< 6	< 9	< 15	< 6	< 6	< 34	< 10
	10/28/11 - 11/25/11	(1)	< 5	< 6	< 11	< 6	< 11	< 5	< 10	< 9	< 4	< 5	< 28	< 7
	11/25/11 - 12/30/11		< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 8	< 3	< 3	< 20	< 6
	MEAN		-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-II.1 **CONCENTRATIONS OF TRITIUM IN GROUND WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	D-23	D-35
01/14/11 - 01/14/11	325 ± 110	< 153
02/11/11 - 02/11/11	232 ± 109	
03/11/11 - 03/11/11	310 ± 121	
04/15/11 - 04/15/11	317 ± 127	< 178
05/13/11 - 05/13/11	258 ± 128	
06/10/11 - 06/10/11	253 ± 117	
07/15/11 - 07/15/11	262 ± 135	< 191
08/12/11 - 08/12/11	< 193	
09/09/11 - 09/09/11	387 ± 138	
10/14/11 - 10/14/11	386 ± 134	< 187
11/11/11 - 11/11/11	194 ± 114	
12/09/11 - 12/09/11	246 ± 133	
MEAN	288 ± 124	-

TABLES C-II.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUND WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	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	01/14/11 - 01/14/11	< 4	< 5	< 9	< 4	< 6	< 4	< 7	< 13	< 4	< 4	< 28	< 9
	02/11/11 - 02/11/11	< 3	< 3	< 6	< 2	< 4	< 3	< 5	< 13	< 3	< 3	< 27	< 8
	03/11/11 - 03/11/11	< 2	< 2	< 5	< 2	< 4	< 3	< 4	< 12	< 2	< 2	< 22	< 7
	04/15/11 - 04/15/11	< 1	< 1	< 3	< 1	< 3	< 1	< 3	< 9	< 1	< 1	< 16	< 5
	05/13/11 - 05/13/11	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 15	< 1	< 1	< 18	< 6
	06/10/11 - 06/10/11	< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 15	< 2	< 2	< 21	< 8
	07/15/11 - 07/15/11	< 6	< 6	< 13	< 6	< 10	< 6	< 11	< 15	< 6	< 5	< 31	< 8
	08/12/11 - 08/12/11	< 6	< 7	< 13	< 7	< 13	< 7	< 11	< 15	< 5	< 7	< 36	< 10
	09/09/11 - 09/09/11	< 6	< 6	< 12	< 8	< 10	< 7	< 10	< 8	< 6	< 6	< 27	< 10
	10/14/11 - 10/14/11	< 5	< 4	< 9	< 5	< 7	< 6	< 10	< 15	< 4	< 6	< 30	< 10
	11/11/11 - 11/11/11	< 4	< 4	< 9	< 4	< 7	< 4	< 8	< 10	< 3	< 4	< 21	< 7
	12/09/11 - 12/09/11	< 5	< 5	< 12	< 6	< 10	< 7	< 11	< 15	< 5	< 6	< 31	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-35	01/14/11 - 01/14/11	< 2	< 2	< 3	< 2	< 4	< 2	< 3	< 8	< 2	< 2	< 14	< 3
	04/15/11 - 04/15/11	< 1	< 2	< 3	< 1	< 2	< 1	< 2	< 11	< 1	< 1	< 17	< 5
	07/15/11 - 07/15/11	< 7	< 7	< 14	< 5	< 12	< 7	< 11	< 14	< 5	< 5	< 35	< 12
	10/14/11 - 10/14/11	< 5	< 4	< 12	< 3	< 9	< 6	< 6	< 15	< 5	< 5	< 32	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-III.1 **CONCENTRATIONS OF GAMMA EMITTERS IN FISH SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

SITE	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	05/11/11	< 54	< 77	< 170	< 64	< 158	< 99	< 137	< 80	< 57	< 1160	< 342
Largemouth Bass	05/11/11	< 68	< 78	< 183	< 58	< 132	< 74	< 141	< 54	< 59	< 1180	< 320
Common Carp	10/27/11	< 73	< 80	< 183	< 88	< 174	< 105	< 147	< 75	< 56	< 757	< 263
Largemouth Bass	10/27/11	< 57	< 81	< 170	< 83	< 128	< 70	< 92	< 63	< 60	< 709	< 185
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-46												
Channel Catfish	05/11/11	< 64	< 89	< 209	< 58	< 126	< 92	< 133	< 57	< 62	< 1330	< 372
Largemouth Bass	05/11/11	< 52	< 63	< 94	< 38	< 108	< 60	< 107	< 49	< 43	< 791	< 338
Common Carp	10/27/11	< 82	< 80	< 187	< 75	< 173	< 88	< 156	< 78	< 77	< 815	< 277
Largemouth Bass	10/27/11	< 87	< 95	< 192	< 79	< 179	< 90	< 139	< 69	< 89	< 829	< 229
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-IV.1 **CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PC/KG DRY ± 2 SIGMA

SITE	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	05/13/11	< 80	< 90	< 226	< 92	< 185	< 100	< 180	< 57	< 89	< 1410	< 356
	10/14/11	< 49	< 46	< 105	< 58	< 123	< 57	< 95	< 44	51 ± 44	< 287	< 98
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-V.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

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

COLLECTION	GROUP I			GROUP II					
PERIOD	D-01	D-02	D-03	D-04	D-07	D-45	D-53	D-56	D-58
12/31/10 - 01/07/11	33 ± 6	39 ± 6	35 ± 6	42 ± 6	43 ± 6	43 ± 6	44 ± 6	44 ± 6	
01/07/11 - 01/14/11	17 ± 4	21 ± 5	21 ± 5	22 ± 5	19 ± 4	19 ± 4	18 ± 4	(1) 19 ± 4	
01/14/11 - 01/21/11	31 ± 5	34 ± 5	30 ± 5	36 ± 5	25 ± 5	32 ± 5	31 ± 6	(1) 35 ± 5	
01/21/11 - 01/28/11	33 ± 5	32 ± 5	36 ± 6	31 ± 5	28 ± 5	32 ± 5	33 ± 5	27 ± 5	
01/28/11 - 02/04/11	17 ± 5	19 ± 5	19 ± 5	19 ± 6	(1) 17 ± 5	27 ± 6	17 ± 5	19 ± 5	
02/04/11 - 02/11/11	23 ± 5	26 ± 5	21 ± 4	24 ± 5	22 ± 5	22 ± 5	21 ± 4	24 ± 5	
02/11/11 - 02/18/11	20 ± 4	19 ± 4	18 ± 4	24 ± 5	20 ± 4	22 ± 5	19 ± 4	19 ± 4	
02/18/11 - 02/25/11	13 ± 4	14 ± 4	10 ± 4	14 ± 4	15 ± 4	12 ± 4	10 ± 4	13 ± 4	
02/25/11 - 03/04/11	19 ± 4	20 ± 4	18 ± 4	23 ± 5	20 ± 5	22 ± 5	19 ± 4	18 ± 4	
03/04/11 - 03/11/11	16 ± 4	13 ± 4	12 ± 4	13 ± 4	15 ± 4	17 ± 4	11 ± 4	12 ± 4	
03/11/11 - 03/18/11	20 ± 5	19 ± 5	21 ± 5	(1) 22 ± 5	22 ± 5	13 ± 5	24 ± 6	20 ± 5	
03/18/11 - 03/25/11	31 ± 6	28 ± 6	24 ± 5	31 ± 6	28 ± 5	30 ± 6	30 ± 6	23 ± 5	
03/25/11 - 04/01/11	41 ± 6	35 ± 5	42 ± 6	35 ± 5	40 ± 6	41 ± 6	42 ± 6	44 ± 6	
04/01/11 - 04/08/11	19 ± 5	14 ± 5	22 ± 5	22 ± 5	21 ± 5	23 ± 5	21 ± 5	17 ± 5	
04/08/11 - 04/15/11	19 ± 4	14 ± 4	19 ± 4	18 ± 4	16 ± 4	16 ± 4	15 ± 4	16 ± 4	
04/15/11 - 04/22/11	15 ± 4	16 ± 4	13 ± 4	12 ± 4	13 ± 4	11 ± 4	10 ± 4	12 ± 4	
04/22/11 - 04/29/11	12 ± 4	7 ± 4	8 ± 4	10 ± 4	10 ± 4	11 ± 4	8 ± 4	12 ± 4	
04/29/11 - 05/06/11	14 ± 4	8 ± 4	9 ± 4	10 ± 4	11 ± 4	11 ± 4	13 ± 4	11 ± 4	
05/06/11 - 05/13/11	13 ± 5	11 ± 5	6 ± 4	10 ± 4	13 ± 4	15 ± 5	14 ± 5	12 ± 4	
05/13/11 - 05/20/11	< 6	8 ± 4	< 6	< 6	10 ± 5	8 ± 4	9 ± 4	10 ± 5	
05/20/11 - 05/27/11	12 ± 4	11 ± 4	10 ± 4	11 ± 4	14 ± 4	13 ± 4	14 ± 4	14 ± 4	
05/27/11 - 06/03/11	11 ± 4	11 ± 4	16 ± 5	13 ± 4	17 ± 5	14 ± 5	14 ± 5	15 ± 5	15 ± 7 (1)(2)
06/03/11 - 06/10/11	22 ± 5	20 ± 4	21 ± 5	(1) 20 ± 4	19 ± 4	24 ± 4	22 ± 5	20 ± 4	21 ± 5
06/10/11 - 06/17/11	9 ± 5	10 ± 4	12 ± 5	13 ± 5	11 ± 5	14 ± 5	11 ± 5	7 ± 4	14 ± 8
06/17/11 - 06/24/11	9 ± 4	11 ± 4	8 ± 4	9 ± 4	13 ± 4	10 ± 4	12 ± 4	9 ± 4	10 ± 4
06/24/11 - 07/01/11	12 ± 4	13 ± 4	16 ± 4	16 ± 4	16 ± 4	17 ± 4	13 ± 4	14 ± 4	15 ± 4
07/01/11 - 07/08/11	20 ± 5	19 ± 5	13 ± 5	19 ± 5	18 ± 5	18 ± 5	22 ± 5	19 ± 5	16 ± 5
07/08/11 - 07/15/11	18 ± 5	17 ± 5	15 ± 5	14 ± 5	13 ± 5	21 ± 5	17 ± 5	12 ± 5	13 ± 5
07/15/11 - 07/22/11	22 ± 5	21 ± 5	15 ± 5	17 ± 5	19 ± 5	16 ± 5	20 ± 5	17 ± 5	17 ± 5
07/22/11 - 07/29/11	16 ± 4	17 ± 4	17 ± 4	19 ± 4	18 ± 4	18 ± 5	18 ± 4	17 ± 4	19 ± 4
07/29/11 - 08/05/11	26 ± 6	26 ± 6	28 ± 6	20 ± 5	24 ± 5	24 ± 6	24 ± 5	23 ± 5	25 ± 5
08/05/11 - 08/12/11	16 ± 5	21 ± 5	15 ± 5	22 ± 5	18 ± 5	(1) 22 ± 6	21 ± 5	19 ± 5	20 ± 5
08/12/11 - 08/19/11	16 ± 5	19 ± 5	17 ± 5	20 ± 5	16 ± 5	18 ± 5	18 ± 5	17 ± 5	17 ± 5
08/19/11 - 08/26/11	24 ± 6	21 ± 5	18 ± 5	23 ± 5	19 ± 5	27 ± 6	(1) < 23 (1)	24 ± 5	24 ± 5
08/26/11 - 09/02/11	29 ± 6	33 ± 6	26 ± 5	28 ± 5	29 ± 6	27 ± 5	25 ± 5	27 ± 5	24 ± 5
09/02/11 - 09/09/11	20 ± 5	19 ± 4	21 ± 5	17 ± 4	14 ± 4	20 ± 5	16 ± 4	18 ± 4	18 ± 4
09/09/11 - 09/16/11	22 ± 5	19 ± 5	15 ± 4	16 ± 4	16 ± 4	18 ± 5	15 ± 4	15 ± 4	20 ± 5
09/16/11 - 09/23/11	20 ± 4	17 ± 4	17 ± 4	22 ± 4	17 ± 4	23 ± 4	23 ± 4	21 ± 4	20 ± 4
09/23/11 - 09/30/11	16 ± 4	15 ± 4	16 ± 4	15 ± 4	16 ± 4	16 ± 4	20 ± 4	22 ± 5	18 ± 4
09/30/11 - 10/07/11	23 ± 5	21 ± 5	27 ± 5	24 ± 5	24 ± 5	23 ± 5	23 ± 5	28 ± 5	26 ± 5
10/07/11 - 10/14/11	35 ± 6	31 ± 5	41 ± 6	37 ± 6	42 ± 6	43 ± 6	35 ± 6	36 ± 6	32 ± 5
10/14/11 - 10/21/11	11 ± 4	11 ± 4	10 ± 4	11 ± 4	14 ± 4	10 ± 4	11 ± 4	11 ± 4	14 ± 4
10/21/11 - 10/28/11	30 ± 5	28 ± 5	23 ± 5	26 ± 5	31 ± 6	26 ± 5	26 ± 5	28 ± 5	29 ± 5
10/28/11 - 11/04/11	30 ± 5	23 ± 5	22 ± 5	23 ± 5	24 ± 5	24 ± 5	24 ± 5	24 ± 5	26 ± 5
11/04/11 - 11/11/11	17 ± 5	16 ± 5	17 ± 5	17 ± 5	19 ± 5	21 ± 5	16 ± 5	23 ± 5	19 ± 5
11/11/11 - 11/18/11	25 ± 5	30 ± 5	25 ± 5	23 ± 5	27 ± 5	28 ± 5	26 ± 5	26 ± 5	30 ± 5
11/18/11 - 11/25/11	19 ± 5	22 ± 5	19 ± 5	15 ± 5	17 ± 5	16 ± 5	20 ± 5	20 ± 5	18 ± 5
11/25/11 - 12/02/11	18 ± 4	18 ± 4	14 ± 4	19 ± 4	15 ± 4	23 ± 5	17 ± 4	16 ± 4	16 ± 4
12/02/11 - 12/09/11	21 ± 5	22 ± 5	24 ± 5	31 ± 6	27 ± 5	28 ± 6	24 ± 5	27 ± 5	20 ± 5
12/09/11 - 12/16/11	27 ± 5	27 ± 5	26 ± 5	35 ± 5	28 ± 5	24 ± 4	30 ± 5	31 ± 5	32 ± 5
12/16/11 - 12/23/11	23 ± 5	33 ± 5	26 ± 5	33 ± 5	32 ± 5	26 ± 5	29 ± 5	31 ± 5	29 ± 5
12/23/11 - 12/30/11	18 ± 4	22 ± 4	18 ± 4	20 ± 4	23 ± 4	26 ± 5	17 ± 4	18 ± 4	19 ± 4
MEAN	20 ± 14	20 ± 15	19 ± 16	21 ± 16	20 ± 15	21 ± 16	20 ± 16	20 ± 16	20 ± 12

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

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

(2) SEE PROGRAM CHANGES SECTION FOR EXPLANATION

TABLE C-V.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

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	
12/31/10 - 01/07/11	38 ± 6	46 ± 6	33 ± 5	35 ± 6	43 ± 6	
01/07/11 - 01/14/11	21 ± 5	19 ± 5	21 ± 5	25 ± 5	19 ± 4	
01/14/11 - 01/21/11	31 ± 5	37 ± 6	31 ± 5	34 ± 5	40 ± 6	
01/21/11 - 01/28/11	33 ± 5	39 ± 6	27 ± 5	29 ± 5	33 ± 5	
01/28/11 - 02/04/11	21 ± 5	23 ± 6	20 ± 5	16 ± 5	22 ± 5	
02/04/11 - 02/11/11	19 ± 4	22 ± 5	22 ± 5	23 ± 5	25 ± 5	
02/11/11 - 02/18/11	22 ± 5	21 ± 5	21 ± 5	21 ± 5	18 ± 4	
02/18/11 - 02/25/11	12 ± 4	12 ± 4	13 ± 4	16 ± 4	13 ± 4	
02/25/11 - 03/04/11	20 ± 5	20 ± 5	22 ± 5	20 ± 5	24 ± 5	
03/04/11 - 03/11/11	14 ± 4	15 ± 4	14 ± 4	15 ± 4	21 ± 4	
03/11/11 - 03/18/11	19 ± 5	22 ± 5	21 ± 5	18 ± 5	18 ± 5	
03/18/11 - 03/25/11	30 ± 6	35 ± 6	25 ± 5	35 ± 6	31 ± 6	
03/25/11 - 04/01/11	39 ± 6	36 ± 6	37 ± 6	53 ± 6	40 ± 6	
04/01/11 - 04/08/11	20 ± 5	20 ± 5	22 ± 5	18 ± 5	20 ± 5	
04/08/11 - 04/15/11	13 ± 4	17 ± 4	10 ± 4	12 ± 4	16 ± 4	
04/15/11 - 04/22/11	10 ± 4	(1) 13 ± 4	(1) 11 ± 4	11 ± 4	15 ± 5	(1)
04/22/11 - 04/29/11	9 ± 4	12 ± 6	(1) 11 ± 4	7 ± 4	8 ± 4	
04/29/11 - 05/06/11	12 ± 4	11 ± 4	10 ± 4	11 ± 4	10 ± 4	
05/06/11 - 05/13/11	14 ± 5	< 6	(1) 12 ± 4	14 ± 5	10 ± 4	
05/13/11 - 05/20/11	10 ± 5	8 ± 4	(1) 7 ± 4	9 ± 4	8 ± 4	
05/20/11 - 05/27/11	12 ± 4	16 ± 4	15 ± 4	13 ± 4	12 ± 4	
05/27/11 - 06/03/11	13 ± 5	15 ± 5	12 ± 5	16 ± 5	14 ± 5	
06/03/11 - 06/10/11	21 ± 4	21 ± 5	23 ± 5	23 ± 5	19 ± 4	
06/10/11 - 06/17/11	9 ± 5	10 ± 4	9 ± 4	13 ± 5	9 ± 4	
06/17/11 - 06/24/11	10 ± 4	10 ± 4	10 ± 4	13 ± 4	12 ± 4	
06/24/11 - 07/01/11	20 ± 4	11 ± 4	17 ± 4	16 ± 4	16 ± 4	
07/01/11 - 07/08/11	19 ± 5	22 ± 5	18 ± 5	21 ± 5	16 ± 5	
07/08/11 - 07/15/11	18 ± 5	14 ± 5	15 ± 5	15 ± 5	16 ± 5	
07/15/11 - 07/22/11	16 ± 5	20 ± 5	21 ± 5	15 ± 5	15 ± 5	
07/22/11 - 07/29/11	19 ± 4	19 ± 4	20 ± 4	21 ± 5	17 ± 4	
07/29/11 - 08/05/11	23 ± 5	22 ± 5	22 ± 5	26 ± 5	22 ± 5	
08/05/11 - 08/12/11	22 ± 5	22 ± 5	21 ± 5	22 ± 5	15 ± 5	
08/12/11 - 08/19/11	14 ± 5	18 ± 5	13 ± 5	20 ± 5	21 ± 5	
08/19/11 - 08/26/11	25 ± 6	19 ± 5	20 ± 5	23 ± 5	18 ± 5	
08/26/11 - 09/02/11	30 ± 6	36 ± 6	28 ± 5	28 ± 5	26 ± 5	
09/02/11 - 09/09/11	20 ± 4	22 ± 5	20 ± 5	19 ± 4	19 ± 4	
09/09/11 - 09/16/11	13 ± 4	14 ± 4	17 ± 4	20 ± 5	14 ± 4	
09/16/11 - 09/23/11	19 ± 4	22 ± 4	13 ± 4	21 ± 4	19 ± 4	
09/23/11 - 09/30/11	15 ± 4	15 ± 4	16 ± 4	16 ± 4	21 ± 5	
09/30/11 - 10/07/11	25 ± 5	25 ± 5	25 ± 5	26 ± 5	21 ± 4	
10/07/11 - 10/14/11	39 ± 6	46 ± 6	38 ± 6	39 ± 6	34 ± 6	
10/14/11 - 10/21/11	11 ± 4	16 ± 4	12 ± 4	13 ± 4	12 ± 4	
10/21/11 - 10/28/11	27 ± 5	28 ± 5	31 ± 6	29 ± 5	24 ± 5	
10/28/11 - 11/04/11	23 ± 5	23 ± 5	28 ± 5	25 ± 5	22 ± 5	
11/04/11 - 11/11/11	13 ± 5	15 ± 5	14 ± 5	16 ± 5	20 ± 5	
11/11/11 - 11/18/11	29 ± 5	32 ± 5	31 ± 5	28 ± 5	29 ± 5	
11/18/11 - 11/25/11	17 ± 5	20 ± 5	20 ± 5	14 ± 5	21 ± 5	
11/25/11 - 12/02/11	19 ± 4	21 ± 5	16 ± 4	19 ± 4	20 ± 4	
12/02/11 - 12/09/11	24 ± 5	25 ± 5	28 ± 6	30 ± 6	31 ± 8	(1)
12/09/11 - 12/16/11	33 ± 5	29 ± 5	33 ± 5	26 ± 4	31 ± 5	
12/16/11 - 12/23/11	33 ± 5	30 ± 5	33 ± 5	30 ± 5	30 ± 5	
12/23/11 - 12/30/11	26 ± 5	21 ± 4	24 ± 5	21 ± 4	23 ± 4	
MEAN	20 ± 16	22 ± 18	20 ± 15	21 ± 17	21 ± 16	

* THE MEAN AND 2 STANDARD DEVIATION 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, 2011

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
12/31/10 - 01/28/11	17	39	30 ± 14	12/31/10 - 01/28/11	18	44	31 ± 18	12/31/10 - 01/28/11	19	46	31 ± 14	12/31/10 - 01/28/11	19	43	34 ± 22
01/28/11 - 02/25/11	10	26	18 ± 9	01/28/11 - 02/25/11	10	27	19 ± 9	01/28/11 - 02/25/11	12	23	19 ± 8	01/28/11 - 02/25/11	13	25	20 ± 10
02/25/11 - 04/01/11	12	42	24 ± 19	02/25/11 - 04/01/11	11	44	25 ± 20	02/25/11 - 04/01/11	14	53	25 ± 21	02/25/11 - 04/01/11	18	40	27 ± 17
04/01/11 - 04/29/11	7	22	15 ± 9	04/01/11 - 04/29/11	8	23	15 ± 9	04/01/11 - 04/29/11	7	22	13 ± 9	04/01/11 - 04/29/11	8	20	15 ± 10
04/29/11 - 06/03/11	6	16	11 ± 5	04/29/11 - 06/03/11	8	17	12 ± 4	04/29/11 - 06/03/11	7	16	12 ± 5	04/29/11 - 06/03/11	8	14	11 ± 5
06/03/11 - 07/01/11	8	22	14 ± 10	06/03/11 - 07/01/11	7	24	15 ± 9	06/03/11 - 07/01/11	9	23	15 ± 10	06/03/11 - 07/01/11	9	19	14 ± 9
07/01/11 - 07/29/11	13	22	17 ± 5	07/01/11 - 07/29/11	12	22	17 ± 5	07/01/11 - 07/29/11	14	22	18 ± 5	07/01/11 - 07/29/11	15	17	16 ± 2
07/29/11 - 09/02/11	15	33	22 ± 11	07/29/11 - 09/02/11	16	29	22 ± 7	07/29/11 - 09/02/11	13	36	23 ± 11	07/29/11 - 09/02/11	15	26	20 ± 9
09/02/11 - 09/30/11	15	22	18 ± 5	09/02/11 - 09/30/11	14	23	18 ± 5	09/02/11 - 09/30/11	13	22	18 ± 6	09/02/11 - 09/30/11	14	21	18 ± 6
09/30/11 - 10/28/11	10	41	24 ± 20	09/30/11 - 10/28/11	10	43	25 ± 19	09/30/11 - 10/28/11	11	46	27 ± 21	09/30/11 - 10/28/11	12	34	23 ± 18
10/28/11 - 12/02/11	14	30	21 ± 10	10/28/11 - 12/02/11	15	30	21 ± 9	10/28/11 - 12/02/11	13	32	21 ± 12	10/28/11 - 12/02/11	20	29	22 ± 8
12/02/11 - 12/30/11	18	33	24 ± 8	12/02/11 - 12/30/11	17	35	27 ± 10	12/02/11 - 12/30/11	21	33	28 ± 8	12/02/11 - 12/30/11	23	31	29 ± 8
12/31/10 - 12/30/11	6	42	20 ± 15	12/31/10 - 12/30/11	7	44	21 ± 15	12/31/10 - 12/30/11	7	53	21 ± 17	12/31/10 - 12/30/11	8	43	21 ± 16

TABLE C-V.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

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

SITE	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	12/31/10 - 04/01/11	< 3	< 4	< 10	< 4	< 7	< 4	< 8	< 3	< 4	< 54	< 15
	04/01/11 - 07/01/11	< 1	< 2	< 6	< 1	< 4	< 2	< 4	< 1	< 1	< 82	< 42
	07/01/11 - 09/30/11	< 2	< 3	< 10	< 2	< 7	< 4	< 4	< 3	< 2	< 62	< 25
	09/30/11 - 12/30/11	< 2	< 3	< 7	< 3	< 7	< 3	< 5	< 3	< 3	< 19	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-02	12/31/10 - 04/01/11	< 4	< 5	< 13	< 4	< 7	< 5	< 6	< 4	< 4	< 56	< 22
	04/01/11 - 07/01/11	< 1	< 2	< 6	< 2	< 4	< 2	< 3	< 1	< 1	< 88	< 46
	07/01/11 - 09/30/11	< 2	< 4	< 7	< 2	< 7	< 4	< 5	< 3	< 3	< 74	< 25
	09/30/11 - 12/30/11	< 3	< 3	< 10	< 2	< 6	< 3	< 5	< 3	< 3	< 21	< 5
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-03	12/31/10 - 04/01/11	< 2	< 3	< 8	< 3	< 7	< 3	< 6	< 3	< 3	< 36	< 16
	04/01/11 - 07/01/11	< 1	< 2	< 6	< 1	< 4	< 2	< 5	< 2	< 1	< 117	< 47
	07/01/11 - 09/30/11	< 2	< 3	< 8	< 2	< 6	< 3	< 4	< 2	< 2	< 59	< 26
	09/30/11 - 12/30/11	< 2	< 3	< 6	< 2	< 4	< 3	< 5	< 2	< 2	< 18	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-04	12/31/10 - 04/01/11	< 3	< 4	< 8	< 3	< 8	< 4	< 8	< 4	< 3	< 52	< 27
	04/01/11 - 07/01/11	< 3	< 5	< 14	< 2	< 10	< 5	< 9	< 4	< 4	< 242	< 49
	07/01/11 - 09/30/11	< 2	< 3	< 10	< 2	< 5	< 4	< 5	< 2	< 3	< 70	< 25
	09/30/11 - 12/30/11	< 2	< 2	< 6	< 3	< 6	< 3	< 6	< 2	< 2	< 20	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-07	12/31/10 - 04/01/11	< 3	< 3	< 8	< 3	< 7	< 3	< 5	< 3	< 3	< 42	< 16
	04/01/11 - 07/01/11	< 3	< 5	< 15	< 3	< 7	< 6	< 10	< 4	< 4	< 287	< 102
	07/01/11 - 09/30/11	< 2	< 2	< 6	< 3	< 6	< 3	< 5	< 2	< 2	< 54	< 26
	09/30/11 - 12/30/11	< 4	< 4	< 7	< 3	< 7	< 4	< 6	< 4	< 3	< 26	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-V.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

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

SITE	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-08	12/31/10 - 04/01/11	< 3	< 5	< 11	< 3	< 7	< 5	< 9	< 4	< 4	< 61	< 17
	04/01/11 - 07/01/11	< 3	< 3	< 8	< 2	< 4	< 4	< 6	< 2	< 2	< 175	< 101
	07/01/11 - 09/30/11	< 3	< 3	< 8	< 3	< 5	< 5	< 6	< 3	< 3	< 74	< 22
	09/30/11 - 12/30/11	< 3	< 4	< 8	< 4	< 9	< 4	< 8	< 4	< 3	< 29	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-10	12/31/10 - 04/01/11	< 2	< 3	< 7	< 3	< 7	< 3	< 5	< 3	< 2	< 47	< 16
	04/01/11 - 07/01/11	< 3	< 4	< 8	< 2	< 8	< 4	< 7	< 2	< 2	< 181	< 98
	07/01/11 - 09/30/11	< 2	< 3	< 8	< 3	< 6	< 3	< 5	< 2	< 2	< 40	< 25
	09/30/11 - 12/30/11	< 2	< 2	< 4	< 2	< 5	< 2	< 4	< 2	< 2	< 22	< 5
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-12	**03/11/11 - 03/18/11**	**< 40**	**< 45**	**< 82**	**< 36**	**< 64**	**< 39**	**< 63**	**< 37**	**< 37**	**< 207**	**< 61**
	03/18/11 - 03/25/11	**< 36**	**< 30**	**< 54**	**< 26**	**< 90**	**< 22**	**< 39**	**< 40**	**< 30**	**< 110**	**< 51**
	03/25/11 - 04/01/11	**< 24**	**< 18**	**< 41**	**< 33**	**< 59**	**< 30**	**< 41**	**< 26**	**< 28**	**< 95**	**< 55**
	04/01/11 - 04/08/11	**< 31**	**< 24**	**< 63**	**< 28**	**< 76**	**< 37**	**< 46**	**< 31**	**< 33**	**< 97**	**< 54**
	12/31/10 - 04/01/11	< 3	< 4	< 10	< 3	< 8	< 4	< 8	< 4	< 3	< 57	< 18
	04/01/11 - 07/01/11	< 3	< 4	< 10	< 2	< 6	< 5	< 5	< 3	< 2	< 159	< 62
	07/01/11 - 09/30/11	< 3	< 4	< 9	< 3	< 7	< 4	< 5	< 2	< 2	< 50	< 26
	09/30/11 - 12/30/11	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 2	< 2	< 17	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-14	12/31/10 - 04/01/11	< 2	< 3	< 8	< 3	< 7	< 3	< 5	< 3	< 2	< 44	< 16
	04/01/11 - 07/01/11	< 3	< 5	< 11	< 3	< 8	< 4	< 6	< 4	< 3	< 187	< 56
	07/01/11 - 09/30/11	< 2	< 3	< 10	< 3	< 6	< 3	< 6	< 2	< 2	< 53	< 26
	09/30/11 - 12/30/11	< 2	< 3	< 6	< 3	< 7	< 3	< 5	< 2	< 2	< 19	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-

BOLDED VALUES INDICATE ADDITIONAL SAMPLING DUE TO THE FUKUSHIMA EVENT

TABLE C-V.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

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

SITE	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-45	12/31/10 - 04/01/11	< 3	< 4	< 9	< 3	< 6	< 3	< 5	< 3	< 3	< 35	< 18
	04/01/11 - 07/01/11	< 2	< 3	< 9	< 2	< 6	< 3	< 6	< 2	< 2	< 139	< 55
	07/01/11 - 09/30/11	< 2	< 3	< 7	< 3	< 6	< 3	< 6	< 2	< 2	< 62	< 25
	09/30/11 - 12/30/11	< 3	< 4	< 4	< 4	< 9	< 3	< 5	< 3	< 3	< 28	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-53	12/31/10 - 04/01/11	< 3	< 4	< 10	< 4	< 8	< 5	< 7	< 4	< 4	< 51	< 19
	04/01/11 - 07/01/11	< 3	< 5	< 12	< 4	< 10	< 5	< 10	< 4	< 3	< 232	< 83
	07/01/11 - 09/30/11	< 4	< 4	< 10	< 2	< 8	< 5	< 8	< 3	< 3	< 82	< 30
	09/30/11 - 12/30/11	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 3	< 3	< 22	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-55	12/31/10 - 04/01/11	< 3	< 3	< 8	< 3	< 6	< 3	< 6	< 3	< 3	< 38	< 17
	04/01/11 - 07/01/11	< 4	< 6	< 17	< 5	< 10	< 5	< 13	< 4	< 3	< 338	< 93
	07/01/11 - 09/30/11	< 2	< 3	< 8	< 3	< 7	< 2	< 4	< 2	< 2	< 56	< 26
	09/30/11 - 12/30/11	< 3	< 3	< 6	< 4	< 5	< 3	< 6	< 3	< 3	< 26	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-56	12/31/10 - 04/01/11	< 4	< 5	< 10	< 3	< 8	< 4	< 7	< 4	< 4	< 62	< 23
	04/01/11 - 07/01/11	< 4	< 5	< 13	< 4	< 9	< 5	< 9	< 4	< 3	< 204	< 56
	07/01/11 - 09/30/11	< 2	< 3	< 6	< 2	< 5	< 2	< 4	< 2	< 2	< 50	< 26
	09/30/11 - 12/30/11	< 3	< 2	< 6	< 3	< 7	< 3	< 5	< 3	< 2	< 24	< 4
	MEAN	-	-	-	-	-	-	-	-	-	-	-
D-58	05/30/11 - 07/01/11	< 11	< 17	< 51	< 8	< 24	< 18	< 35	< 11	< 9	< 866	< 305
	07/01/11 - 09/30/11	< 3	< 3	< 10	< 3	< 5	< 4	< 7	< 3	< 3	< 65	< 31
	09/30/11 - 12/30/11	< 2	< 2	< 6	< 2	< 6	< 3	< 4	< 3	< 3	< 20	< 6
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-VI.1 **CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

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	D-58
12/31/10 - 01/07/11	< 24	< 43	< 43	< 43	< 43	< 47	< 45	< 45	
01/07/11 - 01/14/11	< 51	< 52	< 52	< 51	< 30	< 48	< 51 (1)	< 22	
01/14/11 - 01/21/11	< 40	< 22	< 41	< 38	< 40	< 44	< 50 (1)	< 43	
01/21/11 - 01/28/11	< 17	< 28	< 28	< 28	< 28	< 35	< 34	< 34	
01/28/11 - 02/04/11	< 41	< 42	< 18	< 46 (1)	< 42	< 33	< 32	< 32	
02/04/11 - 02/11/11	< 15	< 28	< 28	< 27	< 28	< 42	< 41	< 41	
02/11/11 - 02/18/11	< 42	< 42	< 41	< 26	< 42	< 61	< 60	< 60	
02/18/11 - 02/25/11	< 21	< 39	< 39	< 39	< 37	< 32	< 34	< 34	
02/25/11 - 03/04/11	< 69	< 69	< 69	< 69	< 30	< 53	< 50	< 50	
03/04/11 - 03/11/11	< 17	< 30	< 30	< 30	< 31	< 51	< 50	< 50	
03/11/11 - 03/18/11	< 36	< 36	< 38 (1)	< 36	< 38	< 43	< 44	< 41	
03/18/11 - 03/25/11	63 ± 26	71 ± 26	90 ± 27	67 ± 35	74 ± 27	91 ± 32	73 ± 27	96 ± 25	
03/25/11 - 04/01/11	61 ± 20	46 ± 16	51 ± 23	61 ± 22	60 ± 19	43 ± 27	63 ± 22	50 ± 21	
04/01/11 - 04/08/11	49 ± 22	< 43	49 ± 29	46 ± 20	58 ± 37	47 ± 32	39 ± 22	32 ± 23	
04/08/11 - 04/15/11	< 27	< 33	< 31	< 26	< 36	< 30	< 32	< 36	
04/15/11 - 04/22/11	< 49	< 49	< 49	< 49	< 39	< 69	< 68	< 29	
04/22/11 - 04/29/11	< 51	< 52	< 52	< 51	< 42	< 60	< 59	< 59	
04/29/11 - 05/06/11	< 42	< 41	< 41	< 42	< 18	< 37	< 36	< 36	
05/06/11 - 05/13/11	< 51	< 55	< 51	< 51	< 69	< 33	< 59	< 59	
05/13/11 - 05/20/11	< 33	< 60	< 60	< 60	< 60	< 64	< 68	< 68	
05/20/11 - 05/27/11	< 43	< 43	< 43	< 43	< 50	< 52	< 21	< 51	
05/27/11 - 06/03/11	< 63	< 63	< 66	< 63	< 61	< 40	< 38	< 38	< 33 (1)(2)
06/03/11 - 06/10/11	< 33	< 33	< 38 (1)	< 33	< 39	< 54	< 55	< 55	< 55
06/10/11 - 06/17/11	< 38	< 37	< 38	< 38	< 21	< 22	< 39	< 38	< 65
06/17/11 - 06/24/11	< 41	< 41	< 41	< 41	< 42	< 36	< 35	< 35	< 19
06/24/11 - 07/01/11	< 49	< 49	< 49	< 49	< 49	< 29	< 58	< 58	< 58
07/01/11 - 07/08/11	< 37	< 68	< 68	< 68	< 68	< 37	< 39	< 38	< 39
07/08/11 - 07/15/11	< 28	< 50	< 49	< 51	< 51	< 60	< 68	< 68	< 68
07/15/11 - 07/22/11	< 43	< 28	< 44	< 43	< 43	< 45	< 64	< 64	< 64
07/22/11 - 07/29/11	< 19	< 45	< 44	< 44	< 45	< 47	< 58	< 58	< 57
07/29/11 - 08/05/11	< 36	< 36	< 36	< 36	< 36	< 33	< 31	< 31	< 31
08/05/11 - 08/12/11	< 51	< 51	< 51	< 51	< 53 (1)	< 60	< 20	< 20	< 9
08/12/11 - 08/19/11	< 29	< 69	< 69	< 29	< 67	< 56	< 67	< 67	< 67
08/19/11 - 08/26/11	< 11	< 20	< 20	< 20	< 20	< 15 (1)	< 252 (1)	< 22	< 22
08/26/11 - 09/02/11	< 45	< 45	< 45	< 45	< 25	< 31	< 55	< 55	< 55
09/02/11 - 09/09/11	< 16	< 29	< 29	< 28	< 28	< 37	< 41	< 41	< 41
09/09/11 - 09/16/11	< 19	< 35	< 34	< 35	< 35	< 61	< 57	< 56	< 56
09/16/11 - 09/23/11	< 50	< 50	< 50	< 50	< 22	< 32	< 59	< 59	< 59
09/23/11 - 09/30/11	< 6	< 12	< 12	< 12	< 12	< 42	< 33	< 33	< 33
09/30/11 - 10/07/11	< 22	< 53	< 53	< 53	< 53	< 41	< 45	< 45	< 45
10/07/11 - 10/14/11	< 26	< 62	< 62	< 64	< 62	< 55	< 35	< 35	< 35
10/14/11 - 10/21/11	< 26	< 47	< 47	< 47	< 47	< 43	< 45	< 45	< 45
10/21/11 - 10/28/11	< 37	< 69	< 69	< 68	< 69	< 66	< 63	< 63	< 63
10/28/11 - 11/04/11	< 28	< 46	< 46	< 46	< 46	< 62	< 57	< 58	< 58
11/04/11 - 11/11/11	< 15	< 28	< 28	< 28	< 28	< 18	< 33	< 33	< 33
11/11/11 - 11/18/11	< 33	< 61	< 61	< 58	< 61	< 53	< 62	< 62	< 62
11/18/11 - 11/25/11	< 19	< 35	< 34	< 35	< 35	< 28	< 15	< 28	< 28
11/25/11 - 12/02/11	< 25	< 46	< 46	< 46	< 45	< 46	< 55	< 55	< 55
12/02/11 - 12/09/11	< 21	< 38	< 38	< 38	< 39	< 59	< 56	< 56	< 56
12/09/11 - 12/16/11	< 26	< 45	< 46	< 46	< 47	< 44	< 52	< 52	< 52
12/16/11 - 12/23/11	< 57	< 58	< 57	< 57	< 22	< 49	< 48	< 26	< 48
12/23/11 - 12/30/11	< 30	< 17	< 30	< 30	< 30	< 34	< 36	< 36	< 36
MEAN	58 ± 16	59 ± 36	63 ± 46	58 ± 22	64 ± 17	60 ± 54	59 ± 35	59 ± 65	-

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

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

(2) SEE PROGRAM CHANGES SECTION FOR EXPLANATION

TABLE C-VI.1 **CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

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
12/31/10 - 01/07/11	< 55	< 55	< 55	< 47	< 55
01/07/11 - 01/14/11	< 29	< 30	< 52	< 52	< 30
01/14/11 - 01/21/11	< 44	< 44	< 44	< 43	< 44
01/21/11 - 01/28/11	< 31	< 31	< 31	< 35	< 31
01/28/11 - 02/04/11	< 42	< 42	< 43	< 33	< 43
02/04/11 - 02/11/11	< 50	< 50	< 50	< 42	< 50
02/11/11 - 02/18/11	< 56	< 56	< 58	< 61	< 56
02/18/11 - 02/25/11	< 33	< 33	< 32	< 32	< 33
02/25/11 - 03/04/11	< 61	< 61	< 63	< 53	< 62
03/04/11 - 03/11/11	< 38	< 38	< 39	< 51	< 38
03/11/11 - 03/18/11	< 16	< 38	< 38	< 42	< 38
03/18/11 - 03/25/11	69 ± 49	115 ± 33	96 ± 29	83 ± 32	73 ± 28
03/25/11 - 04/01/11	49 ± 21	52 ± 25	56 ± 21	47 ± 21	46 ± 24
04/01/11 - 04/08/11	55 ± 23	47 ± 26	< 44	< 27	49 ± 25
04/08/11 - 04/15/11	< 28	< 28	< 27	< 27	< 35
04/15/11 - 04/22/11	< 40 (1)	< 44 (1)	< 69	< 69	< 43 (1)
04/22/11 - 04/29/11	< 42	< 56 (1)	< 26	< 60	< 43
04/29/11 - 05/06/11	< 30	< 30	< 30	< 37	< 30
05/06/11 - 05/13/11	< 69	< 69 (1)	< 59	< 63	< 70 (1)
05/13/11 - 05/20/11	< 65	< 65	< 65	< 69	< 63
05/20/11 - 05/27/11	< 49	< 51	< 54	< 54	< 49
05/27/11 - 06/03/11	< 63	< 61	< 34	< 40	< 61
06/03/11 - 06/10/11	< 42	< 42	< 23	< 25	< 42
06/10/11 - 06/17/11	< 52	< 51	< 49	< 37	< 51
06/17/11 - 06/24/11	< 42	< 42	< 18	< 36	< 42
06/24/11 - 07/01/11	< 66	< 66	< 68	< 57	< 66
07/01/11 - 07/08/11	< 21	< 37	< 37	< 40	< 38
07/08/11 - 07/15/11	< 34	< 64	< 60	< 70	< 60
07/15/11 - 07/22/11	< 25	< 45	< 45	< 65	< 45
07/22/11 - 07/29/11	< 19	< 43	< 44	< 59	< 44
07/29/11 - 08/05/11	< 17	< 31	< 30	< 30	< 30
08/05/11 - 08/12/11	< 23	< 54	< 56	< 21	< 55
08/12/11 - 08/19/11	< 69	< 56	< 56	< 68	< 56
08/19/11 - 08/26/11	< 15	< 23	< 24	< 23	< 24
08/26/11 - 09/02/11	< 50	< 50	< 50	< 56	< 50
09/02/11 - 09/09/11	< 16	< 37	< 37	< 42	< 37
09/09/11 - 09/16/11	< 26	< 60	< 61	< 58	< 60
09/16/11 - 09/23/11	< 57	< 57	< 58	< 61	< 58
09/23/11 - 09/30/11	< 42	< 8	< 42	< 34	< 42
09/30/11 - 10/07/11	< 22	< 40	< 41	< 45	< 41
10/07/11 - 10/14/11	< 54	< 54	< 55	< 36	< 30
10/14/11 - 10/21/11	< 18	< 43	< 43	< 45	< 43
10/21/11 - 10/28/11	< 66	< 66	< 28	< 64	< 66
10/28/11 - 11/04/11	< 34	< 61	< 62	< 59	< 61
11/04/11 - 11/11/11	< 32	< 32	< 32	< 33	< 32
11/11/11 - 11/18/11	< 23	< 55	< 55	< 63	< 55
11/18/11 - 11/25/11	< 45	< 45	< 47	< 28	< 45
11/25/11 - 12/02/11	< 20	< 47	< 46	< 52	< 46
12/02/11 - 12/09/11	< 40	< 40	< 41	< 25	< 62 (1)
12/09/11 - 12/16/11	< 19	< 45	< 45	< 51	< 45
12/16/11 - 12/23/11	< 40	< 40	< 40	< 49	< 40
12/23/11 - 12/30/11	< 14	< 33	< 34	< 36	< 33
MEAN	58 ± 20	71 ± 76	76 ± 57	65 ± 51	56 ± 30

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

TABLE C-VII.1 CONCENTRATIONS OF I-131 IN MILK SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	CONTROL FARM D-25
01/06/11	< 0.7
02/03/11	< 0.6
03/03/11	< 0.5
03/31/11	**< 0.5**
04/07/11	< 0.7
04/21/11	**< 0.5**
05/05/11	< 0.7
05/19/11	< 0.5
06/02/11	< 0.7
06/16/11	< 0.9
06/30/11	< 0.7
07/14/11	< 0.8
07/28/11	< 0.8
08/11/11	< 0.9
08/25/11	< 0.8
09/08/11	< 0.7
09/22/11	< 0.8
10/06/11	< 0.7
10/20/11	< 0.7
11/03/11	< 0.9
12/01/11	< 0.6
MEAN	-

BOLDED VALUES INDICATE ADDITIONAL SAMPLING DUE TO THE FUKUSHIMA EVENT

TABLE C-VII.2 CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	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	01/06/11	< 5	< 5	< 10	< 5	< 11	< 5	< 9	< 4	< 6	< 32	< 10
	02/03/11	< 6	< 7	< 18	< 8	< 14	< 8	< 13	< 6	< 6	< 43	< 12
	03/03/11	< 5	< 6	< 14	< 7	< 14	< 6	< 10	< 5	< 5	< 40	< 13
	03/31/11	**< 5**	**< 7**	**< 14**	**< 6**	**< 14**	**< 6**	**< 11**	**< 5**	**< 6**	**< 48**	**< 11**
	04/07/11	< 4	< 5	< 14	< 6	< 10	< 5	< 9	< 4	< 5	< 46	< 13
	04/21/11	**< 5**	**< 5**	**< 12**	**< 6**	**< 11**	**< 5**	**< 10**	**< 5**	**< 5**	**< 26**	**< 8**
	05/05/11	< 5	< 5	< 11	< 7	< 12	< 6	< 10	< 5	< 6	< 32	< 10
	05/19/11	< 5	< 5	< 13	< 7	< 11	< 6	< 11	< 4	< 5	< 55	< 15
	06/02/11	< 6	< 7	< 17	< 7	< 14	< 6	< 13	< 6	< 6	< 44	< 13
	06/16/11	< 5	< 7	< 15	< 7	< 16	< 6	< 13	< 6	< 7	< 48	< 14
	06/30/11	< 5	< 6	< 14	< 6	< 11	< 6	< 11	< 5	< 6	< 30	< 8
	07/14/11	< 6	< 6	< 13	< 7	< 12	< 5	< 11	< 5	< 6	< 36	< 10
	07/28/11	< 8	< 5	< 18	< 11	< 15	< 7	< 13	< 6	< 7	< 43	< 9
	08/11/11	< 5	< 7	< 17	< 8	< 18	< 6	< 15	< 7	< 7	< 43	< 12
	08/25/11	< 6	< 6	< 15	< 7	< 15	< 7	< 11	< 6	< 6	< 42	< 13
	09/08/11	< 6	< 6	< 14	< 8	< 15	< 7	< 13	< 6	< 6	< 40	< 10
	09/22/11	< 6	< 5	< 11	< 7	< 11	< 6	< 9	< 5	< 5	< 26	< 9
	10/06/11	< 8	< 8	< 17	< 11	< 17	< 7	< 12	< 7	< 7	< 43	< 13
	10/20/11	< 5	< 6	< 13	< 7	< 15	< 6	< 10	< 5	< 6	< 34	< 12
	11/03/11	< 8	< 7	< 17	< 9	< 14	< 8	< 12	< 5	< 7	< 42	< 10
	12/01/11	< 6	< 7	< 17	< 7	< 13	< 7	< 11	< 5	< 7	< 32	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-

BOLDED VALUES INDICATE ADDITIONAL SAMPLING DUE TO THE FUKUSHIMA EVENT

TABLE C-VIII.1 **CONCENTRATIONS OF GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

SITE	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	09/24/11	< 17	< 18	< 36	< 18	< 39	< 18	< 29	< 34	< 14	< 15	< 77	< 30
Carrots	09/24/11	< 15	< 18	< 41	< 22	< 37	< 18	< 28	< 38	< 15	< 20	< 86	< 26
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-QUAD 1													
Beet greens	09/24/11	< 19	< 21	< 51	< 25	< 42	< 19	< 32	< 41	< 17	< 24	< 115	< 28
Beets	09/24/11	< 19	< 17	< 36	< 24	< 53	< 19	< 33	< 38	< 17	< 23	< 96	< 20
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-QUAD 2													
Cabbage	09/23/11	< 15	< 14	< 36	< 18	< 35	< 18	< 24	< 42	< 12	< 16	< 91	< 23
Potatoes	09/23/11	< 20	< 17	< 43	< 28	< 49	< 16	< 34	< 45	< 15	< 20	< 114	< 25
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-QUAD 3													
Cabbage	09/23/11	< 19	< 16	< 47	< 27	< 43	< 19	< 38	< 38	< 15	< 19	< 100	< 21
Sweet potatoes	09/23/11	< 14	< 14	< 34	< 14	< 31	< 19	< 23	< 38	< 13	< 14	< 88	< 27
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
D-QUAD 4													
Broccoli	09/24/11	< 13	< 15	< 42	< 19	< 39	< 17	< 27	< 36	< 16	< 17	< 78	< 25
Potatoes	09/24/11	< 8	< 8	< 21	< 11	< 20	< 11	< 14	< 23	< 8	< 9	< 55	< 14
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-IX.1 QUARTERLY TLD RESULTS FOR DRESDEN NUCLEAR POWER STATION, 2011

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	21.8 ± 6.6	22	21	18	26
D-01-2	21.0 ± 9.1	22	18	17	27
D-02-1	23.8 ± 9.1	26	21	19	29
D-02-2	23.5 ± 8.1	24	21	20	29
D-03-1	19.0 ± 5.9	19	18	16	23
D-03-2	18.5 ± 6.6	19	16	16	23
D-04-1	21.0 ± 11.2	25	14	19	26
D-04-2	21.5 ± 6.8	22	20	18	26
D-07-1	20.3 ± 6.6	22	18	17	24
D-07-2	21.0 ± 9.9	21	17	18	28
D-08-1	22.3 ± 12.3	22	18	18	31
D-08-2	21.3 ± 7.2	22	19	18	26
D-10-1	22.3 ± 8.9	25	19	18	27
D-10-2	20.5 ± 7.4	22	18	17	25
D-12-1	20.5 ± 6.6	21	21	16	24
D-12-2	19.3 ± 6.6	21	17	16	23
D-14-1	19.3 ± 7.5	20	18	15	24
D-14-2	20.0 ± 7.3	22	18	16	24
D-45-1	23.8 ± 8.1	26	22	19	28
D-45-2	23.0 ± 7.1	23	20	21	28
D-53-1	18.0 ± 7.7	19	15	15	23
D-53-2	17.5 ± 6.0	19	15	15	21
D-55-1	22.0 ± 6.3	23	20	19	26
D-55-2	21.3 ± 7.2	22	19	18	26
D-56-1	18.3 ± 7.2	19	16	15	23
D-56-2	18.0 ± 7.1	18	16	15	23
D-58-1	18.8 ± 6.2	19	17	16	23
D-58-2	19.5 ± 7.4	19	20	15	24
D-101-1	22.0 ± 6.3	23	20	19	26
D-101-2	20.5 ± 6.6	21	18	18	25
D-102-1	23.8 ± 9.3	24	22	19	30
D-102-2	23.3 ± 5.5	26	22	20	25
D-103-1	20.8 ± 6.2	21	19	18	25
D-103-2	21.0 ± 6.3	22	19	18	25
D-104-1	22.8 ± 7.7	25	20	19	27
D-104-2	21.8 ± 7.7	24	18	19	26
D-105-1	21.0 ± 6.3	22	19	18	25
D-105-2	21.0 ± 9.2	25	17	17	25
D-106-1	21.8 ± 6.4	23	23	17	24
D-106-2	19.5 ± 6.0	22	18	16	22
D-107-1	18.5 ± 7.7	18	17	15	24
D-107-2	17.8 ± 6.2	22	16	15	18
D-108-1	23.5 ± 6.8	24	22	20	28
D-108-2	20.5 ± 5.8	20	21	17	24
D-109-1	22.5 ± 7.7	22	21	19	28
D-109-2	23.0 ± 6.3	25	19	22	26
D-110-3	24.5 ± 7.6	24	22	22	30
D-110-4	24.5 ± 6.6	25	22	22	29
D-111-1	24.3 ± 7.5	27	21	21	28
D-111-2	22.5 ± 7.0	25	20	19	26
D-113-1	21.8 ± 7.0	20	18	23	26
D-113-2	19.5 ± 7.4	21	17	16	24
D-114-1	18.8 ± 6.2	19	17	16	23
D-114-2	20.3 ± 6.8	20	19	17	25

TABLE C-IX.1 QUARTERLY TLD RESULTS FOR DRESDEN NUCLEAR POWER STATION, 2011

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	22.0 ± 9.9	22	19	18	29
D-115-2	23.0 ± 8.2	26	19	20	27
D-116-1	23.3 ± 7.9	25	20	20	28
D-116-2	23.0 ± 5.9	23	22	20	27
D-201-1	27.0 ± 9.4	28	25	22	33
D-201-2	24.8 ± 7.0	26	23	21	29
D-202-1	23.8 ± 8.1	26	22	19	28
D-202-2	22.5 ± 6.0	24	20	20	26
D-203-1	21.5 ± 8.4	24	19	17	26
D-203-2	19.8 ± 7.5	20	17	17	25
D-204-1	20.3 ± 7.2	21	18	17	25
D-204-2	19.0 ± 7.1	21	16	16	23
D-205-1	25.5 ± 5.0	23 (1)	25	25	29
D-205-2	24.8 ± 9.0	27 (1)	21	21	30
D-206-1	22.5 ± 7.4	23	22	18	27
D-206-2	21.8 ± 4.7	22	20	20	25
D-207-1	20.3 ± 6.8	20	19	17	25
D-207-2	21.5 ± 5.3	23	18	21	24
D-208-1	19.0 ± 6.5	19	19	15	23
D-208-2	19.8 ± 5.7	19	18	18	24
D-209-1	18.8 ± 6.2	19	17	16	23
D-209-2	17.8 ± 5.0	18	17	15	21
D-210-1	22.3 ± 5.7	22	22	19	26
D-210-2	21.5 ± 7.4	23	18	19	26
D-211-1	22.5 ± 7.4	24	20	19	27
D-211-2	23.3 ± 9.4	23	20	20	30
D-212-3	19.3 ± 6.8	19	18	16	24
D-212-4	20.0 ± 5.4	19	18	19	24
D-213-1	18.5 ± 7.4	20	16	15	23
D-213-2	20.3 ± 6.6	21	20	16	24
D-214-1	26.8 ± 15.6	26	22	21	38
D-214-2	25.3 ± 5.3	25	24	23	29
D-215-1	24.5 ± 6.6	25	22	22	29
D-215-2	24.5 ± 9.6	27	21	20	30
D-216-1	21.0 ± 6.3	22	19	18	25
D-216-2	22.3 ± 7.2	23	20	19	27
D-112A-1	20.3 ± 6.6	20	18	18	25
D-112A-2	19.8 ± 7.5	20	17	17	25

TABLE C-IX.2 MEAN QUARTERLY TLD RESULTS FOR THE INNER RING, OUTER RING, OTHEI AND CONTROL LOCATIONS FOR DRESDEN NUCLEAR POWER STATION, 2011

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	22.5 ± 4.8	22.6 ± 5.5	21.8 ± 4.6	21.0 ± 0.0
APR-JUN	19.4 ± 3.8	19.9 ± 4.9	18.2 ± 4.3	19.0 ± 5.7
JUL-SEP	18.4 ± 4.3	18.8 ± 5.0	17.4 ± 3.4	16.0 ± 0.0
OCT-DEC	25.6 ± 4.8	26.5 ± 6.8	25.7 ± 4.9	23.5 ± 1.4

TABLE C-IX.3 SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER

LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S.D.
INNER RING	136	15	30	21.5 ± 7.2
OUTER RING	128	15	38	21.9 ± 8.1
OTHER	96	14	31	20.8 ± 7.9
CONTROL	8	16	24	19.9 ± 6.3

INNER RING STATIONS - D-58-1, D-58-2, 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,

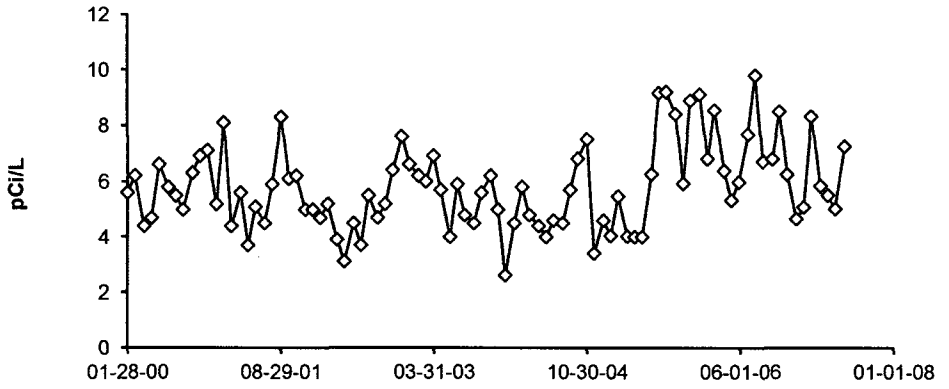
OUTER RING STATIONS - D-201-1, D-201-2, D-202-1, D-202-2, D-203-1, D-203-2, D-204-1, D-204-2, D-205-1, D-205-2, D-206-1, D-206-2, D-207-1, D-207-2, D-208-1, D-208-2, D-209-1, D-209-2, D-210-1, D-210-2, D-211-1, D-211-2, D-212-3, D-212-4, D-213-1, D-213-2, D-214-1, D-214-2, D-215-1, D-215-2, D-216-1,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

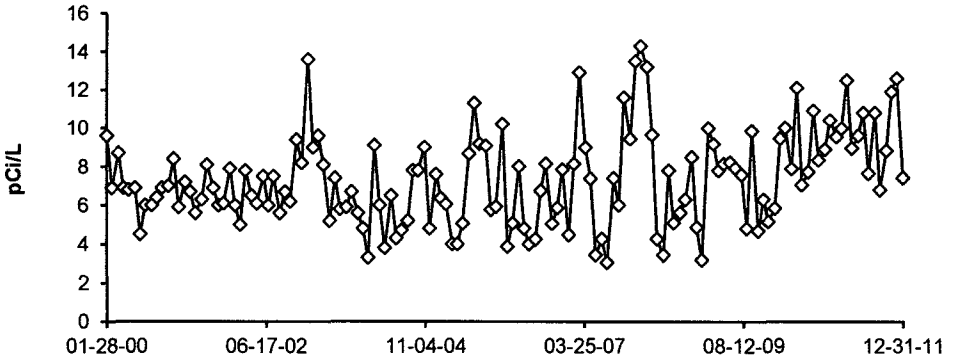
CONTROL STATIONS - D-12-1, D-12-2

FIGURE C-1
SURFACE WATER - GROSS BETA - STATIONS D-51 and D-52 (C) COLLECTED IN THE VICINITY OF DNPS, 2000 - 2011

D-51 Dresden Lock & Dam



D-52 (C) DesPlaines River at Will Road

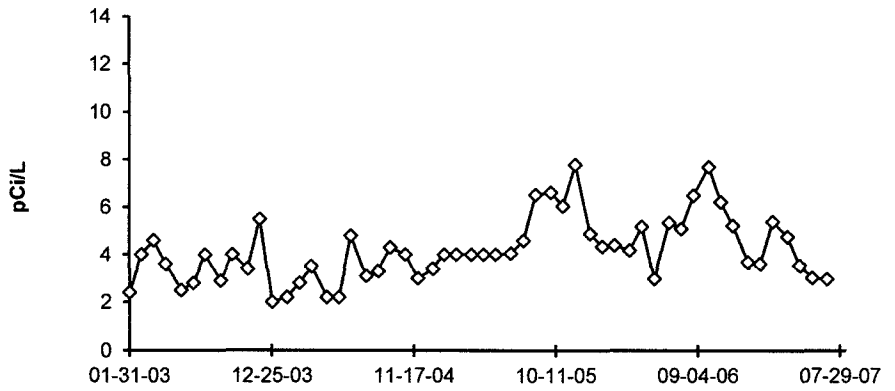


DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY 2005

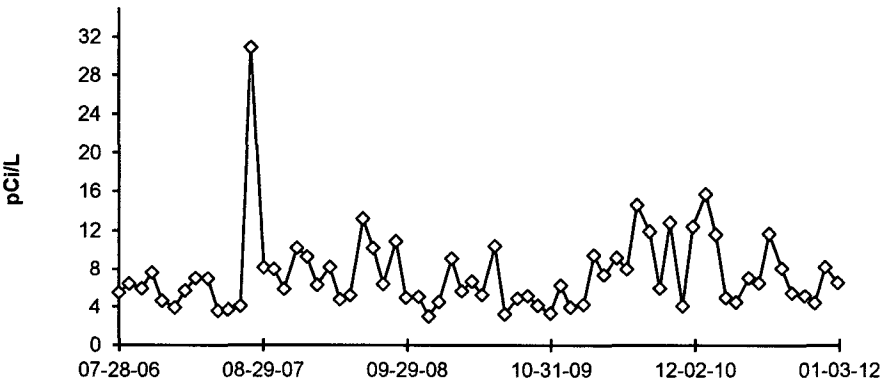
D-51 LOCATION REMOVED FROM PROGRAM JUNE 29, 2007 AND REPLACED WITH D-21

FIGURE C-2
SURFACE WATER - GROSS BETA - STATION D-54 (C) and D-57 (C) COLLECTED IN THE VICINITY OF DNPS, 2003 - 2011

D-54 (C) Kankakee River



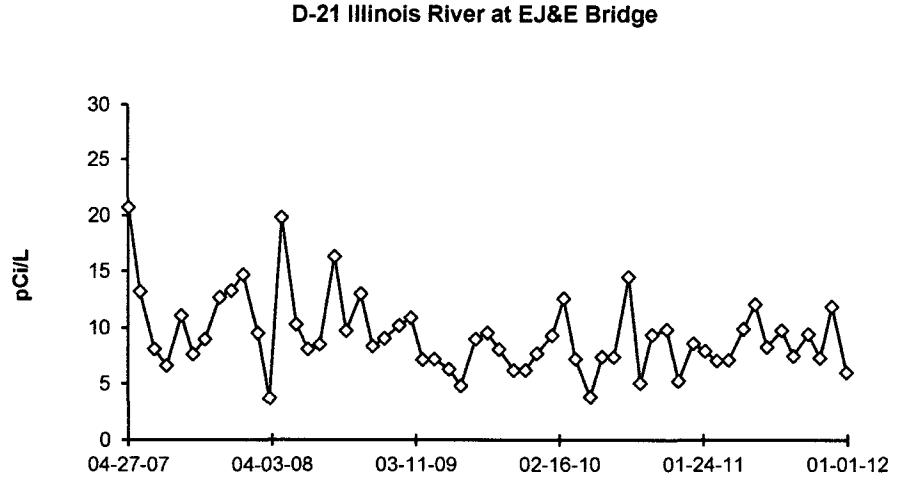
D-57 (C) Kankakee River at Will Road



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

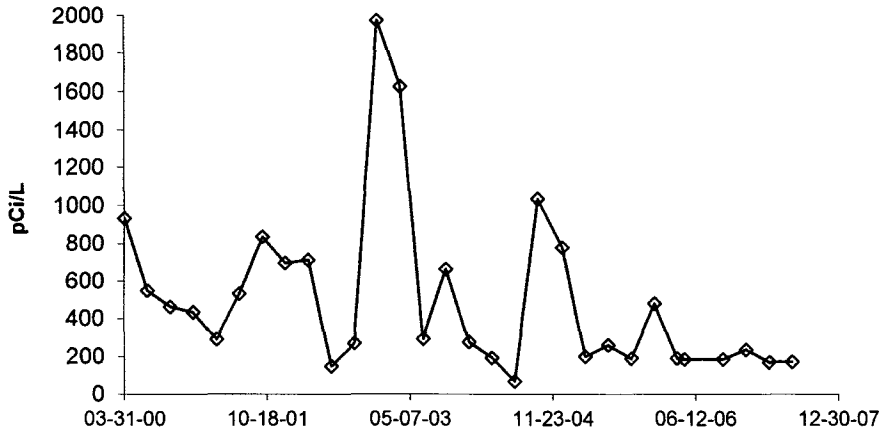
FIGURE C-3
SURFACE WATER - GROSS BETA - STATION D-21
COLLECTED IN THE VICINITY OF DNPS, 2007 - 2011



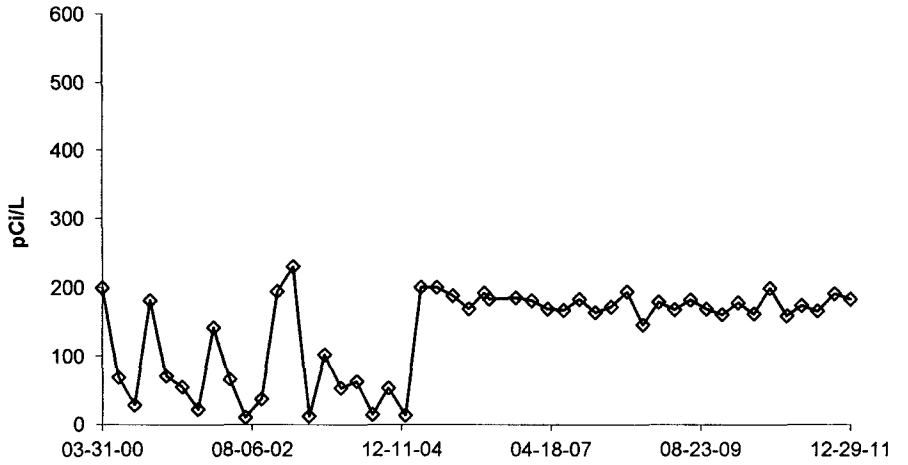
D-21 PLACED INTO SERVICE ON MARCH 30, 2007, REPLACED D-51

FIGURE C-4
SURFACE WATER - TRITIUM - STATIONS D-51 and D-52 (C) COLLECTED IN THE VICINITY OF DNPS, 2000 - 2011

D-51 Dresden Lock & Dam



D-52 (C) Des Plaines River at Will Road

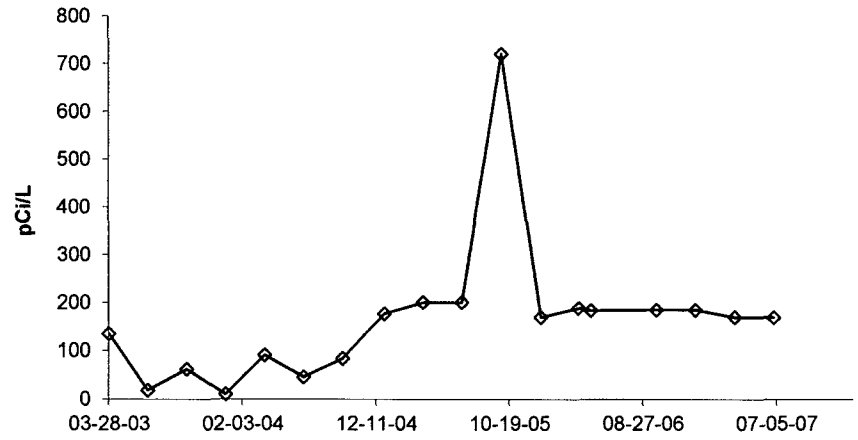


DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY 2005

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

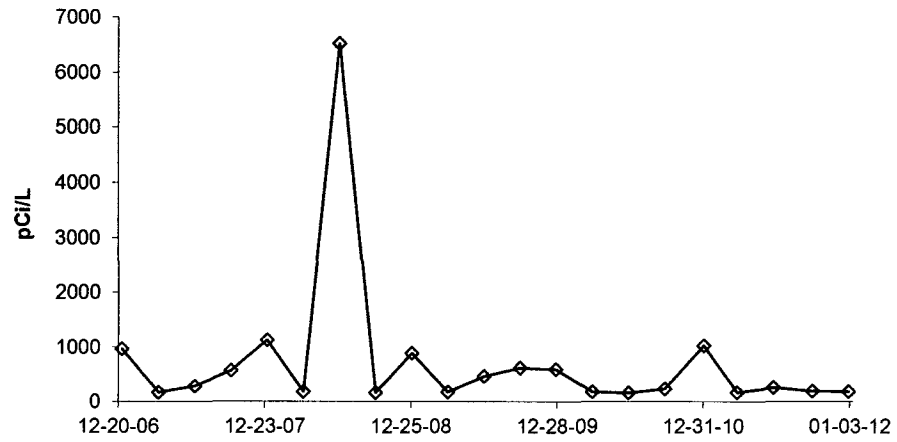
FIGURE C-5
SURFACE WATER - TRITIUM - STATION D-54 (C) AND D-57 (C) COLLECTED IN THE VICINITY OF DNPS, 2003 - 2011

D-54 (C) Kankakee River



Location shared with Braidwood Station (BD-10).

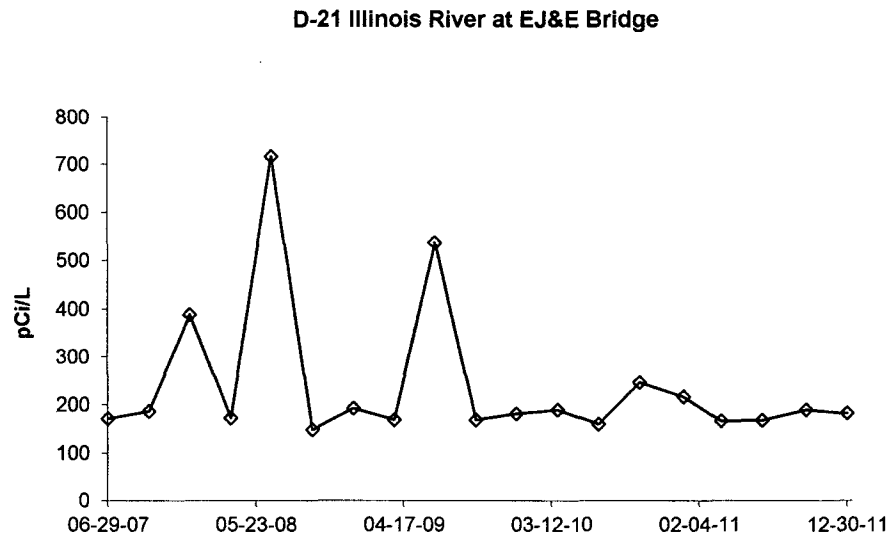
D-57 (C) Kankakee River at Will Road



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

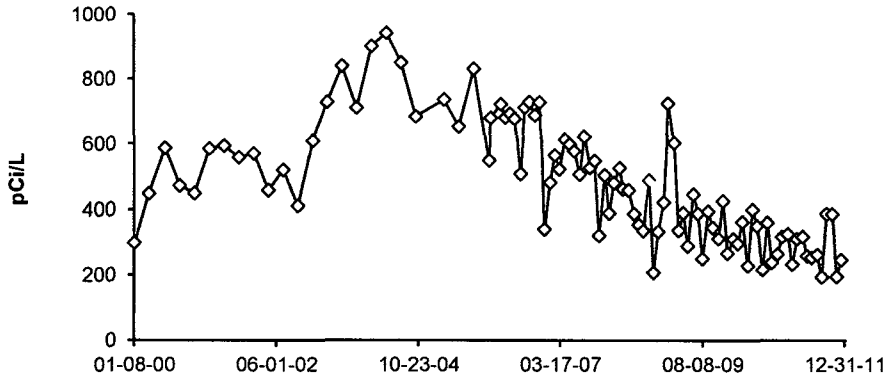
FIGURE C-6
SURFACE WATER - TRITIUM - STATION D-21
COLLECTED IN THE VICINITY OF DNPS, 2007 - 2011



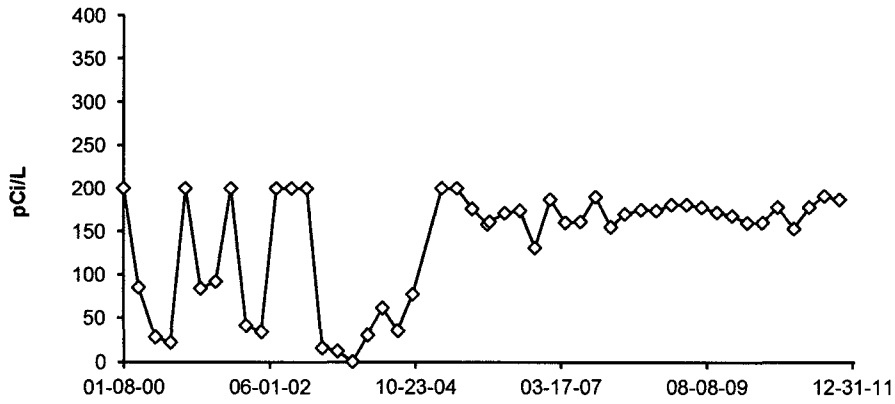
D-21 REPLACED D-51 JUNE 29, 2007

FIGURE C-7
GROUND WATER - TRITIUM - STATIONS D-23 and D-35 COLLECTED IN THE VICINITY OF DNPS, 2000 - 2011

D-23 Thorsen Well



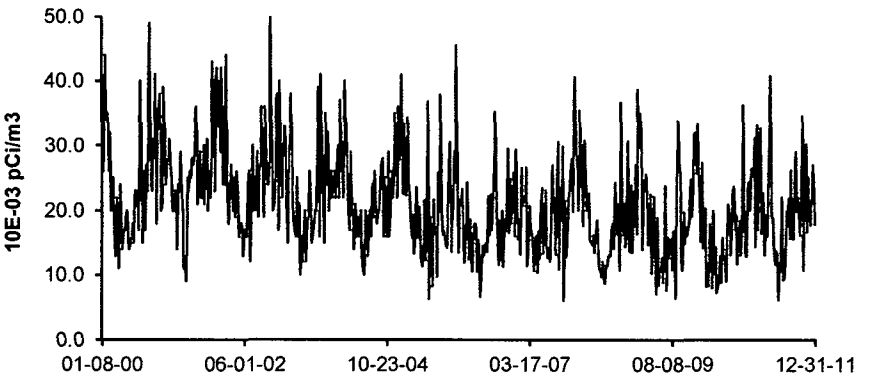
D-35 Dresden Lock and Dam



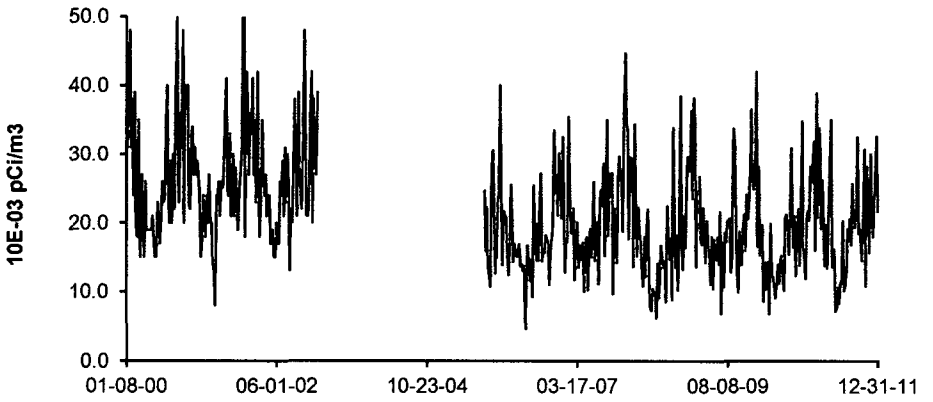
DUE TO VENDOR CHANGE IN 2005, < VALUES ARE LLD VALUES JANUARY THROUGH JUNE 2005 AND MDC VALUES AFTER JULY 2005

FIGURE C-8
AIR PARTICULATES - GROSS BETA - STATIONS D-01 and D-02 COLLECTED IN THE VICINITY OF DNPS, 2000 - 2011

D-01 Onsite Station 1

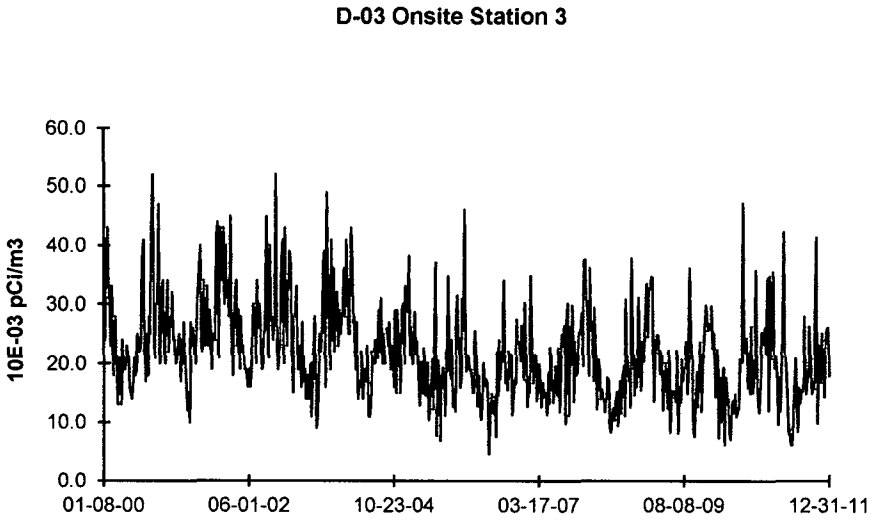


D-02 Onsite Station 2



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

FIGURE C-9
AIR PARTICULATES - GROSS BETA - STATIONS D-03 and D-04 COLLECTED IN THE VICINITY OF DNPS, 2000 - 2011



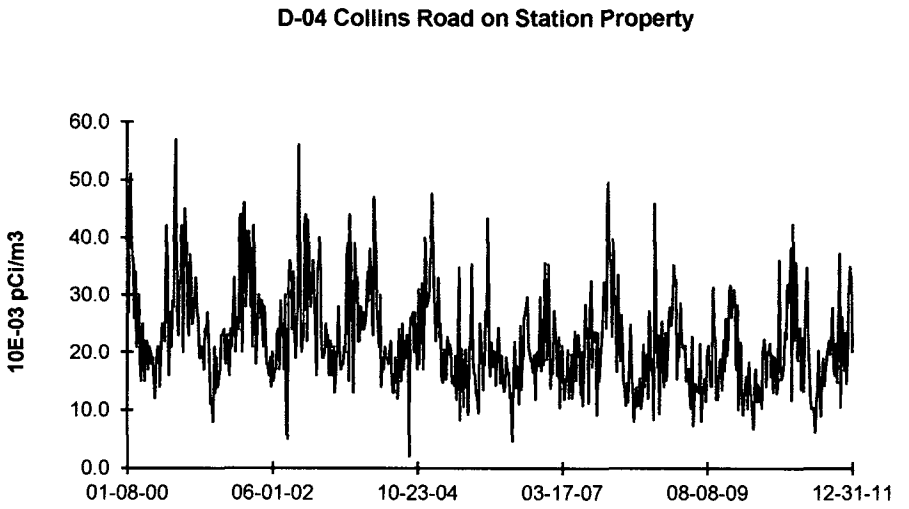
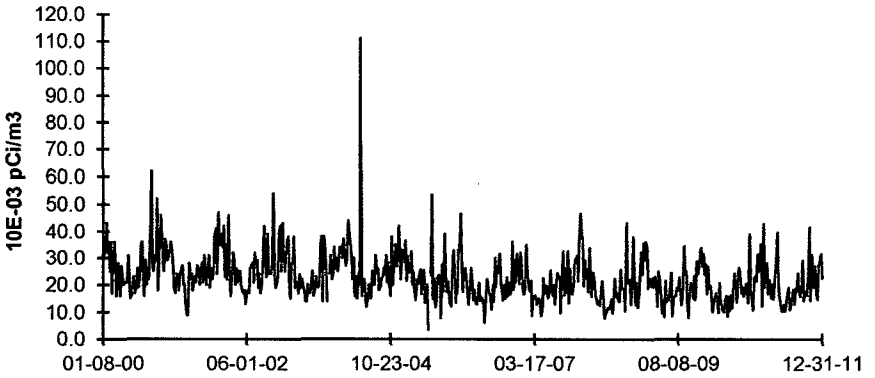


FIGURE C-10
AIR PARTICULATES - GROSS BETA - STATIONS D-07 and D-12 (C) COLLECTED IN THE VICINITY OF DNPS, 2000 - 2011

D-07 Clay Products, Dresden Road



D-12 (C), Quarry Road, Lisbon

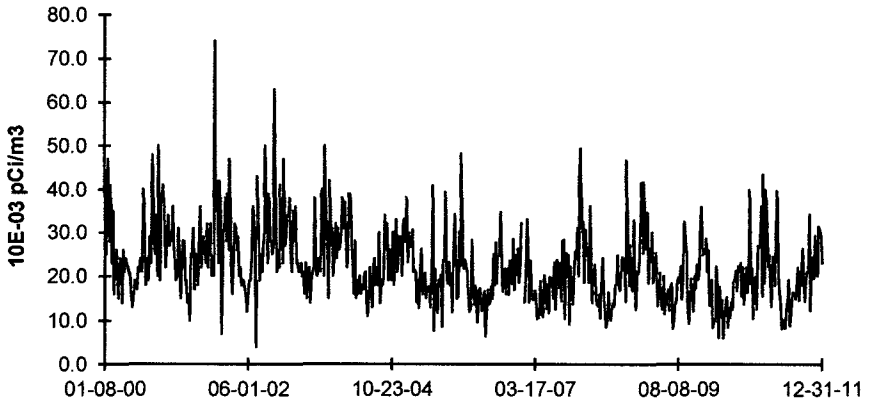
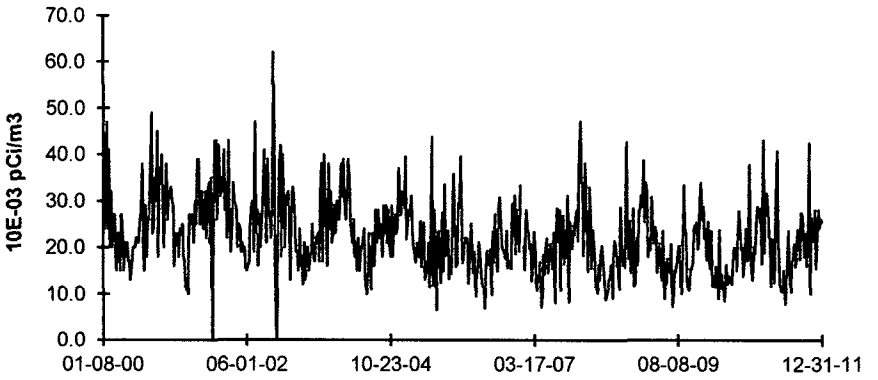


FIGURE C-11
AIR PARTICULATES - GROSS BETA - STATIONS D-45 and D-53 COLLECTED IN THE VICINITY OF DNPS, 2000 - 2011

D-45 McKinley Woods Road, Channahon



D-53 Will Road at Hollyhock

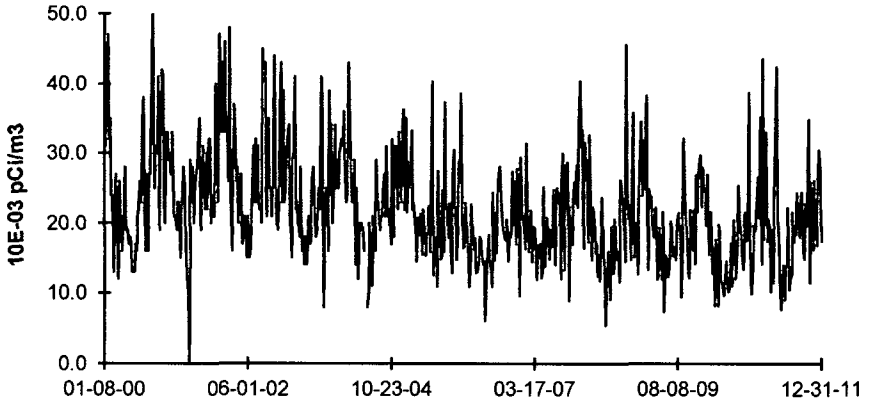
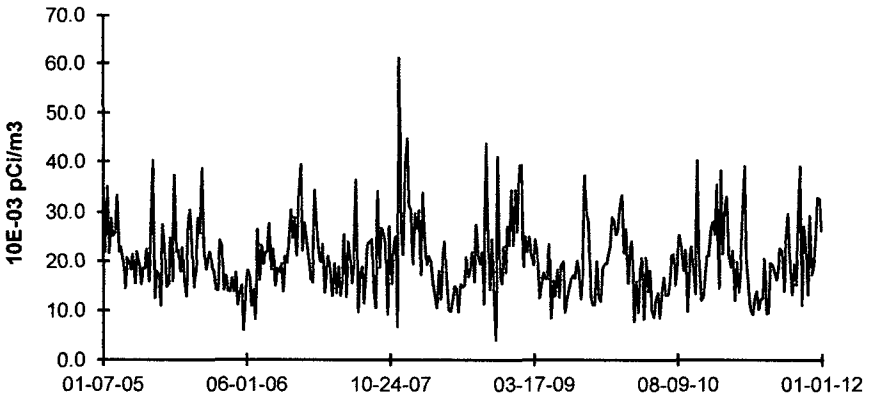


FIGURE C-12
AIR PARTICULATES - GROSS BETA - STATIONS D-08 and D-10 COLLECTED IN THE VICINITY OF DNPS, 2005 - 2011

D-08 Jugtown Road, Prairie Parks



D-10 Goose Lake Road, Goose Lake Village

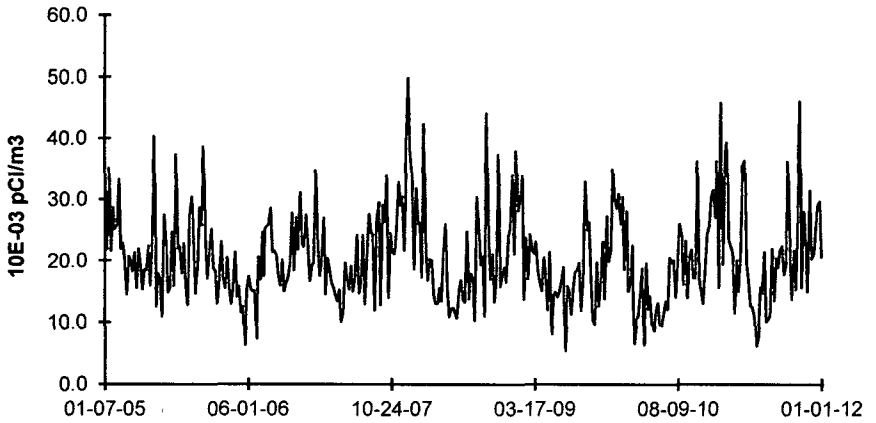
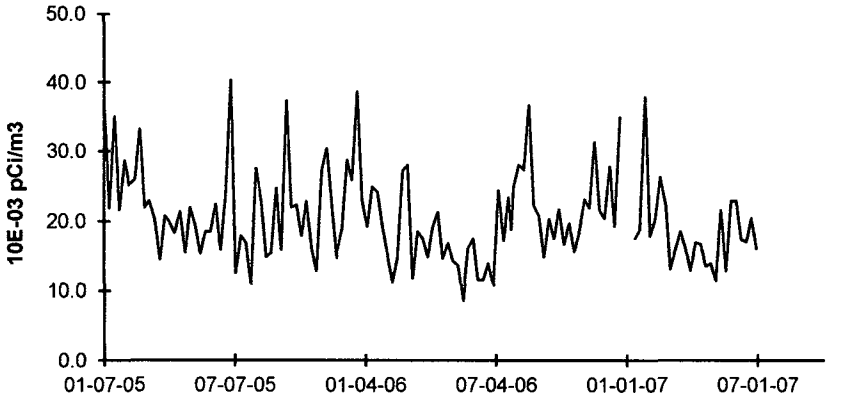
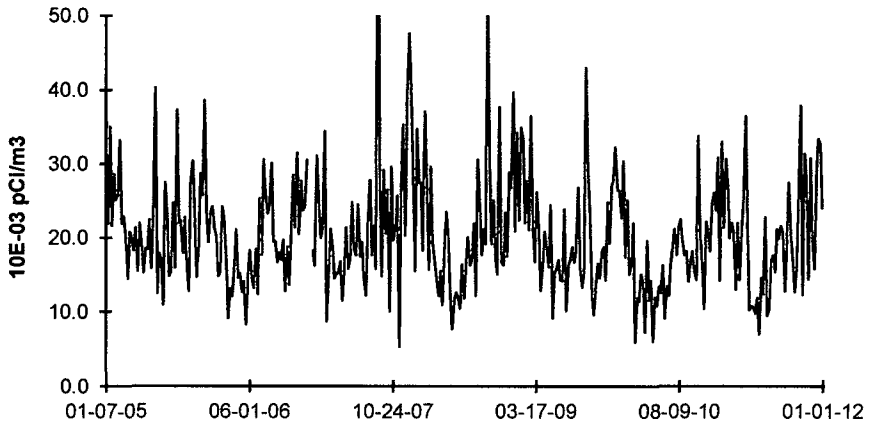


FIGURE C-13
AIR PARTICULATES - GROSS BETA - STATIONS D-13 and D-14 COLLECTED IN THE VICINITY OF DNPS, 2005 - 2011

D-13 Minooka



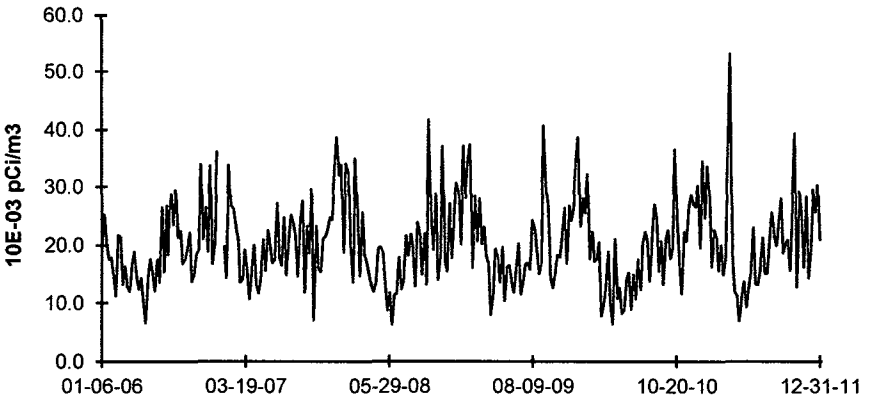
D-14 Center Street, Channahon



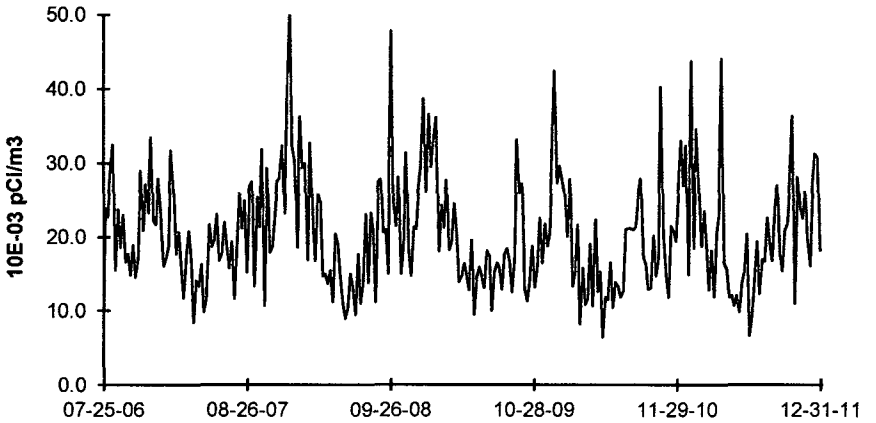
D-13 TAKEN OUT OF SERVICE JUNE 29, 2007 AND REPLACED WITH D-55

FIGURE C-14
AIR PARTICULATES - GROSS BETA - STATIONS D-55 and D-56 COLLECTED IN THE VICINITY OF DNPS, 2006-2011

D-55 Ridge Road, Minooka

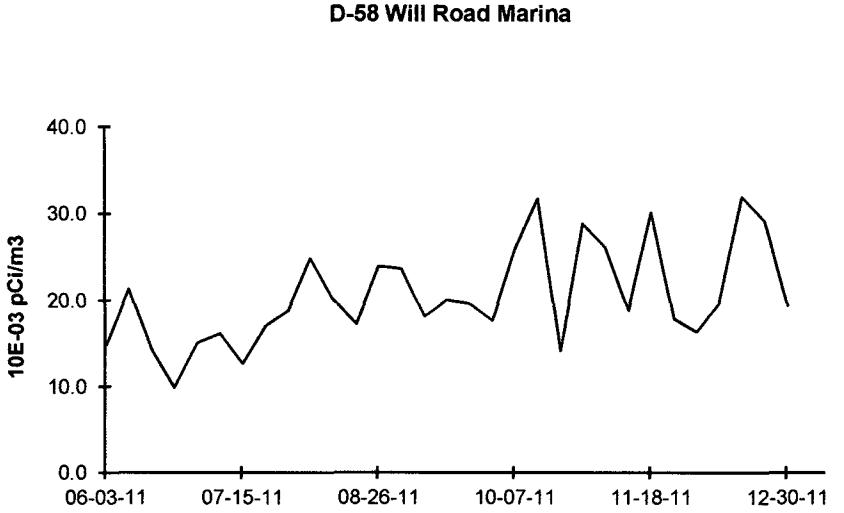


D-56 Will Road, Wildfeather



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

FIGURE C-15
AIR PARTICULATES - GROSS BETA - STATION D-58
COLLECTED IN THE VICINITY OF DNPS, 2011



D-58 NEW STATION IN MAY OF 2011

APPENDIX D

INTER-LABORATORY COMPARISON PROGRAM

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TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2011
(PAGE 1 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
March 2011	E7460-396	Milk	Sr-89	pCi/L	98.8	97.4	1.01	A
			Sr-90	pCi/L	15.2	15.8	0.96	A
	E7461-396	Milk	I-131	pCi/L	92.9	96.9	0.96	A
			Ce-141	pCi/L	not provided by Analytics for this study			
			Cr-51	pCi/L	398	298	1.34	N (1)
			Cs-134	pCi/L	130	130	1.00	A
			Cs-137	pCi/L	232	205	1.13	A
			Co-58	pCi/L	121	113	1.07	A
			Mn-54	pCi/L	289	266	1.09	A
			Fe-59	pCi/L	201	175	1.15	A
			Zn-65	pCi/L	287	261	1.10	A
			Co-60	pCi/L	186	172	1.08	A
	E7463-396	AP	Ce-141	pCi	not provided by Analytics for this study			
			Cr-51	pCi	243	215	1.13	A
			Cs-134	pCi	85.0	94.2	0.90	A
			Cs-137	pCi	168	148	1.14	A
			Co-58	pCi	89.2	81.8	1.09	A
			Mn-54	pCi	171	192	0.89	A
			Fe-59	pCi	129	126	1.02	A
			Zn-65	pCi	159	189	0.84	A
			Co-60	pCi	132	124	1.06	A
	E7462-396	Charcoal	I-131	pCi	96.5	96.3	1.00	A
June 2011	E7851-396	Milk	Sr-89	pCi/L	96.7	103	0.94	A
			Sr-90	pCi/L	13.8	15.6	0.88	A
	E7852-396	Milk	I-131	pCi/L	110	103.0	1.07	A
			Ce-141	pCi/L	68.1	79.9	0.85	A
			Cr-51	pCi/L	186	206	0.90	A
			Cs-134	pCi/L	164	190	0.86	A
			Cs-137	pCi/L	140	138	1.01	A
			Co-58	pCi/L	141	152	0.93	A
			Mn-54	pCi/L	136	138	0.99	A
			Fe-59	pCi/L	128	123	1.04	A
			Zn-65	pCi/L	263	261	1.01	A
			Co-60	pCi/L	189	195	0.97	A
	E7854-396	AP	Ce-141	pCi	49.9	42.9	1.16	A
			Cr-51	pCi	95.6	110	0.87	A
			Cs-134	pCi	104	102	1.02	A
			Cs-137	pCi	83.8	74.0	1.13	A
			Co-58	pCi	90.7	81.3	1.12	A
			Mn-54	pCi	74.5	73.9	1.01	A
			Fe-59	pCi	62.0	66.1	0.94	A
			Zn-65	pCi	140	140	1.00	A
			Co-60	pCi	119	104	1.14	A
	E7853-396	Charcoal	I-131	pCi	76.2	86.1	0.89	A

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2011
(PAGE 2 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
September 2011	E8070-396	Milk	Sr-89	pCi/L	102	90.8	1.12	A
			Sr-90	pCi/L	13.2	14.7	0.90	A
	E8071-396	Milk	I-131	pCi/L	74.2	89.2	0.83	A
			Ce-141	pCi/L	66.9	66.7	1.00	A
			Cr-51	pCi/L	249	226	1.10	A
			Cs-134	pCi/L	116	128	0.91	A
			Cs-137	pCi/L	106	114	0.93	A
			Co-58	pCi/L	95.4	97.5	0.98	A
			Mn-54	pCi/L	147	151	0.97	A
			Fe-59	pCi/L	53.1	54.8	0.97	A
			Zn-65	pCi/L	175	180	0.97	A
			Co-60	pCi/L	150	157	0.96	A
	E8073-396	AP	Ce-141	pCi	66.6	67.5	0.99	A
			Cr-51	pCi	263	229	1.15	A
			Cs-134	pCi	139	130	1.07	A
			Cs-137	pCi	110	115	0.96	A
			Co-58	pCi	108	98.6	1.10	A
			Mn-54	pCi	152	153	0.99	A
			Fe-59	pCi	57.5	55.5	1.04	A
			Zn-65	pCi	190	183	1.04	A
			Co-60	pCi	156	159	0.98	A
	E8072-396	Charcoal	I-131	pCi	77.6	80.6	0.96	A
December, 2011	E8230-396	Milk	Sr-89	pCi/L	93.3	93.1	1.00	A
			Sr-90	pCi/L	12.7	15.4	0.82	A
	E8231-396	Milk	I-131	pCi/L	82.5	90.2	0.91	A
			Ce-141	pCi/L	not provided by Analytics for this study			
			Cr-51	pCi/L	465	566	0.82	A
			Cs-134	pCi/L	142	171	0.83	A
			Cs-137	pCi/L	185	210	0.88	A
			Co-58	pCi/L	177	221	0.80	A
			Mn-54	pCi/L	208	241	0.86	A
			Fe-59	pCi/L	164	183	0.90	A
			Zn-65	pCi/L	259	291	0.89	A
			Co-60	pCi/L	224	270	0.83	A
	E8233-396	AP	Ce-141	pCi	not provided by Analytics for this study			
			Cr-51	pCi	344	368	0.93	A
			Cs-134	pCi	105	111	0.95	A
			Cs-137	pCi	129	137	0.94	A
			Co-58	pCi	145	144	1.01	A
			Mn-54	pCi	137	157	0.87	A
			Fe-59	pCi	119	119	1.00	A
			Zn-65	pCi	145	190	0.76	W
			Co-60	pCi	168	176	0.95	A

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2011
(PAGE 3 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
December 2011	E8232-396	Charcoal	I-131	pCi	100	89.5	1.12	A

(1) Sample appears to be biased high. Corrective Action evaluated after the 2nd Quarter Analytics PE sample; no action required. NCR 11-13

(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, 2011
(PAGE 1 OF 1)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Control Limits	Evaluation (c)
May 2011	RAD-85	Water	Sr-89	pCi/L	59.8	63.2	51.1 - 71.2	A
			Sr-90	pCi/L	42.5	42.5	31.3 - 48.8	A
			Ba-133	pCi/L	73.3	75.3	63.0 - 82.8	A
			Cs-134	pCi/L	64.9	72.9	59.5 - 80.2	A
			Cs-137	pCi/L	74.6	77.0	69.3 - 87.4	A
			Co-60	pCi/L	87.8	88.8	79.9 - 100	A
			Zn-65	pCi/L	103	98.9	89.0 - 118	A
			Gr-A	pCi/L	64.1	50.1	26.1 - 62.9	N (1)
			Gr-B	pCi/L	51.8	49.8	33.8 - 56.9	A
			I-131	pCi/L	27.4	27.5	22.9 - 32.3	A
			U-Nat	pCi/L	38.5	39.8	32.2 - 44.4	A
			H-3	pCi/L	10057	10200	8870 - 11200	A
	MRAD-14	Filter	Gr-A	pCi/filter	79.7	74.3	38.5 - 112	A
November 2011	RAD-87	Water	Sr-89	pCi/L	81.0	69.7	56.9 - 77.9	N (2)
			Sr-90	pCi/L	35.5	41.4	30.2 - 47.2	A
			Ba-133	pCi/L	90.7	96.9	81.8 - 106	A
			Cs-134	pCi/L	36.6	33.4	26.3 - 36.7	A
			Cs-137	pCi/L	44.7	44.3	39.4 - 51.7	A
			Co-60	pCi/L	118.7	119	107 - 133	A
			Zn-65	pCi/L	80.2	76.8	68.9 - 92.5	A
			Gr-A	pCi/L	34.2	53.2	27.8 - 66.6	A
			Gr-B	pCi/L	39.3	45.9	30.9 - 53.1	A
			I-131	pCi/L	22.9	27.5	22.9 - 32.3	A
			U-Nat	pCi/L	46.8	48.6	39.4 - 54.0	A
			H-3	pCi/L	15733	17400	15200 - 19100	A
	MRAD-15	Filter	Gr-A	pCi/filter	44.6	58.4	30.3 - 87.8	A

(1) The solids on the planchet exceeded 100 mg, which was beyond the range of the efficiency curve. NCR 11-08

(2) Sr-89 TBE to known ratio of 1.16 fell within acceptable range of ± 20%. No action required. NCR 11-16

(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, 2011
(PAGE 1 OF 2)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
March 2011	11-MaW24	Water	Cs-134	Bq/L	19.1	21.5	15.1 - 28.0	A
			Cs-137	Bq/L	29.0	29.4	20.6 - 38.2	A
			Co-57	Bq/L	0.139		(1)	A
			Co-60	Bq/L	23.9	24.6	17.2 - 32.0	A
			H-3	Bq/L	265	243	170 - 316	A
			Mn-54	Bq/L	31.8	31.6	22.1 - 41.1	A
			K-40	Bq/L	94.8	91	64 - 118	A
			Sr-90	Bq/L	9.64	8.72	6.10 - 11.34	A
			Zn-65	Bq/L	-0.142		(1)	A
	11-GrW24	Water	Gr-A	Bq/L	0.767	1.136	0.341 - 1.931	A
			Gr-B	Bq/L	3.43	2.96	1.48 - 4.44	A
	11-MaS24	Soil	Cs-134	Bq/kg	612	680	476 - 884	A
			Cs-137	Bq/kg	772	758	531 - 985	A
			Co-57	Bq/kg	910	927	649 - 1205	A
			Co-60	Bq/kg	500	482	337 - 627	A
			Mn-54	Bq/kg	0.607		(1)	A
			K-40	Bq/kg	569	540	378 - 702	A
			Sr-90	Bq/kg	NR	160	112 - 208	N (2)
			Zn-65	Bq/kg	1497	1359	951 - 1767	A
	11-RdF24	AP	Cs-134	Bq/sample	3.26	3.49	2.44 - 4.54	A
			Cs-137	Bq/sample	2.36	2.28	1.60 - 2.96	A
			Co-57	Bq/sample	3.30	3.33	2.33 - 4.33	A
			Co-60	Bq/sample	0.0765		(1)	A
			Mn-54	Bq/sample	2.84	2.64	1.85 - 3.43	A
			Sr-90	Bq/sample	NR	1.36	0.95 - 1.77	N (2)
			Zn-65	Bq/sample	3.30	3.18	2.23 - 4.13	A
	11-GrF24	AP	Gr-A	Bq/sample	0.101	0.659	0.198 - 1.120	N (3)
			Gr-B	Bq/sample	1.23	1.323	0.662 - 1.985	A
	11-RdV24	Vegetation	Cs-134	Bq/sample	4.97	5.50	3.85 - 7.15	A
			Cs-137	Bq/sample	0.0356		(1)	A
			Co-57	Bq/sample	10.8	9.94	6.96 - 12.92	A
			Co-60	Bq/sample	4.89	4.91	3.44 - 6.38	A
			Mn-54	Bq/sample	6.42	6.40	4.48 - 8.32	A
			Sr-90	Bq/sample	NR	2.46	1.72 - 3.20	N (2)
			Zn-65	Bq/sample	3.07	2.99	2.09 - 3.89	A
September 2011	11-MaW25	Water	Cs-134	Bq/L	16.0	19.1	13.4 - 24.8	A
			Cs-137	Bq/L	0.0043		(1)	A
			Co-57	Bq/L	33.1	36.6	25.6 - 47.6	A
			Co-60	Bq/L	26.9	29.3	20.5 - 38.1	A
			H-3	Bq/L	1011	1014	710 - 1318	A
			Mn-54	Bq/L	23.2	25.0	17.5 - 32.5	A
			K-40	Bq/L	147	156	109 - 203	A
			Sr-90	Bq/L	15.8	14.2	9.9 - 18.5	A
			Zn-65	Bq/L	27.3	28.5	20.0 - 37.1	A

TABLE D-3 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2011
(PAGE 2 OF 2)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
September 2011	11-GrW25	Water	Gr-A	Bq/L	0.894	0.866	0.260 - 1.472	A
			Gr-B	Bq/L	5.87	4.81	2.41 - 7.22	A
	11-MaS25	Soil	Cs-134	Bq/kg	-0.213		(1)	A
			Cs-137	Bq/kg	1110	979	685 - 1273	A
			Co-57	Bq/kg	1290	1180	826 - 1534	A
			Co-60	Bq/kg	731	644	451 - 837	A
			Mn-54	Bq/kg	987	848	594 - 1102	A
			K-40	Bq/kg	753	625	438 - 813	W
			Sr-90	Bq/kg	276	320	224 - 416	A
			Zn-65	Bq/kg	1870	1560	1092 - 2028	A
September 2011	11-RdF25	AP	Cs-134	Bq/sample	-0.043		(1)	A
			Cs-137	Bq/sample	3.09	2.60	1.82 - 3.38	A
			Co-57	Bq/sample	5.36	5.09	3.56 - 6.62	A
			Co-60	Bq/sample	3.41	3.20	2.24 - 4.16	A
			Mn-54	Bq/sample	0.067		(1)	A
			Sr-90	Bq/sample	1.84	1.67	1.17 - 2.17	A
			Zn-65	Bq/sample	5.17	4.11	2.88 - 5.34	W
	11-GrF25	AP	Gr-A	Bq/sample	0.0058		(1)	A
			Gr-B	Bq/sample	-0.01		(1)	A
	11-RdV25	Vegetation	Cs-134	Bq/sample	0.0081		(1)	A
			Cs-137	Bq/sample	4.94	4.71	3.30 - 6.12	A
			Co-57	Bq/sample	0.0639		(1)	A
			Co-60	Bq/sample	3.36	3.38	2.37 - 4.39	A
			Mn-54	Bq/sample	5.89	5.71	4.00 - 7.42	A
			Sr-90	Bq/sample	1.31	1.26	0.88 - 1.64	A
			Zn-65	Bq/sample	6.54	6.39	4.47 - 8.31	A

(1) False positive test.

(2) Evaluated as failed due to not reporting a previously reported analyte. NCR 11-11

(3) The filter for Gross Alpha was counted on the wrong side. Recounted on the correct side resulted in acceptable results. NCR 11-11

(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

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There is no errata data for 2011.

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APPENDIX F

ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

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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 2011

Prepared By

Teledyne Brown Engineering
Environmental Services

Exelon SM
Nuclear

Dresden Nuclear Power Station
Norris, IL 60450

May 2012

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Table of Contents

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 (PA).

The Dresden power plant has experienced leaks from underground lines and spills from systems containing radioactive water over its 40-year history. These incidents have created a number of areas of localized contamination within the PA. 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 as well as an detailed analysis on groundwater hydrology for Dresden Nuclear Generation Station. 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.

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 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 has 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 89 sampling points in the RGPP:

*Dresden has 45 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 8 surface water monitoring locations on the owner-controlled area sampled as part of the Dresden RGPP.

*Dresden has 12 precipitation water monitoring locations sampled as part of the Dresden RGPP.

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 determined by the well detection category. Sixteen of the 89 wells are categorized as background monitoring wells and are sampled on a annual basis. The remaining 73 wells are sampled on a quarterly basis to maximize leak detection and contamination plume movement capability. During 2011, there were 693 analyses that were performed on 254 samples from 88 sampling points.

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. These wells are categorized as idle wells and are used only for troubleshooting purposes.

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. The Dresden Station RGPP has eight RGPP surface water sampling points to monitor these systems.

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 PA.

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 89 developed groundwater wells and surface water sample points in the RGPP.

1. Sample Collection

Sample locations can be found in Table A–1, 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 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 2011.
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 strontium in groundwater and surface water.

3. Concentrations of tritium in groundwater, surface water and precipitation water.

4. Concentrations of gross alpha and gross beta in groundwater and surface water samples.

5. Concentrations of Am-241 in groundwater and surface water.

6. Concentrations of Cm-242 and Cm-243/244 in groundwater and surface water.

7. Concentrations of Pu-238 and Pu-239/240 in groundwater and surface water.

8. Concentrations of U-233/234, U-235 and U-238 in groundwater and surface water.

9. Concentrations of Fe-55 in groundwater and surface water.

10. Concentrations of Ni-63 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 and surface water 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 worldwide from 1960 to 2006. RadNet provides tritium precipitation concentration data for samples collected at stations throughout 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

Of the 69 developed groundwater-monitoring wells and one non-developed well sampled approximately half (34 wells) show some level of tritium contamination ranging from just above LLD to 85,000 pCi/L. The well with the highest concentration was MD-11. Of the 69 wells sampled only 3 had concentrations higher than United States Environmental Protection Agency (USEPA) drinking water standard (and the Nuclear Regulatory Commission Reporting Limit) of 20,000 pCi/L, however these

wells are located onsite and not available as a drinking water source. 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 (Table B–I.1, Appendix B).

Strontium

Samples were collected and analyzed for strontium activity (Table B-II.1. Appendix B). Strontium was detected at a concentration greater than 1 pCi/l at one sampling location (MW-DN-105-S). The concentrations ranged from 2.1 to 4.3 pCi/L.

Gross Alpha and Gross Beta (dissolved and suspended)

Gross Alpha and Gross Beta analyses in the dissolved and suspended fractions were performed on groundwater samples throughout the sampling year in 2011. Gross Alpha (dissolved) was detected in two groundwater locations (DSP-122 and MW-DN-107-S). The concentrations ranged from 6.4 to 6.9 pCi/L. Gross Alpha (suspended) was detected in three groundwater locations (MW-DN-102-I, MW-DN-107-S, MW-DN-122-I). The concentrations ranged from 2.0 to 3.2 pCi/L. Gross Beta (dissolved) was detected in all 15 of the groundwater locations (DSP-107, DSP-122, DSP-123, DSP-124, DSP-125, MD-11, MW-DN-102-I, MW-DN-102-S, MW-DN-104-S, MW-DN-106-S, MW-DN-107-S, MW-DN-108-I, MW-DN-113-I, MW-DN-113-S, and MW-DN-122-I). The concentrations ranged from 2.8 to 71.8 pCi/L. Gross Beta (suspended) was detected in two groundwater locations (MW-DN-107-S and MW-DN-122-I). The concentrations ranged from 5.9 to 6.5 pCi/L. The concentrations of Gross Alpha and Gross Beta, which are slightly above detectable levels, are considered to be background and are not the result of plant effluents.

Gamma Emitters

Naturally-occurring K-40 was detected in one sample (MW-DN-120-I) at a concentration of 68 pCi/L. No other gamma emitting nuclides were detected (Table B–I.2, Appendix B).

Hard-To-Detects

Hard-To-Detect analyses were performed on 16 groundwater locations to establish background levels. The analyses included Fe-55, Ni-63, Am-241, Cm-242, Cm-243/244, Pu-238, Pu-239/240, U-233/234, U-235

and U-238. The isotope U-233/234 was detected at eight of 16 groundwater monitoring locations (DSP-123, MW-DN-102-I, MW-DN-104-S, MW-DN-106-S, MW-DN-107-S, MW-DN-108-I, MW-DN-113-S, MW-DN-122-I). The 234 concentrations ranged from 0.17 to 1.09 pCi/L. The isotope U-238 was detected at seven of 16 groundwater monitoring locations (MW-DN-104-S, MW-DN-106-S, MW-DN-107-S, MW-DN-108-I, MW-DN-113-S, MW-DN-122-I, MW-DN-124-I). The U-238 concentrations ranged from 0.15 to 0.85 pCi/L (Table B-I.3, Appendix B). The concentrations detected are considered background.

All other hard-to-detect nuclides were not detected at concentrations greater than their respective MDCs.

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 449 pCi/l. The measurable concentrations of tritium are from an upstream source.

Strontium

Samples were collected and analyzed for strontium activity (Table B-II.1. Appendix B). Strontium was not detected in any samples above the LLD of 1pCi/l.

Gross Alpha and Gross Beta (dissolved and suspended)

Gross Alpha and Gross Beta analyses in the dissolved and suspended fractions were performed on surface water samples throughout the sampling year in 2011. Gross Alpha (dissolved) was not detected in any of the six surface water locations. Gross Alpha (suspended) was detected in two of six surface water locations (SW-DN-101, SW-DN-103). The concentrations ranged from 1.1 to 1.4 pCi/L. Gross Beta (dissolved) was detected in all six of the surface water locations. The concentrations

ranged from 3.4 to 5.0 pCi/L. Gross Beta (suspended) was detected in one of the six surface water locations (SW-DN-101) at a concentration of 2.9 pCi/L. The concentrations of Gross Alpha and Gross Beta, which are slightly above detectable levels, are considered to be background and are not the result of plant effluents.

Gamma Emitters

Naturally occurring K-40 was detected in one sample (SW-DN-105) at a concentration of 101 pCi/L. No other gamma emitting nuclides were detected (Table B–II.2, Appendix B).

Hard-To-Detects

Hard-To-Detect analyses were performed on six surface water locations to establish background levels. The analyses included Fe-55, Ni-63, Am-241, Cm-242, Cm-243/244, Pu-238, Pu-239/240, U-233/234, U-235 and U-238. The isotope U-233/234 was detected at all six surface water monitoring locations. The 234 concentrations ranged from 0.41 to 0.80 pCi/L. The isotope U-238 was detected at all six surface water monitoring locations. The U-238 concentrations ranged from 0.40 to 0.60 pCi/L (Table B-II.3, Appendix B). The concentrations detected are considered background.

All other hard-to-detect nuclides were not detected at concentrations greater than their respective MDCs.

C. Precipitation Water Results

Precipitation Water

Samples were collected from 12 precipitation water locations throughout the year in accordance with the station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from 12 locations were analyzed for tritium activity (Table B-III.1, Appendix B). Tritium values ranged from the detection limit to 273 pCi/l.

D. Drinking Water Well Survey

No drinking water well surveys were conducted in 2011.

E. Summary of Results – Inter-Laboratory Comparison Program

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

F. Leaks, Spills, and Releases

In August 2011, Dresden Station personnel was removing insulation from Condensate Storage Tank line 2/3-3333-6 in order to evaluate condition of piping for proactive repair or replacement. During the removal of the piping insulation, two pin hole leaks were created during the process of chiseling the insulation from the piping. Pin hole leaks were immediately stopped. Source water was 2.793E6 pCi/l and leakage volume is unknown but was reported to be less than half a gallon. All groundwater in the excavation area was collected and treated by the station radiological waste system.

G. Trends

The tritium concentration in the water found near the 2010 LPCI leak is traveling to the east due to the restabilization of the groundwater in the area after dewatering activities to support excavation. The elevated tritium concentrations are expected for the wells in the vicinity (MW-DN-124-S, and MW-DN-124-I) as the plume continues to reside in this area.

Tritium concentrations in DSP-107, DSP-108, DSP-122, DSP-123, DSP-149R, MW-DN-101I, MW-DN-112I, MW-DN-114S, MW-DN-116I, MW-DN-119I, and MW-DN-124I are decreasing over time.

H. Investigations

Between May and December 2010 there was an excavation project near MW-DN-124S to put a carbon fiber wrap on lines connected to the condensate storage tank (CST). A hole was discovered and repaired in the LPCI line during the excavation project. However, station personnel could not determine if the hole in the pipe was due to deterioration or from excavation activities. Groundwater entering the excavation was extracted and processed through the Station's Radiological Waste system. During the time of the dewatering activities to support excavation of the subject piping, the tritium concentration in MW-DN-124S decreased significantly (from approximately 70,000 - 80,000 pCi/L to approximately 1,000 pCi/L). Upon completion of the excavation project and groundwater extraction

activities, the tritium concentration in MW-DN-124-S returned to near pre-pumping concentrations (approximately 110,000 pCi/l) in June 2011.

The tritium concentration in MW-DN-124S has fluctuated between 11,000 pCi/L (February 2011) and 120,000 (April 2011) in 2011. The elevated tritium concentrations are expected as the plume continues to move through the area.

I. Actions Taken

1. Compensatory Actions

When the pin hole leaks were identified in August 2011, the pin hole leaks were immediately stopped and the piping was reinforced. All groundwater in the excavation area was collected and treated by the station radiological waste system.

Three additional monitoring wells (MW-DN-125S, -126S, and -127S) were installed in May 2011 to further evaluate the tritium plume in the area of MW-DN-124S in 2011. These three wells were sampled in 2011 and show no adverse trends.

2. Actions to Recover/Reverse Plumes

No actions were taken in 2011 by Dresden Station in an effort to reverse plume movement.

ARGPPR APPENDIX A

LOCATION DESIGNATION

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TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Dresden Nuclear Power Station, 2011

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-M	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-M	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-M	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

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Dresden Nuclear Power Station, 2011

Site	Site Type	Location
MW-DN-122-I	Monitoring Well	150 feet north of Collins Road; northeast of the G.E. Fuel Storage Facility
MW-DN-122-S	Monitoring Well	150 feet north of Collins 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
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
MW-DN-125-S	Monitoring Well	40 feet east of 2/3 B CST
MW-DN-126-S	Monitoring Well	15 feet south of fence around Unit 2/3 A CST and B CST (outside of fence)
MW-DN-127-S	Monitoring Well	20 feet south of Unit 3 HRSS
MD-11	Monitoring Well	Piping located between Condensate Storage 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
FW-1	Precipitation	40 feet southwest of Unit 2/3 Off-gas Filter Building access door; north end of guardrail
FW-2	Precipitation	50 feet East of Chem Feed Trailer
FW-3	Precipitation	South of Stock Truck Bay rollup door
FW-4	Precipitation	Southeast corner of Unit 3 RB Interlock
FW-5	Precipitation	East of Unit 2/3 Intake Ross barrier
FW-6	Precipitation	North of Unit 1 Chimney
FW-7	Precipitation	Southeast of Unit 2 TB Trackway
FW-8	Precipitation	Southwest corner of 2/3 CST on fence
FW-9	Precipitation	South of MUDS Building on Security fence
FW-10	Precipitation	At the fence at the northwest corner of the SBO Building
FW-11	Precipitation	30 feet east of the east wall of the EM shop; at the stanchion for RGPP well DSP-105
FW-12	Precipitation	60 feet southeast of the southwest corner of the Admin Building; on the security fence

ARGPPR APPENDIX B

DATA TABLES

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TABLE B-I.1 CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
DSP-105	02/23/11		218 ± 107					
DSP-105	06/07/11		278 ± 111	< 0.8				
DSP-105	08/04/11		< 198					
DSP-105	12/01/11		< 193					
DSP-106	02/23/11		3060 ± 350					
DSP-106	06/07/11		3030 ± 352	< 0.8				
DSP-106	08/04/11		2980 ± 350					
DSP-106	12/01/11		2710 ± 327					
DSP-107	02/23/11		3830 ± 426	< 0.6	< 1.1	< 0.3	7.0 ± 1.2	< 1.1
DSP-107	06/03/11		4200 ± 466	< 0.8				
DSP-107	08/04/11		3740 ± 421					
DSP-107	11/30/11		3550 ± 407					
DSP-108	02/23/11		1260 ± 175					
DSP-108	06/09/11		976 ± 158	< 0.8				
DSP-108	08/04/11		858 ± 155					
DSP-108	11/30/11		873 ± 167					
DSP-117	02/28/11		< 165					
DSP-121	02/28/11		< 164					
DSP-122	02/22/11		854 ± 141					
DSP-122	02/22/11		922 ± 153	< 0.6	6.9 ± 2.5	< 0.2	44.6 ± 2.5	< 1.1
DSP-122	06/10/11		2300 ± 280					
DSP-122	08/05/11		1480 ± 205					
DSP-122	11/29/11		< 193					
DSP-122	11/29/11	Recount	< 193					
DSP-122	11/29/11	Reanalysis	< 185					
DSP-123	02/23/11		7740 ± 816	< 0.6	< 0.9	< 0.6	7.9 ± 1.3	< 1.7
DSP-123	06/10/11		3410 ± 388	< 0.8				
DSP-123	08/05/11		2880 ± 338					
DSP-123	11/30/11		2590 ± 314					
DSP-124	02/25/11		5240 ± 568	< 0.5	< 0.9	< 0.6	13.0 ± 1.5	< 1.7
DSP-124	06/07/11		11700 ± 1210	< 0.9				
DSP-124	06/07/11	Reanalysis	11700 ± 1210					
DSP-124	08/03/11		7040 ± 749					
DSP-124	11/29/11		9600 ± 1010					
DSP-125	02/24/11		226 ± 112					
DSP-125	06/02/11		< 176	< 0.9	< 4.9	< 1.3	27.3 ± 3.8	< 4.0
DSP-125	08/02/11		< 177					
DSP-125	11/28/11		< 198					
DSP-126	03/02/11		< 165					
DSP-126	06/13/11		< 165	< 0.8				
DSP-147	03/02/11		< 167					
DSP-147	06/13/11		< 166	< 0.6				
DSP-148	02/28/11		293 ± 117					
DSP-148	06/01/11		341 ± 127					
DSP-148	08/08/11		< 189					
DSP-148	12/05/11		237 ± 125					
DSP-149R	02/28/11		258 ± 115					
DSP-149R	06/01/11		211 ± 120					
DSP-149R	08/08/11		< 189					
DSP-149R	12/05/11		< 181					

TABLE B-I.1 CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
DSP-150	02/23/11		< 164					
DSP-150	06/13/11		< 162					
DSP-150	08/04/11		< 181					
DSP-150	12/01/11		< 192					
DSP-151	02/23/11		< 167					
DSP-151	06/13/11		< 183					
DSP-151	08/04/11		< 184					
DSP-151	12/01/11		< 194					
DSP-152	03/01/11		< 169					
DSP-153	03/02/11		< 165					
DSP-154	03/01/11		< 167					
DSP-154	06/07/11		< 168	< 0.8				
DSP-156	02/28/11		301 ± 117					
DSP-156	06/01/11		330 ± 126					
DSP-156	08/08/11		252 ± 129					
DSP-156	12/05/11		< 187					
DSP-157-I	06/08/11		< 171	< 0.8				
DSP-157-M	03/01/11		< 164					
DSP-157-S	03/01/11		< 166					
DSP-157-S	06/08/11		< 172	< 0.7				
DSP-158-M	03/01/11		< 159					
DSP-158-S	03/01/11		< 167					
DSP-159-I	06/08/11		357 ± 126	< 0.8				
DSP-159-M	03/02/11		267 ± 115					
DSP-159-S	03/02/11		< 159					
DSP-159-S	06/08/11		< 171	< 0.7				
MD-11	06/02/11		6800 ± 722	< 1.0	< 3.2	< 0.6	71.8 ± 3.6	< 1.8
MD-11	08/02/11		47900 ± 4600					
MD-11	11/28/11		79400 ± 7950					
MD-11	11/28/11	Recount	85000 ± 8540					
MD-11	11/28/11	Reanalysis	82900 ± 8320					
MW-DN-101-I	02/23/11		897 ± 148					
MW-DN-101-I	06/09/11		1100 ± 168	< 0.8				
MW-DN-101-I	08/05/11		947 ± 157					
MW-DN-101-I	11/30/11		989 ± 161					
MW-DN-101-S	02/23/11		< 166					
MW-DN-101-S	06/09/11		< 170	< 0.9				
MW-DN-101-S	08/05/11		< 168					
MW-DN-101-S	11/30/11		< 184					
MW-DN-102-I	02/24/11		< 167					
MW-DN-102-I	06/03/11		< 171	< 0.8	< 0.7	2.0 ± 1.2	4.4 ± 1.0	< 2.1
MW-DN-102-I	08/03/11		< 170					
MW-DN-102-I	12/02/11		< 183					
MW-DN-102-S	02/24/11		< 163					
MW-DN-102-S	06/03/11		195 ± 115	< 0.8	< 9.4	< 3.6	32.8 ± 7.8	< 7.3
MW-DN-102-S	08/03/11		< 168					
MW-DN-102-S	12/02/11		< 186					
MW-DN-103-I	3/1/2011		< 148					
MW-DN-103-I	06/08/11		< 171	< 1.0				
MW-DN-103-S	03/01/11		< 171					

TABLE B-I.1 CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
MW-DN-103-S	06/08/11		< 169	< 0.7				
MW-DN-104-S	02/22/11		185 ± 110	< 0.7	< 2.4	< 0.6	23.3 ± 2.1	< 1.7
MW-DN-104-S	06/10/11		< 168					
MW-DN-104-S	08/05/11		< 169					
MW-DN-104-S	11/29/11		1950 ± 250					
MW-DN-104-S	11/29/11	Recount	1820 ± 235					
MW-DN-104-S	11/29/11	Reanalysis	1860 ± 240					
MW-DN-104-S	11/29/11	Reanalysis	1920 ± 247					
MW-DN-105-S	02/23/11		< 166	4.3 ± 0.5				
MW-DN-105-S	06/13/11		< 167	2.2 ± 0.4				
MW-DN-105-S	08/04/11		< 171	< 0.6				
MW-DN-105-S	12/01/11		< 169	2.1 ± 0.4				
MW-DN-106-S	02/28/11		< 147					
MW-DN-106-S	06/01/11		< 171	< 0.8	< 1.4	< 1.2	3.6 ± 1.4	< 2.0
MW-DN-107-S	06/02/11		944 ± 155					
MW-DN-107-S	08/05/11		626 ± 141					
MW-DN-107-S	12/02/11		747 ± 142	< 0.8	6.4 ± 3.2	2.5 ± 0.7	68.5 ± 3.0	5.9 ± 1.5
MW-DN-108-I	02/22/11		< 164	< 0.6	< 1.4	< 0.6	15.1 ± 1.6	< 1.7
MW-DN-108-I	06/10/11		< 169	< 1.0				
MW-DN-108-I	08/05/11		< 171					
MW-DN-108-I	11/30/11		< 166					
MW-DN-109-I	02/22/11		< 164					
MW-DN-109-I	06/13/11		184 ± 109	< 0.8				
MW-DN-109-I	08/03/11		< 167					
MW-DN-109-I	11/29/11		< 165					
MW-DN-109-S	02/22/11		197 ± 110					
MW-DN-109-S	06/13/11		239 ± 114	< 0.9				
MW-DN-109-S	08/03/11		< 165					
MW-DN-109-S	11/29/11		< 176					
MW-DN-110-I	02/22/11		212 ± 109					
MW-DN-110-I	06/10/11		202 ± 115					
MW-DN-110-I	08/03/11		< 179					
MW-DN-110-I	11/29/11		239 ± 119					
MW-DN-110-S	02/22/11		< 160					
MW-DN-110-S	06/10/11		< 166					
MW-DN-110-S	08/03/11		< 182					
MW-DN-110-S	11/29/11		< 172					
MW-DN-111-S	02/25/11		224 ± 111					
MW-DN-111-S	06/07/11		< 172					
MW-DN-111-S	08/03/11		< 177					
MW-DN-111-S	11/29/11		300 ± 123					
MW-DN-112-I	02/22/11		1010 ± 158					
MW-DN-112-I	06/02/11		361 ± 116					
MW-DN-112-I	08/03/11		261 ± 121					
MW-DN-112-I	11/29/11		< 172					
MW-DN-112-S	02/22/11		< 160					
MW-DN-112-S	06/02/11		< 171					
MW-DN-112-S	08/03/11		< 179					
MW-DN-112-S	11/29/11		< 169					

TABLE B-I.1 CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
MW-DN-113-I	02/24/11	< 163					
MW-DN-113-I	06/03/11	< 172	< 0.9	< 0.5	< 1.2	2.8 ± 0.8	< 2.0
MW-DN-113-I	08/03/11	< 179					
MW-DN-113-I	12/02/11	< 185					
MW-DN-113-S	02/24/11	< 159					
MW-DN-113-S	06/03/11	< 170	< 0.9	< 2.3	< 0.6	8.7 ± 1.8	< 1.8
MW-DN-113-S	08/03/11	< 177					
MW-DN-113-S	12/02/11	< 185					
MW-DN-114-I	02/24/11	7770 ± 818					
MW-DN-114-I	06/03/11	6590 ± 705					
MW-DN-114-I	08/03/11	1770 ± 232					
MW-DN-114-I	12/01/11	7190 ± 762					
MW-DN-114-S	06/03/11	1640 ± 218					
MW-DN-114-S	08/03/11	< 180					
MW-DN-114-S	12/01/11	< 190					
MW-DN-115-I	02/24/11	342 ± 115					
MW-DN-115-I	06/09/11	< 174	< 0.9				
MW-DN-115-I	08/04/11	235 ± 122					
MW-DN-115-I	12/01/11	279 ± 128					
MW-DN-115-S	02/24/11	215 ± 107					
MW-DN-115-S	06/09/11	242 ± 121	< 0.9				
MW-DN-115-S	08/04/11	265 ± 125					
MW-DN-115-S	12/01/11	< 187					
MW-DN-116-I	02/22/11	390 ± 118					
MW-DN-116-I	06/10/11	191 ± 116	< 0.7				
MW-DN-116-I	08/05/11	328 ± 127					
MW-DN-116-I	11/30/11	276 ± 131					
MW-DN-116-S	02/22/11	307 ± 112					
MW-DN-116-S	06/10/11	399 ± 128	< 0.7				
MW-DN-116-S	08/05/11	346 ± 129					
MW-DN-116-S	11/30/11	449 ± 142					
MW-DN-118-S	02/23/11	2820 ± 325					
MW-DN-118-S	06/07/11	1300 ± 187	< 0.7				
MW-DN-118-S	08/04/11	800 ± 153					
MW-DN-118-S	11/30/11	1100 ± 173					
MW-DN-119-I	06/09/11	< 174	< 0.7				
MW-DN-119-I	08/05/11	< 185					
MW-DN-119-I	11/30/11	< 184					
MW-DN-119-S	06/09/11	< 175	< 0.9				
MW-DN-119-S	08/05/11	< 183					
MW-DN-119-S	11/30/11	< 185					
MW-DN-120-I	02/28/11	< 145					
MW-DN-120-S	02/28/11	< 146					
MW-DN-121-S	03/02/11	< 165					

TABLE B-I.1 CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE		H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
MW-DN-122-I	03/02/11		< 144					
MW-DN-122-I	03/02/11		< 144	< 0.8	< 1.4	3.2 ± 1.7	3.3 ± 1.9	6.5 ± 2.25
MW-DN-122-I	06/13/11		< 162	< 0.7				
MW-DN-122-S	03/02/11		< 144					
MW-DN-122-S	06/13/11		< 165	< 0.9				
MW-DN-123-I	03/02/11		< 145					
MW-DN-123-S	03/02/11		< 146					
MW-DN-124-I	02/25/11		57400 ± 5770	< 0.6	< 2.1	< 0.3	18.0 ± 1.8	< 1.1
MW-DN-124-I	06/06/11		73100 ± 7340	< 0.8				
MW-DN-124-I	08/02/11		50200 ± 4310					
MW-DN-124-I	12/02/11		53900 ± 5410					
MW-DN-124-S	02/25/11		28600 ± 2900					
MW-DN-124-S	06/06/11		43500 ± 4390	< 0.9				
MW-DN-124-S	08/02/11		67300 ± 6740					
MW-DN-124-S	12/02/11		51500 ± 5190					
MW-DN-125-S	06/06/11		< 173	< 0.9				
MW-DN-125-S	08/02/11		< 170					
MW-DN-125-S	12/02/11		< 186					
MW-DN-126-S	06/06/11		< 174	< 0.6				
MW-DN-126-S	08/02/11		< 172					
MW-DN-126-S	12/02/11		2420 ± 293					
MW-DN-126-S	12/02/11	Recount	2640 ± 317					
MW-DN-126-S	12/02/11	Reanalysis	2930 ± 342					
MW-DN-126-S	12/02/11	Reanalysis	3120 ± 364					
MW-DN-127-S	06/06/11		192 ± 117	< 0.6				
MW-DN-127-S	08/02/11		269 ± 122					
MW-DN-127-S	12/02/11		474 ± 143					

TABLE B-I.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	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-105	06/07/11	< 12	< 35	< 1	< 1	< 3	< 1	< 2	< 2	< 2	< 11	< 1	< 1	< 17	< 5
DSP-105	08/04/11	< 27	< 56	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 7	< 3	< 3	< 18	< 5
DSP-106	06/07/11	< 13	< 10	< 1	< 1	< 2	< 1	< 2	< 1	< 3	< 12	< 1	< 1	< 16	< 6
DSP-106	08/04/11	< 26	< 56	< 3	< 3	< 6	< 3	< 7	< 3	< 5	< 7	< 3	< 3	< 18	< 7
DSP-107	02/23/11	< 20	< 39	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 8	< 2	< 2	< 16	< 5
DSP-107	06/03/11	< 11	< 25	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 13	< 1	< 1	< 16	< 4
DSP-107	08/04/11	< 34	< 83	< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 9	< 4	< 4	< 23	< 8
DSP-108	06/09/11	< 8	< 18	< 1	< 1	< 2	< 1	< 2	< 1	< 1	< 10	< 1	< 1	< 12	< 4
DSP-108	08/04/11	< 31	< 33	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 8	< 3	< 3	< 20	< 6
DSP-122	02/22/11	< 38	< 34	< 3	< 3	< 8	< 4	< 8	< 4	< 6	< 15	< 4	< 4	< 28	< 10
DSP-123	02/23/11	< 21	< 45	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 8	< 2	< 2	< 17	< 5
DSP-123	06/10/11	< 8	< 11	< 1	< 1	< 2	< 1	< 1	< 1	< 1	< 8	< 1	< 1	< 10	< 3
DSP-123	08/05/11	< 26	< 26	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 6	< 3	< 3	< 16	< 5
DSP-124	02/25/11	< 16	< 32	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 6	< 2	< 2	< 12	< 4
DSP-124	06/07/11	< 10	< 8	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 9	< 1	< 1	< 12	< 4
DSP-125	06/02/11	< 47	< 87	< 5	< 5	< 12	< 5	< 11	< 6	< 8	< 15	< 5	< 5	< 34	< 9
DSP-126	06/13/11	< 41	< 63	< 4	< 5	< 9	< 4	< 9	< 4	< 7	< 15	< 4	< 4	< 28	< 10
DSP-147	06/13/11	< 28	< 33	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 13	< 3	< 3	< 25	< 7
DSP-154	06/07/11	< 10	< 9	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 10	< 1	< 1	< 14	< 5
DSP-157-I	06/08/11	< 11	< 25	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 10	< 1	< 1	< 12	< 4
DSP-157-S	06/08/11	< 12	< 25	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 14	< 1	< 1	< 18	< 5
DSP-159-I	06/08/11	< 6	< 4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 7	< 0	< 0	< 9	< 3
DSP-159-S	06/08/11	< 10	< 31	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 13	< 1	< 1	< 18	< 6
MW-DN-101-I	06/09/11	< 41	< 43	< 5	< 4	< 10	< 5	< 7	< 6	< 9	< 14	< 5	< 6	< 29	< 9
MW-DN-101-I	08/05/11	< 30	< 28	< 3	< 3	< 6	< 3	< 6	< 3	< 6	< 8	< 3	< 4	< 19	< 6
MW-DN-101-S	06/09/11	< 47	< 122	< 6	< 6	< 10	< 5	< 14	< 6	< 11	< 12	< 5	< 5	< 30	< 12
MW-DN-101-S	08/05/11	< 25	< 52	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 7	< 3	< 3	< 18	< 5
MW-DN-102-I	06/03/11	< 64	68 ± 43	< 5	< 6	< 12	< 5	< 12	< 6	< 11	< 13	< 7	< 7	< 33	< 11
MW-DN-102-S	06/03/11	< 58	< 86	< 5	< 6	< 13	< 5	< 14	< 6	< 11	< 15	< 7	< 6	< 31	< 12
MW-DN-103-I	06/08/11	< 48	< 102	< 6	< 5	< 14	< 6	< 12	< 6	< 10	< 15	< 5	< 5	< 35	< 14
MW-DN-103-S	06/08/11	< 43	< 89	< 4	< 5	< 8	< 5	< 8	< 5	< 7	< 13	< 3	< 5	< 29	< 7
MW-DN-104-S	02/22/11	< 13	< 12	< 1	< 1	< 3	< 1	< 3	< 2	< 3	< 6	< 1	< 1	< 11	< 3
MW-DN-105-S	02/23/11	< 16	< 33	< 2	< 2	< 4	< 1	< 3	< 2	< 3	< 7	< 1	< 2	< 14	< 4
MW-DN-105-S	06/13/11	< 39	< 40	< 3	< 4	< 8	< 4	< 8	< 4	< 8	< 14	< 3	< 4	< 32	< 8
MW-DN-105-S	08/04/11	< 31	< 31	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 8	< 3	< 4	< 21	< 6

TABLE B-I.2 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	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-106-S	06/01/11	< 62	< 63	< 6	< 6	< 13	< 5	< 13	< 6	< 10	< 15	< 6	< 5	< 38	< 15
MW-DN-107-S	12/02/11	< 55	< 144	< 8	< 7	< 14	< 7	< 15	< 8	< 11	< 14	< 6	< 5	< 39	< 15
MW-DN-108-I	02/22/11	< 16	< 14	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 7	< 1	< 2	< 13	< 4
MW-DN-108-I	06/10/11	< 62	< 115	< 6	< 7	< 11	< 6	< 14	< 7	< 11	< 15	< 6	< 7	< 36	< 13
MW-DN-108-I	08/05/11	< 35	< 73	< 4	< 4	< 8	< 4	< 8	< 5	< 7	< 9	< 3	< 4	< 23	< 9
MW-DN-109-I	06/13/11	< 43	< 105	< 5	< 5	< 11	< 5	< 8	< 4	< 10	< 15	< 4	< 5	< 37	< 8
MW-DN-109-S	06/13/11	< 37	< 32	< 3	< 4	< 9	< 3	< 7	< 4	< 6	< 15	< 3	< 4	< 29	< 9
MW-DN-113-I	06/03/11	< 78	< 64	< 7	< 6	< 11	< 6	< 11	< 7	< 9	< 14	< 7	< 7	< 41	< 9
MW-DN-113-S	06/03/11	< 48	< 42	< 6	< 5	< 9	< 6	< 9	< 7	< 9	< 14	< 5	< 6	< 38	< 9
MW-DN-115-I	06/09/11	< 51	< 64	< 5	< 5	< 12	< 6	< 9	< 7	< 9	< 13	< 5	< 5	< 29	< 8
MW-DN-115-S	06/09/11	< 51	< 46	< 6	< 6	< 10	< 5	< 13	< 7	< 11	< 13	< 6	< 6	< 34	< 11
MW-DN-116-I	06/10/11	< 32	< 34	< 4	< 4	< 10	< 5	< 9	< 5	< 8	< 11	< 4	< 5	< 24	< 8
MW-DN-116-I	08/05/11	< 33	< 30	< 3	< 4	< 7	< 3	< 6	< 4	< 5	< 9	< 3	< 3	< 20	< 8
MW-DN-116-S	06/10/11	< 46	< 91	< 5	< 5	< 9	< 4	< 8	< 6	< 9	< 11	< 5	< 5	< 31	< 10
MW-DN-116-S	08/05/11	< 38	< 72	< 4	< 4	< 9	< 4	< 7	< 4	< 8	< 10	< 4	< 4	< 26	< 9
MW-DN-118-S	06/07/11	< 41	< 86	< 5	< 4	< 10	< 4	< 8	< 5	< 8	< 13	< 4	< 4	< 32	< 9
MW-DN-118-S	08/04/11	< 34	< 75	< 4	< 4	< 10	< 5	< 9	< 4	< 7	< 10	< 3	< 4	< 26	< 11
MW-DN-119-I	06/09/11	< 49	< 60	< 6	< 5	< 11	< 7	< 10	< 5	< 9	< 13	< 5	< 6	< 34	< 10
MW-DN-119-S	06/09/11	< 51	< 113	< 6	< 6	< 13	< 5	< 13	< 8	< 11	< 12	< 5	< 6	< 33	< 13
MW-DN-122-I	03/02/11	< 48	< 123	< 5	< 5	< 12	< 4	< 9	< 7	< 10	< 14	< 5	< 5	< 32	< 9
MW-DN-122-I	06/13/11	< 37	< 36	< 4	< 4	< 9	< 4	< 7	< 5	< 7	< 14	< 4	< 4	< 34	< 10
MW-DN-122-S	06/13/11	< 37	< 44	< 4	< 5	< 8	< 4	< 8	< 4	< 7	< 15	< 3	< 4	< 29	< 10
MW-DN-124-I	02/25/11	< 23	< 53	< 3	< 3	< 5	< 2	< 5	< 3	< 5	< 8	< 2	< 3	< 18	< 6
MW-DN-124-I	06/06/11	< 46	< 47	< 4	< 5	< 10	< 5	< 10	< 5	< 9	< 15	< 4	< 5	< 32	< 10
MW-DN-124-S	06/06/11	< 40	< 70	< 4	< 4	< 9	< 4	< 7	< 5	< 8	< 14	< 4	< 4	< 28	< 6
MW-DN-125-S	06/06/11	< 47	< 76	< 5	< 5	< 11	< 5	< 8	< 6	< 9	< 15	< 4	< 5	< 32	< 10
MW-DN-126-S	06/06/11	< 43	< 37	< 5	< 5	< 8	< 5	< 9	< 6	< 8	< 15	< 4	< 5	< 31	< 11
MW-DN-127-S	06/06/11	< 46	< 41	< 5	< 6	< 10	< 5	< 10	< 5	< 9	< 15	< 5	< 5	< 36	< 8
MD-11	06/02/11	< 48	< 44	< 5	< 6	< 11	< 4	< 10	< 5	< 8	< 14	< 5	< 5	< 31	< 12

TABLE B-I.3 CONCENTRATIONS OF HARD TO DETECTS IN GROUND WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	AM-241	CM-242	CM-243/244	PU-238	PU-239/240	U-233/234	U-235	U-238	FE-55	NI-63
DSP-107	02/23/11	< 0.10	< 0.04	< 0.08	< 0.12	< 0.05	< 0.09	< 0.02	< 0.08	< 145	< 4.2
DSP-122	02/22/11	< 0.12	< 0.07	< 0.02	< 0.03	< 0.08	< 0.17	< 0.08	< 0.16	< 130	< 4.2
DSP-123	02/23/11	< 0.15	< 0.08	< 0.03	< 0.05	< 0.04	0.17 ± 0.10	< 0.04	< 0.07	< 149	< 4.3
DSP-124	02/25/11	< 0.19	< 0.08	< 0.09	< 0.02	< 0.04	< 0.04	< 0.04	< 0.06	< 64	< 4.2
DSP-125	06/02/11	< 0.08	< 0.14	< 0.04	< 0.09	< 0.02	< 0.13	< 0.06	< 0.19	< 95	< 3.4
MD-11	06/02/11	< 0.14	< 0.05	< 0.12	< 0.09	< 0.02	< 0.06	< 0.03	< 0.08	< 123	< 3.7
MW-DN-102-I	06/03/11	< 0.08	< 0.08	< 0.08	< 0.10	< 0.09	0.58 ± 0.21	< 0.06	< 0.11	< 199	< 3.7
MW-DN-102-S	06/03/11	< 0.14	< 0.10	< 0.04	< 0.14	< 0.10	< 0.11	< 0.20	< 0.11	< 80	< 3.4
MW-DN-104-S	02/22/11	< 0.13	< 0.08	< 0.15	< 0.06	< 0.04	0.85 ± 0.36	< 0.06	0.44 ± 0.26	< 136	< 4.2
MW-DN-106-S	06/01/11	< 0.15	< 0.05	< 0.05	< 0.20	< 0.09	1.09 ± 0.26	< 0.05	0.85 ± 0.22	< 193	< 3.7
MW-DN-107-S	12/02/11	< 0.13	< 0.05	< 0.05	< 0.16	< 0.08	0.37 ± 0.23	< 0.09	0.43 ± 0.24	< 151	< 3.9
MW-DN-108-I	02/22/11	< 0.13	< 0.04	< 0.05	< 0.08	< 0.07	0.38 ± 0.17	< 0.03	0.21 ± 0.12	< 141	< 4.2
MW-DN-113-I	06/03/11	< 0.10	< 0.07	< 0.03	< 0.13	< 0.05	< 0.09	< 0.02	< 0.06	< 164	< 3.7
MW-DN-113-S	06/03/11	< 0.06	< 0.10	< 0.06	< 0.14	< 0.06	0.54 ± 0.23	< 0.07	0.30 ± 0.17	< 122	< 3.7
MW-DN-122-I	03/02/11	< 0.12	< 0.03	< 0.10	< 0.13	< 0.02	0.32 ± 0.15	< 0.03	0.35 ± 0.16	< 184	< 3.8
MW-DN-124-I	02/25/11	< 0.14	< 0.05	< 0.02	< 0.16	< 0.03	< 0.05	< 0.05	0.15 ± 0.09	< 189	< 4.2

TABLE B-II.1 CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SR-90	GR-A (DIS)	GR-A (SUS)	GR-B (DIS)	GR-B (SUS)
SW-DN-101	02/28/11	< 148					
SW-DN-101	06/01/11	449 ± 129	< 0.9	< 1.0	1.4 ± 0.9	4.6 ± 1.2	2.9 ± 1.4
SW-DN-101	08/08/11	< 191					
SW-DN-101	12/05/11	< 185					
SW-DN-102	02/28/11	345 ± 106					
SW-DN-102	06/01/11	214 ± 119	< 0.9	< 1.1	< 0.7	3.8 ± 1.3	< 1.8
SW-DN-102	08/08/11	< 190					
SW-DN-102	12/05/11	< 187					
SW-DN-103	02/28/11	248 ± 102					
SW-DN-103	06/01/11	178 ± 117	< 1.0	< 1.1	1.1 ± 0.7	3.4 ± 1.3	< 1.9
SW-DN-103	08/08/11	< 191					
SW-DN-103	12/05/11	< 184					
SW-DN-104	03/02/11	216 ± 101					
SW-DN-104	06/01/11	183 ± 120	< 0.9	< 1.1	< 0.5	4.7 ± 1.3	< 1.9
SW-DN-104	08/08/11	< 189					
SW-DN-104	12/05/11	< 185					
SW-DN-105	03/02/11	185 ± 99					
SW-DN-105	06/01/11	< 171	< 0.9	< 1.1	< 0.5	5.0 ± 1.4	< 1.9
SW-DN-105	08/08/11	282 ± 129					
SW-DN-105	12/05/11	< 188					
SW-DN-106	03/02/11	200 ± 115					
SW-DN-106	06/01/11	< 172	< 1.0	< 1.1	< 0.5	4.0 ± 1.3	< 1.9
SW-DN-106	08/08/11	< 192					
SW-DN-106	12/05/11	< 183					

TABLE B-II.2 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	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	06/01/11	< 44	< 46	< 4	< 5	< 8	< 5	< 9	< 5	< 7	< 14	< 4	< 5	< 28	< 10
SW-DN-102	06/01/11	< 47	< 33	< 5	< 5	< 9	< 5	< 9	< 6	< 9	< 14	< 5	< 5	< 30	< 12
SW-DN-103	06/01/11	< 48	< 42	< 5	< 5	< 9	< 4	< 8	< 5	< 9	< 14	< 5	< 4	< 32	< 9
SW-DN-104	06/01/11	< 41	< 98	< 5	< 5	< 8	< 4	< 11	< 5	< 9	< 14	< 5	< 5	< 31	< 8
SW-DN-105	06/01/11	< 43	101 ± 54	< 4	< 5	< 9	< 4	< 10	< 5	< 8	< 14	< 5	< 5	< 32	< 9
SW-DN-106	06/01/11	< 42	< 38	< 3	< 5	< 9	< 4	< 10	< 5	< 9	< 15	< 5	< 4	< 34	< 11

TABLE B-II.3 CONCENTRATIONS OF HARD TO DETECTS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	AM-241	CM-242	CM-243/244	PU-238	PU-239/240	U-233/234	U-235	U-238	FE-55	NI-63
SW-DN-101	06/01/11	< 0.13	< 0.10	< 0.05	< 0.17	< 0.13	0.41 ± 0.18	< 0.03	0.55 ± 0.22	< 94	< 3.8
SW-DN-102	06/01/11	< 0.12	< 0.06	< 0.03	< 0.17	< 0.07	0.44 ± 0.18	< 0.03	0.53 ± 0.20	< 125	< 3.8
SW-DN-103	06/01/11	< 0.04	< 0.05	< 0.03	< 0.06	< 0.11	0.67 ± 0.23	< 0.07	0.41 ± 0.18	< 106	< 3.7
SW-DN-104	06/01/11	< 0.05	< 0.05	< 0.02	< 0.19	< 0.05	0.80 ± 0.32	< 0.09	0.48 ± 0.24	< 93	< 3.7
SW-DN-105	06/01/11	< 0.02	< 0.04	< 0.02	< 0.19	< 0.17	0.55 ± 0.21	< 0.07	0.40 ± 0.19	< 107	< 3.7
SW-DN-106	06/01/11	< 0.06	< 0.13	< 0.02	< 0.10	< 0.05	0.49 ± 0.20	< 0.08	0.60 ± 0.21	< 140	< 3.7

TABLE B-III.1 CONCENTRATIONS OF TRITIUM IN PRECIPITATION WATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3
FW-1	02/22/11	< 163
FW-1	06/10/11	< 172
FW-10	02/22/11	< 164
FW-10	12/01/11	< 185
FW-11	02/22/11	< 164
FW-11	12/01/11	< 187
FW-12	02/22/11	< 164
FW-12	12/02/11	< 191
FW-2	02/22/11	< 166
FW-2	06/10/11	< 169
FW-3	02/22/11	273 ± 114
FW-3	06/10/11	< 171
FW-4	02/22/11	< 164
FW-5	02/22/11	< 169
FW-6	02/22/11	< 165
FW-7	02/22/11	< 164
FW-7	08/04/11	< 171
FW-8	02/22/11	< 165
FW-8	08/02/11	< 170
FW-9	02/22/11	223 ± 111
FW-9	08/03/11	< 169