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DRESDEN NUCLEAR POWER STATION UNITS 1, 2 and 3

Annual Radiological Groundwater Protection Program Report

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I. Summary and Conclusions

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

The Dresden power plant has experienced a number of leaks from underground lines and spills from above ground systems containing radioactive water over its 40-year history. These incidents have created a number of areas of localized contamination within the P.A. Isotopic analyses of groundwater in many of these areas show measurable concentrations of tritium (H-3). In addition, Strontium (Sr-90) was detected just above the Lower Limit of Detectability (LLD) in one of the wells within the P.A.

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

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

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

Tritium has a half-life of 12.3 years. This means that 40 years from now 90% of the tritium on site today will have decayed away to more stable elements.

Given the limited volume of contaminated groundwater on site, radioactive decay, slow groundwater movement, and dilution effects the conclusion of the HIR is that the operation of Dresden Nuclear Power Station had no adverse radiological impact on the environment. As a result there is little potential for contaminated groundwater on site to affect off-site drinking water.

II. Introduction

Radiological Groundwater Monitoring Program (RGPP):

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

The Dresden RGPP was established in 2006, and, therefore, there are no changes to this program from previous years. This program does not impact the operation of the plant and is independent of the REMP.

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

There are 71 sampling points in the RGPP:

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

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

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

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

The RGPP sample points are currently sampled on a frequency of twice per year. During 2006, there were 529 analyses that were performed on 214 samples from 71 sample points.

Supplemental Radiological Groundwater Monitoring Program (SRGPP):

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

In addition to the 71 sampling points in the RGPP, the SRGPP also includes sampling of 9 sentinel wells, 39 sewers and 1-trench totaling 120 possible sample 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. Many sentinel wells were installed near a leaking underground HPCI suction line and were subsequently removed as part of the excavation and repair of that line.

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

Dresden has a trench, or storm-water ditch, that runs along the south side of the P.A. Rainwater run-off and subsurface water to a depth of about 4 feet flows into this trench discharging into the hot canal to the west and the Kankakee River to the east. This and other trenches around the site can be sampled surface and near surface water on site.

The Dresden site-specific RGPP procedure identifies the historic 'events' that would affect the individual SRGPP 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 Dresden SRGPP in 2006 included sampling of 3 sewers and 5 sentinel wells at a frequency of approximately every two weeks.

During 2006, there were 299 analyses that were performed on 299 samples from 8 sample points.

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 SRGPP is to provide indication of short-term changes to groundwater tritium concentrations within the P.A.

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

Specific Objectives include:

1. Perform routine water sampling and radiological analysis of water from selected locations.
2. Report new leaks, spills, or other detections with potential radiological significance to stakeholders in a timely manner.
3. Regularly assess analytical results to identify adverse trends.
4. Take necessary corrective actions to protect groundwater resources.

B. Implementation of the Objectives

1. Dresden Nuclear Power Station will continue to perform routine sampling and radiological analysis of water from selected locations.
2. Dresden Nuclear Power Station has implemented new procedures to identify and report new leaks, spills, or other detections with potential radiological significance in a timely manner.
3. Dresden Nuclear Power Station staff and consulting hydrogeologist assess analytical results on an ongoing basis to identify adverse trends.
4. If an adverse trend in groundwater monitoring analytical results is identified, further investigation will be undertaken. If the investigation identifies a leak or unidentified spill, corrective actions will be implemented.

C. Program Description

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

Dresden also has a Supplemental Radiological Groundwater Monitoring Program (SRGPP) that provides short-term monitoring of a limited selection of monitoring points mostly within the P.A. intended to identity relatively rapid changes in the groundwater tritium concentrations. In addition to the 71 sampling points in the RGPP, the SRGPP also includes sampling of 9 sentinel wells, 39 sewers and 1-trench totaling 120 possible sample points.

1. Sample Collection

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

<u>Groundwater and Surface Water</u>

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

D. Characteristics of Tritium (H-3)

Tritium (chemical symbol H-3) is a radioactive isotope of hydrogen. The most common form of tritium is tritium oxide, which is also called "tritiated water." The chemical properties of tritium are essentially those of ordinary hydrogen.

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

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

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

III. Program Description

A. Sample Analysis

This section describes the general analytical methodologies used by Teledyne Brown Engineers (TBE) and Environmental Incorporated Midwest laboratories (EIML) to analyze the environmental samples for radioactivity for the Dresden Nuclear Power Station RGPP in 2006.

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 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 specified by federal regulation as a 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 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.

C. Background Analysis

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

1. Background Concentrations of Tritium

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

a. Tritium Production

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

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

b. Precipitation Data

Precipitation samples are routinely collected at stations around the world for the analysis of tritium and other radionuclides. Two publicly available databases that provide tritium concentrations in precipitation are Global Network of Isotopes in Precipitation (GNIP) and USEPA's RadNet database. GNIP provides tritium precipitation concentration data for samples collected world wide from 1960 to 2006. RadNet provides tritium precipitation concentration data for samples collected at stations through out the U.S. from 1960 up to and including 2006. Based on GNIP data for sample stations located in the U.S. Midwest, tritium concentrations peaked around 1963. This peak, which approached 10,000 pCi/L for some stations, coincided with the atmospheric testing of thermonuclear weapons. Tritium concentrations in surface water showed a sharp decline up until 1975 followed by a gradual decline since that time. Tritium concentrations in Midwest precipitation have typically been below 100 pCi/L since around 1980. Tritium concentrations in wells may still be above the 200-pCi/L detection limit from the external causes described above. Water from previous years and decades is naturally captured in groundwater, so some well water sources today are affected by the surface water from the 1960s that was elevated in tritium.

c. Surface Water Data

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

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

IV. Results and Discussion

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

A. Groundwater Results

Groundwater

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

Tritium

Of the 39 developed groundwater-monitoring wells inside the Protected Area, 28 wells show some level of tritium contamination ranging from just above LLD to 150,000 pCi/L.

Of the 26 developed groundwater-monitoring wells outside the Protected Area, 2 wells show tritium contamination just above LLD. One of these wells is located near the radwaste discharge line (about 200 yards north of the plant) that ruptured in 1999. The other well is about 1500 feet south of the Security Check point adjacent to the hot canal that had measurable concentrations of tritium from an upstream source for several years prior to 2006.

Strontium

Strontium-90 was detected in one well MW-DN-108I. The result of seven analyses averaged 3.4 pCi/L. This is attributed to a release from a Unit 1 off-gas line in November of 1975.

Gamma Emitters and Strontium

Potassium-40 was detected in 33 of 197 samples. The concentrations ranged from 36 pCi/liter to 332 pCi/liter. Cobalt-60 was detected on one sample at a concentration of 4 pCi/liter. No other gamma emitting nuclides were detected. (Table B–I.5 and B–I.6, Appendix B).

B. Drinking Water Well Survey

A drinking water well survey was conducted during the summer 2006 by CRA (CRA 2006) around the Dresden Nuclear Power Station.

C. Summary of Results – Inter-Laboratory Comparison Program

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

D. Leaks, Spills, and Releases

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

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

There was no other incidence of a leak, spill or release in 2006.

E. Trends

The leak from the HPCI line in 2004 left an area of tritium contamination near the excavation site. The plume from this event was predicted to travel west then north around the foundation of the Reactor Building toward the Cribhouse intake structure.

The groundwater monitoring well just south of the Floor Drain Surge Tank has shown an increasing trend of tritium concentration. It is believed that the plume from the 2004 HPCI line leak has produced this increasing trend.

F. Investigations

Two new groundwater-monitoring wells were installed in late 2006 with the intent of intercepting the highest concentration of the plume from the 2004 HPCI line leak. As expected, the results of these two wells showed tritium concentration of approximately 120,000 pCi/l and approximately 100,000 PCi/L. These wells are located just south of the liquid nitrogen storage tanks.

G. Actions Taken

1. Compensatory Actions

   No compensatory actions were taken as a result of the RGPP in 2006.

2. Installation of Monitoring Wells

As discussed above, two new groundwater-monitoring wells (DN-MW-124-I and 124-S) were installed just south of the liquid nitrogen storage tanks in late 2006. This action was taken to further quantify the plume movement of the 2004 HPCI leak.

Dresden Station has implemented a program to assess the condition of underground lines within the Protected Area. The first lines will be unearthed for testing in the summer of 2007. The results of the RGPP have influenced the priority of the lines being tested.

No other actions were taken with the sample results from the RGPP.

3. Actions to Recover/Reverse Plumes

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

APPENDIX A

LOCATION DISTANCE

APPENDIX A

LOCATION DISTANCE

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations and Distances, Dresden Nuclear Power Station, 2006

Site	Site Type	Temporary/Permanent	Distance
DSP-105	Monitoring Well		
DSP-106	Monitoring Well		
DSP-107	Monitoring Well		
DSP-108	Monitoring Well		
DSP-117	Monitoring Well		
DSP-118	Monitoring Well		
DSP-121	Monitoring Well		
DSP-122	Monitoring Well		
DSP-123	Monitoring Well		
DSP-124	Monitoring Well		
DSP-125	Monitoring Well		
DSP-126	Monitoring Well		
DSP-127	Monitoring Well		
DSP-147	Monitoring Well		
DSP-148	Monitoring Well		
DSP-149	Monitoring Well		
DSP-150	Monitoring Well		
DSP-151	Monitoring Well		
DSP-152	Monitoring Well		
DSP-153	Monitoring Well		
DSP-154	Monitoring Well		
DSP-155	Monitoring Well		
DSP-156	Monitoring Well		
DSP-157M	Monitoring Well		
DSP-157S	Monitoring Well		
DSP-158	Monitoring Well		
DSP-158M	Monitoring Well		
DSP-158S	Monitoring Well		
DSP-159	Monitoring Well		
DSP-159M	Monitoring Well		
DSP-159S	Monitoring Well		
MW-DN-101I	Monitoring Well		
MW-DN-101S	Monitoring Well		
MW-DN-102I	Monitoring Well		
MW-DN-102S	Monitoring Well		
MW-DN-103I	Monitoring Well		
MW-DN-103S	Monitoring Well		
MW-DN-104S	Monitoring Well		
MW-DN-105S	Monitoring Well		
MW-DN-106S	Monitoring Well		
MW-DN-107S	Monitoring Well		
MW-DN-108I	Monitoring Well		
MW-DN-109I	Monitoring Well		
MW-DN-109S	Monitoring Well		
MW-DN-110I	Monitoring Well		
MW-DN-111S	Monitoring Well		
MW-DN-111S	Monitoring Well		
MW-DN-112I	Monitoring Well		

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations and Distances, Dresden Nuclear Power Station, 2006

Site	Site Type	Temporary/Permanent	Distance
MW-DN-112S	Monitoring Well		
MW-DN-113I	Monitoring Well		
MW-DN-113S	Monitoring Well		
MW-DN-114I	Monitoring Well		
MW-DN-114S	Monitoring Well		
MW-DN-115I	Monitoring Well		
MW-DN-115S	Monitoring Well		
MW-DN-116I	Monitoring Well		
MW-DN-116S	Monitoring Well		
MW-DN-117I	Monitoring Well		
MW-DN-118S	Monitoring Well		
MW-DN-119I	Monitoring Well		
MW-DN-119S	Monitoring Well		
MW-DN-120I	Monitoring Well		
MW-DN-120S	Monitoring Well		
MW-DN-121S	Monitoring Well		
MW-DN-122I	Monitoring Well		
MW-DN-122S	Monitoring Well		
MW-DN-123I	Monitoring Well		
MW-DN-123S	Monitoring Well		
SW-DN-101	Surface Water		
SW-DN-102	Surface Water		
SW-DN-103	Surface Water		
SW-DN-104	Surface Water		
SW-DN-105	Surface Water		
SW-DN-106	Surface Water		
SW-DN-107	Surface Water		
DSP-124	Sewer		
DSP-131	Sewer		
DSP-132	Sewer		
W-2R	Sentinel Well		
W-3	Sentinel Well		
T-6	Sentinel Well		
R1	Sentinel Well		
E-7	Sentinel Well		

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APPENDIX B

DATA TABLES

TABLE B-I.1 CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	
DSP-105		05/23/06	319 ± 117
DSP-105	ORIG	10/20/06	428 ± 121*
DSP-105	RERUN	10/20/06	302 ± 123*
DSP-106		05/23/06	2370 ± 289
DSP-106	ORIG	10/20/06	2210 ± 276*
DSP-106	RERUN	10/20/06	1910 ± 285*
DSP-107		05/23/06	9820 ± 1030
DSP-107	ORIG	10/24/06	5570 ± 613*
DSP-107	RERUN	10/24/06	5400 ± 629*
DSP-107	ORIG	10/24/06	5100 ± 586*
DSP-107	RERUN	10/24/06	5350 ± 321*
DSP-108		05/24/06	1930 ± 244
DSP-108	ORIG	10/24/06	2190 ± 271*
DSP-108	RERUN	10/24/06	1780 ± 271*
DSP-117		05/26/06	< 165
DSP-117		10/23/06	< 147 *
DSP-118		05/25/06	< 166
DSP-118		10/20/06	191 ± 108*
DSP-121		05/26/06	< 165
DSP-121		10/20/06	< 145 *
DSP-122		05/25/06	1440 ± 139
DSP-122	ORIG	10/24/06	2480 ± 300*
DSP-122	RERUN	10/24/06	2400 ± 335*
DSP-123		05/26/06	13100 ± 318
DSP-123		05/26/06	13200 ± 319
DSP-123	ORIG	10/24/06	14000 ± 1470*
DSP-123	RERUN	10/24/06	14900 ± 1570*
DSP-123	ORIG	10/24/06	13600 ± 1430*
DSP-123	RERUN	10/24/06	13500 ± 720*
DSP-124		05/26/06	10000 ± 284
DSP-124	ORIG	10/23/06	6810 ± 744*
DSP-124	RERUN	10/23/06	5860 ± 673*
DSP-124	ORIG	10/23/06	6250 ± 705*
DSP-124	RERUN	10/23/06	6670 ± 385*
DSP-125		06/01/06	320 ± 127
DSP-125	ORIG	10/24/06	402 ± 116*
DSP-125	RERUN	10/24/06	257 ± 150*
DSP-126		05/24/06	< 163
DSP-126		10/18/06	< 145 *
DSP-127		05/30/06	< 163
DSP-127	ORIG	10/23/06	217 ± 107*
DSP-127	RERUN	10/23/06	< 185 *
DSP-147		05/30/06	< 156
DSP-148		05/30/06	356 ± 111
DSP-148	ORIG	10/23/06	209 ± 101*
DSP-148	RERUN	10/23/06	< 172 *
DSP-149	ORIG	10/23/06	640 ± 132*
DSP-149	RERUN	10/23/06	725 ± 147*
DSP-149R	ORIG	05/31/06	668 ± 144
DSP-149R DUP	DUP	05/31/06	694 ± 143
DSP-150		05/24/06	< 161

* INDICATED DISTILLED SAMPLE

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	
DSP-150	ORIG	10/17/06	254 ± 108*
DSP-150	RERUN	10/17/06	< 187 *
DSP-151		05/24/06	< 162
DSP-151	ORIG	10/17/06	281 ± 119*
DSP-151	RERUN	10/17/06	< 186 *
DSP-152		05/23/06	< 166
DSP-152		10/19/06	< 147 *
DSP-153		05/24/06	< 158
DSP-153		10/17/06	< 145 *
DSP-154		05/25/06	< 162
DSP-154		10/20/06	< 147 *
DSP-155		05/25/06	< 167
DSP-155	ORIG	10/23/06	233 ± 119*
DSP-155	RERUN	10/23/06	< 186 *
DSP-156		05/30/06	177 ± 107
DSP-156		10/23/06	< 147 *
DSP-157		10/19/06	< 148 *
DSP-157		10/20/06	< 146 *
DSP-157M		05/23/06	< 164
DSP-157S		05/23/06	< 163
DSP-158		10/19/06	< 149 *
DSP-158		10/19/06	< 142 *
DSP-158M		05/25/06	< 163
DSP-158S		05/25/06	< 159
DSP-159	ORIG	10/23/06	474 ± 125*
DSP-159	RERUN	10/23/06	391 ± 127*
DSP-159		10/24/06	< 146 *
DSP-159M		05/25/06	531 ± 131
DSP-159S		05/31/06	< 170
MW-DN-101I		05/26/06	4570 ± 208
MW-DN-101I	ORIG	10/20/06	2890 ± 357*
MW-DN-101I	RERUN	10/20/06	2630 ± 358*
MW-DN-101I	ORIG	10/20/06	2960 ± 373*
MW-DN-101I	RERUN	10/20/06	2980 ± 207*
MW-DN-101S		05/26/06	220 ± 114
MW-DN-101S	ORIG	10/17/06	265 ± 119*
MW-DN-101S	RERUN	10/17/06	< 185 *
MW-DN-102I		06/01/06	1380 ± 195
MW-DN-102I	ORIG	10/18/06	507 ± 130*
MW-DN-102I	RERUN	10/18/06	327 ± 152*
MW-DN-102S		06/01/06	4250 ± 475
MW-DN-102S	ORIG	10/18/06	1300 ± 201*
MW-DN-102S	RERUN	10/18/06	1290 ± 227*
MW-DN-103I		05/26/06	< 179
MW-DN-103I		10/18/06	< 176 *
MW-DN-103S	ORIG	05/26/06	< 177
MW-DN-103S DUP	DUP	05/26/06	< 183
MW-DN-103S		10/18/06	< 178 *
MW-DN-104S		05/30/06	< 173
MW-DN-104S	ORIG	10/17/06	1460 ± 226*
MW-DN-104S	RERUN	10/17/06	1350 ± 132*

* INDICATED DISTILLED SAMPLE

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	
MW-DN-105S		06/01/06	< 178
MW-DN-106S		05/26/06	< 178
MW-DN-106S		10/20/06	< 194 *
MW-DN-107S		05/31/06	1040 ± 165
MW-DN-107S	ORIG	10/17/06	3190 ± 395*
MW-DN-107S	RERUN	10/17/06	3020 ± 210*
MW-DN-108I		05/26/06	< 176
MW-DN-108I	ORIG	08/14/06	< 184 *
MW-DN-108I DUP	DUP	08/14/06	210 ± 124*
MW-DN-108I	ORIG	10/17/06	1170 ± 194*
MW-DN-108I	RERUN	10/17/06	1400 ± 135*
MW-DN-109I	ORIG	05/31/06	3620 ± 413
MW-DN-109I DUP	DUP	05/31/06	3750 ± 424
MW-DN-109I	ORIG	10/19/06	2740 ± 350*
MW-DN-109I	RERUN	10/19/06	2830 ± 200*
MW-DN-109S		05/31/06	251 ± 120
MW-DN-109S		10/18/06	< 193 *
MW-DN-110I		05/30/06	516 ± 134
MW-DN-110I	ORIG	10/19/06	344 ± 127*
MW-DN-110I	RERUN	10/19/06	571 ± 106*
MW-DN-110S		05/30/06	< 172
MW-DN-111S		05/31/06	638 ± 140
MW-DN-111S	ORIG	10/23/06	383 ± 134*
MW-DN-111S	RERUN	10/23/06	465 ± 105*
MW-DN-112I		08/10/06	1520 ± 214*
MW-DN-112I	ORIG	10/23/06	1730 ± 250*
MW-DN-112I	RERUN	10/23/06	1680 ± 146*
MW-DN-112S		08/10/06	< 181 *
MW-DN-112S		10/17/06	< 192 *
MW-DN-113I	ORIG	08/09/06	< 182 *
MW-DN-113I DUP	DUP	08/09/06	< 176 *
MW-DN-113I		10/23/06	< 192 *
MW-DN-113S		08/09/06	451 ± 136*
MW-DN-113S	ORIG	10/18/06	439 ± 138*
MW-DN-113S	RERUN	10/18/06	492 ± 132*
MW-DN-114I		08/14/06	4190 ± 473*
MW-DN-114I	ORIG	10/19/06	9610 ± 1040*
MW-DN-114I	RERUN	10/19/06	9530 ± 527*
MW-DN-114I	ORIG	10/19/06	9560 ± 1040*
MW-DN-114I	RERUN	10/19/06	9690 ± 533*
MW-DN-114S	ORIG	08/11/06	2770 ± 336*
MW-DN-114S DUP	DUP	08/11/06	2740 ± 335*
MW-DN-114S	ORIG	10/19/06	2790 ± 351*
MW-DN-114S	RERUN	10/19/06	3290 ± 221*
MW-DN-115I		08/11/06	< 181 *
MW-DN-115I		10/19/06	191 ± 121*
MW-DN-115S		08/14/06	< 181 *
MW-DN-115S	RERUN	10/19/06	253 ± 100*
MW-DN-115S	RERUN	10/19/06	294 ± 124*
MW-DN-116I		08/09/06	4150 ± 468*
MW-DN-116I	ORIG	10/20/06	3950 ± 518*

* INDICATED DISTILLED SAMPLE

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	
MW-DN-116I	RERUN	10/20/06	4220 ± 497*
MW-DN-116S		08/09/06	431 ± 135*
MW-DN-117I		08/10/06	1030 ± 170*
MW-DN-117I	ORIG	10/23/06	494 ± 152*
MW-DN-117I	RERUN	10/23/06	459 ± 136*
MW-DN-118S		08/10/06	1650 ± 227*
MW-DN-118S	ORIG	10/23/06	1280 ± 229*
MW-DN-118S	RERUN	10/23/06	1260 ± 207*
MW-DN-119I		08/11/06	1470 ± 211*
MW-DN-119I	ORIG	10/23/06	3140 ± 418*
MW-DN-119I	RERUN	10/23/06	3720 ± 444*
MW-DN-119S		08/11/06	< 183 *
MW-DN-119S		10/18/06	< 196 *
MW-DN-120I		08/08/06	< 180 *
MW-DN-120I		08/08/06	< 182 *
MW-DN-120I		10/20/06	< 190 *
MW-DN-120S		08/08/06	< 181 *
MW-DN-120S		10/20/06	< 196 *
MW-DN-121S		08/08/06	< 182 *
MW-DN-121S		10/21/06	< 160 *
MW-DN-122I		08/08/06	< 179 *
MW-DN-122I		10/19/06	< 197 *
MW-DN-122S		08/08/06	< 181 *
MW-DN-122S		10/18/06	< 196 *
MW-DN-123I		08/08/06	< 186 *
MW-DN-123I	ORIG	10/17/06	731 ± 144*
MW-DN-123I	RERUN	10/17/06	392 ± 121*
MW-DN-123S		08/08/06	< 183 *
MW-DN-123S		10/18/06	< 198 *
SW-101		05/31/06	< 170
SW-DN-101		10/16/06	< 194 *
SW-DN-102		05/31/06	< 171
SW-DN-102		10/16/06	< 197 *
SW-DN-103		05/31/06	< 171
SW-DN-103		10/16/06	< 197 *
SW-DN-104		06/01/06	< 168
SW-DN-104		10/16/06	< 197 *
SW-DN-105		06/01/06	< 165
SW-DN-105		10/16/06	< 197 *
SW-DN-106		06/01/06	< 168
SW-DN-106		10/16/06	< 186 *
SW-DN-107		06/01/06	< 170
SW-DN-107	ORIG	10/17/06	247 ± 128*
SW-DN-107	RERUN	10/17/06	363 ± 100*

* INDICATED DISTILLED SAMPLE

TABLE B-I.2 **HIGHEST TO LOWEST CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	
DSP-123	RERUN	10/24/06	14900 ± 1570*
DSP-123	ORIG	10/24/06	14000 ± 1470*
DSP-123	ORIG	10/24/06	13600 ± 1430*
DSP-123	RERUN	10/24/06	13500 ± 720*
DSP-123		05/26/06	13200 ± 319
DSP-123		05/26/06	13100 ± 318
DSP-124		05/26/06	10000 ± 284
DSP-107		05/23/06	9820 ± 1030
MW-DN-114I	RERUN	10/19/06	9690 ± 533*
MW-DN-114I	ORIG	10/19/06	9610 ± 1040*
MW-DN-114I	ORIG	10/19/06	9560 ± 1040*
MW-DN-114I	RERUN	10/19/06	9530 ± 527*
DSP-124	ORIG	10/23/06	6810 ± 744*
DSP-124	RERUN	10/23/06	6670 ± 385*
DSP-124	ORIG	10/23/06	6250 ± 705*
DSP-124	RERUN	10/23/06	5860 ± 673*
DSP-107	ORIG	10/24/06	5570 ± 613*
DSP-107	RERUN	10/24/06	5400 ± 629*
DSP-107	RERUN	10/24/06	5350 ± 321*
DSP-107	ORIG	10/24/06	5100 ± 586*
MW-DN-101I		05/26/06	4570 ± 208
MW-DN-102S		06/01/06	4250 ± 475
MW-DN-116I	RERUN	10/20/06	4220 ± 497*
MW-DN-114I		08/14/06	4190 ± 473*
MW-DN-116I		08/09/06	4150 ± 468*
MW-DN-116I	ORIG	10/20/06	3950 ± 518*
MW-DN-109I DUP	DUP	05/31/06	3750 ± 424
MW-DN-119I	RERUN	10/23/06	3720 ± 444*
MW-DN-109I	ORIG	05/31/06	3620 ± 413
MW-DN-114S	RERUN	10/19/06	3290 ± 221*
MW-DN-107S	ORIG	10/17/06	3190 ± 395*
MW-DN-119I	ORIG	10/23/06	3140 ± 418*
MW-DN-107S	RERUN	10/17/06	3020 ± 210*
MW-DN-101I	RERUN	10/20/06	2980 ± 207*
MW-DN-101I	ORIG	10/20/06	2960 ± 373*
MW-DN-101I	ORIG	10/20/06	2890 ± 357*
MW-DN-109I	RERUN	10/19/06	2830 ± 200*
MW-DN-114S	ORIG	10/19/06	2790 ± 351*
MW-DN-114S	ORIG	08/11/06	2770 ± 336*
MW-DN-109I	ORIG	10/19/06	2740 ± 350*
MW-DN-114S DUP	DUP	08/11/06	2740 ± 335*
MW-DN-101I	RERUN	10/20/06	2630 ± 358*
DSP-122	ORIG	10/24/06	2480 ± 300*
DSP-122	RERUN	10/24/06	2400 ± 335*
DSP-106		05/23/06	2370 ± 289
DSP-106	ORIG	10/20/06	2210 ± 276*
DSP-108	ORIG	10/24/06	2190 ± 271*
DSP-108		05/24/06	1930 ± 244
DSP-106	RERUN	10/20/06	1910 ± 285*
DSP-108	RERUN	10/24/06	1780 ± 271*
MW-DN-112I	ORIG	10/23/06	1730 ± 250*

* INDICATED DISTILLED SAMPLE

TABLE B-I.2 **HIGHEST TO LOWEST CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	
MW-DN-112I	RERUN	10/23/06	1680 ± 146*
MW-DN-118S		08/10/06	1650 ± 227*
MW-DN-112I		08/10/06	1520 ± 214*
MW-DN-119I		08/11/06	1470 ± 211*
MW-DN-104S	ORIG	10/17/06	1460 ± 226*
DSP-122		05/25/06	1440 ± 139
MW-DN-108I	RERUN	10/17/06	1400 ± 135*
MW-DN-102I		06/01/06	1380 ± 195
MW-DN-104S	RERUN	10/17/06	1350 ± 132*
MW-DN-102S	ORIG	10/18/06	1300 ± 201*
MW-DN-102S	RERUN	10/18/06	1290 ± 227*
MW-DN-118S	ORIG	10/23/06	1280 ± 229*
MW-DN-118S	RERUN	10/23/06	1260 ± 207*
MW-DN-108I	ORIG	10/17/06	1170 ± 194*
MW-DN-107S		05/31/06	1040 ± 165
MW-DN-117I		08/10/06	1030 ± 170*
MW-DN-123I	ORIG	10/17/06	731 ± 144*
DSP-149	RERUN	10/23/06	725 ± 147*
DSP-149R DUP	DUP	05/31/06	694 ± 143
DSP-149R	ORIG	05/31/06	668 ± 144
DSP-149	ORIG	10/23/06	640 ± 132*
MW-DN-111S		05/31/06	638 ± 140
MW-DN-110I	RERUN	10/19/06	571 ± 106*
DSP-159M		05/25/06	531 ± 131
MW-DN-110I		05/30/06	516 ± 134
MW-DN-102I	ORIG	10/18/06	507 ± 130*
MW-DN-117I	ORIG	10/23/06	494 ± 152*
MW-DN-113S	RERUN	10/18/06	492 ± 132*
DSP-159	ORIG	10/23/06	474 ± 125*
MW-DN-111S	RERUN	10/23/06	465 ± 105*
MW-DN-117I	RERUN	10/23/06	459 ± 136*
MW-DN-113S		08/09/06	451 ± 136*
MW-DN-113S	ORIG	10/18/06	439 ± 138*
MW-DN-116S		08/09/06	431 ± 135*
DSP-105	ORIG	10/20/06	428 ± 121*
DSP-125	ORIG	10/24/06	402 ± 116*
MW-DN-123I	RERUN	10/17/06	392 ± 121*
DSP-159	RERUN	10/23/06	391 ± 127*
MW-DN-111S	ORIG	10/23/06	383 ± 134*
SW-DN-107	RERUN	10/17/06	363 ± 99.9*
DSP-148		05/30/06	356 ± 111
MW-DN-110I	ORIG	10/19/06	344 ± 127*
MW-DN-102I	RERUN	10/18/06	327 ± 152*
DSP-125		06/01/06	320 ± 127
DSP-105		05/23/06	319 ± 117
DSP-105	RERUN	10/20/06	302 ± 123*
MW-DN-115S	RERUN	10/19/06	294 ± 124*
DSP-151	ORIG	10/17/06	281 ± 119*
MW-DN-101S	ORIG	10/17/06	265 ± 119*
DSP-125	RERUN	10/24/06	257 ± 150*
DSP-150	ORIG	10/17/06	254 ± 108*

* INDICATED DISTILLED SAMPLE

TABLE B-I.2 **HIGHEST TO LOWEST CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	
MW-DN-115S	RERUN	10/19/06	253 ± 100*
MW-DN-109S		05/31/06	251 ± 120
SW-DN-107	ORIG	10/17/06	247 ± 128*
DSP-155	ORIG	10/23/06	233 ± 119*
MW-DN-101S		05/26/06	220 ± 114
DSP-127	ORIG	10/23/06	217 ± 107*
MW-DN-108I DUP	DUP	08/14/06	210 ± 124*
DSP-148	ORIG	10/23/06	209 ± 101*
MW-DN-123S		10/18/06	< 198 *
MW-DN-122I		10/19/06	< 197 *
SW-DN-102		10/16/06	< 197 *
SW-DN-103		10/16/06	< 197 *
SW-DN-104		10/16/06	< 197 *
SW-DN-105		10/16/06	< 197 *
MW-DN-119S		10/18/06	< 196 *
MW-DN-120S		10/20/06	< 196 *
MW-DN-122S		10/18/06	< 196 *
MW-DN-106S		10/20/06	< 194 *
SW-DN-101		10/16/06	< 194 *
MW-DN-109S		10/18/06	< 193 *
MW-DN-112S		10/17/06	< 192 *
MW-DN-113I		10/23/06	< 192 *
DSP-118		10/20/06	191 ± 108*
MW-DN-115I		10/19/06	191 ± 121*
MW-DN-120I		10/20/06	< 190 *
DSP-150	RERUN	10/17/06	< 187 *
DSP-151	RERUN	10/17/06	< 186 *
DSP-155	RERUN	10/23/06	< 186 *
MW-DN-123I		08/08/06	< 186 *
SW-DN-106		10/16/06	< 186 *
DSP-127	RERUN	10/23/06	< 185 *
MW-DN-101S	RERUN	10/17/06	< 185 *
MW-DN-108I	ORIG	08/14/06	< 184 *
MW-DN-103S DUP	DUP	05/26/06	< 183
MW-DN-119S		08/11/06	< 183 *
MW-DN-123S		08/08/06	< 183 *
MW-DN-113I	ORIG	08/09/06	< 182 *
MW-DN-120I		08/08/06	< 182 *
MW-DN-121S		08/08/06	< 182 *
MW-DN-112S		08/10/06	< 181 *
MW-DN-115I		08/11/06	< 181 *
MW-DN-115S		08/14/06	< 181 *
MW-DN-120S		08/08/06	< 181 *
MW-DN-122S		08/08/06	< 181 *
MW-DN-120I		08/08/06	< 180 *
MW-DN-103I		05/26/06	< 179
MW-DN-122I		08/08/06	< 179 *
MW-DN-103S		10/18/06	< 178 *
MW-DN-105S		06/01/06	< 178
MW-DN-106S		05/26/06	< 178
DSP-156		05/30/06	177 ± 107

* INDICATED DISTILLED SAMPLE

TABLE B-I.2 **HIGHEST TO LOWEST CONCENTRATIONS OF TRITIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE		
MW-DN-103S	ORIG	05/26/06	< 177	
MW-DN-103I		10/18/06	< 176	*
MW-DN-108I		05/26/06	< 176	
MW-DN-113I DUP	DUP	08/09/06	< 176	*
MW-DN-104S		05/30/06	< 173	
DSP-148	RERUN	10/23/06	< 172	*
MW-DN-110S		05/30/06	< 172	
SW-DN-102		05/31/06	< 171	
SW-DN-103		05/31/06	< 171	
DSP-159S		05/31/06	< 170	
SW-101		05/31/06	< 170	
SW-DN-107		06/01/06	< 170	
SW-DN-104		06/01/06	< 168	
SW-DN-106		06/01/06	< 168	
DSP-155		05/25/06	< 167	
DSP-118		05/25/06	< 166	
DSP-152		05/23/06	< 166	
DSP-117		05/26/06	< 165	
DSP-121		05/26/06	< 165	
SW-DN-105		06/01/06	< 165	
DSP-157M		05/23/06	< 164	
DSP-126		05/24/06	< 163	
DSP-127		05/30/06	< 163	
DSP-157S		05/23/06	< 163	
DSP-158M		05/25/06	< 163	
DSP-151		05/24/06	< 162	
DSP-154		05/25/06	< 162	
DSP-150		05/24/06	< 161	
MW-DN-121S		10/21/06	< 160	*
DSP-158S		05/25/06	< 159	
DSP-153		05/24/06	< 158	
DSP-147		05/30/06	< 156	
DSP-158		10/19/06	< 149	*
DSP-157		10/19/06	< 148	*
DSP-117		10/23/06	< 147	*
DSP-152		10/19/06	< 147	*
DSP-154		10/20/06	< 147	*
DSP-156		10/23/06	< 147	*
DSP-157		10/20/06	< 146	*
DSP-159		10/24/06	< 146	*
DSP-121		10/20/06	< 145	*
DSP-126		10/18/06	< 145	*
DSP-153		10/17/06	< 145	*
DSP-158		10/19/06	< 142	*

* INDICATED DISTILLED SAMPLE

TABLE B-I.3 CONCENTRATIONS OF TRITIUM IN SENTINEL WELL AND SEWER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SITE	COLLECTION DATE	H-3	SITE	COLLECTION DATE	H-3	SITE	COLLECTION DATE	H-3
E-7	04/10/06	1,800	R-1	07/14/06	9,300	T-6	01/03/06	17,000	W-3	01/03/06	7,000
E-7	04/14/06	300	R-1	07/17/06	12,000	T-6	01/31/06	86,000	W-3	01/31/06	21,000
E-7	04/24/06	400	R-1	07/25/06	19,000	T-6	02/12/06	124,000	W-3	03/08/06	66,800
E-7	05/04/06	1,100	R-1	07/31/06	2,650	T-6	02/13/06	131,800	W-3	04/03/06	120,600
E-7	05/08/06	900	R-1	08/07/06	1,700	T-6	02/14/06	134,300	W-3	04/04/06	159,200
E-7	05/11/06	700	R-1	08/15/06	6,500	T-6	02/15/06	128,300	W-3	04/07/06	224,200
E-7	05/15/06	500	R-1	08/23/06	3,000	T-6	02/16/06	102,300	W-3	04/20/06	224,500
E-7	05/18/06	900	R-1	09/12/06	6,100	T-6	02/17/06	11,200	W-3	04/21/06	228,700
E-7	05/25/06	700	R-1	09/22/06	1,500	T-6	02/18/06	24,800	W-3	04/24/06	110,000
E-7	06/02/06	300	R-1	09/29/06	60,000	T-6	02/19/06	48,300	W-3	04/27/06	265,000
E-7	06/05/06	300	R-1	11/03/06	31,000	T-6	02/20/06	56,000	W-3	05/08/06	220,000
E-7	06/08/06	1,200	R-1	11/09/06	19,000	T-6	02/23/06	35,000	W-3	05/11/06	280,000
E-7	06/15/06	300	R-1	12/03/06	600	T-6	04/13/06	220,000	W-3	05/15/06	98,000
E-7	06/19/06	400	R-1	12/13/06	21,000	T-6	04/14/06	220,000	W-3	05/18/06	52,000
E-7	07/06/06	500	R-1	12/15/06	25,000	T-6	04/17/06	110,000	W-3	05/25/06	180,000
E-7	07/11/06	800	R-1	12/27/06	21,200	T-6	04/19/06	190,000	W-3	06/01/06	70,000
E-7	07/25/06	1,100				T-6	04/21/06	9,800	W-3	06/05/06	65,000
E-7	07/31/06	1,950				T-6	04/21/06	5,800	W-3	06/08/06	250,000
E-7	08/07/06	1,000				T-6	04/24/06	170,000	W-3	06/15/06	13,000
E-7	08/23/06	200				T-6	04/27/06	130,000	W-3	06/19/06	180,000
E-7	08/31/06	200				T-6	05/04/06	39,000	W-3	07/06/06	140,000
E-7	09/07/06	200				T-6	05/08/06	64,000	W-3	07/11/06	80,000
E-7	09/12/06	200				T-6	05/15/06	9,100	W-3	07/17/06	66,000
E-7	09/22/06	500				T-6	05/18/06	5,100	W-3	07/31/06	18,000
E-7	09/29/06	0				T-6	05/25/06	160,000	W-3	08/02/06	19,000
E-7	10/03/06	1,100				T-6	06/02/06	22,000	W-3	08/03/06	31,000
E-7	10/16/06	300				T-6	06/05/06	140,000	W-3	08/07/06	41,000
E-7	10/26/06	1,600				T-6	06/08/06	160,000	W-3	08/23/06	29,000
E-7	11/03/06	500				T-6	06/15/06	120,000	W-3	09/18/06	6,300
E-7	11/09/06	1,100				T-6	06/19/06	86,000	W-3	09/29/06	26,000
E-7	12/03/06	200				T-6	07/06/06	3,900	W-3	10/04/06	38,000
E-7	12/15/06	300				T-6	07/14/06	13,000	W-3	10/10/06	49,000
E-7	12/27/06	1,000				T-6	07/17/06	7,300	W-3	10/16/06	54,000
						T-6	07/25/06	7,000	W-3	10/27/06	36,000
						T-6	07/31/06	5,150	W-3	11/02/06	39,000
						T-6	08/03/06	5,800	W-3	11/10/06	34,000
						T-6	08/07/06	4,700	W-3	12/03/06	27,000
						T-6	08/15/06	5,000	W-3	12/15/06	21,000
						T-6	08/23/06	3,800	W-3	12/27/06	27,000
						T-6	09/12/06	81,000	W-3		
						T-6	09/18/06	11,000	W-3		
						T-6	10/06/06	52,000	W-3		
						T-6	10/16/06	36,000	W-3		
						T-6	11/03/06	1,700	W-3		
						T-6	11/09/06	2,800	W-3		
						T-6	12/27/06	1,700	W-3		

TABLE B-I.3 CONCENTRATIONS OF TRITIUM IN SENTINEL WELL SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3	SITE	COLLECTION DATE	H-3	SITE	COLLECTION DATE	H-3	SITE	COLLECTION DATE	H-3
W-2R	01/03/06	93,000	DSP-124	02/16/06	9,300	DSP-131	04/13/06	800	DSP-132	03/03/06	710
W-2R	01/31/06	60,000	DSP-124	02/17/06	12,000	DSP-131	04/17/06	1,000	DSP-132	04/13/06	700
W-2R	02/13/06	63,800	DSP-124	02/18/06	12,200	DSP-131	04/24/06	800	DSP-132	04/17/06	1,000
W-2R	03/30/06	99,400	DSP-124	02/19/06	10,300	DSP-131	04/27/06	800	DSP-132	04/24/06	600
W-2R	03/31/06	97,100	DSP-124	02/20/06	9,800	DSP-131	05/04/06	1,100	DSP-132	04/27/06	1,100
W-2R	04/01/06	123,400	DSP-124	02/21/06	9,500	DSP-131	05/08/06	500	DSP-132	05/04/06	1,100
W-2R	04/02/06	121,200	DSP-124	02/22/06	11,100	DSP-131	05/11/06	1,200	DSP-132	05/08/06	600
W-2R	04/03/06	121,400	DSP-124	02/23/06	9,700	DSP-131	05/15/06	460	DSP-132	05/11/06	300
W-2R	04/04/06	104,300	DSP-124	04/13/06	8,000	DSP-131	05/18/06	500	DSP-132	05/15/06	460
W-2R	04/05/06	105,800	DSP-124	04/14/06	8,200	DSP-131	05/25/06	1,100	DSP-132	05/18/06	300
W-2R	04/06/06	88,200	DSP-124	04/24/06	3,700	DSP-131	06/01/06	900	DSP-132	05/25/06	500
W-2R	04/07/06	120,600	DSP-124	04/27/06	3,500	DSP-131	06/05/06	700	DSP-132	06/01/06	600
W-2R	04/08/06	141,100	DSP-124	05/04/06	3,000	DSP-131	06/08/06	900	DSP-132	06/05/06	500
W-2R	04/09/06	155,600	DSP-124	05/08/06	2,400	DSP-131	06/15/06	700	DSP-132	06/08/06	700
W-2R	04/10/06	103,500	DSP-124	05/11/06	3,500	DSP-131	06/19/06	700	DSP-132	06/15/06	700
W-2R	04/14/06	91,000	DSP-124	05/15/06	3,700	DSP-131	07/06/06	500	DSP-132	06/19/06	600
W-2R	04/17/06	88,000	DSP-124	05/18/06	3,300	DSP-131	07/11/06	700	DSP-132	07/06/06	1,700
W-2R	04/19/06	93,000	DSP-124	05/25/06	5,800	DSP-131	07/17/06	700	DSP-132	07/11/06	700
W-2R	04/24/06	61,000	DSP-124	06/01/06	12,000	DSP-131	07/25/06	1,100	DSP-132	07/17/06	1,100
W-2R	04/27/06	84,000	DSP-124	06/05/06	14,000	DSP-131	07/31/06	900	DSP-132	07/25/06	1,100
W-2R	05/04/06	53,000	DSP-124	06/15/06	15,000	DSP-131	07/31/06	800	DSP-132	07/31/06	750
W-2R	05/08/06	67,000	DSP-124	06/19/06	15,000	DSP-131	08/07/06	1,000	DSP-132	08/03/06	500
W-2R	05/11/06	87,000	DSP-124	07/06/06	14,000	DSP-131	08/15/06	700	DSP-132	08/07/06	1,000
W-2R	05/15/06	47,000	DSP-124	07/11/06	12,000	DSP-131	08/23/06	600	DSP-132	08/15/06	900
W-2R	05/18/06	28,000	DSP-124	07/17/06	11,000	DSP-131	08/31/06	600	DSP-132	08/23/06	600
W-2R	05/25/06	49,000	DSP-124	07/25/06	11,000	DSP-131	09/07/06	900	DSP-132	08/31/06	800
W-2R	06/01/06	20,000	DSP-124	07/31/06	10,000	DSP-131	09/12/06	500	DSP-132	09/07/06	700
W-2R	06/05/06	27,000	DSP-124	08/07/06	11,000	DSP-131	09/22/06	300	DSP-132	09/12/06	600
W-2R	06/08/06	39,000	DSP-124	09/18/06	11,000	DSP-131	09/29/06	200	DSP-132	09/22/06	700
W-2R	06/15/06	290,000	DSP-124	09/29/06	9,400	DSP-131	10/03/06	1,100	DSP-132	09/29/06	400
W-2R	06/19/06	46,000	DSP-124	10/04/06	8,000	DSP-131	10/10/06	500	DSP-132	10/03/06	1,100
W-2R	07/06/06	17,000	DSP-124	10/10/06	6,900	DSP-131	10/16/06	400	DSP-132	10/10/06	500
W-2R	07/11/06	19,000	DSP-124	10/16/06	9,300	DSP-131	10/26/06	300	DSP-132	10/16/06	600
W-2R	07/17/06	14,000	DSP-124	10/23/06	5,600	DSP-131	10/31/06	400	DSP-132	10/23/06	400
W-2R	07/25/06	8,300	DSP-124	10/27/06	6,100	DSP-131	11/09/06	300	DSP-132	10/31/06	900
W-2R	07/31/06	16,000	DSP-124	11/02/06	6,300	DSP-131	12/15/06	700	DSP-132	11/09/06	900
W-2R	08/02/06	16,000	DSP-124	11/09/06	8,867	DSP-131	12/27/06	100	DSP-132	12/02/06	400
W-2R	08/03/06	15,000	DSP-124	12/03/06	10,000				DSP-132	12/27/06	200
W-2R	08/07/06	11,000	DSP-124	12/13/06	13,000						
W-2R	08/23/06	9,800	DSP-124	12/27/06	16,000						
W-2R	09/18/06	9,000									
W-2R	09/29/06	20,000									
W-2R	10/04/06	33,000									
W-2R	10/10/06	36,000									
W-2R	10/16/06	35,000									
W-2R	10/27/06	19,000									
W-2R	11/02/06	17,000									
W-2R	11/10/06	8,800									
W-2R	12/03/06	3,600									
W-2R	12/27/06	3,900									

TABLE B-I.4 CONCENTRATIONS OF STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	
DSP-151		10/17/06	2.6 ± 0.7
DSP-155		05/25/06	0.7 ± 0.4
MW-DN-108I		05/26/06	4.4 ± 1.2
MW-DN-108I		05/26/06	3.4 ± 0.8
MW-DN-108I	ORIG	08/14/06	3.2 ± 1.0
MW-DN-108I	ORIG RERUN	08/14/06	3.5 ± 0.6
MW-DN-108I DUP	DUP	08/14/06	2.7 ± 1.0
MW-DN-108I DUP	DUP RERUN	08/14/06	4.2 ± 0.9
MW-DN-108I		10/17/06	2.7 ± 1.2

TABLE B-I.5 **HIGHEST TO LOWEST CONCENTRATIONS OF STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	
MW-DN-108I		05/26/06	4.4 ± 1.2
MW-DN-108I DUP	DUP RERUN	08/14/06	4.2 ± 0.9
MW-DN-108I	ORIG RERUN	08/14/06	3.5 ± 0.6
MW-DN-108I		05/26/06	3.4 ± 0.8
MW-DN-108I	ORIG	08/14/06	3.2 ± 1.0
MW-DN-108I DUP	DUP	08/14/06	2.7 ± 1.0
MW-DN-108I		10/17/06	2.7 ± 1.2
DSP-151		10/17/06	2.6 ± 0.7
DSP-155		05/25/06	0.7 ± 0.4

TABLE B-I.6 **CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006**

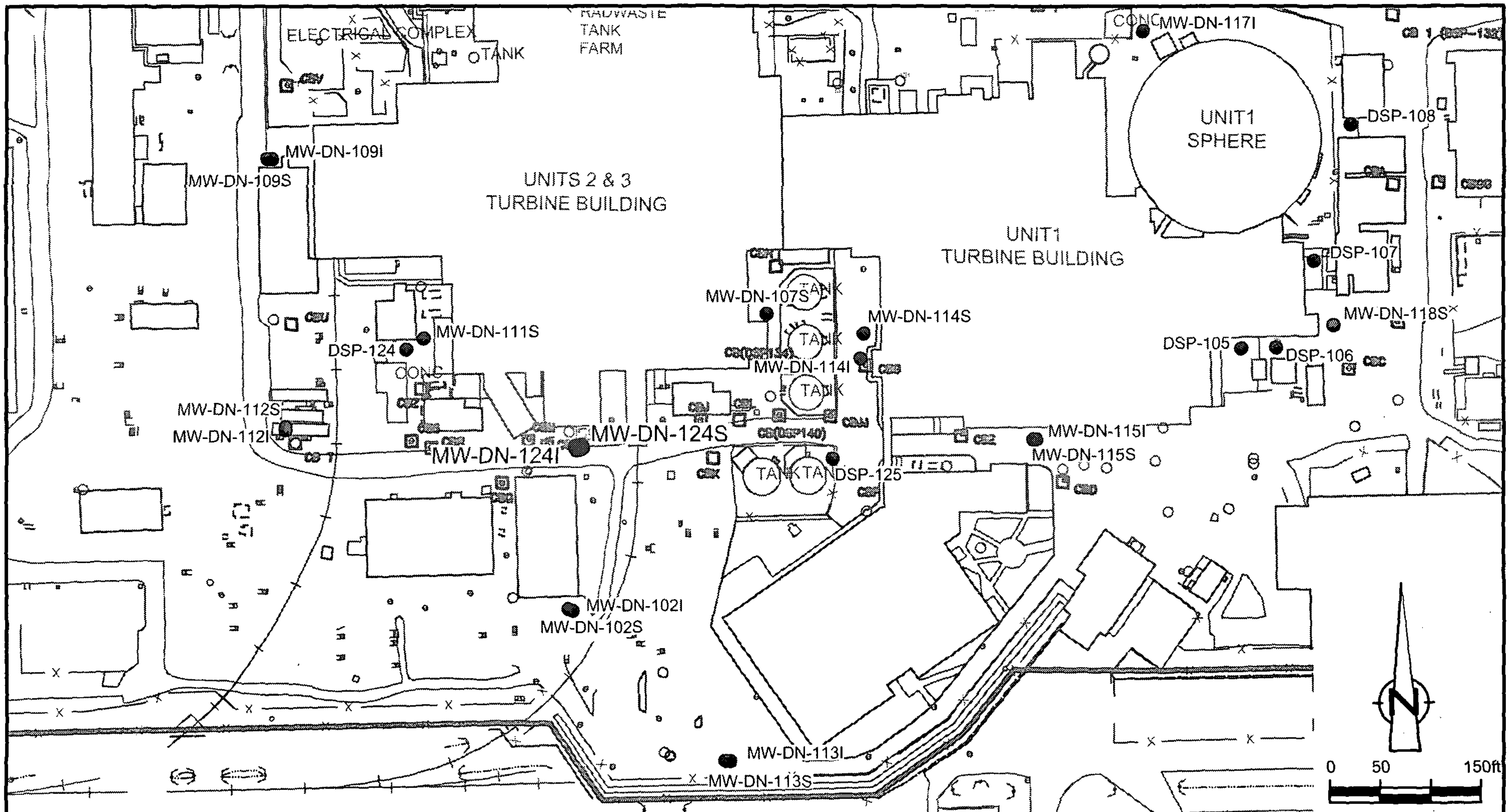
RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	BE-7	K-40	CO-60
DSP-118	10/20/06	-	57 ± 38	-
DSP-121	05/26/06	-	64 ± 46	-
DSP-122	05/25/06	-	59 ± 53	-
DSP-123	05/26/06	-	75 ± 49	-
DSP-126	05/24/06	-	64 ± 42	-
DSP-127	05/30/06	-	38 ± 35	-
DSP-149	10/23/06	-	50 ± 43	-
DSP-154	05/25/06	-	68 ± 51	-
DSP-156	05/30/06	-	68 ± 46	-
DSP-158M	05/25/06	-	165 ± 26	-
DSP-159	10/23/06	-	82 ± 51	-
MW-DN-101I	05/26/06	-	45 ± 38	-
MW-DN-102S	06/01/06	-	44 ± 36	-
MW-DN-102S	10/18/06	-	89 ± 56	-
MW-DN-103S	10/18/06	-	110 ± 48	-
MW-DN-106S	10/20/06	-	69 ± 52	-
MW-DN-107S	05/31/06	-	43 ± 34	-
MW-DN-107S	10/17/06	-	-	4 ± 3
MW-DN-108I	05/26/06	-	44 ± 35	-
MW-DN-109I	10/19/06	-	78 ± 68	-
MW-DN-111S	10/23/06	-	62 ± 51	-
MW-DN-113I	08/09/06	-	60 ± 36	-
MW-DN-113S	10/18/06	-	54 ± 36	-
MW-DN-115I	10/19/06	-	76 ± 28	-
MW-DN-115S	10/19/06	-	53 ± 52	-
MW-DN-117I	10/23/06	-	90 ± 53	-
MW-DN-120I	08/08/06	-	103 ± 50	-
MW-DN-120S	08/08/06	-	55 ± 44	-
MW-DN-121S	10/21/06	-	36 ± 25	-
MW-DN-122I	08/08/06	-	104 ± 48	-
MW-DN-122I	10/19/06	-	118 ± 70	-
SW-DN-103	10/16/06	-	119 ± 77	-
SW-DN-105	06/01/06	-	84 ± 43	-
SW-DN-105	10/16/06	-	332 ± 55	-

TABLE B-I.7 **HIGHEST TO LOWEST CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF DRESDEN NUCLEAR POWER STATION, 2006**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	K-40	CO-60
SW-DN-105	10/16/06	332 ± 55	-
DSP-158M	05/25/06	165 ± 26	-
SW-DN-103	10/16/06	119 ± 77	-
MW-DN-122I	10/19/06	118 ± 70	-
MW-DN-103S	10/18/06	110 ± 48	-
MW-DN-122I	08/08/06	104 ± 48	-
MW-DN-120I	08/08/06	103 ± 50	-
MW-DN-117I	10/23/06	90 ± 53	-
MW-DN-102S	10/18/06	89 ± 56	-
SW-DN-105	06/01/06	84 ± 43	-
DSP-159	10/23/06	82 ± 51	-
MW-DN-109I	10/19/06	78 ± 68	-
MW-DN-115I	10/19/06	76 ± 28	-
DSP-123	05/26/06	75 ± 49	-
MW-DN-106S	10/20/06	69 ± 52	-
DSP-156	05/30/06	68 ± 46	-
DSP-154	05/25/06	68 ± 51	-
DSP-126	05/24/06	64 ± 42	-
DSP-121	05/26/06	64 ± 46	-
MW-DN-111S	10/23/06	62 ± 51	-
MW-DN-113I	08/09/06	60 ± 36	-
DSP-122	05/25/06	59 ± 53	-
DSP-118	10/20/06	57 ± 38	-
MW-DN-120S	08/08/06	55 ± 44	-
MW-DN-113S	10/18/06	54 ± 36	-
MW-DN-115S	10/19/06	53 ± 52	-
DSP-149	10/23/06	50 ± 43	-
MW-DN-101I	05/26/06	45 ± 38	-
MW-DN-102S	06/01/06	44 ± 36	-
MW-DN-108I	05/26/06	44 ± 35	-
MW-DN-107S	05/31/06	43 ± 34	-
DSP-127	05/30/06	38 ± 35	-
MW-DN-121S	10/21/06	36 ± 25	-
MW-DN-107S	10/17/06	-	4 ± 3



LEGEND

FENCE

RAILROAD

PROTECTED AREA

ELECTRICAL TOWER

SANITARY MANHOLE

STORM WATER CATCH BASIN

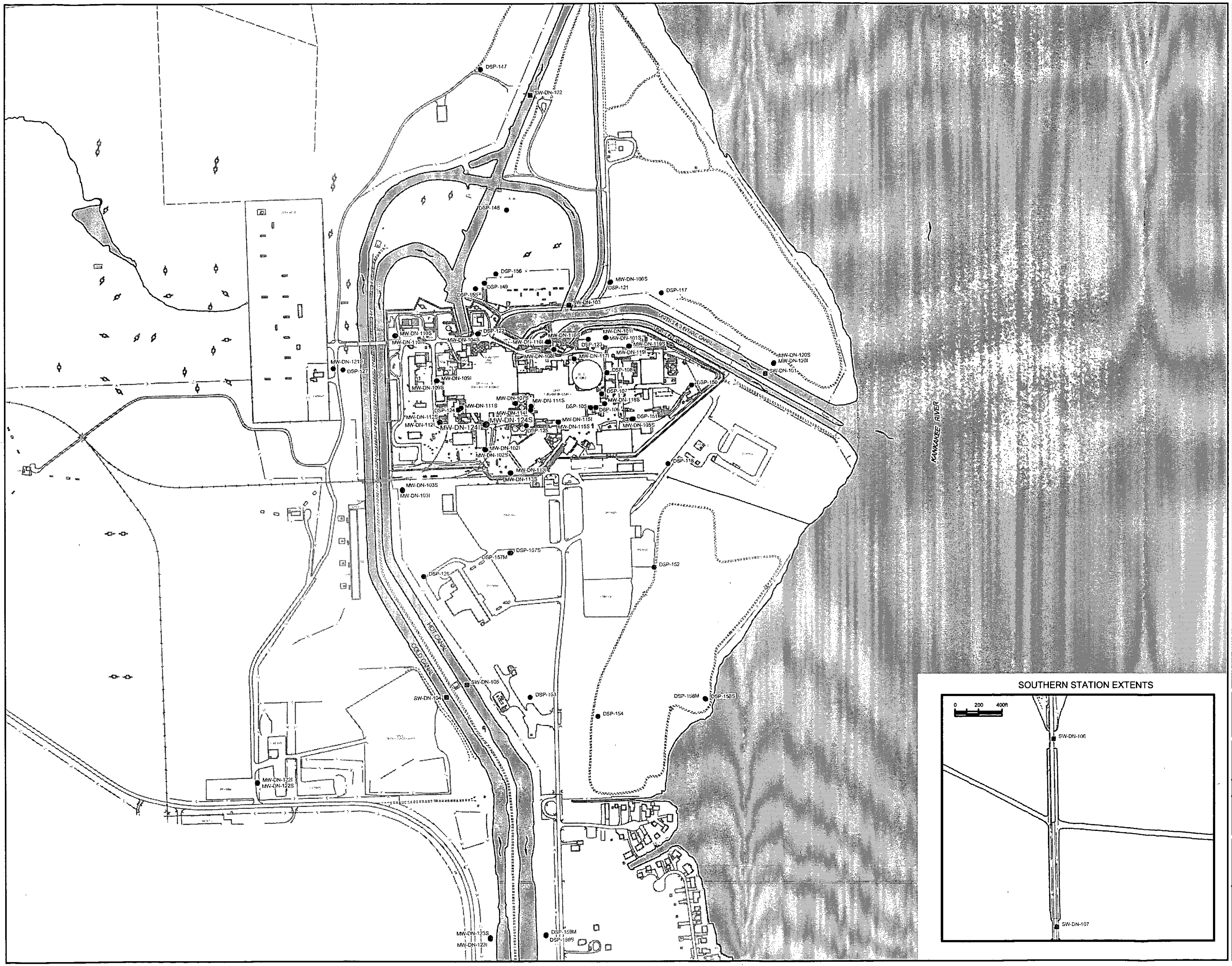
MW-DN-109S MONITORING WELL
S - SHALLOW
I - INTERMEDIATE

SECURITY-RELATED INFORMATION
WITHHOLD FROM PUBLIC DISCLOSURE
UNDER 10 CFR 2.390 AND
5 ILCS 140/7(1)(a) & (mm)

figure 2

PARTIAL SITE PLAN
DRESDEN GENERATING STATION
Morris, Illinois

45136-73(MEMO007)GN-CO002 FEB 08/2007



0 150 300ft

LEGEND

- EDGE OF WATER
- FENCE
- TRAIL
- RAILROAD
- PROTECTED AREA
- ELECTRICAL TOWER
- SANITARY MANHOLE
- STORM WATER CATCH BASIN
- MW-DN-109S MONITORING WELL
  - S - SHALLOW
  - I - INTERMEDIATE
- SW-DN-101 SURFACE WATER LOCATION
- SURFACE WATER FLOW DIRECTION

SECURITY-RELATED INFORMATION WITHHOLD FROM PUBLIC DISCLOSURE UNDER 10 CFR 2.390 AND 5 ILCS 140/7(1)(a) & (mm)

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

EXELON GENERATION COMPANY, LLC

FLEETWIDE ASSESSMENT

UPDATED GROUNDWATER MONITORING LOCATIONS
DRESDEN GENERATING STATION
MORRIS, ILLINOIS

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:
SDI CONSULTANTS LTD., ALTA/ACSM LAND TITLE SURVEY, DRESDEN NUCLEAR STATION, 9-15-00

Project Manager:	Reviewed By:	Date:	
P. HARVEY	K. DUWAL	FEBRUARY 2007	
Scale: AS SHOWN	Project Nº: 45136-73	Report Nº: MEMO007	Drawing Nº: figure 1

REVISION 0

45136-73(MEMO007)GN-CO001 FEB 08/2007