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

THREE MILE ISLAND NUCLEAR STATION UNITS 1 AND 2
OPERATING LICENSE NO. DPR-50 AND POSSESSION ONLY LICENSE NO. DPR-73
DOCKET NOS. 50-289 AND 50-320

SUBJECT: 2007 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM REPORT

In accordance with TMI-1 Technical Specification 6.9.3.1 and TMI-2 Technical Specification 6.8.1.1, enclosed is the Annual Radiological Environmental Operating Report covering the time-period of January 1 through December 31, 2007, for the Three Mile Island Nuclear Station.

Please contact Laura Weber of TMI-1 Chemistry at (717) 948-8947 if you have any questions regarding this submittal.

Sincerely,

Thomas J. Dougherty
Plant Manager

TJD/awm

Enclosure

cc: Region I Administrator
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IE25
NRR

Docket No: 50-289
50-320

THREE MILE ISLAND NUCLEAR STATION
UNITS 1 and 2

Annual Radiological
Environmental Operating Report

1 January Through 31 December 2007

Prepared By
Teledyne Brown Engineering
Environmental Services

AmerGen SM
An Exelon Company

Three Mile Island Nuclear Station
Middletown, PA 17057

April 2008

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I. Summary and Conclusions

This report on the Radiological Environmental Monitoring Program conducted for the Three Mile Island Nuclear Station (TMINS) by AmerGen covers the period 1 January 2007 through 31 December 2007. During that time period, 1,718 analyses were performed on 1318 samples. In assessing all the data gathered for this report and comparing these results with preoperational data and operational REMP data, it was concluded that the operation of TMINS had no adverse radiological impact on the environment.

Surface, drinking, effluent, and storm water samples were analyzed for concentrations of tritium and gamma emitting nuclides. Surface, drinking, and effluent water samples were also analyzed for concentrations of I-131. Drinking and effluent water samples were also analyzed for concentrations of gross beta. Effluent water samples were also analyzed for concentrations of Sr-89 and Sr-90. All groundwater results are now being reported in the ARGPPR, Appendix F. No I-131, Sr-89 and Sr-90 activities were detected. Gross beta concentrations detected were consistent with those detected in previous years. Tritium activity in several monthly surface water, drinking water, effluent water and storm water samples was due to TMINS activities or releases. The calculated dose due to the drinking water samples was <0.008 mrem. This dose is a small fraction of the 10 CFR 50 Appendix I dose limits. No other fission or activation products potentially attributed to TMI release were detected.

Fish (predator and bottom feeder) and sediment samples were analyzed for concentrations of gamma emitting nuclides. Fish samples were also analyzed for concentrations of Sr-90. No Sr-90 activity was detected. No fission or activation products were detected in fish samples. Cesuim-137 was detected in sediment samples at very low levels (just above LLD) and are not distinguishable from background levels.

Air particulate samples were analyzed for concentrations of gross beta and gamma emitting nuclides. Cosmogenic Be-7 was detected at levels consistent with those detected in previous years. No fission or activation products were detected.

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

Cow milk samples were analyzed for concentrations of I-131, gamma emitting nuclides, Sr-89 and Sr-90. No I-131 and Sr-89 activities were detected. Concentrations of naturally occurring K-40 were consistent with those detected in previous years. Sr-90 activities detected were consistent with those detected in previous years and were attributed to fallout from nuclear weapons testing. No other fission or activation products were found.

Food Product samples were analyzed for concentrations of gamma emitting nuclides (including I-131) and Sr-90. Sr-90 activities were detected in both the indicator and control samples. This was a result of plant uptake of Sr-90 in soil as a result of past nuclear weapons testing. Concentrations of naturally occurring K-40 were consistent with those detected in previous years. 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.

In conclusion, radioactive materials related to TMINS operations were detected in environmental samples, but the measured concentrations were low and consistent with measured effluents. The environmental sample results verified that the doses received by the public from TMINS effluents in 2007 were well below applicable dose limits and only a small fraction of the doses received from natural background radiation. Additionally, the results indicated that there was no permanent buildup of radioactive materials in the environment and no increase in background radiation levels.

Therefore, based on the results of the radiological environmental monitoring program (REMP) and the doses calculated from measured effluents, TMINS operations in 2007 did not have any adverse effects on the health of the public or on the environment.

II. Introduction

The Three Mile Island Nuclear Station (TMINS), consisting of two pressurized water reactors (PWR), is located on the northern one-half of Three Mile Island in the Susquehanna River approximately 2.5 miles south of Middletown in Londonderry Township, Dauphin County, Pennsylvania. TMI-1 is owned and operated by AmerGen and became operational in 1974. TMI-2 is operated by GPU Nuclear, Inc. and owned by Metropolitan Edison (50%), Pennsylvania Electric (25%) and Jersey Central Power & Light (25%). TMI-2 became operational in 1978 and was shut down following the 1979 accident. At the end of 1993, TMI-2 was placed in a condition called Post-Defueling Monitored Storage. TMI-2 is maintained by Amergen under contract with GPU Nuclear.

A Radiological Environmental Monitoring Program (REMP) for TMINS was initiated in 1974. This report covers those analyses performed by Teledyne Brown Engineering (TBE), Global Dosimetry Solutions, Inc., and Environmental Inc. (Midwest Labs) on samples collected during the period 1 January 2007 through 31 December 2007.

A. Objective of the REMP

The objectives of the REMP are to:

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

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

3. To verify inplant controls for the containment of radioactive materials.

4. To determine buildup of long-lived radionuclides in the environment and changes in background radiation levels.

5. To provide reassurance to the public that the program is capable of adequately assessing impacts and identifying noteworthy changes in the radiological status of the environment.

6. To fulfill the requirements of the TMI-1 and TMI-2 Technical Specifications.

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 TMINS REMP were collected for AmerGen by Normandeau Associates, RMC Environmental Services Division (RMC). This section describes the general collection methods used by RMC to obtain environmental samples for the TMINS REMP in 2007. Sample locations and descriptions can be found in Tables B–1 and B–2, and Figures B–1 through B–3, Appendix B. The collection procedures used by RMC are listed in Table B–3.

Aquatic Environment

The aquatic environment was evaluated by performing radiological analyses on samples of surface water, drinking water, effluent water, storm water, fish, and sediment. Two gallon water samples were collected monthly from continuous samplers located at three surface water locations (A3-2, J1-2 and Q9-1), three drinking water locations (G15-2, G15-3 and Q9-1), and one effluent water location (K1-1). Control locations were A3-2 and Q9-1. Quarterly water samples were taken from one storm water runoff location (EDCB). All groundwater results are now being reported in the ARGPPR, Appendix F. All water samples were collected in either new amber glass or unused plastic bottles, which were rinsed at least twice with source water prior to collection. Fish samples comprising the flesh of two groups, bottom feeders and predators, were collected semiannually at an upstream control (BKG) and a downstream Indicator (IND) location. Location IND could be affected by TMINS' effluent releases. Sediment samples composed of recently deposited substrate were collected semiannually at three locations (J2-1, K1-3 and A1-3). In addition, one sediment sample was collected annually at the EDCB. Location A1-3 was

the control.

Atmospheric Environment

The atmospheric environment was evaluated by performing radiological analyses on samples of air particulates, airborne iodine, milk, and food product. Airborne iodine and particulate samples were collected and analyzed weekly at seven locations (A3-1, E1-2, F1-3, G2-1, H3-1, M2-1, and Q15-1). The control location was Q15-1. 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 filters were replaced weekly and sent to the laboratory for analysis.

Milk samples were collected biweekly at five locations (K15-3, D2-1, E2-2, F4-1, and G2-1) from March through November, and monthly from December through February. The control location was K15-3. All samples were collected in new unused two gallon plastic bottles from the bulk tank at each location, preserved with sodium bisulfite, and shipped promptly to the laboratory.

Food products were collected monthly at two locations (B10-2 and H1-2), in lieu of milk sampling, and annually from the four food product groups at two locations (E1-2 and B10-2). The control location was B10-2 was the control location for both annual and monthly sampling. Four different kinds of vegetation samples and seven different kinds of vegetation leaves 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 Panasonic 814 calcium sulfate ($CaSO_4$) thermoluminescent dosimeters (TLD). The TLD locations are arranged in generally concentric rings on and around the TMINS site as follows:

A site boundary ring consisting of 18 locations (A1-4, B1-2, C1-2, D1-1, E1-4, F1-2, F1-4, G1-3, G1-5, G1-6, J1-3, K1-4, L1-1, M1-1, N1-3, P1-2, Q1-2, and R1-1) near and within the site perimeter representing fence post doses (i.e., at locations where the doses will be potentially greater than maximum annual off–site doses) from TMINS release.

An indicator ring consisting of 61 locations (A3-1, A5-1, A9-3, B1-1, B2-1, B5-1, B10-1, C1-1, C2-1, C5-1, C8-1, D1-2, D2-2, D6-1, E1-2, E2-3, E5-1,

E7-1, F1-1, F2-1, F5-1, F10-1, G1-2, G2-4, G5-1, H1-1, H3-1, H5-1, H8-1, J1-1, J3-1, J5-1, J7-1 K2-1, K3-1, K5-1, K8-1, L1-2, L2-1, L5-1, L8-1, M1-2, M2-1, M5-1, M9-1, N1-1, N2-1, N5-1, N8-1, P1-1, P2-1, P5-1, P8-1, Q1-1, Q2-1, Q5-1, Q9-1, R1-2, R3-1, R5-1, and R9-1) extending to approximately 10 miles from the site designed to measure possible exposures to close-in population.

The balance of 11 locations (D15-1, F25-1, G10-1, G15-1, H15-1, J15-1, K15-1, L15-1, N15-2, Q15-1, and R15-1) represent control areas.

The specific TLD locations were determined by the following criteria:

1. The presence of relatively dense population;

2. Site meteorological data taking into account distance and elevation for each of the sixteen–22 1/2 degree sectors around the site, where estimated annual dose from TMINS, if any, would be most significant;

3. On hills free from local obstructions and within sight of the vents (where practical);

4. And near the closest dwelling to the vents in the prevailing downwind direction.

Each TLD station consists of two primary program TLD badges, each of which has three $CaSO_4$ thermoluminescent phosphors enclosed in plastic, placed at each location in a frame located approximately three to six feet above ground level. Since each TLD responds to radiation independently, this provides six independent detectors at each station. The TLDs were exchanged quarterly and sent to Global Dosimetry for analysis.

B. Sample Analysis

This section describes the general analytical methods used by TBE and Midwest Labs to analyze the environmental samples for radioactivity for the TMINS REMP in 2007. The analytical procedures used by the laboratories are listed in Table B–3.

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

1. Concentrations of beta emitters in drinking and effluent water, and air particulates.

2. Concentrations of gamma emitters in surface, drinking, effluent, and storm water, air particulates, milk, fish, sediment, and food products.

3. Concentrations of tritium in surface, drinking, effluent, and storm water.

4. Concentrations of I-131 in surface, drinking, and effluent water, air, milk and food products.

5. Concentrations of strontium in effluent water, fish, milk, and food products.

6. Ambient gamma radiation levels at various site environs.

C. Data Interpretation

Data were compared to previous years' operational data for consistency and trending. In addition, comparison to pre-operational data is sometimes made. For the purpose of this report, TMINS 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) 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 TMINS detection capabilities for environmental sample analysis.

The minimum detectable concentration (MDC) is defined above 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 surface, drinking, effluent, storm, and ground water 11 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Zr-95, Nb-95, Cs-134, Cs-137, Ba-140 and La-140 were reported.

For fish eight nuclides, K-40, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Cs-134 and Cs-137 were reported.

For sediment six nuclides, K-40, Mn-54, Co-58, Co-60, Cs-134 and Cs-137 were reported.

For air particulate six nuclides, Be-7, Mn-54, Co-58, Co-60, Cs-134 and Cs-137 were reported.

For milk five nuclides, K-40, Cs-134, Cs-137, Ba-140 and La-140 were reported.

For food products four nuclides, K-40, I-131, Cs-134 and Cs-137 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 2007 the TMINS REMP had a sample recovery rate in excess of 99%. Exceptions are listed below:

<u>AIR</u>

1. G2-1 air particulate and air iodine samples – During the weekly sampling period, the sample station was found with a fuse blown. The sample pump was replaced. Samples were sent for analysis with a low volume for the following period:
   06/26/07 – 07/04/07

2. F1-3 air particulate and air iodine samples – During the weekly sampling period, no sample was available for this station. The sample pump failed and was replaced for the following period:

09/12/07 – 09/19/07

2. F1-3 air particulate and air iodine samples – During the weekly sampling period, the sample station was found with a fuse blown. The sample pump was replaced. Samples were sent for analysis with a low volume for the following period:
   11/14/07 – 11/20/07

WATER

1. TM-SW-Q9-1 surface water - During weekly sampling periods several hourly composite samples were missed due to unknown power losses and sediment blocking flow. No grab samples were required for the following periods:
   01/23/07 – 01/30/07
   04/17/07 – 04/24/07
   04/24/07 – 05/01/07

2. TM-DW-Q9-1 drinking water – During weekly sampling periods several composite samples were missed due to unknown power loss. No grab samples were required for the following periods:
   01/23/07 – 01/30/07
   04/17/07 – 04/24/07

3. TM-SW-J1-2 surface water – During weekly sampling periods hourly composite samples were missed due to the suction line freezing and becoming dislodged from its anchor during ice flows. Samples were also missed when trying to reposition the suction line, reattaching it to the anchor and during insulation installation and replacement of a broken heat trace. At no time was a grab sample required, there was always sufficient volume for the following periods:
   01/23/07 – 01/30/07
   01/30/07 – 02/06/07
   02/06/07 – 02/13/07
   02/13/07 – 02/20/07
   02/20/07 – 02/27/07
   02/27/07 – 03/06/07
   03/06/07 – 03/13/07
   03/27/07 – 04/03/07
   04/17/07 – 04/24/07
   11/13/07 – 11/21/07
   11/27/07 – 12/03/07
   12/03/07 – 12/11/07
   12/11/07 – 12/18/07
   12/18/07 – 12/24/07

4. TM-EW-K1-1 effluent water – During the sampling period, the effluent sampler was found stopped or missing hourly composite samples due to power interruptions and construction activities in the area and pump jammed error. No grab samples were required for the following periods:
   01/16/07 – 01/23/07
   07/03/07 – 07/10/07

5. TM-SW-A3-2 surface water – During the weekly sampling period no sample was available. The sample line was out of the water apparently as a result of a fisherperson snagging the line. The sample line was repositioned and returned to service. A grab sample was required for the following period:
   09/18/07 – 09/25/07

6. G15-2 drinking water – During the weekly sampling period no composite sample was available. At the time of collection (12/03/07 @ 0955 EST), the water compositor was found laying on its side and the sample line was found disconnected from the compositor. (Apparently, a large iron rod fell on the sampler and caused the disruption.) The LCD read: 56 samples; float/weight tripped. No water remained in the collection tube; a 1 gallon grab sample and a 1 liter grab sample were collected. The compositor was fixed and was operating properly upon departure for the following sampling period:
   11/27/07 – 12/03/07

7. G15-3 drinking water – During the weekly sampling period three hourly composite samples were missed due to a power outage at the facility. No grab sample was required for the following period:
   12/28/07 – 12/24/07

<u>TLD</u>

1. K8-1 – During the sampling period 1 of 2 TLD badges was found missing. It was not located on the ground or in the general area so it was presumed stolen for the following period:
   01/12/07 – 04/13/07

2. K3-1 – During the sampling period, the station was vandalized. Badge 106 was found on the ground. It appears someone cut or pulled it from its frame. The TLD was send for analysis for the following period:
   10/12/07 – 01/11/08

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

Indicator Farm F4-1 changed from quarterly sampling to monthly sampling on 05/16/2007.

In 2007, TMI started collecting vegetation samples monthly from location B-10-2 and H1-2.

Starting in 2007, the mean and two standard deviation values are calculated using the positive values only.

All groundwater results are now being reported in the ARGPPR, Appendix F.

IV. Results and Discussion

A. Aquatic Environment

1. Surface Water

Samples were taken weekly from a continuous sampler at three locations (A3-2, J1-2, and Q9-1) and composited on a monthly schedule. Of these locations only J1-2 located downstream, could be affected by TMINS' effluent releases. The following analyses were performed.

<u>Tritium</u>

Monthly samples from J1-2 and Q9-1 were analyzed for tritium activity (Table C–I.1, Appendix C). Positive tritium activity was detected in eight of 24 samples at location J1-2 which is located immediately downstream of the TMINS effluent outfall. The concentrations ranged from 527 to 5,350 pCi/l. The increased tritium concentrations detected were a result of TMINS releasing

radwaste treatment system effluent water under permitted discharges in accordance with NRC regulations. The indicator surface water sample is taken just downstream of the liquid discharge outfall where mixing of liquid effluents with the river water is incomplete. More complete mixing is not achieved until liquid effluents pass over the York Haven Dam. This water is normally not consumed by humans. The concentrations detected were well below any regulatory limits. (Figures C–1 and C–2, Appendix C).

Iodine

Monthly samples from location A3-2 were analyzed for iodine-131 activity (Table C–I.2, Appendix C). This is a control or background station sampled because known medical discharges of radiopharmaceuticals occur into the surface water upstream of TMI from a nearby hospital. Iodine-131 was not detected.

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–I.3, Appendix C). All nuclides were less than the MDC.

2. Drinking Water

Monthly samples were collected from continuous water samplers at three locations (G15-2, G15-3, and Q9-1). Two locations (G15-2 and G15-3) could be affected by TMINS' effluent releases. The following analyses were performed:

Gross Beta

Monthly samples from all locations were analyzed for concentrations of gross beta. (Tables C–II.1, Appendix C). Gross beta activity was detected in 25 of 36 samples. The concentrations ranged from 2.2 to 5.4 pCi/l. Concentrations detected were consistent with those detected in previous years (Figures C–3, Appendix C).

Tritium

Monthly samples from all locations were analyzed for tritium activity (Table C–II.3, Appendix C). Activity was detected in three of 36 samples. Concentrations ranged from 188 to 447 pCi/l. Three samples had concentrations slightly above the required LLD of 200

pCi/liter. Dose estimates were performed for the positive drinking water tritium results. The hypothetical dose to the maximum exposed individual from consuming this water during all three time periods would have been <0.008 mrem to the liver of a child. The effluent combined projected dose for an adult for these time periods was 0.012 mrem. Given the error for tritium at these low concentrations, the effluent predictions are in good agreement with the environmental sample results. (Figures C–4, Appendix C).

Exelon specified that its laboratories achieve a lower limit of detection 10 times lower than that required by federal regulation.

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–II.4, Appendix C). All nuclides were less than the MDC.

3. Effluent Water

Monthly samples were collected from a continuous water sampler at one location (K1-1). The following analyses were performed:

Gross Beta

Monthly samples from location K1-1 were analyzed for concentrations of gross beta. (Tables C–III.1, Appendix C). Gross beta was detected in all 12 samples. The concentrations ranged from 2.9 to 10 pCi/l. Concentrations detected were consistent with those detected in previous years.

Iodine-131

Monthly samples from location K1-1 were analyzed for concentrations of iodine-131. (Tables C–III.1, Appendix C). Iodine-131 was not detected. Effluent water is not consumed by humans.

Tritium

Monthly samples from location K1-1 were analyzed for tritium activity (Table C–III.1, Appendix C). Tritium activity was detected in eight samples. The concentrations ranged from 5470 to 52,500 pCi/l. The elevated results were a result of TMI releasing radwaste treatment system effluent water under permitted discharges in

accordance with NRC regulations. These results are from the liquid discharge mixing basin. The concentrations detected agree with those obtained from the TMINS Effluent Monitoring Program. The concentrations were well below any regulatory limits.

Strontium

Semiannual samples from location K1-1 were analyzed for Sr-89 and Sr-90 (Table C–III.1, Appendix C). No strontium activity was detected. The highest MDC was calculated at 4.2 pCi/l for Sr-89 and at 0.9 pCi/l for Sr-90.

Gamma Spectrometry

Samples from location K1-1 were analyzed for gamma emitting nuclides (Table C–III.2, Appendix C). All nuclides were less than the MDC.

4. Storm Water

Monthly grabs from the storm water collection basin (EDCB) were composited quarterly. The following analyses were performed:

Tritium

All samples from location EDCB were analyzed for tritium activity (Table C–IV.1, Appendix C). Tritium activity was detected in three samples. The concentrations ranged from 231 to 244 pCi/l and were due to airborne releases of H-3 from TMI. Concentrations detected were consistent with those detected in previous years.

Gamma Spectrometry

Samples from location EDCB were analyzed for gamma emitting nuclides (Table C–IV.1, Appendix C). All nuclides were less than the MDC.

5. Ground Water

During 2006, Exelon initiated a fleetwide Environmental Assessment program. Comprehensive groundwater studies and reports were developed. As a result of this assessment and the NEI initiative on groundwater protection, TMI developed a new Radiological Groundwater Protection Program (RGPP) that was implemented by the end of the year. For 2007, this more

comprehensive groundwater program replaced TMI's previous groundwater monitoring program. The results from these special investigations and studies are discussed in Appendix F.

6. Fish

Fish samples comprised of bottom feeders and predators were collected at two locations (IND and BKG) semiannually. Location IND could be affected by TMINS' effluent releases. The following analyses were performed:

Strontium

The edible portions of fish samples from both locations were analyzed for Sr-90. (Table C–V.1, Appendix C). No strontium activity was detected. The highest MDC was calculated at <4 pCi/kg wet for Sr-90.

Gamma Spectrometry

The edible portions of fish samples from both locations were analyzed for gamma emitting nuclides (Table C–V.2, Appendix C). Naturally occurring K-40 was found at all stations and ranged from 2,100 to 3,280 pCi/kg wet and was consistent with levels detected in previous years. No fission or activation products were found.

7. Sediment

Aquatic sediment samples were collected at three locations (A1-3, J2-1 and K1-3) semiannually. In addition, location EDCB was sampled annually. Of these locations two (J2-1 and K1-3) could be affected by TMINS' effluent releases. The following analysis was performed:

Gamma Spectrometry

Sediment samples from all four locations were analyzed for gamma emitting nuclides (Table C–VI.1, Appendix C). Potassium-40 was found at all stations and ranged from 7,370 to 14,900 pCi/kg dry. Cesuim-137 was detected in sediment samples at very low levels (just above LLD) and are not distinguishable from background levels. No other fisson or activation products were found.

B. Atmospheric Environment

1. Airborne Particulates

a. Air Particulates

Continuous air particulate samples were collected from seven locations on a weekly basis. Six locations (E1-2, F1-3, G2-1, A3-1, M2-1 and H3-1) were indicator stations located in the highest D/Q sectors and the nearest communities to TMI. One sample (Q15-1) represents the control location at a remote distance from TMINS . The following analyses were performed:

Gross Beta

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

Detectable gross beta activity was observed at all locations. Comparison of results aid in determining the effects, if any, resulting from the operation of TMINS. The results from the closest to the site boundary locations (Group I) ranged from <7 to 34 E–3 pCi/m^3 with a mean of 17 E–3 pCi/m^3. The results from the intermediate offsite locations (Group II) ranged from <7 to 35 E–3 pCi/m^3 with a mean of 18 E–3 pCi/m^3. The results from the Control location (Group III) ranged from <7 to 35 E–3 pCi/m^3 with a mean of 19 E–3 pCi/m^3. Comparison of the 2007 air particulate data with previous years data indicate no effects from the operation of TMINS (Figure C–6, Appendix C). In addition a comparison of the weekly mean values for 2007 indicate no notable differences between indicator and control stations. (Figure C–7, Appendix C).

Gamma Spectrometry

Weekly samples were composited quarterly and analyzed for gamma emitting nuclides (Table C–VII.3, Appendix C). Naturally occurring Be-7 due to cosmic ray activity was detected in all 28 samples. These concentrations ranged from 42 to 126 E–3 pCi/m^3. All other nuclides were less than the MDC.

b. Airborne Iodine

Continuous air samples were collected from seven (A3-1, E1-2, F1-3, G2-1, H3-1, M2-1, and Q15-1) locations and analyzed weekly for I-131 (Table C–VIII.1, Appendix C). All results were less than the MDC.

2. Terrestrial

a. Milk

Samples were collected from five locations (K15-3, D2-1, E2-2, F4-1 and G2-1) biweekly March through November and monthly December through February. The following analyses were performed:

Iodine–131

Milk samples from all locations were analyzed for concentrations of I-131 (Table C–IX.1, Appendix C). All results were less than the MDC.

Strontium

Milk samples from all locations were composited quarterly and analyzed for Sr-89 and Sr-90 (Table C–IX.2, Appendix C). No Sr-89 activity was detected. Sr-90 activity was detected in 11 of 21 samples. The concentrations ranged from 0.6 to 1.4 pCi/l. The activity detected was consistent with those detected in the pre–operational years (Figure C–8, Appendix C).

Gamma Spectrometry

Milk samples from all locations were analyzed for concentrations of gamma emitting nuclides (Table C–IX.3, Appendix C).

Naturally occurring K-40 activity was found in all samples. The concentrations ranged from 784 to 1,460 pCi/l. All other nuclides were less than the MDC.

b. Food Products

Samples were collected from two locations (B10-2 and H1-2)

monthly, in lieu of milk sampling. Samples from the four food product groups were collected from two locations (B10-2 and E1-2) annually. The following analyses were performed:

Strontium

Each food product sample was analyzed for concentrations of Sr-90 (Table C–X.1, Appendix C). Sr-90 activity was detected in 24 of 26 samples. The concentrations ranged from 2 to 47 pCi/kg wet.

Gamma Spectrometry

Each food product sample was analyzed for concentrations of gamma emitting nuclides (Table C–X.1, Appendix C).

Naturally occurring K-40 activity was found in all samples. The concentrations ranged from 2,030 to 5,250 pCi/l. All other nuclides were less than the MDC.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Panasonic 814 ($CaSO_4$) thermoluminescent dosimeters. Ninety TLD locations were established around the site. Results of TLD measurements are listed in Tables C–XI.1 to C–XI.3, Appendix C.

All TLD measurements were below 10 mR/standard month, with a range of 4.1 to 9.4 mR/standard month. A comparison of the Site Boundary and Indicator data to the Control Location data, indicate that the ambient gamma radiation levels from the Control Locations D15-1, F25-1, G10-1, G15-1, H15-1, J15-1, K15-1, L15-1, N15-2, Q15-1, and R15-1 were consistently higher. The historical ambient gamma radiation data from Locations D15-1, F25-1, G10-1, G15-1, H15-1, J15-1, K15-1, L15-1, N15-2, Q15-1, and R15-1 were plotted along with similar data from the Site, Indicator and Control Ring Locations (Figure C–9, Appendix C). Locations D15-1, F25-1, G10-1, G15-1, H15-1, J15-1, K15-1, L15-1, N15-2, Q15-1, and R15-1 have a historical high bias, but tracked with the data from all three groups, this bias is most likely due to radon and other naturally occurring nuclides, e.g. K-40, emanating from the ground.

D. Land Use Survey

A Land Use Survey conducted in the September and October 2007 growing season around the Three Mile Island Nuclear Station (TMINS) was performed by Normandeau Associates, RMC Environmental Services Division for AmerGen to comply with Sections 2.15 and 3.4.2 of the Plant's Offsite Dose Calculation Manual (ODCM). The purpose of the survey was to document the nearest resident, milk-producing animal and garden of greater than 500 ft2 in each of the sixteen 22 ½ degree sectors around the site. There were no changes required to the TMINS REMP, as a result of this survey. Two gardens were closer to TMINS. The gardens in sectors L (SW) and M (WSW) were closer by 1.3 miles (2.1 kilometers) and 0.1 miles (0.2 kilometers), respectively based on the recent survey. The results of this survey are summarized below.

Distance in Miles from the TMINS Reactor Buildings			
Sector	Residence Miles	Garden Miles	Milk Farm Miles
1 N	1.1	1.6	2.1
2 NNE	0.7	0.9	-
3 NE	0.5	0.8	4.1
4 ENE	0.5	0.5	1.1
5 E	0.4	0.5	1.1
6 ESE	1.1	0.5	3.2
7 SE	0.7	0.5	1.4
8 SSE	0.7	0.8	-
9 S	2.3	2.7	-
10 SSW	0.6	1.6	4.9
11 SW	0.5	0.6	-
12 WSW	0.5	1.3	-
13 W	0.7	1.4	-
14 WNW	0.4	2.2	3.7
15 NW	0.4	2.1	-
16 NNW	1.1	2.4	-

E. Radiological Impact of TMINS Operations

An assessment of potential radiological impact indicated that radiation doses to the public from 2007 operations at TMINS were well below all applicable regulatory limits and were significantly less than doses received from natural sources of radiation. The 2007 whole body dose potentially received by an assumed maximum exposed individual from TMI-1 and TMI-2 liquid and airborne effluents was conservatively calculated to be 0.08 mrem. This dose is equivalent to <0.03% of the dose that an individual living in the TMI area receives each year from natural

background radiation.

1. Determination of Radiation Doses to the Public

Dose assessments can be performed by using either effluent data and an environmental transport model or environmental sample data. To the extent possible, doses to the public are based on the direct measurement of dose rates from external sources and the measurement of radionuclide concentrations in environmental media which may contribute to an internal dose of radiation. Thermoluminescent dosimeters (TLDs) positioned in the environment around TMINS provide measurements to determine external radiation doses to humans. Samples of air, water and food products are used to determine internal doses.

The quantity of radioactive materials released during normal operations are typically too small to be measured once distributed in the offsite environment. Therefore, the potential offsite doses are more effectively calculated for TMINS operations using a computerized model that predicts concentrations of radioactive materials in the environment and subsequent radiation doses based on measured effluents.

Doses are calculated using an advanced "class A" dispersion model. This model incorporates the guidelines and methodology set forth by the USNRC in Regulatory Guide 1.109. Due to the conservative assumptions that are used in the model, the calculated doses are generally higher than the doses based on actual environmental sample concentrations.

Therefore, the model predicts doses that are higher than actual doses received by people. The type and amount of radioactivity released from TMINS is calculated using measurements from effluent sample analyses. Once released, the dispersion of radionuclides in the environment is readily determined by computer modeling.

Airborne releases are diluted and carried away from the site by atmospheric diffusion, which continuously acts to disperse radioactivity. Variables that affect atmospheric dispersion include wind speed, temperature at different elevations, terrain, and shift in wind direction. A weather station on the north end of TMI is linked to a data logger that records the meteorological data.

Computer models also are used to predict the downstream dilution

and travel times for liquid releases into the Susquehanna River. Actual monthly Susquehanna River flows are obtained from the York Haven Hydroelectric Station.

The human exposure pathways also are included in the model and are depicted in Figure 1. The exposure pathways that are considered for the discharge of TMINS liquid effluents are consumption of drinking water and fish, and shoreline exposure. The exposure pathways considered for the discharge of TMINS airborne effluents are plume exposure, inhalation, cow milk consumption, goat milk consumption, fruit and vegetable consumption, meat consumption and land deposition.

Numerous data files are used in the calculations that describe the area around TMI in terms of population distribution and foodstuffs production. Data files include such information as the distance from the plant stack to the site boundary in each sector, the population groupings, milk cows, milk goats, gardens of more than 500 square feet, meat animals, downstream drinking water users, and crop yields.

When determining the dose to humans, it is necessary to consider all applicable pathways and all exposed tissues, summing the dose from each to provide the total dose for each organ as well as the whole body from a given radionuclide. Dose calculations involve determining the energy absorbed per unit mass in the various tissues. Thus, for radionuclides taken into the body, the metabolism of the radionuclide in the body must be known along with the physical characteristics of the nuclide such as energies, types of radiations emitted and half-life. The dose assessment model also contains dose conversion factors for the radionuclides for each of four age groups (adults, teenagers, children and infants) and eight organs (total body, thyroid, liver, skin, kidney, lung, bone and GI tract).

Doses are calculated for what is termed the "maximum hypothetical individual". This individual is assumed to be affected by the combined maximum environmental concentrations wherever they occur.

For liquid releases, the maximum hypothetical individual would consume 193 gallons of Susquehanna River water per year from the first downstream drinking water supplier, eat 46 pounds of fish each year that reside in the plant discharge area and stand 67 hours per year on the shoreline influenced by the plant discharge.
For airborne releases, the maximum hypothetical individual would live at the location of highest radionuclide concentration for inhalation and direct plume exposure. Additionally, this individual each year would

consume 106 gallons of cow milk, 141 pounds of leafy vegetables, 1389 pounds of non-leafy vegetables and fruits and 243 pounds of meat produced at the locations with the highest predicted radionuclide concentrations. Consumption of goat milk is not included, since this exposure pathway does not currently exist.

2. Result of Dose Calculations

The maximum hypothetical doses due to 2007 TMI-1 and TMI-2 liquid and airborne effluents are summarized in Tables 1 and 2. Table 1 compares the calculated maximum hypothetical individual doses to the USNRC 10 CFR 50 App. I guidelines. This table also compares the calculated doses (to an individual of the public) from effluents and direct radiation to USEPA 40 CFR 190 dose limits.

Table 2 presents the maximum hypothetical whole body doses to an individual.

As shown in Table 1, the doses calculated for 2007 operations at TMINS were well below the Federal dose limits (USEPA 40 CFR 190) and the guidelines of USNRC 10 CFR 50 App. I. This conclusion was supported by radionuclide concentrations detected in actual environmental samples.

Doses from natural background radiation provide a baseline for assessing the potential public health significance of radioactive effluents. Natural background radiation from cosmic, terrestrial and natural radionuclides in the human body (not including radon), averages about 100 mrem/yr (Ref. 5). Additionally, the average individual living in the United States receives an annual dose of about 2,400 mrem to the lung from natural radon gas. This lung dose is considered to be equivalent to a whole (or total) body dose of 200 mrem (Ref. 5). Therefore, the average person in the United States receives a whole body dose of about 300 mrem/yr from natural background radiation sources.

As shown on Table 2, the maximum hypothetical whole body dose received by an individual from 2007 TMI-1 and TMI-2 liquid and airborne effluents combined was conservatively calculated to be 0.06 mrem. This dose is equivalent to <0.02% percent of the dose that an individual living in the TMI area receives each year from natural background radiation (300 mrem).

The low doses calculated for 2007 TMINS operations were the result of efforts to maintain releases "as low as reasonably achievable"

(ALARA).

In conclusion, radioactive materials related to TMINS operations were detected in environmental samples, but the measured concentrations were low and consistent with measured effluents. The environmental sample results verified that the doses received by the public from TMINS effluents in 2007 were well below applicable dose limits and only a small fraction of the doses received from natural background radiation. Additionally, the results indicated that there was no permanent buildup of radioactive materials in the environment and no increase in background radiation levels.

Therefore, based on the results of the radiological environmental monitoring program (REMP) and the doses calculated from measured effluents, TMINS operations in 2007 did not have any adverse effects on the health of the public or on the environment.

TABLE 1

Calculated Maximum Hypothetical Doses to an Individual from 2007 TMI-1 and TMI-2 Liquid and Airborne Effluents

	Maximum Hypothetical Doses To An Individual		
	USNRC 10 CFR 50 APP. I Guidelines (mrem/yr)	**Calculated Dose (mrem/yr) TMI-1**	**TMI-2**
From Radionuclides In Liquid Releases	3 total body, or	5.68E-2	3.80E-4
	10 any organ	7.25E-2	6.04E-4
From Radionuclides In Airborne Releases (Noble Gases)	5 total body, or	1.87E-4	0*
	15 skin	3.29E-4	0*
From Radionuclides In Airborne Releases (Iodines, Tritium and Particulates)	15 any organ	8.14E-3	2.35E-5

*No noble gases were released from TMI-2.

	USEPA 40 CFR 190 Limits (mrem/yr)	**Calculated Dose (mrem/yr) TMI-1 and TMI-2 Combined****
Total from Site	75 thyroid	0.29
	25 total body or other organs	0.33

* *This sums together TMI-1 and TMI-2 maximum doses regardless of age group for different pathways. The combined doses include those due to radioactive effluents and direct radiation from TMINS. The direct radiation dose is calculated from environmental TLD data. For this calculation, exposure is assumed to be equal to dose.

The direct radiation dose from 2007 TMINS operations was 0.25 mrem. This dose was based on a maximum net fence-line exposure rate of 3 mR/std month and a shoreline/fence-line occupancy factor of 67 hours (Regulatory Guide 1.109). The combination of the maximum organ dose from TMI-1 and TMI-2 effluents (0.08 mrem) and the dose from direct radiation (0.25 mrem) yielded a maximum hypothetical dose of 0.33 mrem.

TABLE 2

Calculated Whole Body Doses to the Maximum Individual From 2007 TMI-1 and TMI-2 Liquid and Airborne Effluents

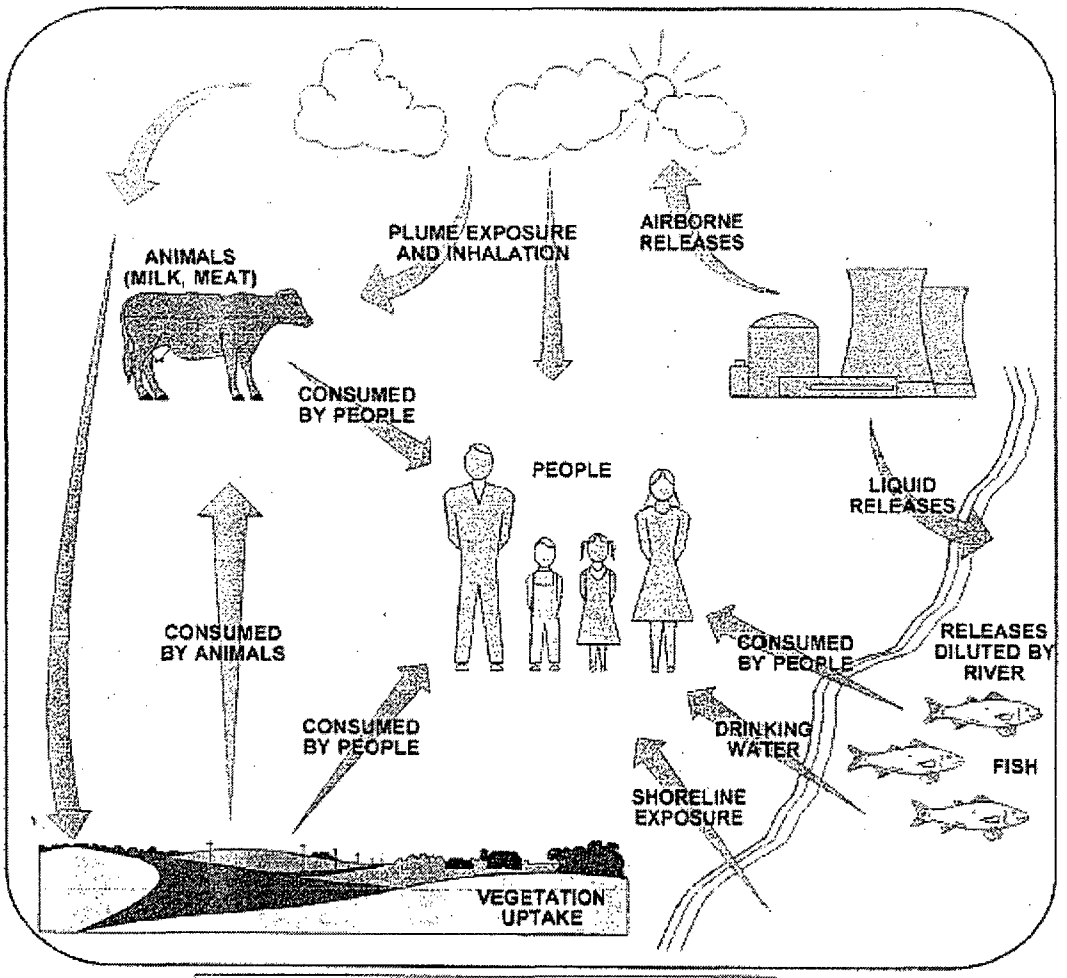
	Calculated Maximum Individual Whole Body Dose (mrem/yr)	
	TMI-1	**TMI-2**
From Radionuclides In Liquid Releases	5.68E-2	3.80E-4
From Radionuclides in Airborne Releases (Noble Gases)	1.87E-4	0*
From Radionuclides In Airborne Releases (Iodines, Tritium and Particulates)	7.75E-3	2.35E-5

*No noble gases were released from TMI-2.

Individual Whole Body Dose Due to TMI-1 and TMI-2 Operations:	**0.06 mrem/yr**
Individual Whole Body Dose Due to Natural Background Radiation	**300 mrem/yr**

Figure 1

Exposure Pathways For Radionuclides Routinely Released From TMINS



PREDOMINANT RADIONUCLIDES

NOBLE GASES (Xe,Kr)
Plume exposure

RADIOIODINES (I-131, I-133)
Inhalation and consumption of milk, water, fruits, and vegetables

RADIOSTRONTIUMS (Sr-89, Sr-90)
Consumption of milk, meat, fruits, and vegetables

ACTIVATION PRODUCTS (Co-60, Mn-54)
Shoreline exposure

RADIOCESIUMS (Cs-134, Cs-137)
Shoreline exposure and consumption of milk, meat, fish, water, fruits, and vegetables

TRITIUM (H-3)
Inhalation and consumption of water, milk, fruits, and vegetables

F. Summary of Results – Inter-Laboratory Comparison Program

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

1. Analytics Evaluation Criteria

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

2. ERA Evaluation Criteria

   ERA's evaluation report provides an acceptance range for control and warning limits with associated flag values. ERA's acceptance limits are established per the USEPA, NELAC, state specific PT program requirements or ERA's SOP for the Generation of Performance Acceptance Limits, as applicable. The acceptance limits are either determined by a regression equation specific to each analyte or a fixed percentage limit promulgated under the appropriate regulatory document.

3. DOE Evaluation Criteria

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

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

For the primary laboratory, 17 out of 19 analytes met the specified acceptance criteria. Two samples did not meet the specified acceptance criteria for the following reasons:

1. Teledyne Brown Engineering's Analytics March 2007 I-131 in charcoal result of 34.7 pCi was lower than the known value of 71.3, resulting in a found to known ratio of 0.49. A new technician counted the charcoal cartridge on the back rather than the face side. Due to decay of the I-131, recounting could not be performed. Counting the 2nd quarter Analytics charcoal cartridge on the face and the back resulted in approximately 220% more activity on the face of the cartridge. This indicates that TBE would have had acceptable results (ratio approximately 1.07) if the cartridge had been counted on the face side.

2. Teledyne Brown Engineering's ERA July 2007 Cs-134 result of 57.6 pCi/L exceeded the lower acceptance limit of 60.2 pCi/L. The high activity of the sample resulted in the lower acceptance limit of 8.66, although the ratio of found to known was 83.6%, which is considered acceptable by TBE.

For the secondary laboratory, 18 out of 19 analytes met the specified acceptance criteria. One sample did not meet the specified acceptance criteria for the following reasons:

1. Environmental Inc.'s ERA March 2007 air particulate Cs-137 result of 345.3 pCi/L exceeded the upper control limit of 336 pCi/L. The reported result was calculated using composite filter geometry rather than the single filter geometry. The recalculated result of 305.8 pCi/filter fell within the acceptance limits.

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

V. References

1. Three Mile Island Nuclear Station, Unit 1, Technical Specifications, DPR 50.
2. Three Mile Island Nuclear Station, Unit 2, PDMS Technical Specifications, DPR 73.
3. Radiation Management Corporation. "Three Mile Island Nuclear Station, Preoperational Radiological Environmental Monitoring Program, January 1, 1974 - June5, 1974." RMC-TR-75-17, January 1975.
4. AmerGen. "Three Mile Island Nuclear Station Offsite Dose Calculation Manual (ODCM)."
5. National Council of Radiation Protection and Measurements Report No.

93. "Ionizing Radiation Exposure of the Population of the United States." 1987.

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APPENDIX A

RADIOLOGICAL ENVIRONMENTAL MONITORING REPORT SUMMARY

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR ANNUAL SUMMARY FOR THE THREE MILE ISLAND NUCLEAR STATION, 2007

Name of Facility: THREE MILE ISLAND NUCLEAR STATION **DOCKET NUMBER:** 50-289 & 50-320
Location of Facility: MIDDLETOWN COUNTY PA **REPORTING PERIOD:** 2007

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCI/LITER)	H-3	24	2000	2343 (8/12) (527/5350)	<LLD	2343 (8/8) (527/5350)	J1-2 INDICATOR WEST SHORE; TMI 0.5 MILES S OF SITE	0
	I-131	12	15	NA	<LLD	-	-	0
	GAMMA	24						
	MN-54		15	<LLD	<LLD	-	-	0
	CO-58		15	<LLD	<LLD	-	-	0
	FE-59		30	<LLD	<LLD	-	-	0
	CO-60		15	<LLD	<LLD	-	-	0
	ZN-65		30	<LLD	<LLD	-	-	0
	NB-95		15	<LLD	<LLD	-	-	0

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

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR ANNUAL SUMMARY FOR THE THREE MILE ISLAND NUCLEAR STATION, 2007

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Location of Facility: MIDDLETOWN COUNTY PA **REPORTING PERIOD:** 2007

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN MEAN (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCI/LITER)	ZR-95		30	<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
DRINKING WATER (PCI/LITER)	GR-B	36	4	3.7 (18/24) (2.3/5.4)	3.4 (7/12) (2.2/5.2)	3.8 (8/8) (2.3/5.3)	G15-3 INDICATOR LANCASTER WATER AUTHORITY 14.8 MILES SE OF SITE	0
	I-131	36	1	<LLD	<LLD	-	-	0

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

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR ANNUAL SUMMARY FOR THE THREE MILE ISLAND NUCLEAR STATION, 2007

Name of Facility: THREE MILE ISLAND NUCLEAR STATION **DOCKET NUMBER:** 50-289 & 50-320
Location of Facility: MIDDLETOWN COUNTY PA **REPORTING PERIOD:** 2007

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN (F) RANGE	CONTROL LOCATION MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: MEAN (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN: STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
DRINKING WATER (PCI/LITER)	H-3	36	2000	289 (3/24) (188/447)	<LLD	340 (2/2) (232/447)	G15-3 INDICATOR LANCASTER WATER AUTHORITY 14.8 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
	ZR-95		30	<LLD	<LLD	-	-	0

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DRINKING WATER (PCI/LITER)	CS-134		15	<LLD	<LLD	-	-	0
	CS-137		18	<LLD	<LLD	-	-	0
	BA-140		60	<LLD	<LLD	-	-	0
	LA-140		15	<LLD	<LLD	-	-	0
EFFLUENT WATER (PCI/LITER)	GR-B	12	4	5.7 (12/12) (2.9/10)	NA	5.7 (12/12) (2.9/10)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	I-131	12	1	<LLD	NA	-	-	0
	H-3	12	2000	23340 (8/12) (5470/52500)	NA	23340 (8/8) (5470/52500)	K1-1 INDICATOR MAIN STATION LIQ. DISCHARGE ONSITE	0
	SR-89	2	5	<LLD	NA	-	-	0

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EFFLUENT WATER (PCI/LITER)	SR-90	2	2	<LLD	NA	-	-	0
	GAMMA	12						
	MN-54		15	<LLD	NA	-	-	0
	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

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EFFLUENT WATER (PCI/LITER)	CS-134		15	<LLD	NA	-	-	0
	CS-137		18	<LLD	NA	-	-	0
	BA-140		60	<LLD	NA	-	-	0
	LA-140		15	<LLD	NA	-	-	0
STORM WATER (PCI/LITER)	H-3	4	2000	237 (3/4) (231/244)	NA	237 (3/4) (231/244)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	GAMMA MN-54	4	15	<LLD	NA	-	-	0
	CO-58		15	<LLD	NA	-	-	0
	FE-59		30	<LLD	NA	-	-	0

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STORM WATER (PCI/LITER)	CO-60		15	<LLD	NA	-	-	0
	ZN-65		30	<LLD	NA	-	-	0
	NB-95		15	<LLD	NA	-	-	0
	ZR-95		30	<LLD	NA	-	-	0
	CS-134		15	<LLD	NA	-	-	0
	CS-137		18	<LLD	NA	-	-	0
	BA-140		60	<LLD	NA	-	-	0
	LA-140		15	<LLD	NA	-	-	0

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BOTTOM FEEDER (PCI/KG WET)	SR-90	4	10	<LLD	<LLD	-	-	0
	GAMMA	4						
	K-40		NA	2555 (2/2) (2100/3010)	2600 (2/2) (2410/2790)	2600 (2/2) (2410/2790)	BKGB CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	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
	CS-134		130	<LLD	<LLD	-	-	0

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BOTTOM FEEDER (PCI/KG WET)	CS-137		150	<LLD	<LLD	-	-	0
PREDATOR (PCI/KG WET)	SR-90	4	10	<LLD	<LLD	-	-	0
	GAMMA	4						
	K-40		NA	2775 (2/2) (2270/3280)	3140 (2/2) (3110/3170)	3140 (2/2) (3110/3170)	BKGP CONTROL CITY ISLAND UPSTREAM OF DISCHARGE	0
	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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PREDATOR (PCI/KG WET)	CS-134		130	<LLD	<LLD	-	-	0
	CS-137		150	<LLD	<LLD	-	-	0
SEDIMENT (PCI/KG DRY)	GAMMA	7						
	K-40		NA	9866 (7/7) (7370/14900)	NA	14900 (1/1)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0
	MN-54		NA	<LLD	NA	-	-	0
	CO-58		NA	<LLD	NA	-	-	0
	CO-60		NA	<LLD	NA	-	-	0
	CS-134		150	<LLD	NA	-	-	0
	CS-137		180	157 (3/7) (107/248)	NA	248 (1/1)	EDCB INDICATOR STORM WATER BASIN 0.2 MILES SE OF SITE	0

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AIR PARTICULATE (E-3 PCI/CU.METER)	GR-B	363	10	18 (306/311) (7/35)	19 (51/52) (8/35)	19 (51/51) (8/35)	Q15-1 CONTROL WEST FAIRVIEW 13.5 MILES NW OF SITE	0
	GAMMA BE-7	28	NA	85.3 (24/24) (42/111)	92.9 (4/4) ="(72/126)"	93.2 (4/4) (75/109)	E1-2 INDICATOR TMI VISITOR'S CENTER 0.4 MILES E OF SITE	0
	MN-54		NA	<LLD	<LLD	-	-	0
	CO-58		NA	<LLD	<LLD	-	-	0
	CO-60		NA	<LLD	<LLD	-	-	0
	CS-134		50	<LLD	<LLD	-	-	0
	CS-137		60	<LLD	<LLD	-	-	0

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AIR IODINE (E-3 PCI/CU.METER)	GAMMA I-131	363	70	<LLD	<LLD	-	-	0
MILK (PCI/LITER)	I-131	109	1	<LLD	<LLD	-	-	0
	SR-89	20	5	<LLD	<LLD	-	-	0
	SR-90	21	2	.8 (9/17) (0.6/1.4)	1 (2/4) (0.9/1.0)	1.1 (2/2) (0.8/1.4)	F4-1 INDICATOR TURNPIKE ROAD FARM 3.0 MILES ESE OF SITE	0
	GAMMA K-40	109	NA	1274 (86/86) (784/1460)	1308 (23/23) (1100/1450)	1359 (17/17) (1270/1430)	F4-1 INDICATOR TURNPIKE ROAD FARM 3.0 MILES ESE OF SITE	0
	CS-134		15	<LLD	<LLD	-	-	0
	CS-137		18	<LLD	<LLD	-	-	0

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MILK (PCI/LITER)	BA-140		60	<LLD	<LLD	-	-	0
	LA-140		15	<LLD	<LLD	-	-	0
FOOD PRODUCT (PCI/KG WET)	SR-90	26	10	16.4 (12/13) (1.8/41.9)	17.7 (12/13) (2.6/47.4)	17.7 (12/13) (2.6/47.4)	B10-2 CONTROL MILTON HERSHEY SCHOOL 10.1 MILES NNE OF SITE	0
	GAMMA	32						
	BE-7		NA	975 (8/16) (414/2470)	1703.6 (7/16) (402/3640)	1703.6 (7/16) (402/3640)	B10-2 CONTROL MILTON HERSHEY SCHOOL 10.1 MILES NNE OF SITE	0
	K-40		NA	3541.3 (16/16) (2080/4810)	3536.9 (16/16) (2030/5250)	3701.7 (12/12) (2080/4810)	H1-2 INDICATOR RED HILL MARKET 1.0 MILES SSE OF SITE	0
	I-131		60	<LLD	<LLD	-	-	0
	CS-134		60	<LLD	<LLD	-	-	0
	CS-137		80	<LLD	<LLD	-	-	0

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DIRECT RADIATION	TLD-QUARTERLY	360	NA	5.7 (316/316) (4.1/9.4)	6.3 (44/44) (4.9/8.8)	8.9 (4/4) (8.2/9.4)	H8-1 INDICATOR SAGINAW ROAD 7.4 MILES SSE OF SITE	0

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APPENDIX B

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

TABLE B-1: Location Designation and Identification System for the Three Mile Island Nuclear Station

XYY-Z- General code for identification of locations, where:

X - Angular Sector of Sampling Location. The compass is divided into 16 sectors of 22 1/2 degrees each with center at Three Mile Island's Units 1 and 2 off-gas vents. Sector A is centered due North, and others are alphabetical in a clockwise direction.

YY - Radial Zone of Sampling Location in miles.

Z - Station's Numerical Designation within sector and zone, using 1, 2, 3... in each sector and zone.

TABLE B-2: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Three Mile Island Nuclear Station, 2007

Sample Medium	Station Code	Map Number	Distance (miles)	Azimuth	Description
AQS	A1-3	1	0.5	359°	N of site off north tip of TMI in Susquehanna River
ID	A1-4	1	0.3	6°	N of Reactor Building on W fence adjacent to North Weather Station, TMI
AP,AI,ID	A3-1	2	2.7	357°	N of site at Mill Street Substation
SW	A3-2	2	2.7	356°	N of site at Swatara Creek, Middletown
ID	A5-1	2	4.4	3°	N of site on Vine Street Exit off Route 283
ID	A9-3	3	8.0	2°	N of site at Duke Street Pumping Station, Hummelstown
ID	B1-1	1	0.6	25°	NNE of site on light pole in middle of North Bridge, TMI
ID	B1-2	1	0.4	23°	NNE of Reactor Building on top of dike, TMI
ID	B2-1	2	1.9	17°	NNE of site on Sunset Dr. (off Hillsdale Rd.)
ID	B5-1	2	4.9	19°	NNE of site at intersection of School House and Miller Roads
ID	B10-1	3	9.2	21°	NNE of site at intersection of West Areba Avenue and Mill Street, Hershey
FP	B10-2	3	10	31°	NNE of site at Milton Hershey School, Hershey
ID	C1-1	1	0.7	37°	NE of site along Route 441 N
ID	C1-2	1	0.3	50°	NE of Reactor Building on top of dike, TMI
ID	C2-1	2	1.5	44°	NE of site at Middletown Junction
ID	C5-1	2	4.7	43°	NE of site on Kennedy Lane
ID	C8-1	3	7.1	48°	NE of site at Schenk's Church on School House Road
AQF	Control	-	-	-	All locations where finfish are collected above Dock St. Dam, Harrisburg
ID	D1-1	1	0.2	76°	ENE of Reactor Building on top of dike, TMI
ID	D1-2	1	0.5	67°	ENE of site off Route 441 along lane between garden center and residence
M	D2-1	2	1.1	62°	ENE of site at farm on Gingrich Road
ID	D2-2	2	1.6	74°	ENE of site along Hillsdale Rd. (S of Zion Rd.)
ID	D6-1	3	5.2	66°	ENE of site off Beagle Road
ID	D15-1	3	10.8	64°	ENE of site along Route 241, Lawn
AP,AI,ID,FP	E1-2	1	0.4	97°	E of site at TMI Visitor's Center
ID	E1-4	1	0.2	97°	E of Reactor Building on top of dike, TMI
M	E2-2	2	1.1	96°	E of site at farm on Pecks Road
ID	E2-3	2	2.0	97°	E of site along Hillsdale Rd. (N of Creek Rd.)
ID	E5-1	2	4.7	82°	E of site at intersection of North Market Street (Route 230) and Zeager Road
ID	E7-1	3	6.7	88°	E of site along Hummelstown Street, Elizabethtown
ID	F1-1	1	0.5	117°	ESE of site near entrance to 500 kV Substation
ID	F1-2	1	0.2	112°	ESE of Reactor Building on top of dike midway within ISWSF, TMI
AP,AI	F1-3	1	0.6	112°	ESE of site in 500 kV Substation
ID	F1-4	1	0.2	122°	ESE of Reactor Building on top of dike, TMI
ID	F2-1	2	1.3	119°	ESE of site along Engle Road
M	F4-1	2	3.2	104°	ESE of site at farm on Turnpike Road
ID	F5-1	2	4.7	109°	ESE of site along Amosite Road
ID	F10-1	3	9.4	112°	ESE of site along Donegal Springs Road, Donegal Springs
ID	F25-1	3	22	106°	ESE of site at intersection of Steel Way and Loop Roads, Lancaster
ID	G1-2	1	0.7	145°	SE of site along Route 441 S
ID	G1-3	1	0.2	130°	SE of Reactor Building on top of dike, TMI
ID	G1-5	1	0.3	143°	SE of Reactor Building on top of dike, TMI
ID	G1-6	1	0.3	139°	SE of Reactor Building on top of dike, TMI
AI,AP,M	G2-1	2	1.4	126°	SE of site at farm on Becker Road
ID	G2-4	2	1.7	138°	SE of site on Becker Road
ID	G5-1	2	4.8	131°	SE of site at intersection of Bainbridge and Risser Roads
ID	G10-1	3	9.7	128°	SE of site at farm along Engles Tollgate Road, Marietta
ID	G15-1	3	14.4	126°	SE of site at Columbia Water Treatment Plant
DW	G15-2	3	13.3	129°	SE of site at Wrightsville Water Treatment Plant
DW	G15-3	3	15.7	124	SE of site at Lancaster Water Treatment Plant

TABLE B-2: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Three Mile Island Nuclear Station, 2007

Sample Medium	Station Code	Map Number	Distance (miles)	Azimuth	Description
ID	H1-1	1	0.5	167°	SSE of site, TMI
FP	H1-2	1	1.0	151°	SSE of site along Route 441, Red Hill Market
AP,AI,ID	H3-1	2	2.2	160°	SSE of site in Falmouth-Collins Substation
ID	H5-1	2	4.1	158°	SSE of site by Guard Shack at Brunner Island Steam Electric Station
ID	H8-1	3	7.4	163°	SSE of site along Saginaw Road, Starview
ID	H15-1	3	13.2	157°	SSE of site at intersection of Orchard and Stonewood Roads, Wilshire Hills
AQF	Indicator	-	-	-	All locations where finfish are collected downstream of the TMINS liquid discharge outfall
ID	J1-1	1	0.8	176°	S of site, TMI
SW	J1-2	1	0.5	188°	S of site downstream of the TMINS liquid discharge outfall in Susquehanna River
ID	J1-3	1	0.3	189°	S of Reactor Building just S of SOB, TMI
AQS	J2-1	2	1.4	179°	S of site in Susquehanna River just upstream of the York Haven Dam
ID	J3-1	2	2.7	179°	S of site at York Haven/Cly
ID	J5-1	2	4.9	181°	S of site along Canal Road, Conewago Heights
ID	J7-1	3	6.5	176°	S of site off of Maple Street, Manchester
ID	J15-1	3	12.6	183°	S of site in Met-Ed York Load Dispatch Station
EW	K1-1	1	0.2	210°	On site at RML-7 Main Station Discharge Building
AQS	K1-3	1	0.2	212°	SSW of site downstream of the TMINS liquid discharge outfall in the Susquehanna River
ID	K1-4	1	0.2	209°	SSW of Reactor Building on top of dike behind Warehouse 2, TMI
ID	K2-1	2	1.2	200°	SSW of site on S Shelley Island
ID	K3-1	2	2.0	206°	SSW of site along Rt. 262, N of Cly
ID	K5-1	2	4.9	202°	SSW of site along Conewago Creek Road, Strinestown
ID	K8-1	3	7.5	196°	SSW of site at intersection of Coppenhaffer Road and Route 295, Zions View
ID	K15-1	3	12.8	203°	SSW of site behind McDonald's and next to child care center, Weiglestown
M	K15-3	3	14.4	205°	SSW of site at farm along S Salem Church Rd, Dover
ID	L1-1	1	0.1	236°	SW of site on top of dike W of Mech. Draft Cooling Tower, TMI
ID	L1-2	1	0.5	221°	SW of site on Beech Island
ID	L2-1	2	1.8	224°	SW of site along Route 262
ID	L5-1	2	4.1	228°	SW of site at intersection of Stevens and Wilson Roads
ID	L8-1	3	8.0	225°	SW of site along Rohlers Church Rd., Andersontown
ID	L15-1	3	11.8	226°	SW of site on W side of Route 74, rear of church, Mt. Royal
ID	M1-1	1	0.1	250°	WSW of Reactor Building on SE corner of U-2 Screenhouse fence, TMI
ID	M1-2	1	0.4	252°	WSW of site on E side of Shelley Island, Lot #157
AP,AI,ID	M2-1	2	1.3	256°	WSW of site along Route 262 and adjacent to Fishing Creek, Goldsboro
ID	M5-1	2	4.3	249°	WSW of site at intersection of Lewisberry and Roxberry Roads, Newberrytown
ID	M9-1	3	8.7	243°	WSW of site along Alpine Road, Maytown
ID	N1-1	1	0.7	274°	W of site on W side of Shelley Island, between lots #13 and #14
ID	N1-3	1	0.1	274°	W of Reactor Building on fence adjacent to Screenhouse entrance gate, TMI
ID	N2-1	2	1.2	261°	W of site at Goldsboro Marina
ID	N5-1	2	5.0	268°	W of site off of Old York Road along Robin Hood Drive
ID	N8-1	3	7.7	262°	W of site along Route 382, 1/2 mile north of Lewisberry
ID	N15-2	3	10.4	275°	W of site at intersection of Lisburn Road and Main Street, Lisburn
ID	P1-1	1	0.4	303°	WNW of site on Shelley Island

TABLE B-2: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, Three Mile Island Nuclear Station, 2007

Sample Medium	Station Code	Map Number	Distance (miles)	Azimuth	Description
ID	P1-2	1	0.1	292°	WNW of Reactor Building on fence N of Unit 1 Screenhouse, TMI
ID	P2-1	2	2.0	283°	WNW of site along Route 262
ID	P5-1	2	5.0	284°	WNW of site at intersection of Valley Road (Route 262) and Beinhower Road
ID	P8-1	3	8.0	292°	WNW of site along Evergreen Road, Reesers Summit
ID	Q1-1	1	0.5	317°	NW of site on E side of Shelley Island
ID	Q1-2	1	0.2	321°	NW of Reactor Building on fence W of Warehouse 1, TMI
ID	Q2-1	2	1.9	310°	NW of site along access road along river
ID	Q5-1	2	5.0	317°	NW of site along Lumber Street, Highspire
SW,DW,ID	Q9-1	3	8.5	310°	NW of site at the Steelton Water Company
AP,AI,ID	Q15-1	3	13.4	309°	NW of site behind West Fairview Fire Dept. Social Hall (abandoned)
ID	R1-1	3	0.2	335°	NNW of Reactor Building along W fence, TMI
ID	R1-2	1	0.7	334°	NNW of site on central Henry Island
ID	R3-1	2	2.6	341°	NNW of site at Crawford Station, Middletown
ID	R5-1	2	4.9	339°	NNW of site at intersection of Spring Garden Drive and Route 441
ID	R9-1	3	8.0	341°	NNW of site at intersection of Derry and 66th Streets, Rutherford Heights
ID	R15-1	3	11.2	332°	NNW of site at intersection of Route 22 and Colonial Road, Colonial Park

IDENTIFICATION KEY

ID = Immersion Dose (TLD)
SW = Surface Water
AI = Air Iodine
AP = Air Particulate
FP = Food Products (Green Leafy Vegetation, Fruits, Vegetables)
EW = Effluent Water
DW = Drinking Water
M = Milk (Cow)
AFT = Finfish
AQS = Aquatic Sediment

TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Three Mile Island Nuclear Station, 2007

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Surface Water	Gamma Spectroscopy	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Surface Water	Tritium	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2010 Tritium and carbon-14 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Surface Water	Iodine- 131	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2012 Radioiodine in various matrices Env. Inc., I-131-01 Determination of I-131 in milk by anion exchange
Drinking Water	Gross Beta	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2008 Gross alpha and/or gross beta activity in various matrices Env. Inc., W(DS)-01 Determination of gross alpha and/or gross beta in water (dissolved solids or total residue)
Drinking Water	Gamma Spectroscopy	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Drinking Water	Tritium	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2010 Tritium and carbon-14 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Drinking Water	Iodine-131	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2012 Radioiodine in various matrices Env. Inc., I-131-01 Determination of I-131 in milk by anion exchange
Effluent Water	Iodine-131	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2012 Radioiodine in various matrices Env. Inc., I-131-01 Determination of I-131 in milk by anion exchange
Effluent Water	Gross Beta	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2008 Gross alpha and/or gross beta activity in various matrices Env. Inc., W(DS)-01 Determination of gross alpha and/or gross beta in water (dissolved solids or total residue)

TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Three Mile Island Nuclear Station, 2007

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Effluent Water	Gamma Spectroscopy	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Effluent Water	Tritium	Monthly composite from a continuous water compositor.	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2010 Tritium and carbon-14 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Effluent Water	Strontium 89/90	Semi-annual composite from monthly samples.	TBE, TBE-2023 Compositing of samples	2 gallon	TBE, TBE-2019 Radiostrontium analysis by ion exchange
Storm Water	Gamma Spectroscopy	Quarterly composite of monthly grab samples	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	1 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Storm Water	Tritium	Quarterly composite of monthly grab samples	ER-TMI-06 Collection of water samples for radiological analysis (Three Mile Island Nuclear Station)	1 gallon	TBE, TBE-2010 Tritium and carbon-14 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Fish	Gamma Spectroscopy	Semi-annual samples collected via electroshocking or other techniques	ER-TMI-13 Collection of fish samples for radiological analysis (Three Mile Island Nuclear Station)	1000 grams (wet)	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Fish	Strontium 90	Semi-annual samples collected via electroshocking or other techniques	ER-TMI-13 Collection of fish samples for radiological analysis (Three Mile Island Nuclear Station)	1000 grams (wet)	TBE, TBE-2019 Radiostrontium analysis by ion exchange

TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Three Mile Island Nuclear Station, 2007

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Sediment	Gamma Spectroscopy	Semi-annual grab samples	ER-TMI-03 Collection of sediment samples for radiological analysis (Three Mile Island Nuclear Station)	500 grams (dry)	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Air Particulates	Gross Beta	One-week composite of continuous air sampling through glass fiber filter paper	ER-TMI-14 Collection of air particulate and air iodine samples for radiological analysis (Three Mile Island Nuclear Station)	1 filter (approximately 280 cubic meters weekly)	TBE, TBE-2008 Gross alpha and/or gross beta activity in various matrices Env. Inc., AP-02 Determination of gross alpha and/or gross beta in air particulate filters
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 (approximately 3600 cubic meters)	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Air Iodine	Gamma Spectroscopy	One-week composite of continuous air sampling through charcoal filter	ER-TMI-14 Collection of air particulate and air iodine samples for radiological analysis (Three Mile Island Nuclear Station)	1 filter (approximately 280 cubic meters weekly)	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., I-131-02 Determination of I-131 in charcoal canisters by gamma spectroscopy (batch method)
Milk	I-131	Bi-weekly grab sample when cows are on pasture. Monthly all other times	ER-TMI-01 Collection of milk samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2012 Radioiodine in various matrices Env. Inc., I-131-01 Determination of I-131 in milk by anion exchange
Milk	Strontium-89/90	Quarterly composite of Bi-weekly and monthly grab samples	ER-TMI-01 Collection of milk samples for radiological analysis (Three Mile Island Nuclear Station) TBE, TBE-2023 Compositing of samples	2 gallon	TBE, TBE-2019 Radiostrontium analysis by ion exchange
Milk	Gamma Spectroscopy	Bi-weekly grab sample when cows are on pasture. Monthly all other times	ER-TMI-01 Collection of milk samples for radiological analysis (Three Mile Island Nuclear Station)	2 gallon	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Vegetation	Gamma Spectroscopy	Monthly and annual grab sample	ER-TMI-04 Collection of vegetation samples for radiological analysis (Three Mile Island Nuclear Station)	1000 grams	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy

TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Three Mile Island Nuclear Station, 2007

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Vegetation	Gamma Spectroscopy	Monthly and annual grab sample	ER-TMI-04 Collection of vegetation samples for radiological analysis (Three Mile Island Nuclear Station)	1000 grams	TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Vegetation	Strontium-89/90	Monthly and annual grab sample	ER-TMI-04 Collection of vegetation samples for radiological analysis (Three Mile Island Nuclear Station)	1000 grams	TBE, TBE-2019 Radiostrontium analysis by ion exchange
TLD	Thermoluminescence Dosimetry	Quarterly TLDs comprised of two Panasonic 814 (containing 4 each $CaSO_4$ elements)	ER-TMI-02 Collection of TLD samples for radiological analysis (Three Mile Island Nuclear Station)	2 badges with 3 dosimeters	Global Dosimetry Solutions, Inc.

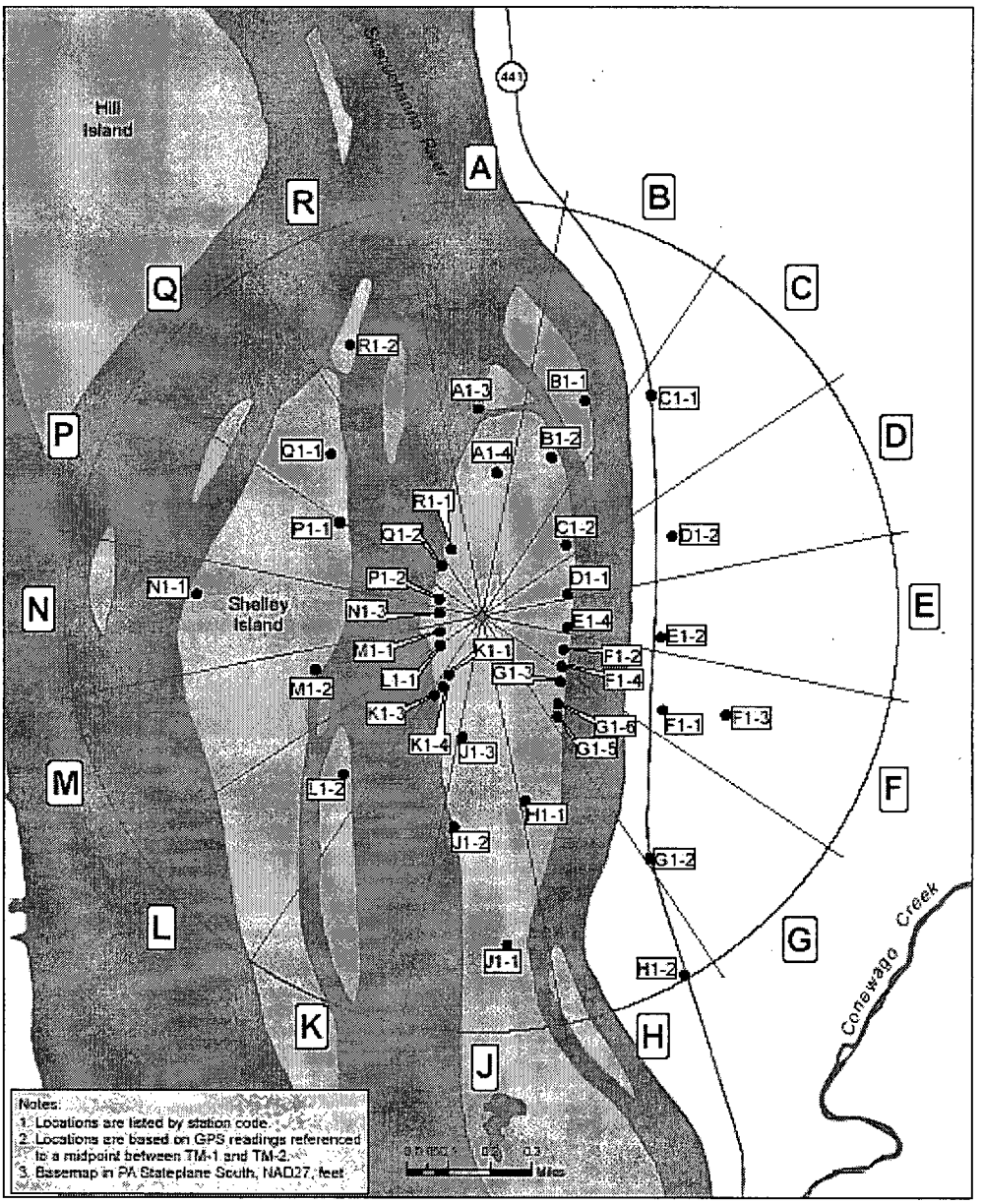

Figure B-1
Environmental Sampling Locations Within One Mile of the Three Mile Island Nuclear Station, 2007

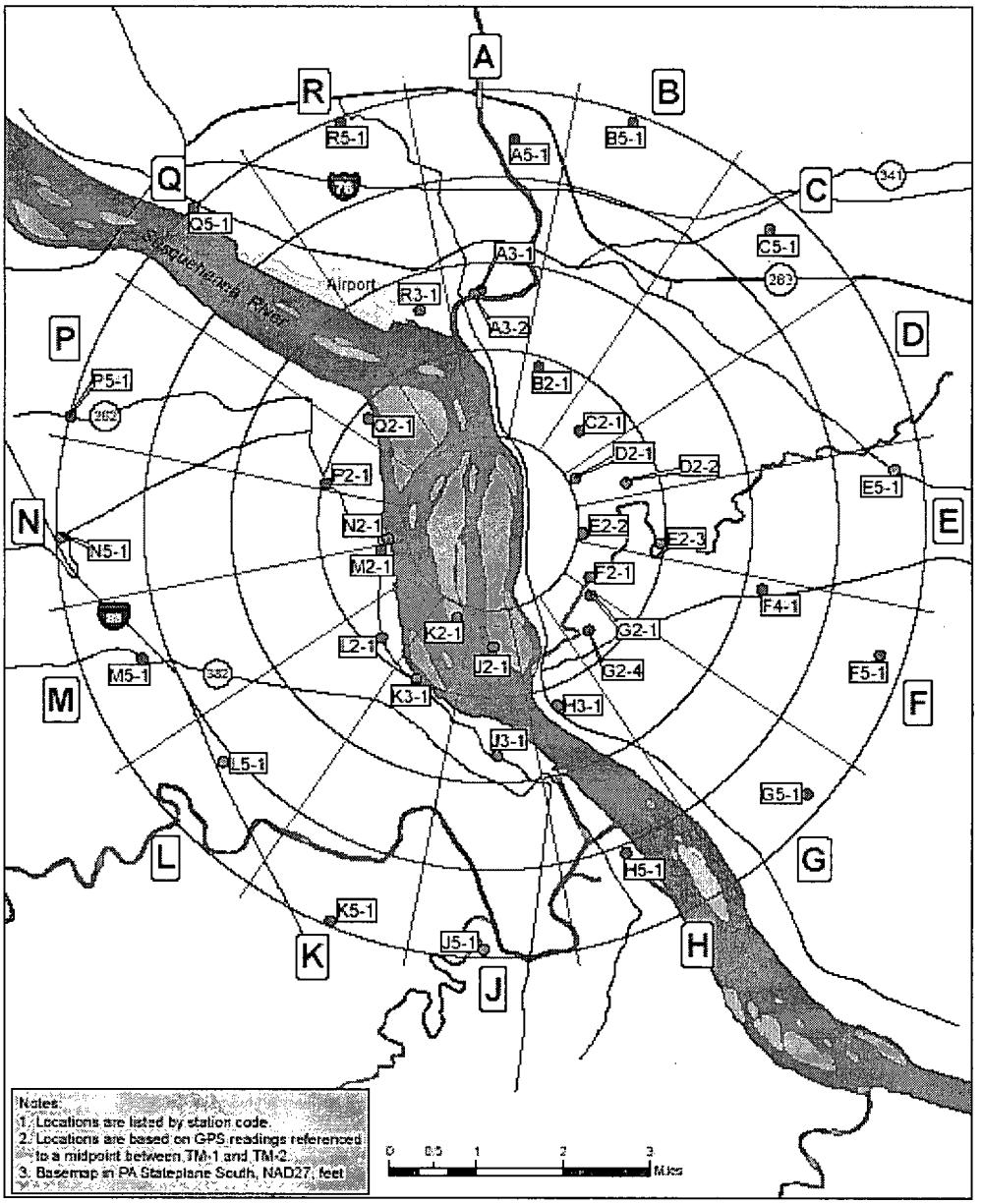

Figure B-2
Environmental Sampling Locations Between One and Five Miles of the Three Mile Island Nuclear Station, 2007

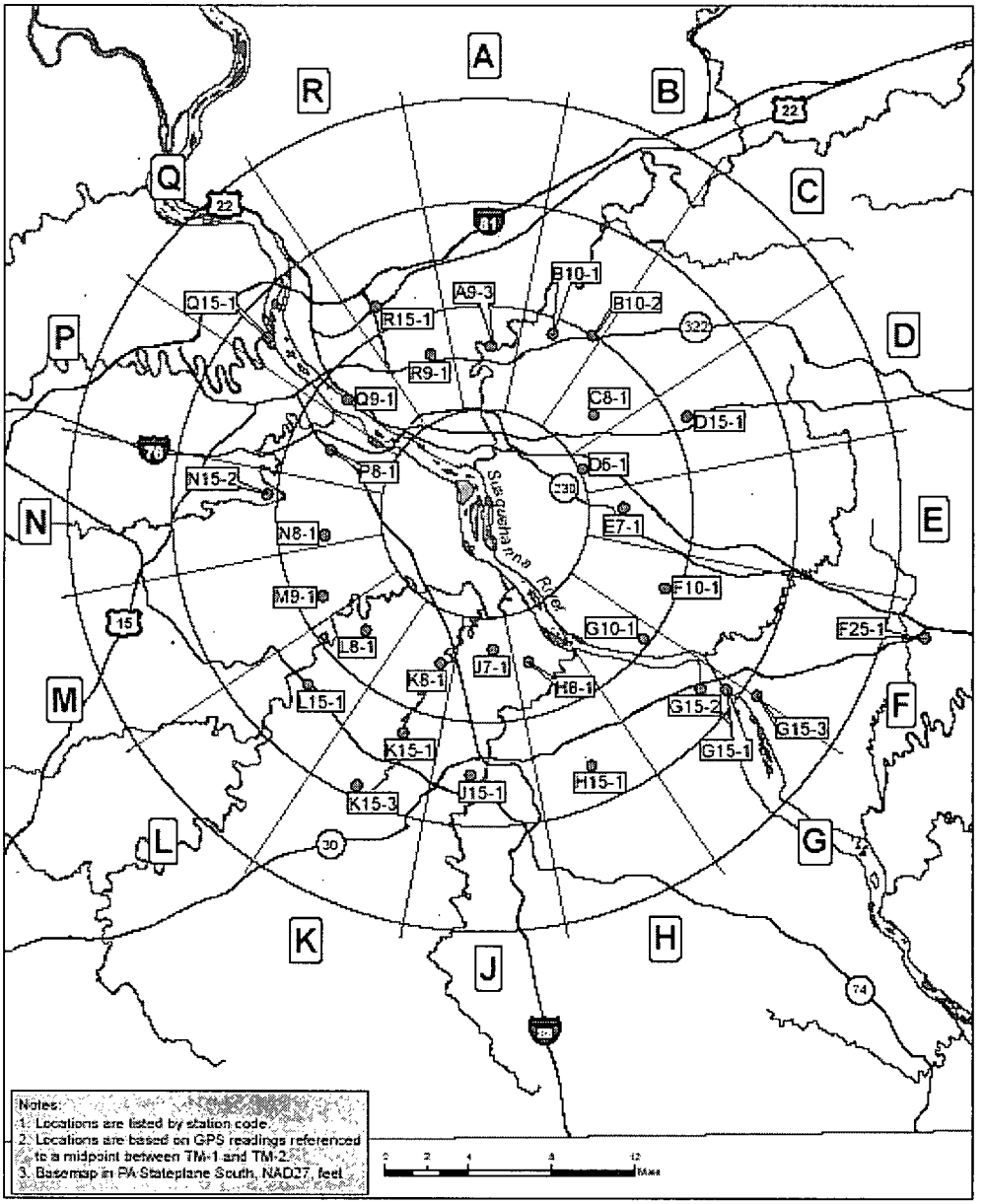

Figure B-3
Environmental Sampling Locations Greater than Five Miles of the Three Mile Island Nuclear Station, 2007

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APPENDIX C

DATA TABLES AND FIGURES - PRIMARY LABORATORY

TABLE C-I.1 **CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	J1-2	Q9-1
01/02/07 - 01/30/07	5040 ± 564	< 183
01/30/07 - 02/27/07	< 179	< 183
02/27/07 - 04/03/07	< 154	< 158
04/03/07 - 05/01/07	1510 ± 209	< 157
05/01/07 - 05/29/07	1120 ± 172	< 164
05/29/07 - 07/03/07	5350 ± 587	< 179
07/03/07 - 07/31/07	< 163	< 160
07/31/07 - 08/28/07	527 ± 116	< 155
08/28/07 - 10/02/07	1720 ± 244	< 185
10/02/07 - 10/30/07	2110 ± 287	< 186
10/30/07 - 11/27/07	< 193	< 184
11/27/07 - 12/31/07	1370 ± 208	< 178
MEAN	2343 ± 3640	-

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

TABLE C-I.2 **CONCENTRATIONS OF I-131 IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	A3-2
01/02/07 - 01/30/07	< 0.5
01/30/07 - 02/27/07	< 0.5
02/27/07 - 04/03/07	< 0.6
04/03/07 - 05/01/07	< 0.6
05/01/07 - 05/29/07	< 0.8
05/29/07 - 07/03/07	< 0.7
07/03/07 - 07/31/07	< 0.7
07/31/07 - 08/28/07	< 0.6
08/28/07 - 10/02/07	< 0.5
10/02/07 - 10/30/07	< 0.9
10/30/07 - 11/27/07	< 0.7
11/27/07 - 12/31/07	< 0.6
MEAN	-

TABLE C-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140
J1-2	01/02/07 - 01/30/07	< 7	< 8	< 15	< 7	< 14	< 7	< 13	< 8	< 8	< 34	< 11
	01/30/07 - 02/27/07	< 6	< 6	< 13	< 6	< 13	< 6	< 11	< 6	< 7	< 29	< 13
	02/27/07 - 04/03/07	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 2	< 2	< 8	< 2
	04/03/07 - 05/01/07	< 7	< 7	< 14	< 7	< 12	< 7	< 11	< 4	< 6	< 29	< 12
	05/01/07 - 05/29/07	< 3	< 3	< 7	< 3	< 7	< 4	< 6	< 3	< 4	< 15	< 6
	05/29/07 - 07/03/07	< 4	< 4	< 10	< 5	< 10	< 5	< 8	< 4	< 5	< 20	< 6
	07/03/07 - 07/31/07	< 5	< 4	< 13	< 3	< 9	< 6	< 8	< 4	< 5	< 28	< 11
	07/31/07 - 08/28/07	< 2	< 2	< 6	< 2	< 5	< 3	< 4	< 2	< 2	< 26	< 7
	08/28/07 - 10/02/07	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 2	< 2	< 13	< 4
	10/02/07 - 10/30/07	< 5	< 5	< 12	< 6	< 10	< 5	< 9	< 4	< 5	< 31	< 11
	10/30/07 - 11/27/07	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 13	< 5
	11/27/07 - 12/31/07	< 5	< 4	< 11	< 5	< 8	< 5	< 9	< 4	< 5	< 24	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-
Q9-1	01/02/07 - 01/30/07	< 6	< 6	< 11	< 6	< 15	< 7	< 12	< 8	< 6	< 31	< 9
	01/30/07 - 02/27/07	< 6	< 7	< 11	< 6	< 14	< 6	< 10	< 5	< 6	< 32	< 13
	02/27/07 - 04/03/07	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 3	< 9	< 3
	04/03/07 - 05/01/07	< 6	< 6	< 11	< 5	< 10	< 6	< 10	< 5	< 5	< 30	< 12
	05/01/07 - 05/29/07	< 4	< 5	< 9	< 5	< 8	< 4	< 7	< 4	< 3	< 20	< 6
	05/29/07 - 07/03/07	< 4	< 5	< 10	< 4	< 10	< 4	< 9	< 4	< 5	< 22	< 7
	07/03/07 - 07/31/07	< 2	< 3	< 6	< 3	< 5	< 3	< 5	< 2	< 3	< 17	< 6
	07/31/07 - 08/28/07	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 1	< 16	< 5
	08/28/07 - 10/02/07	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 2	< 2	< 11	< 3
	10/02/07 - 10/30/07	< 5	< 6	< 11	< 5	< 9	< 7	< 9	< 5	< 5	< 34	< 12
	10/30/07 - 11/27/07	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 2	< 2	< 14	< 4
	11/27/07 - 12/31/07	< 6	< 7	< 12	< 5	< 11	< 6	< 11	< 6	< 6	< 33	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-II.1 **CONCENTRATIONS OF GROSS BETA IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	G15-2	G15-3	Q9-1
01/02/07 - 01/30/07	2.4 ± 1.5	< 2.0	< 2.0
01/30/07 - 02/27/07	3.1 ± 1.3	3.4 ± 1.4	< 1.7
02/27/07 - 04/03/07	4.2 ± 1.5	2.3 ± 1.4	< 1.8
04/03/07 - 05/01/07	4.3 ± 1.4	2.6 ± 1.2	2.2 ± 1.2
05/01/07 - 05/29/07	2.5 ± 1.3	< 1.8	4.5 ± 1.5
05/29/07 - 07/03/07	< 2.1	< 2.3	< 2.1
07/03/07 - 07/31/07	2.8 ± 1.5	3.0 ± 1.6	2.2 ± 1.5
07/31/07 - 08/28/07	2.8 ± 1.5	4.9 ± 1.7	2.3 ± 1.5
08/28/07 - 10/02/07	5.4 ± 1.7	5.3 ± 1.8	4.7 ± 1.6
10/02/07 - 10/30/07	4.5 ± 1.7	4.8 ± 1.7	5.2 ± 1.7
10/30/07 - 11/27/07	4.5 ± 1.5	4.0 ± 1.4	2.7 ± 1.3
11/27/07 - 12/31/07	< 2.4	< 2.4	< 2.3
MEAN	3.6 ± 2.1	3.8 ± 2.3	3.4 ± 2.7

TABLE C-II.2 **CONCENTRATIONS OF I-131 IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	G15-2	G15-3	Q9-1
01/02/07 - 01/30/07	< 0.4	< 0.4	< 0.5
01/30/07 - 02/27/07	< 0.6	< 0.7	< 0.7
02/27/07 - 04/03/07	< 0.6	< 0.7	< 0.6
04/03/07 - 05/01/07	< 0.6	< 0.7	< 0.6
05/01/07 - 05/29/07	< 0.7	< 0.8	< 0.9
05/29/07 - 07/03/07	< 0.6	< 0.7	< 0.7
07/03/07 - 07/31/07	< 0.6	< 0.8	< 0.7
07/31/07 - 08/28/07	< 0.6	< 0.5	< 0.6
08/28/07 - 10/02/07	< 0.5	< 0.4	< 0.5
10/02/07 - 10/30/07	< 0.9	< 0.9	< 0.9
10/30/07 - 11/27/07	< 0.7	< 0.7	< 0.7
11/27/07 - 12/31/07	< 0.8	< 0.5	< 0.5
MEAN	-	-	-

TABLE C-II.3 **CONCENTRATIONS OF TRITIUM IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	G15-2	G15-3	Q9-1
01/02/07 - 01/30/07	< 178	< 182	< 180
01/30/07 - 02/27/07	< 181	< 184	< 183
02/27/07 - 04/03/07	< 155	< 157	< 156
04/03/07 - 05/01/07	< 158	< 161	< 157
05/01/07 - 05/29/07	< 159	< 159	< 158
05/29/07 - 07/03/07	< 171	447 ± 129	< 168
07/03/07 - 07/31/07	< 161	< 164	< 159
07/31/07 - 08/28/07	188 ± 101	< 148	< 146
08/28/07 - 10/02/07	< 174	< 174	< 171
10/02/07 - 10/30/07	< 184	232 ± 124	< 184
10/30/07 - 11/27/07	< 192	< 189	< 191
11/27/07 - 12/31/07	< 172	< 173	< 174
MEAN	188 ± 0	340 ± 304	-

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

TABLE C-II.4 **CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140
G15-2	01/02/07 - 01/30/07	< 8	< 9	< 16	< 7	< 26	< 9	< 14	< 13	< 8	< 41	< 13
	01/30/07 - 02/27/07	< 4	< 4	< 9	< 5	< 9	< 4	< 9	< 4	< 5	< 23	< 8
	02/27/07 - 04/03/07	< 2	< 2	< 4	< 3	< 4	< 2	< 3	< 2	< 2	< 7	< 3
	04/03/07 - 05/01/07	< 6	< 5	< 11	< 5	< 12	< 5	< 10	< 6	< 6	< 29	< 6
	05/01/07 - 05/29/07	< 3	< 3	< 5	< 3	< 5	< 3	< 4	< 3	< 3	< 13	< 4
	05/29/07 - 07/03/07	< 3	< 3	< 6	< 3	< 6	< 3	< 5	< 3	< 3	< 16	< 5
	07/03/07 - 07/31/07	< 3	< 3	< 6	< 3	< 5	< 3	< 4	< 2	< 3	< 16	< 6
	07/31/07 - 08/28/07	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 20	< 7
	08/28/07 - 10/02/07	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 14	< 5
	10/02/07 - 10/30/07	< 5	< 5	< 11	< 4	< 11	< 5	< 9	< 6	< 5	< 31	< 10
	10/30/07 - 11/27/07	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 2	< 2	< 14	< 4
	11/27/07 - 12/31/07	< 7	< 6	< 12	< 6	< 9	< 6	< 9	< 6	< 6	< 34	< 8
	MEAN	-	-	-	-	-	-	-	-	-	-	-
G15-3	01/02/07 - 01/30/07	< 7	< 7	< 15	< 7	< 18	< 8	< 14	< 7	< 7	< 31	< 11
	01/30/07 - 02/27/07	< 5	< 5	< 10	< 5	< 12	< 6	< 10	< 4	< 5	< 30	< 12
	02/27/07 - 04/03/07	< 2	< 2	< 5	< 2	< 5	< 2	< 4	< 2	< 2	< 8	< 3
	04/03/07 - 05/01/07	< 5	< 5	< 10	< 6	< 10	< 4	< 9	< 5	< 6	< 24	< 10
	05/01/07 - 05/29/07	< 3	< 2	< 6	< 3	< 5	< 3	< 5	< 3	< 3	< 14	< 6
	05/29/07 - 07/03/07	< 4	< 5	< 9	< 5	< 8	< 4	< 7	< 3	< 4	< 20	< 6
	07/03/07 - 07/31/07	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 2	< 3	< 18	< 6
	07/31/07 - 08/28/07	< 2	< 2	< 5	< 2	< 3	< 2	< 3	< 2	< 2	< 21	< 6
	08/28/07 - 10/02/07	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 2	< 2	< 12	< 4
	10/02/07 - 10/30/07	< 5	< 5	< 11	< 6	< 9	< 6	< 9	< 4	< 5	< 36	< 11
	10/30/07 - 11/27/07	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 2	< 2	< 12	< 4
	11/27/07 - 12/31/07	< 5	< 5	< 12	< 6	< 11	< 5	< 9	< 6	< 6	< 35	< 11
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-II.4 **CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140
Q9-1	01/02/07 - 01/30/07	< 7	< 7	< 16	< 7	< 17	< 9	< 12	< 8	< 8	< 34	< 8
	01/30/07 - 02/27/07	< 5	< 6	< 12	< 5	< 13	< 6	< 9	< 5	< 6	< 28	< 11
	02/27/07 - 04/03/07	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 2	< 2	< 7	< 3
	04/03/07 - 05/01/07	< 5	< 5	< 11	< 5	< 10	< 6	< 9	< 5	< 6	< 24	< 4
	05/01/07 - 05/29/07	< 4	< 4	< 9	< 6	< 8	< 4	< 7	< 4	< 5	< 22	< 8
	05/29/07 - 07/03/07	< 4	< 4	< 9	< 5	< 7	< 4	< 7	< 3	< 5	< 22	< 7
	07/03/07 - 07/31/07	< 3	< 4	< 9	< 4	< 6	< 4	< 7	< 3	< 4	< 25	< 8
	07/31/07 - 08/28/07	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 2	< 2	< 19	< 6
	08/28/07 - 10/02/07	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 13	< 5
	10/02/07 - 10/30/07	< 5	< 5	< 11	< 5	< 9	< 5	< 9	< 5	< 5	< 32	< 10
	10/30/07 - 11/27/07	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 14	< 5
	11/27/07 - 12/31/07	< 6	< 6	< 15	< 8	< 13	< 7	< 12	< 6	< 6	< 33	< 12
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-III.1 CONCENTRATIONS OF GROSS BETA, IODINE-131, TRITIUM, AND STRONTIUM IN EFFLUENT WATER SAMPLES FOR STATION K1-1 COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	GROSS BETA	I-131	H-3	SR-89	SR-90
01/02/07 - 01/30/07	2.9 ± 1.5	< 0.5	46200 ± 4530		
01/30/07 - 02/27/07	4.0 ± 1.5	< 0.7	< 185		
02/27/07 - 04/03/07	3.4 ± 1.5	< 0.7	< 150		
04/03/07 - 05/01/07	4.9 ± 1.5	< 0.6	23200 ± 2360		
05/01/07 - 05/29/07	3.8 ± 1.5	< 0.7	20400 ± 2070		
05/29/07 - 07/03/07	6.2 ± 2.0	< 0.7	52500 ± 4870	< 4.2	< 0.4
07/03/07 - 07/31/07	7.1 ± 2.0	< 0.7	< 158		
07/31/07 - 08/28/07	8.6 ± 2.2	< 0.6	5470 ± 589		
08/28/07 - 10/02/07	8.5 ± 2.1	< 0.8	12000 ± 1250		
10/02/07 - 10/30/07	10 ± 2.2	< 0.8	18800 ± 1950		
10/30/07 - 11/27/07	4.8 ± 1.5	< 0.7	< 185		
11/27/07 - 12/31/07	4.0 ± 1.8	< 0.6	8150 ± 875	< 4.0	< 0.9
MEAN	5.7 ± 4.6	-	23340 ± 34483	-	-

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

TABLE C-III.2 **CONCENTRATIONS OF GAMMA EMITTERS IN EFFLUENT WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	MN-54	CO-58	FE-59	CO-60	ZN-65	NB-95	ZR-95	CS-134	CS-137	BA-140	LA-140
K1-1	01/02/07 - 01/30/07	< 4	< 4	< 8	< 4	< 8	< 3	< 7	< 4	< 4	< 19	< 7
	01/30/07 - 02/27/07	< 5	< 5	< 12	< 5	< 9	< 5	< 9	< 4	< 5	< 25	< 8
	02/27/07 - 04/03/07	< 3	< 2	< 5	< 3	< 5	< 3	< 5	< 3	< 3	< 11	< 4
	04/03/07 - 05/01/07	< 4	< 5	< 12	< 6	< 7	< 5	< 8	< 5	< 6	< 24	< 8
	05/01/07 - 05/29/07	< 4	< 5	< 8	< 4	< 8	< 4	< 9	< 4	< 4	< 23	< 7
	05/29/07 - 07/03/07	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 4	< 4	< 21	< 6
	07/03/07 - 07/31/07	< 2	< 2	< 4	< 2	< 5	< 2	< 4	< 2	< 2	< 14	< 4
	07/31/07 - 08/28/07	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 23	< 7
	08/28/07 - 10/02/07	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 15	< 4
	10/02/07 - 10/30/07	< 5	< 6	< 13	< 5	< 10	< 6	< 9	< 5	< 6	< 37	< 13
	10/30/07 - 11/27/07	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 2	< 2	< 14	< 5
	11/27/07 - 12/31/07	< 5	< 4	< 10	< 5	< 8	< 5	< 8	< 5	< 4	< 24	< 10
	MEAN	-	-	-	-	-	-	-	-	-	-	-

TABLE C-IV.1 **CONCENTRATIONS OF TRITIUM AND GAMMA EMITTERS IN STORM WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	H-3	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
EDCB	01/30/07 - 04/03/07	236 ± 104	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 2	< 2	< 8	< 3
	05/01/07 - 07/03/07	231 ± 114	< 3	< 4	< 7	< 3	< 7	< 4	< 5	< 3	< 4	< 17	< 7
	07/31/07 - 10/02/07	244 ± 126	< 5	< 6	< 14	< 8	< 9	< 8	< 11	< 5	< 6	< 27	< 8
	10/30/07 - 12/31/07	< 195	< 5	< 7	< 14	< 7	< 13	< 6	< 11	< 6	< 6	< 35	< 12
	MEAN	237 ± 13	-	-	-	-	-	-	-	-	-	-	-

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

TABLE C-V.1 **CONCENTRATIONS OF STRONTIUM IN PREDATOR AND BOTTOM FEEDER (FISH) SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	Sr-90
INDP	PREDATOR	
	06/06/07	< 3
	10/17/07	< 3
	MEAN	-
INDB	BOTTOM FEEDER	
	06/06/07	< 4
	10/17/07	< 4
	MEAN	-
BKGP	PREDATOR	
	06/06/07	< 4
	10/15/07	< 4
	MEAN	-
BKGB	BOTTOM FEEDER	
	06/06/07	< 4
	10/15/07	< 4
	MEAN	-

TABLE C-V.2 **CONCENTRATIONS OF GAMMA EMITTERS IN PREDATOR AND BOTTOM FEEDER (FISH) SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137
INDP	PREDATOR								
	06/06/07	2270 ± 614	< 27	< 39	< 74	< 41	< 91	< 39	< 40
	10/17/07	3280 ± 685	< 47	< 43	< 101	< 51	< 110	< 42	< 49
	MEAN	2775 ± 1428	-	-	-	-	-	-	-
INDB	BOTTOM FEEDER								
	06/06/07	2100 ± 632	< 34	< 43	< 92	< 43	< 90	< 38	< 46
	10/17/07	3010 ± 688	< 44	< 42	< 107	< 37	< 89	< 32	< 44
	MEAN	2555 ± 1287	-	-	-	-	-	-	-
BKGP	PREDATOR								
	06/06/07	3110 ± 790	< 46	< 45	< 92	< 49	< 118	< 48	< 53
	10/15/07	3170 ± 754	< 47	< 42	< 109	< 41	< 87	< 39	< 45
	MEAN	3140 ± 85	-	-	-	-	-	-	-
BKGB	BOTTOM FEEDER								
	06/06/07	2790 ± 544	< 34	< 37	< 69	< 39	< 73	< 37	< 42
	10/15/07	2410 ± 870	< 58	< 57	< 134	< 60	< 102	< 62	< 68
	MEAN	2600 ± 537	-	-	-	-	-	-	-

TABLE C-VI.1 **CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/KG DRY ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	MN-54	CO-58	CO-60	CS-134	CS-137
A1-3	06/11/07 - 06/11/07	7970 ± 986	< 51	< 54	< 53	< 49	< 65
	11/21/07 - 11/21/07	9280 ± 1300	< 82	< 70	< 68	< 64	< 88
	MEAN	8625 ± 1853	-	-	-	-	-
J2-1	06/11/07 - 06/11/07	8800 ± 1880	< 130	< 118	< 96	< 90	< 129
	11/21/07 - 11/21/07	13000 ± 1730	< 84	< 81	< 69	< 83	107 ± 92
	MEAN	10900 ± 5940	-	-	-	-	107 ± 0
K1-3	06/11/07 - 06/11/07	7370 ± 1840	< 42	< 138	< 122	< 89	< 126
	11/21/07 - 11/21/07	7740 ± 1260	< 72	< 79	< 67	< 64	115 ± 54
	MEAN	7555 ± 523	-	-	-	-	115 ± 0
EDCB	11/21/07 - 11/21/07	14900 ± 2300	< 97	< 114	< 104	< 83	248 ± 78
	MEAN	14900 ± 0	-	-	-	-	248 ± 0

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

TABLE C-VII.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

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

COLLECTION PERIOD	GROUP I		GROUP II				GROUP III
	E1-2	F1-3	A3-1	G2-1	H3-1	M2-1	Q15-1
01/03/07 - 01/10/07	14 ± 5	13 ± 5	17 ± 5	15 ± 5	15 ± 5	15 ± 5	20 ± 5
01/10/07 - 01/17/07	16 ± 5	15 ± 5	8 ± 4	12 ± 5	12 ± 5	16 ± 5	14 ± 5
01/17/07 - 01/24/07	12 ± 5	13 ± 5	13 ± 5	12 ± 5	14 ± 5	10 ± 5	13 ± 5
01/24/07 - 01/31/07	19 ± 5	21 ± 5	23 ± 5	23 ± 5	19 ± 5	18 ± 5	19 ± 5
01/31/07 - 02/07/07	16 ± 5	19 ± 5	20 ± 5	12 ± 5	21 ± 5	18 ± 5	21 ± 5
02/07/07 - 02/14/07	17 ± 5	17 ± 5	17 ± 5	14 ± 5	15 ± 5	15 ± 5	17 ± 5
02/14/07 - 02/21/07	15 ± 5	19 ± 5	20 ± 5	20 ± 5	19 ± 5	20 ± 5	21 ± 5
02/21/07 - 02/28/07	7 ± 5	10 ± 5	10 ± 5	12 ± 5	11 ± 5	11 ± 5	8 ± 5
02/28/07 - 03/07/07	15 ± 5	14 ± 5	14 ± 5	16 ± 5	15 ± 5	11 ± 5	11 ± 5
03/07/07 - 03/14/07	20 ± 5	18 ± 5	25 ± 6	19 ± 5	21 ± 5	22 ± 5	23 ± 5
03/14/07 - 03/21/07	11 ± 4	18 ± 5	19 ± 5	15 ± 5	14 ± 5	15 ± 5	12 ± 5
03/21/07 - 03/28/07	12 ± 5	17 ± 5	12 ± 5	15 ± 5	18 ± 5	18 ± 5	15 ± 5
03/28/07 - 04/04/07	14 ± 5	16 ± 5	14 ± 5	16 ± 5	14 ± 5	12 ± 4	15 ± 5
04/04/07 - 04/11/07	11 ± 5	11 ± 4	13 ± 5	11 ± 5	9 ± 4	11 ± 5	15 ± 5
04/11/07 - 04/18/07	< 7	< 7	10 ± 5	< 7	< 7	7 ± 5	< 7
04/18/07 - 04/25/07	18 ± 5	12 ± 5	22 ± 5	16 ± 5	13 ± 5	10 ± 5	13 ± 5
04/25/07 - 05/02/07	12 ± 4	12 ± 4	13 ± 4	9 ± 4	12 ± 4	13 ± 5	15 ± 5
05/02/07 - 05/09/07	12 ± 5	15 ± 5	12 ± 5	14 ± 5	14 ± 5	12 ± 5	13 ± 5
05/09/07 - 05/16/07	12 ± 5	13 ± 5	13 ± 5	14 ± 5	12 ± 5	15 ± 5	12 ± 5
05/16/07 - 05/23/07	9 ± 4	16 ± 5	14 ± 5	15 ± 5	16 ± 5	10 ± 5	13 ± 5
05/23/07 - 05/30/07	21 ± 5	23 ± 5	29 ± 6	20 ± 5	23 ± 5	26 ± 6	23 ± 5
05/30/07 - 06/06/07	17 ± 5	14 ± 5	16 ± 5	20 ± 5	13 ± 5	15 ± 5	17 ± 5
06/06/07 - 06/13/07	17 ± 5	10 ± 5	14 ± 5	16 ± 5	17 ± 5	13 ± 5	13 ± 5
06/13/07 - 06/20/07	17 ± 5	19 ± 5	17 ± 5	16 ± 5	16 ± 5	19 ± 5	17 ± 5
06/20/07 - 06/27/07	20 ± 5	16 ± 5	20 ± 5	22 ± 5	17 ± 5	21 ± 5	21 ± 5
06/27/07 - 07/04/07	15 ± 5	15 ± 5	15 ± 5	21 ± 10	15 ± 5	14 ± 5	13 ± 5
07/04/07 - 07/11/07	18 ± 5	23 ± 6	16 ± 5	23 ± 6	18 ± 5	21 ± 5	19 ± 5
07/11/07 - 07/18/07	15 ± 5	18 ± 5	18 ± 5	22 ± 6	17 ± 5	21 ± 5	22 ± 6
07/18/07 - 07/25/07	11 ± 5	20 ± 5	18 ± 5	18 ± 5	16 ± 5	17 ± 5	20 ± 5
07/25/07 - 08/01/07	14 ± 5	13 ± 5	23 ± 5	12 ± 5	20 ± 5	19 ± 5	23 ± 5
08/01/07 - 08/08/07	26 ± 6	34 ± 6	33 ± 6	32 ± 6	27 ± 6	31 ± 6	35 ± 6
08/08/07 - 08/15/07	17 ± 5	21 ± 5	23 ± 5	25 ± 5	22 ± 5	24 ± 5	24 ± 5
08/15/07 - 08/22/07	21 ± 5	21 ± 5	18 ± 5	19 ± 5	19 ± 5	18 ± 5	19 ± 5
08/22/07 - 08/29/07	19 ± 6	13 ± 5	13 ± 5	13 ± 5	18 ± 5	13 ± 5	19 ± 5
08/29/07 - 09/05/07	22 ± 6	24 ± 6	23 ± 6	28 ± 6	23 ± 6	26 ± 6	29 ± 6
09/05/07 - 09/12/07	24 ± 6	21 ± 6	24 ± 6	20 ± 6	26 ± 6	28 ± 6	27 ± 6
09/12/07 - 09/19/07	17 ± 5	(1)	16 ± 5	20 ± 5	16 ± 5	16 ± 5	15 ± 5
09/19/07 - 09/26/07	24 ± 6	26 ± 6	25 ± 6	27 ± 6	23 ± 6	21 ± 5	28 ± 6
09/26/07 - 10/03/07	19 ± 5	19 ± 5	23 ± 6	25 ± 6	22 ± 5	22 ± 5	20 ± 5
10/03/07 - 10/10/07	22 ± 5	19 ± 5	25 ± 5	19 ± 5	19 ± 5	20 ± 5	24 ± 5
10/10/07 - 10/17/07	15 ± 6	18 ± 6	18 ± 6	12 ± 6	17 ± 6	17 ± 6	17 ± 6
10/17/07 - 10/24/07	27 ± 6	27 ± 6	23 ± 6	30 ± 6	23 ± 6	29 ± 6	26 ± 6
10/24/07 - 10/31/07	13 ± 5	11 ± 5	16 ± 5	14 ± 5	14 ± 5	12 ± 5	18 ± 5
10/31/07 - 11/07/07	17 ± 5	14 ± 5	20 ± 6	19 ± 6	20 ± 6	18 ± 5	15 ± 5
11/07/07 - 11/14/07	23 ± 6	20 ± 5	21 ± 5	21 ± 5	23 ± 6	25 ± 5	22 ± 5
11/14/07 - 11/20/07	16 ± 6	13 ± 7	10 ± 6	11 ± 6	< 8	15 ± 6	13 ± 6
11/20/07 - 11/28/07	24 ± 5	23 ± 5	25 ± 5	20 ± 5	21 ± 5	26 ± 5	25 ± 5
11/28/07 - 12/04/07	22 ± 6	20 ± 6	18 ± 6	15 ± 6	22 ± 6	16 ± 5	21 ± 6
12/04/07 - 12/12/07	21 ± 5	19 ± 5	19 ± 5	21 ± 5	20 ± 5	21 ± 5	17 ± 5
12/12/07 - 12/19/07	19 ± 6	18 ± 6	19 ± 6	19 ± 6	18 ± 5	18 ± 5	17 ± 5
12/19/07 - 12/26/07	19 ± 6	19 ± 6	24 ± 6	29 ± 6	21 ± 6	19 ± 5	26 ± 6
12/26/07 - 01/01/08	29 ± 6	34 ± 7	35 ± 7	29 ± 6	31 ± 6	32 ± 6	29 ± 6
MEAN	17 ± 9	18 ± 11	19 ± 11	18 ± 11	18 ± 9	18 ± 11	19 ± 11

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

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VII.2 MONTHLY AND YEARLY MEAN VALUES OF GROSS BETA CONCENTRATIONS (E-3 PCI/CU METER) IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

GROUP I - CLOSEST TO THE SITE BOUNDARY				GROUP II - INTERMEDIATE OFFSITE				GROUP III - CONTROL LOCATIONS			
COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD
01/03/07 - 01/31/07	12	21	15 ± 6	01/03/07 - 01/31/07	8	23	15 ± 8	01/03/07 - 01/31/07	13	20	17 ± 7
01/31/07 - 02/28/07	7	19	15 ± 9	01/31/07 - 02/28/07	10	21	16 ± 8	01/31/07 - 02/28/07	8	21	17 ± 12
02/28/07 - 03/28/07	11	20	16 ± 6	02/28/07 - 03/28/07	11	25	17 ± 7	02/28/07 - 03/28/07	11	23	15 ± 10
03/28/07 - 05/02/07	< 7	18	12 ± 7	03/28/07 - 05/02/07	< 7	22	12 ± 7	03/28/07 - 05/02/07	< 7	15	13 ± 7
05/02/07 - 05/30/07	9	23	15 ± 10	05/02/07 - 05/30/07	10	29	16 ± 11	05/02/07 - 05/30/07	12	23	15 ± 10
05/30/07 - 06/27/07	10	20	16 ± 6	05/30/07 - 06/27/07	13	22	17 ± 5	05/30/07 - 06/27/07	13	21	17 ± 6
06/27/07 - 08/01/07	11	23	16 ± 7	06/27/07 - 08/01/07	12	23	18 ± 6	06/27/07 - 08/01/07	13	23	19 ± 8
08/01/07 - 08/29/07	13	34	21 ± 13	08/01/07 - 08/29/07	13	33	22 ± 13	08/01/07 - 08/29/07	19	35	24 ± 15
08/29/07 - 10/03/07	17	26	22 ± 6	08/29/07 - 10/03/07	16	28	23 ± 7	08/29/07 - 10/03/07	15	29	24 ± 12
10/03/07 - 10/31/07	11	27	19 ± 12	10/03/07 - 10/31/07	12	30	19 ± 11	10/03/07 - 10/31/07	17	26	21 ± 9
10/31/07 - 11/28/07	13	24	19 ± 9	10/31/07 - 11/28/07	< 8	26	19 ± 11	10/31/07 - 11/28/07	13	25	19 ± 11
11/28/07 - 01/01/08	18	34	22 ± 11	11/28/07 - 01/01/08	15	35	22 ± 11	11/28/07 - 01/01/08	17	29	22 ± 11
01/03/07 - 01/01/08	< 7	34	17 ± 6	01/03/07 - 01/01/08	< 7	35	18 ± 6	01/03/07 - 01/01/08	< 7	35	19 ± 7

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

TABLE C-VII.3 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

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

STC	COLLECTION PERIOD	BE-7	MN-54	CO-58	CO-60	CS-134	CS-137
A3-1	01/03 - 04/04/07	76 ± 24	< 2	< 3	< 3	< 2	< 2
	04/04 - 07/04/07	84 ± 27	< 3	< 4	< 3	< 3	< 2
	07/04 - 10/03/07	111 ± 36	< 3	< 5	< 4	< 4	< 4
	10/03 - 01/01/08	60 ± 25	< 3	< 4	< 3	< 4	< 3
	MEAN	83 ± 43	-	-	-	-	-
E1-2	01/03 - 04/04/07	84 ± 37	< 4	< 5	< 2	< 3	< 4
	04/04 - 07/04/07	109 ± 31	< 3	< 3	< 3	< 3	< 3
	07/04 - 10/03/07	105 ± 38	< 3	< 4	< 4	< 5	< 4
	10/03 - 01/01/08	75 ± 29	< 3	< 3	< 2	< 3	< 3
	MEAN	93 ± 33	-	-	-	-	-
F1-3	01/03 - 04/04/07	83 ± 20	< 2	< 3	< 2	< 2	< 2
	04/04 - 07/04/07	102 ± 49	< 4	< 5	< 3	< 5	< 4
	07/04 - 10/03/07	95 ± 36	< 4	< 5	< 3	< 5	< 3
	10/03 - 01/01/08	93 ± 34	< 4	< 5	< 3	< 4	< 3
	MEAN	93 ± 16	-	-	-	-	-
G2-1	01/03 - 04/04/07	106 ± 31	< 3	< 4	< 4	< 3	< 3
	04/04 - 07/04/07	99 ± 42	< 4	< 6	< 4	< 5	< 4
	07/04 - 10/03/07	75 ± 32	< 3	< 3	< 3	< 4	< 3
	10/03 - 01/01/08	80 ± 26	< 3	< 5	< 4	< 3	< 4
	MEAN	90 ± 30	-	-	-	-	-
H3-1	01/03 - 04/04/07	94 ± 32	< 4	< 3	< 4	< 3	< 3
	04/04 - 07/04/07	105 ± 30	< 3	< 5	< 2	< 4	< 2
	07/04 - 10/03/07	71 ± 29	< 3	< 5	< 4	< 4	< 3
	10/03 - 01/01/08	61 ± 21	< 2	< 3	< 2	< 2	< 2
	MEAN	83 ± 40	-	-	-	-	-
M2-1	01/03 - 04/04/07	99 ± 31	< 3	< 4	< 4	< 3	< 2
	04/04 - 07/04/07	61 ± 36	< 2	< 5	< 3	< 3	< 3
	07/04 - 10/03/07	81 ± 31	< 4	< 4	< 5	< 5	< 4
	10/03 - 01/01/08	42 ± 24	< 3	< 3	< 2	< 3	< 2
	MEAN	71 ± 49	-	-	-	-	-
Q15-1	01/03 - 04/04/07	92 ± 39	< 4	< 3	< 3	< 3	< 3
	04/04 - 07/04/07	126 ± 35	< 2	< 4	< 3	< 2	< 3
	07/04 - 10/03/07	72 ± 37	< 2	< 3	< 4	< 3	< 3
	10/03 - 01/01/08	82 ± 33	< 3	< 4	< 3	< 3	< 2
	MEAN	93 ± 47	-	-	-	-	-

TABLE C-VIII.1 **CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

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

	GROUP I		GROUP II				GROUP III
COLLECTION PERIOD	E1-2	F1-3	A3-1	G2-1	H3-1	M2-1	Q15-1
01/03/07 - 01/10/07	< 13	< 12	< 12	< 13	< 13	< 12	< 12
01/10/07 - 01/17/07	< 18	< 18	< 37	< 19	< 19	< 36	< 36
01/17/07 - 01/24/07	< 21	< 20	< 21	< 21	< 14	< 20	< 21
01/24/07 - 01/31/07	< 42	< 42	< 37	< 43	< 43	< 37	< 37
01/31/07 - 02/07/07	< 26	< 14	< 33	< 26	< 26	< 25	< 32
02/07/07 - 02/14/07	< 32	< 31	< 31	< 32	< 32	< 32	< 17
02/14/07 - 02/21/07	< 37	< 37	< 39	< 38	< 38	< 39	< 38
02/21/07 - 02/28/07	< 44	< 43	< 47	< 45	< 44	< 47	< 47
02/28/07 - 03/07/07	< 27	< 27	< 29	< 28	< 28	< 29	< 29
03/07/07 - 03/14/07	< 24	< 24	< 27	< 24	< 24	< 27	< 26
03/14/07 - 03/21/07	< 17	< 17	< 31	< 18	< 17	< 31	< 30
03/21/07 - 03/28/07	< 23	< 23	< 28	< 23	< 17	< 29	< 28
03/28/07 - 04/04/07	< 35	< 34	< 27	< 35	< 35	< 34	< 34
04/04/07 - 04/11/07	< 36	< 36	< 28	< 37	< 36	< 28	< 28
04/11/07 - 04/18/07	< 33	< 33	< 30	< 34	< 33	< 30	< 30
04/18/07 - 04/25/07	< 21	< 21	< 20	< 21	< 21	< 20	< 20
04/25/07 - 05/02/07	< 23	< 23	< 23	< 24	< 24	< 23	< 22
05/02/07 - 05/09/07	< 37	< 37	< 37	< 30	< 38	< 37	< 37
05/09/07 - 05/16/07	< 63	< 63	< 50	< 64	< 63	< 52	< 51
05/16/07 - 05/23/07	< 57	< 57	< 54	< 59	< 59	< 53	< 53
05/23/07 - 05/30/07	< 41	< 41	< 66	< 42	< 42	< 66	< 66
05/30/07 - 06/06/07	< 31	< 31	< 28	< 31	< 31	< 28	< 28
06/06/07 - 06/13/07	< 11	< 11	< 9	< 11	< 11	< 9	< 9
06/13/07 - 06/20/07	< 43	< 21	< 33	< 43	< 43	< 43	< 33
06/20/07 - 06/27/07	< 18	< 18	< 19	< 18	< 18	< 20	< 20
06/27/07 - 07/04/07	< 40	< 40	< 37	< 69	< 41	< 22	< 36
07/04/07 - 07/11/07	< 52	< 53	< 53	< 53	< 53	< 27	< 52
07/11/07 - 07/18/07	< 44	< 56	< 66	< 56	< 54	< 53	< 64
07/18/07 - 07/25/07	< 47	< 47	< 43	< 48	< 47	< 41	< 42
07/25/07 - 08/01/07	< 45	< 46	< 54	< 46	< 45	< 51	< 52
08/01/07 - 08/08/07	< 31	< 31	< 24	< 31	< 35	< 34	< 35
08/08/07 - 08/15/07	< 48	< 48	< 47	< 50	< 48	< 44	< 46
08/15/07 - 08/22/07	< 56	< 45	< 65	< 56	< 55	< 62	< 64
08/22/07 - 08/29/07	< 69	< 69	< 61	< 70	< 68	< 57	< 59
08/29/07 - 09/05/07	< 40	< 40	< 69	< 40	< 40	< 66	< 68
09/05/07 - 09/12/07	< 48	< 48	< 55	< 48	< 47	< 52	< 54
09/12/07 - 09/19/07	< 39	(1)	< 69	< 39	< 38	< 68	< 69
09/19/07 - 09/26/07	< 52	< 52	< 57	< 55	< 54	< 53	< 55
09/26/07 - 10/03/07	< 32	< 32	< 41	< 32	< 31	< 39	< 40
10/03/07 - 10/10/07	< 39	< 40	< 48	< 40	< 39	< 46	< 47
10/10/07 - 10/17/07	< 50	< 50	< 65	< 51	< 50	< 61	< 63
10/17/07 - 10/24/07	< 65	< 65	< 69	< 66	< 35	< 62	< 67
10/24/07 - 10/31/07	< 30	< 30	< 39	< 30	< 30	< 37	< 38
10/31/07 - 11/07/07	< 28	< 28	< 28	< 28	< 28	< 27	< 28
11/07/07 - 11/14/07	< 65	< 66	< 65	< 67	< 66	< 62	< 51
11/14/07 - 11/20/07	< 40	< 49	< 50	< 40	< 39	< 47	< 49
11/20/07 - 11/28/07	< 40	< 40	< 39	< 40	< 38	< 37	< 38
11/28/07 - 12/04/07	< 57	< 58	< 64	< 25	< 57	< 61	< 64
12/04/07 - 12/12/07	< 20	< 20	< 24	< 21	< 20	< 23	< 23
12/12/07 - 12/19/07	< 55	< 54	< 59	< 54	< 53	< 55	< 57
12/19/07 - 12/26/07	< 57	< 58	< 27	< 59	< 35	< 34	< 35
12/26/07 - 01/01/08	< 46	< 46	< 44	< 47	< 45	< 42	< 44
MEAN	-	-	-	-	-	-	-

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-IX.1 CONCENTRATIONS OF I-131 IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	CONTROL FARM K15-3	INDICATOR FARMS D2-1	E2-2	F4-1	G2-1
01/10/07	< 0.5	< 0.4	< 0.6		< 0.5
02/07/07	< 0.4	< 0.3	< 0.7		< 0.4
03/07/07	< 0.7	< 0.6	< 0.6		< 0.6
03/21/07	< 0.5	< 0.5	< 0.8	< 0.5	< 0.6
04/04/07	< 0.8	< 0.6	< 0.9		< 0.8
04/18/07	< 0.7	< 0.6	< 0.8		< 0.8
05/02/07	< 0.5	< 0.5	< 0.6		< 0.5
05/16/07	< 0.7	< 0.5	< 0.7	< 0.7 (1)	< 0.7
05/30/07	< 1.0	< 0.8	< 0.7	< 0.8	< 0.7
06/13/07	< 0.7	< 0.7	< 0.7	< 0.9	< 0.7
06/27/07	< 0.9	< 0.6	< 0.7	< 0.5	< 0.6
07/11/07	< 0.7	< 0.7	< 0.9	< 0.7	< 0.8
07/25/07	< 0.5	< 0.4	< 0.6	< 0.8	< 0.5
08/08/07	< 0.7	< 0.5	< 0.7	< 0.5	< 0.7
08/22/07	< 0.6	< 0.6	< 0.6	< 0.6	< 0.8
09/05/07	< 0.7	< 0.7	< 0.8	< 0.6	< 0.7
09/19/07	< 0.7	< 0.6	< 0.7	< 0.8	< 0.7
10/03/07	< 0.6	< 0.5	< 0.8	< 0.6	< 0.6
10/17/07	< 0.8	< 0.6	< 0.6	< 0.7	< 0.7
10/31/07	< 0.7	< 0.6	< 0.6	< 0.5	< 0.6
11/14/07	< 0.6	< 0.5	< 0.6	< 0.6	< 0.7
11/28/07	< 0.6	< 0.5	< 0.6	< 0.6	< 0.6
12/12/07	< 0.6	< 0.6	< 0.6	< 0.5	< 0.6
MEAN	-	-	-	-	-

(1) SEE PROGRAM CHANGES SECTION FOR EXPLANATION

TABLE C-IX.2 CONCENTRATIONS OF STRONTIUM IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	CONTROL FARM K15-3 SR-89	CONTROL FARM K15-3 SR-90	INDICATOR FARMS D2-1 SR-89	D2-1 SR-90	E2-2 SR-89	E2-2 SR-90	F4-1 SR-89	F4-1 SR-90	G2-1 SR-89	G2-1 SR-90
01/10/07 - 03/21/07	< 3.8	< 0.8	< 3.8	< 0.7	< 3.7	< 0.8			< 3.4	< 0.7
01/10/07 - 03/21/07										0.8 ± 0.2 (1)
03/21/07 - 03/21/07							< 0.9	1.4 ± 0.7		
04/04/07 - 06/27/07	< 1.6	< 0.6	< 1.8	< 0.7	< 2.0	< 0.7			< 2.0	< 0.6
05/16/07 - 05/16/07							< 2.0	< 0.6		
07/11/07 - 09/19/07	< 3.0	0.9 ± 0.5	< 3.2	0.6 ± 0.4	< 2.6	1.1 ± 0.4	< 4.5	0.8 ± 0.6	< 3.4	0.9 ± 0.7
10/03/07 - 12/12/07	< 4.5	1.0 ± 0.6	< 1.7	0.9 ± 0.2	< 1.8	0.7 ± 0.3	< 3.1	< 0.7	< 3.2	0.6 ± 0.4
MEAN	-	1.0 ± 0.2	-	0.7 ± 0.4	-	0.9 ± 0.5	-	1.1 ± 0.8	-	0.8 ± 0.4

(1) RERUN RESULT

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

TABLE C-IX.3 CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	Cs-134	Cs-137	Ba-140	La-140
D2-1	01/10/07	1290 ± 169	< 5	< 7	< 35	< 9
	02/07/07	962 ± 194	< 7	< 9	< 43	< 15
	03/07/07	1270 ± 195	< 8	< 10	< 40	< 12
	03/21/07	1270 ± 105	< 4	< 4	< 14	< 4
	04/04/07	1410 ± 187	< 7	< 7	< 24	< 8
	04/18/07	1190 ± 148	< 5	< 7	< 28	< 8
	05/02/07	1370 ± 169	< 6	< 7	< 36	< 9
	05/16/07	1290 ± 108	< 4	< 5	< 24	< 7
	05/30/07	1150 ± 83	< 3	< 3	< 29	< 8
	06/13/07	1320 ± 110	< 3	< 4	< 33	< 10
	06/27/07	1260 ± 124	< 4	< 5	< 43	< 13
	07/11/07	1250 ± 116	< 4	< 5	< 22	< 6
	07/25/07	1290 ± 82	< 3	< 4	< 22	< 7
	08/08/07	1160 ± 193	< 9	< 9	< 40	< 15
	08/22/07	1390 ± 83	< 3	< 3	< 33	< 10
	09/05/07	1220 ± 39	< 1	< 2	< 21	< 6
	09/19/07	1290 ± 128	< 5	< 5	< 32	< 10
	10/03/07	1370 ± 140	< 6	< 6	< 30	< 9
	10/17/07	1460 ± 81	< 3	< 3	< 44	< 14
	10/31/07	1310 ± 132	< 6	< 7	< 38	< 13
	11/14/07	1280 ± 94	< 3	< 4	< 47	< 15
	11/28/07	1130 ± 154	< 7	< 7	< 46	< 14
	12/12/07	1340 ± 51	< 2	< 2	< 14	< 4
	MEAN	1273 ± 214	-	-	-	-
E2-2	01/10/07	1240 ± 195	< 9	< 8	< 36	< 13
	02/07/07	1310 ± 206	< 8	< 10	< 35	< 13
	03/07/07	1180 ± 136	< 5	< 5	< 22	< 10
	03/21/07	1300 ± 143	< 5	< 7	< 23	< 9
	04/04/07	1080 ± 166	< 8	< 9	< 32	< 9
	04/18/07	1320 ± 148	< 6	< 6	< 31	< 10
	05/02/07	1310 ± 142	< 6	< 6	< 25	< 9
	05/16/07	1330 ± 152	< 7	< 8	< 39	< 14
	05/30/07	1160 ± 102	< 4	< 5	< 38	< 12
	06/13/07	1280 ± 127	< 4	< 4	< 49	< 14
	06/27/07	1320 ± 154	< 5	< 7	< 50	< 13
	07/11/07	1400 ± 124	< 5	< 5	< 29	< 8
	07/25/07	1390 ± 85	< 3	< 4	< 23	< 6
	08/08/07	1200 ± 195	< 8	< 12	< 55	< 10
	08/22/07	1400 ± 93	< 4	< 5	< 41	< 12
	09/05/07	1270 ± 173	< 7	< 8	< 55	< 14
	09/19/07	1330 ± 100	< 4	< 4	< 26	< 8
	10/03/07	1360 ± 129	< 5	< 6	< 32	< 8
	10/17/07	1310 ± 62	< 3	< 3	< 41	< 13
	10/31/07	1250 ± 109	< 6	< 7	< 41	< 14
	11/14/07	1250 ± 91	< 3	< 4	< 46	< 15
	11/28/07	1310 ± 140	< 5	< 5	< 39	< 14
	12/12/07	1290 ± 60	< 2	< 3	< 19	< 5
	MEAN	1287 ± 155	-	-	-	-

TABLE C-IX.3 CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	Cs-134	Cs-137	Ba-140	La-140
F4-1	03/21/07	1370 ± 145	< 5	< 5	< 22	< 7
	05/16/07	1270 ± 148	< 6	< 7	< 38	< 7
	05/30/07	1320 ± 117	< 4	< 5	< 40	< 11
	06/13/07	1390 ± 43	< 2	< 2	< 19	< 5
	06/27/07	1380 ± 115	< 5	< 5	< 42	< 13
	07/11/07	1420 ± 132	< 5	< 6	< 31	< 10
	07/25/07	1430 ± 84	< 3	< 4	< 25	< 7
	08/08/07	1360 ± 191	< 6	< 8	< 39	< 11
	08/22/07	1340 ± 77	< 3	< 3	< 31	< 8
	09/05/07	1330 ± 112	< 4	< 4	< 29	< 9
	09/19/07	1400 ± 131	< 5	< 6	< 37	< 15
	10/03/07	1340 ± 145	< 7	< 7	< 35	< 8
	10/17/07	1330 ± 51	< 2	< 2	< 28	< 8
	10/31/07	1340 ± 188	< 7	< 9	< 54	< 14
	11/14/07	1390 ± 105	< 3	< 4	< 53	< 15
	11/28/07	1300 ± 114	< 4	< 5	< 30	< 10
	12/12/07	1400 ± 57	< 2	< 2	< 16	< 4
	MEAN	1359 ± 87	-	-	-	-
G2-1	01/10/07	784 ± 164	< 8	< 11	< 32	< 15
	02/07/07	1250 ± 195	< 7	< 7	< 26	< 9
	03/07/07	1010 ± 174	< 7	< 9	< 39	< 10
	03/21/07	1220 ± 123	< 4	< 5	< 19	< 5
	04/04/07	967 ± 150	< 10	< 10	< 40	< 13
	04/18/07	1340 ± 171	< 9	< 9	< 38	< 11
	05/02/07	1160 ± 147	< 7	< 7	< 31	< 12
	05/16/07	1210 ± 119	< 4	< 5	< 24	< 7
	05/30/07	1220 ± 102	< 4	< 4	< 35	< 11
	06/13/07	1050 ± 48	< 2	< 2	< 20	< 7
	06/27/07	959 ± 96	< 4	< 4	< 39	< 14
	07/11/07	1220 ± 148	< 5	< 6	< 31	< 11
	07/25/07	1140 ± 87	< 3	< 4	< 24	< 7
	08/08/07	1260 ± 184	< 7	< 9	< 38	< 13
	08/22/07	1300 ± 111	< 4	< 5	< 45	< 14
	09/05/07	1400 ± 163	< 7	< 7	< 53	< 14
	09/19/07	1220 ± 113	< 4	< 5	< 33	< 9
	10/03/07	1400 ± 120	< 4	< 6	< 22	< 8
	10/17/07	1250 ± 64	< 4	< 4	< 46	< 14
	10/31/07	1250 ± 120	< 9	< 8	< 46	< 14
	11/14/07	1410 ± 83	< 3	< 4	< 46	< 15
	11/28/07	1300 ± 110	< 4	< 4	< 30	< 11
	12/12/07	1240 ± 55	< 2	< 3	< 18	< 6
	MEAN	1198 ± 310	-	-	-	-

TABLE C-IX.3 CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	Cs-134	Cs-137	Ba-140	La-140
K15-3	01/10/07	1450 ± 157	< 5	< 5	< 29	< 5
	02/07/07	1310 ± 203	< 7	< 9	< 39	< 11
	03/07/07	1100 ± 163	< 6	< 8	< 32	< 11
	03/21/07	1340 ± 142	< 5	< 5	< 23	< 7
	04/04/07	1410 ± 155	< 6	< 8	< 21	< 7
	04/18/07	1180 ± 130	< 4	< 6	< 28	< 8
	05/02/07	1330 ± 166	< 6	< 6	< 30	< 10
	05/16/07	1210 ± 127	< 4	< 5	< 20	< 8
	05/30/07	1230 ± 115	< 4	< 4	< 35	< 14
	06/13/07	1400 ± 50	< 1	< 1	< 15	< 4
	06/27/07	1420 ± 106	< 3	< 5	< 38	< 14
	07/11/07	1210 ± 138	< 4	< 4	< 20	< 9
	07/25/07	1390 ± 84	< 3	< 4	< 21	< 6
	08/08/07	1200 ± 206	< 5	< 10	< 39	< 9
	08/22/07	1310 ± 77	< 3	< 4	< 36	< 9
	09/05/07	1280 ± 100	< 3	< 4	< 31	< 9
	09/19/07	1380 ± 117	< 5	< 6	< 38	< 13
	10/03/07	1220 ± 169	< 6	< 7	< 33	< 9
	10/17/07	1350 ± 41	< 2	< 2	< 27	< 8
	10/31/07	1330 ± 153	< 6	< 7	< 54	< 14
	11/14/07	1320 ± 85	< 3	< 4	< 53	< 14
	11/28/07	1400 ± 168	< 7	< 8	< 42	< 14
	12/12/07	1310 ± 71	< 3	< 3	< 21	< 6
	MEAN	1308 ± 181	-	-	-	-

TABLE C-X.1

CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN FOOD PRODUCT SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD		SR-90	Be-7	K-40	I-131	Cs-134	Cs-137
B10-2	06/29/07	Cucumber Leaves	37 ± 3	1280 ± 263	5090 ± 525	< 36	< 26	< 29
B10-2	06/29/07	Sweet Corn Leaves	11 ± 3	643 ± 188	4470 ± 404	< 22	< 16	< 17
B10-2	06/29/07	Zucchini Leaves	40 ± 3	402 ± 101	3810 ± 300	< 16	< 12	< 13
B10-2	07/24/07	Cabbage	3 ± 1	< 55	2510 ± 133	< 21	< 6	< 7
B10-2	07/24/07	Sweet Corn		< 95	2470 ± 216	< 40	< 10	< 10
B10-2	07/24/07	Tomatoes		< 42	2740 ± 99	< 20	< 4	< 4
B10-2	08/01/07	Cabbage	< 2	< 143	2830 ± 312	< 28	< 13	< 12
B10-2	08/01/07	Sweet Corn Leaves	5 ± 1	1140 ± 233	4160 ± 469	< 46	< 21	< 23
B10-2	08/01/07	Zucchini Leaves	6 ± 1	1700 ± 201	4690 ± 422	< 29	< 15	< 17
B10-2	08/06/07	Red Beets		< 109	2960 ± 309	< 21	< 11	< 12
B10-2	08/29/07	Cabbage	3 ± 2	< 149	3030 ± 331	< 47	< 15	< 18
B10-2	08/29/07	Eggplant Leaves	15 ± 2	3640 ± 132	5250 ± 210	< 27	< 8	< 8
B10-2	08/29/07	Squash Leaves	16 ± 2	3120 ± 125	4710 ± 208	< 29	< 8	< 10

TABLE C-X.1

CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN FOOD PRODUCT SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD		SR-90	Be-7	K-40	I-131	Cs-134	Cs-137
B10-2	09/26/07	Broccoli Leaves	47 ± 5	< 191	2800 ± 315	< 57	< 17	< 17
B10-2	09/26/07	Cabbage	12 ± 2	< 181	2030 ± 327	< 51	< 17	< 20
B10-2	09/26/07	Cauliflower Leaves	18 ± 3	< 201	3040 ± 428	< 53	< 18	< 23
	MEAN		18 ± 30	1704 ± 2459	3537 ± 2089	-	-	-
E1-2	07/24/07	Cabbage	3 ± 1	< 44	2280 ± 110	< 18	< 4	< 5
E1-2	07/24/07	Sweet Corn		< 58	2940 ± 150	< 25	< 6	< 7
E1-2	07/24/07	Tomatoes		< 60	3040 ± 138	< 26	< 6	< 6
E1-2	08/06/07	Red Beets		< 156	3980 ± 424	< 30	< 17	< 20
	MEAN		3 ± 0	-	3060 ± 1400	-	-	-

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

TABLE C-X.1

CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN FOOD PRODUCT SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD		SR-90	Be-7	K-40	I-131	Cs-134	Cs-137
H1-2	06/29/07	Sweet Corn Leaves	12 ± 3	940 ± 197	3980 ± 506	< 30	< 23	< 26
H1-2	06/29/07	Yellow Squash Leaves	30 ± 3	457 ± 244	4140 ± 586	< 35	< 26	< 30
H1-2	06/29/07	Zucchini Leaves	27 ± 3	< 313	4760 ± 662	< 38	< 24	< 26
H1-2	08/01/07	Cabbage & Leaves	2 ± 1	< 177	4400 ± 428	< 42	< 16	< 20
H1-2	08/01/07	Sweet Corn Leaves	7 ± 2	1350 ± 278	4810 ± 523	< 53	< 24	< 29
H1-2	08/01/07	Zucchini Leaves	13 ± 1	987 ± 146	3420 ± 297	< 34	< 15	< 16
H1-2	08/29/07	Cabbage	< 2	< 97	2080 ± 247	< 34	< 10	< 12
H1-2	08/29/07	Squash Leaves	9 ± 2	538 ± 194	4660 ± 488	< 58	< 19	< 21
H1-2	08/29/07	Sweet Corn Leaves	6 ± 3	2470 ± 284	3210 ± 400	< 52	< 20	< 24
H1-2	09/26/07	Cabbage	15 ± 2	< 204	2530 ± 392	< 54	< 21	< 21
H1-2	09/26/07	Eggplant Leaves	32 ± 2	644 ± 160	3270 ± 300	< 47	< 14	< 14
H1-2	09/26/07	Squash Leaves	42 ± 4	414 ± 162	3160 ± 408	< 50	< 15	< 18
	MEAN		18 ± 26	975 ± 1365	3702 ± 1792	-	-	-

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

TABLE C-XI.1 QUARTERLY TLD RESULTS FOR THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF MILLI-ROENTGENS/STD. MONTH

STATION CODE	MEAN ± 2 S.D.	01/10/07 - 04/16/07	04/16/07 - 07/13/07	07/13/07 - 10/11/07	10/11/07 - 01/12/08
A1-4	5.1 ± 1.0	5.3 ± 0.6	5.2 ± 0.6	5.5 ± 0.7	4.4 ± 0.4
A3-1	5.6 ± 1.1	6.0 ± 0.4	5.6 ± 0.2	5.9 ± 0.6	4.8 ± 0.6
A5-1	6.1 ± 1.1	6.2 ± 0.6	6.1 ± 0.2	6.6 ± 0.4	5.3 ± 0.6
A9-3	5.2 ± 1.0	5.3 ± 0.4	5.4 ± 0.2	5.6 ± 0.4	4.5 ± 0.4
B1-1	5.3 ± 0.9	5.6 ± 0.4	5.3 ± 0.6	5.5 ± 0.5	4.6 ± 0.4
B1-2	5.2 ± 0.8	5.5 ± 0.5	5.1 ± 0.4	5.4 ± 0.3	4.6 ± 0.2
B2-1	5.4 ± 1.0	5.7 ± 0.9	5.4 ± 0.4	5.8 ± 0.4	4.7 ± 0.5
B5-1	6.0 ± 1.1	6.5 ± 0.3	6.0 ± 0.3	6.2 ± 0.4	5.2 ± 0.7
B10-1	5.9 ± 1.4	5.9 ± 0.5	6.0 ± 0.3	6.7 ± 1.0	5.0 ± 0.4
C1-1	5.8 ± 0.9	6.0 ± 0.6	5.9 ± 0.4	6.1 ± 0.5	5.1 ± 0.4
C1-2	5.1 ± 0.9	5.3 ± 0.2	5.2 ± 0.7	5.3 ± 0.5	4.4 ± 0.4
C2-1	5.7 ± 1.1	6.0 ± 0.6	5.9 ± 0.3	6.1 ± 0.3	4.9 ± 0.3
C5-1	6.2 ± 1.3	6.2 ± 0.5	6.2 ± 0.3	6.9 ± 0.3	5.3 ± 0.5
C8-1	6.3 ± 1.1	6.2 ± 0.3	6.6 ± 0.5	6.8 ± 0.5	5.5 ± 0.4
D1-1	5.2 ± 0.9	5.4 ± 0.3	5.3 ± 0.5	5.5 ± 0.5	4.5 ± 0.3
D1-2	5.6 ± 1.2	5.8 ± 0.3	5.8 ± 0.8	6.0 ± 0.3	4.7 ± 0.3
D2-2	6.7 ± 1.0	6.9 ± 0.4	6.9 ± 0.5	7.1 ± 0.7	6.0 ± 0.9
D6-1	6.7 ± 1.3	6.8 ± 0.5	6.8 ± 0.4	7.4 ± 0.4	5.8 ± 0.5
D15-1	6.0 ± 0.9	6.2 ± 0.4	6.0 ± 0.3	6.4 ± 0.6	5.4 ± 0.3
E1-2	5.4 ± 1.0	5.6 ± 0.4	5.3 ± 0.4	5.8 ± 0.6	4.7 ± 0.5
E1-4	5.0 ± 1.0	5.3 ± 0.3	4.8 ± 0.4	5.5 ± 0.4	4.4 ± 0.5
E2-3	6.3 ± 1.1	6.6 ± 0.3	6.3 ± 0.3	6.8 ± 0.4	5.5 ± 0.6
E5-1	5.7 ± 1.1	5.9 ± 0.4	5.8 ± 0.7	6.1 ± 0.4	4.9 ± 0.5
E7-1	6.1 ± 1.2	6.2 ± 0.3	6.3 ± 0.4	6.5 ± 0.7	5.2 ± 0.5
F1-1	5.7 ± 1.0	5.9 ± 0.6	5.7 ± 0.2	6.2 ± 0.2	5.0 ± 0.4
F1-2	5.3 ± 1.0	5.5 ± 0.2	5.4 ± 0.4	5.8 ± 1.1	4.6 ± 0.5
F1-4	5.1 ± 1.0	5.5 ± 0.3	4.9 ± 0.5	5.6 ± 0.8	4.5 ± 0.4
F2-1	6.3 ± 1.1	6.5 ± 0.3	6.3 ± 1.0	6.9 ± 0.3	5.6 ± 0.7
F5-1	6.6 ± 0.9	6.7 ± 0.6	6.7 ± 0.5	7.0 ± 0.3	5.9 ± 0.6
F10-1	7.1 ± 1.3	7.2 ± 0.3	7.3 ± 0.3	7.8 ± 0.3	6.2 ± 0.5
F25-1	6.2 ± 1.2	6.8 ± 0.7	6.1 ± 0.5	6.6 ± 0.4	5.4 ± 0.5
G1-2	6.0 ± 1.1	6.2 ± 0.4	5.7 ± 0.3	6.7 ± 0.7	5.4 ± 0.5
G1-3	5.1 ± 1.0	5.6 ± 0.2	5.0 ± 0.5	5.4 ± 0.9	4.5 ± 0.5
G1-5	5.2 ± 0.9	5.5 ± 0.5	5.2 ± 0.2	5.5 ± 0.3	4.5 ± 0.3
G1-6	5.3 ± 1.0	5.6 ± 0.4	5.3 ± 0.2	5.7 ± 0.4	4.6 ± 0.2
G2-4	6.9 ± 1.2	7.0 ± 0.3	6.9 ± 0.3	7.5 ± 0.7	6.0 ± 0.3
G5-1	5.6 ± 0.8	5.8 ± 0.5	5.5 ± 0.6	5.9 ± 0.2	5.0 ± 0.3
G10-1	7.9 ± 1.5	7.9 ± 0.2	7.9 ± 0.9	8.8 ± 0.5	7.0 ± 0.4
G15-1	6.5 ± 1.0	6.7 ± 0.7	7.0 ± 1.0	6.5 ± 0.3	5.8 ± 0.4
H1-1	5.6 ± 1.1	6.2 ± 0.4	5.8 ± 0.2	5.3 ± 0.6	5.0 ± 0.8
H3-1	5.0 ± 1.1	5.3 ± 0.3	5.3 ± 0.9	5.2 ± 0.4	4.2 ± 0.5
H5-1	4.7 ± 1.0	5.2 ± 0.4	4.5 ± 0.5	4.9 ± 0.2	4.1 ± 0.6
H8-1	7.7 ± 4.2	9.2 ± 0.5	8.6 ± 0.3	9.4 ± 0.4	8.2 ± 1.3
H15-1	6.7 ± 0.9	6.9 ± 0.6	6.5 ± 0.8	7.1 ± 0.6	6.1 ± 0.5
J1-1	5.4 ± 1.3	5.6 ± 0.4	5.3 ± 0.7	6.1 ± 0.4	4.6 ± 0.7

TABLE C-XI.1 QUARTERLY TLD RESULTS FOR THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF MILLI-ROENTGENS/STD. MONTH

STATION CODE	MEAN ± 2 S.D.	01/10/07 - 04/16/07	04/16/07 - 07/13/07	07/13/07 - 10/11/07	10/11/07 - 01/12/08
J1-3	4.8 ± 0.9	5.2 ± 0.2	4.8 ± 0.5	4.9 ± 0.1	4.1 ± 0.3
J3-1	5.6 ± 0.9	5.9 ± 0.4	5.4 ± 0.3	6.1 ± 0.5	5.1 ± 0.8
J5-1	6.4 ± 1.2	6.7 ± 0.4	6.4 ± 0.6	7.0 ± 0.5	5.6 ± 0.3
J7-1	6.7 ± 0.9	7.0 ± 0.7	6.6 ± 0.9	7.1 ± 0.2	6.1 ± 0.3
J15-1	6.6 ± 1.2	7.0 ± 0.7	6.5 ± 0.8	7.2 ± 0.5	5.8 ± 0.6
K1-4	5.2 ± 1.1	5.7 ± 0.7	5.0 ± 0.3	5.6 ± 0.2	4.5 ± 0.5
K2-1	6.4 ± 1.0	6.8 ± 0.7	6.4 ± 0.6	6.8 ± 0.5	5.7 ± 0.4
K3-1	5.3 ± 1.0	5.9 ± 0.4	4.9 ± 0.4	5.5 ± 0.3	4.8 ± 0.5
K5-1	6.5 ± 1.7	7.3 ± 0.5	6.2 ± 0.3	7.0 ± 0.5	5.4 ± 0.5
K8-1	6.0 ± 0.9	6.2 ± 0.2	6.0 ± 0.2	6.5 ± 0.4	5.4 ± 0.3
K15-1	5.7 ± 1.0	6.1 ± 0.4	5.6 ± 0.3	6.1 ± 0.3	5.1 ± 0.6
L1-1	5.4 ± 0.4	5.6 ± 0.5	5.3 ± 0.6	5.5 ± 0.7	5.2 ± 0.7
L1-2	5.0 ± 0.9	5.3 ± 0.3	5.0 ± 0.4	5.2 ± 0.3	4.3 ± 0.6
L2-1	6.0 ± 1.7	6.4 ± 0.4	5.9 ± 0.9	6.7 ± 1.3	4.8 ± 0.4
L5-1	5.3 ± 1.2	5.9 ± 0.1	5.3 ± 0.3	5.6 ± 0.2	4.5 ± 0.4
L8-1	6.1 ± 2.2	6.3 ± 0.4	5.8 ± 0.2	6.1 ± 0.5	5.0 ± 0.4
L15-1	5.9 ± 1.1	6.2 ± 0.4	5.7 ± 0.4	6.4 ± 0.3	5.2 ± 0.5
M1-1	5.2 ± 0.6	5.5 ± 0.4	5.0 ± 0.4	5.3 ± 0.4	4.9 ± 0.5
M1-2	5.8 ± 1.1	6.0 ± 0.6	5.7 ± 0.4	6.3 ± 0.4	5.0 ± 0.7
M2-1	5.0 ± 0.9	5.5 ± 0.4	5.0 ± 0.3	5.1 ± 0.1	4.4 ± 0.6
M5-1	5.8 ± 1.3	6.4 ± 0.2	5.5 ± 0.1	6.2 ± 0.5	5.0 ± 0.5
M9-1	7.0 ± 1.2	7.4 ± 0.5	7.0 ± 0.6	7.3 ± 0.3	6.1 ± 0.9
N1-1	5.6 ± 1.2	5.9 ± 0.5	5.8 ± 0.3	5.9 ± 0.2	4.7 ± 0.4
N1-3	5.3 ± 0.6	5.6 ± 0.2	4.9 ± 0.3	5.4 ± 0.3	5.4 ± 0.6
N2-1	5.9 ± 1.4	6.6 ± 0.4	5.5 ± 0.3	6.4 ± 0.5	5.2 ± 0.3
N5-1	4.9 ± 1.3	5.6 ± 0.2	4.6 ± 0.2	5.3 ± 0.2	4.2 ± 0.4
N8-1	6.0 ± 1.0	6.3 ± 0.4	6.0 ± 0.4	6.3 ± 0.4	5.2 ± 0.3
N15-2	6.5 ± 1.1	7.0 ± 0.5	6.4 ± 0.3	6.8 ± 0.4	5.7 ± 0.7
P1-1	5.5 ± 0.9	5.8 ± 0.7	5.4 ± 0.3	5.8 ± 0.4	4.9 ± 0.5
P1-2	5.7 ± 1.7	5.4 ± 0.3	4.9 ± 0.3	5.5 ± 0.2	6.9 ± 0.8
P2-1	6.8 ± 2.2	7.0 ± 0.5	6.3 ± 0.3	8.3 ± 0.4	5.7 ± 0.5
P5-1	6.2 ± 1.9	6.5 ± 0.6	6.1 ± 0.6	7.2 ± 0.3	4.9 ± 0.3
P8-1	5.0 ± 1.5	5.8 ± 0.8	4.8 ± 0.3	5.4 ± 0.4	4.1 ± 0.1
Q1-1	5.6 ± 1.4	6.2 ± 0.2	5.8 ± 0.2	5.7 ± 0.4	4.6 ± 0.2
Q1-2	4.9 ± 0.5	5.1 ± 0.3	5.0 ± 0.5	4.9 ± 0.4	4.5 ± 0.6
Q2-1	5.3 ± 1.3	5.8 ± 0.6	5.1 ± 0.3	5.7 ± 0.3	4.4 ± 0.3
Q5-1	5.5 ± 1.3	6.3 ± 0.3	5.3 ± 0.4	5.5 ± 0.4	4.7 ± 0.4
Q9-1	5.8 ± 1.1	6.5 ± 0.2	5.8 ± 0.5	5.7 ± 0.4	5.1 ± 0.4
Q15-1	6.1 ± 1.0	6.6 ± 0.7	6.2 ± 0.5	6.3 ± 0.3	5.4 ± 0.6
R1-1	5.1 ± 1.2	5.9 ± 0.3	5.1 ± 0.2	5.0 ± 0.3	4.5 ± 0.6
R1-2	5.1 ± 1.2	5.8 ± 0.3	5.2 ± 0.8	5.0 ± 0.3	4.4 ± 0.6
R3-1	6.4 ± 1.5	7.0 ± 0.6	6.3 ± 0.3	6.9 ± 0.3	5.4 ± 0.5
R5-1	6.2 ± 1.1	6.7 ± 0.5	6.3 ± 0.7	6.3 ± 0.4	5.4 ± 0.4
R9-1	6.1 ± 1.2	6.5 ± 0.5	6.3 ± 0.2	6.4 ± 0.3	5.2 ± 0.3
R15-1	5.6 ± 0.9	5.8 ± 0.5	5.7 ± 0.2	5.8 ± 0.2	4.9 ± 0.3

TABLE C-XII.2 MEAN QUARTERLY TLD RESULTS FOR THE SITE BOUNDARY, INDICATOR AND CONTROL LOCATIONS FOR THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF MILLI-ROENTGENS/MONTH ± 2 STANDARD DEVIATIONS OF THE STATION DATA

COLLECTION PERIOD	SITE BOUNDARY ± 2 S.D.	INDICATOR	CONTROL
JAN-MAR	5.5 ± 0.4	6.3 ± 1.3	6.7 ± 1.2
APR-JUN	5.1 ± 0.4	5.9 ± 1.4	6.3 ± 1.3
JUL-SEP	5.4 ± 0.5	6.3 ± 1.7	6.7 ± 1.6
OCT-DEC	4.7 ± 1.2	5.1 ± 1.3	5.6 ± 1.2

TABLE C-XI.3 SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF MILLI-ROENTGEN/STD. MONTH

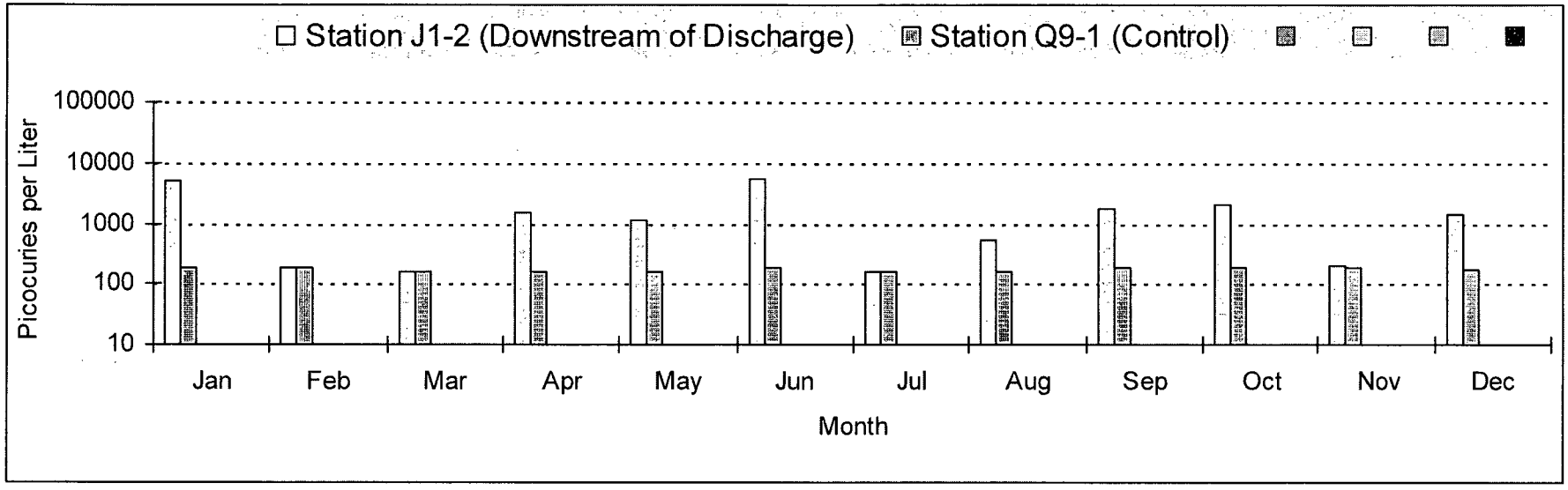
LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S.D.	PRE-OP MEAN ± 2 S.D.
SITE BOUNDARY	72	4.1	6.9	5.2 ± 0.9	4.8 ± 1.5
INDICATOR	244	4.1	9.4	5.9 ± 1.7	5.2 ± 1.5
CONTROL	44	4.9	8.8	6.3 ± 1.6	5.8 ± 1.7

SITE BOUNDARY STATIONS - A1-4, B1-2, C1-2, D1-1, E1-4, F1-2, F1-4, G1-3, G1-5, G1-6, J1-3, K1-4, L1-1, M1-1, N1-3, P1-2, Q1-2, R1-1

CONTROL STATIONS - D15-1, F25-1, G10-1, G15-1, H15-1, J15-1, K15-1, L15-1, N15-2, Q15-1, R15-1

INDICATOR STATIONS - A3-1, A5-1, A9-3, B1-1, B10-1, B2-1, B5-1, C1-1, C2-1, C5-1, C8-1, D1-2, D2-2, D6-1, E1-2, E2-3, E5-1, E7-1, F1-1, F10-1, F2-1, F5-1, G1-2, G2-4, G5-1, H1-1, H3-1, H5-1, H8-1, J1-1, J3-1, J5-1, J7-1, K2-1, K3-1, K5-1, K8-1, L1-2, L2-1, L5-1, L8-1, M1-2, M2-1, M5-1, M9-1, N1-1, N2-1, N5-1, N8-1, P1-1, P2-1, P5-1, P8-1, Q1-1, Q2-1, Q5-1, Q9-1, R1-2, R3-1, R5-1, R9-1

FIGURE C-1
Monthly Tritium Concentrations in Surface Water and Effluent Water
Three Mile Island Nuclear Station, 2007



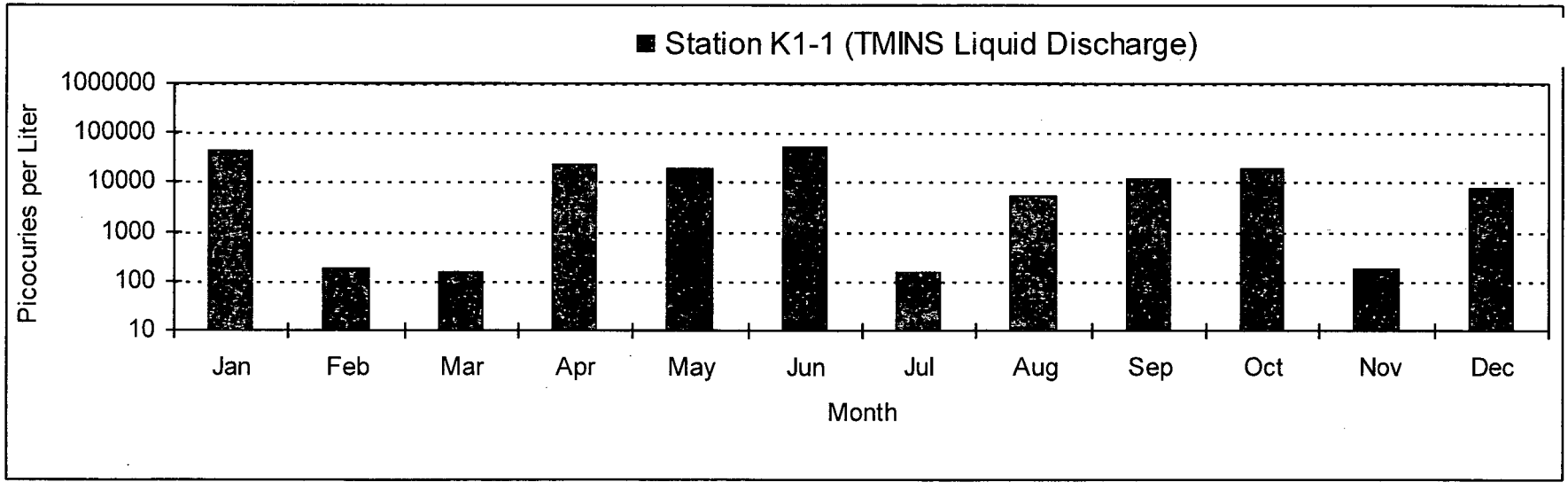


FIGURE C-2
Mean Quarterly Tritium Concentrations in Surface Water
Three Mile Island Nuclear Station, 1974 - 2007

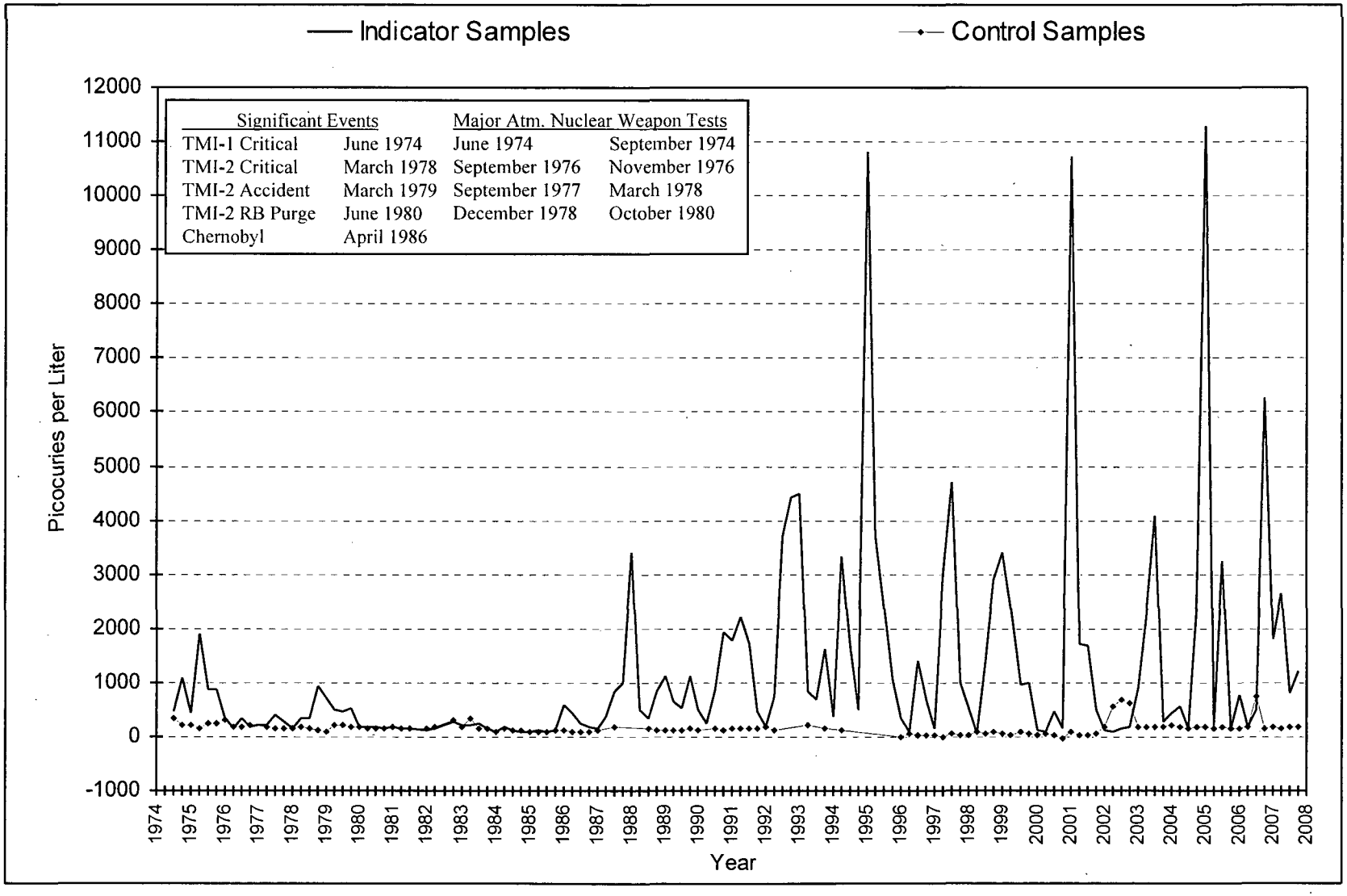


FIGURE C-3
Mean Monthly Gross Beta Concentrations in Drinking Water
Three Mile Island Nuclear Station, 2007

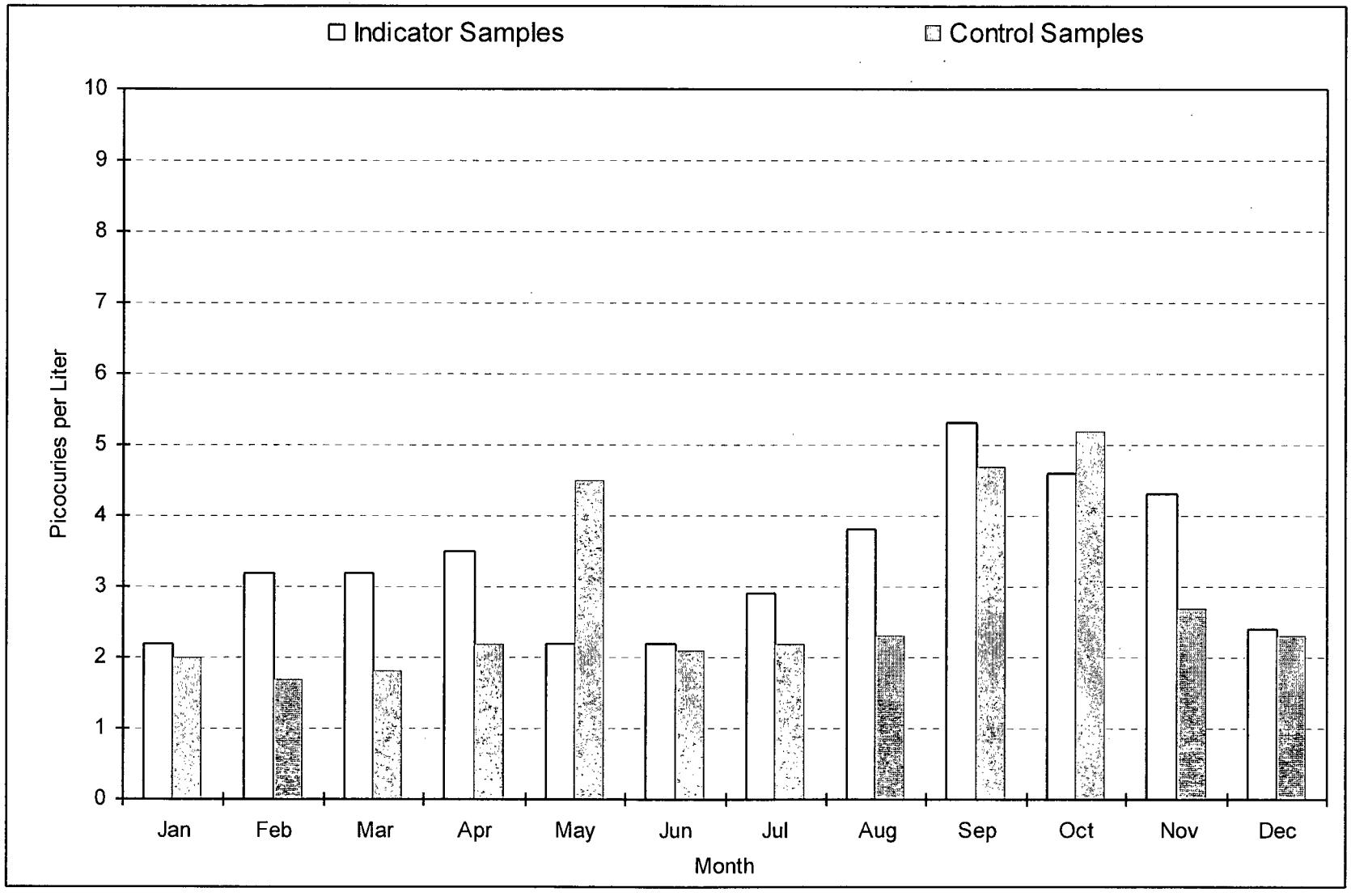
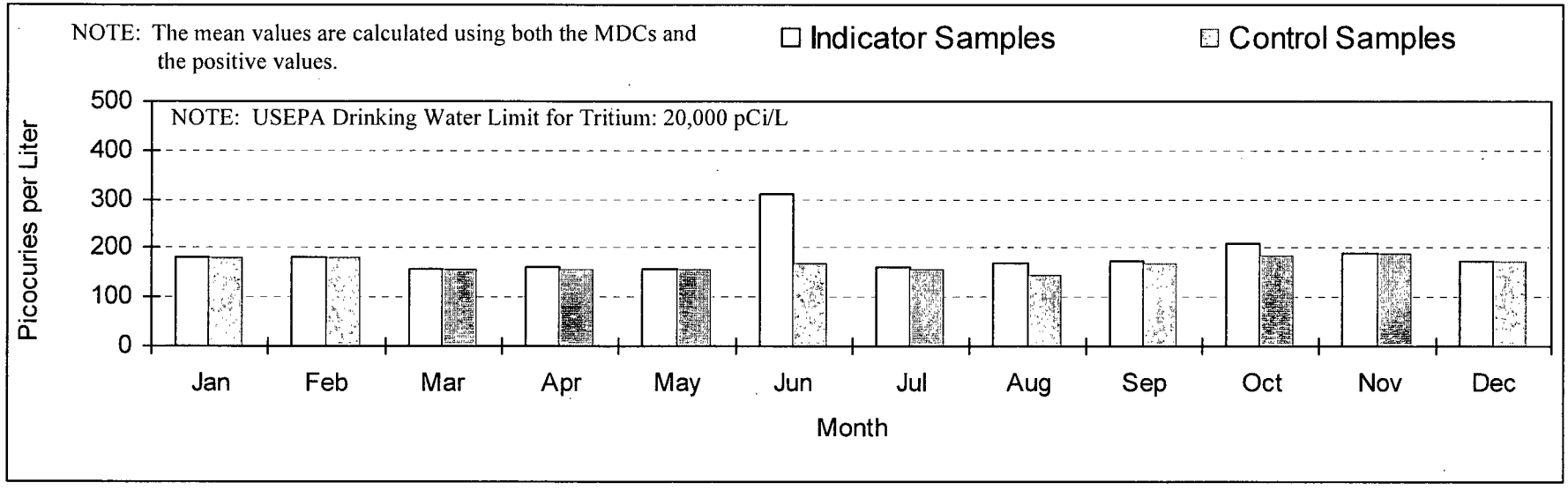


FIGURE C-4

Mean Monthly Tritium Concentrations in Drinking Water and Effluent Water

Three Mile Island Nuclear Station, 2007



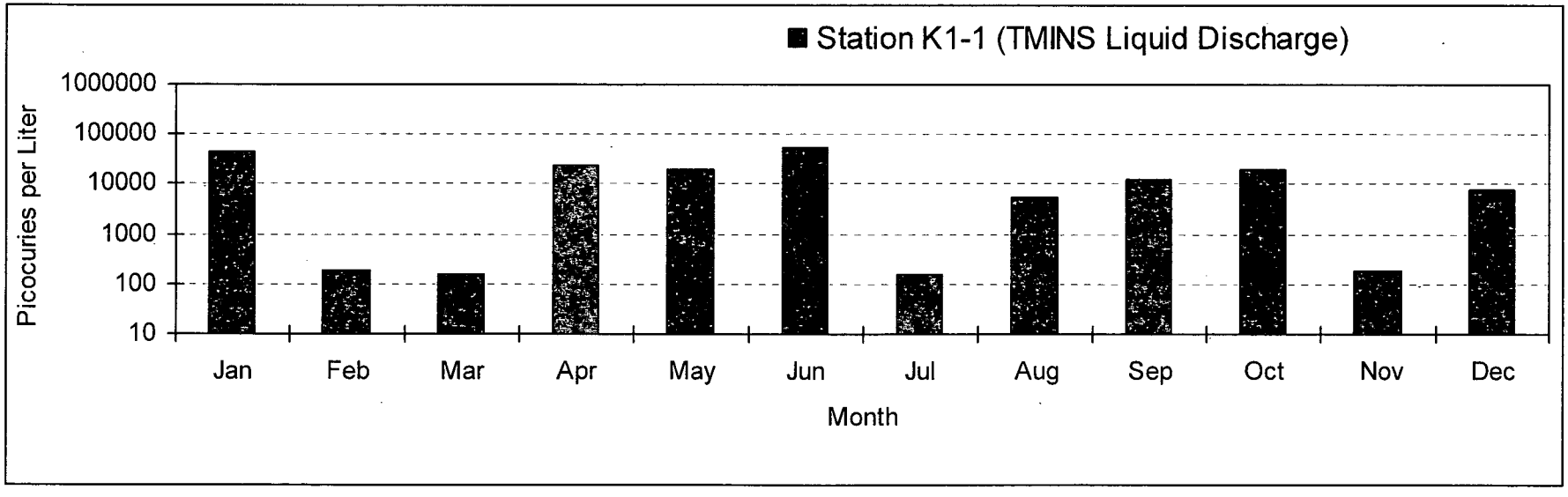


FIGURE C-5
Mean Cesium-137 Concentrations in Aquatic Sediments
Three Mile Island Nuclear Station, 1984 - 2007

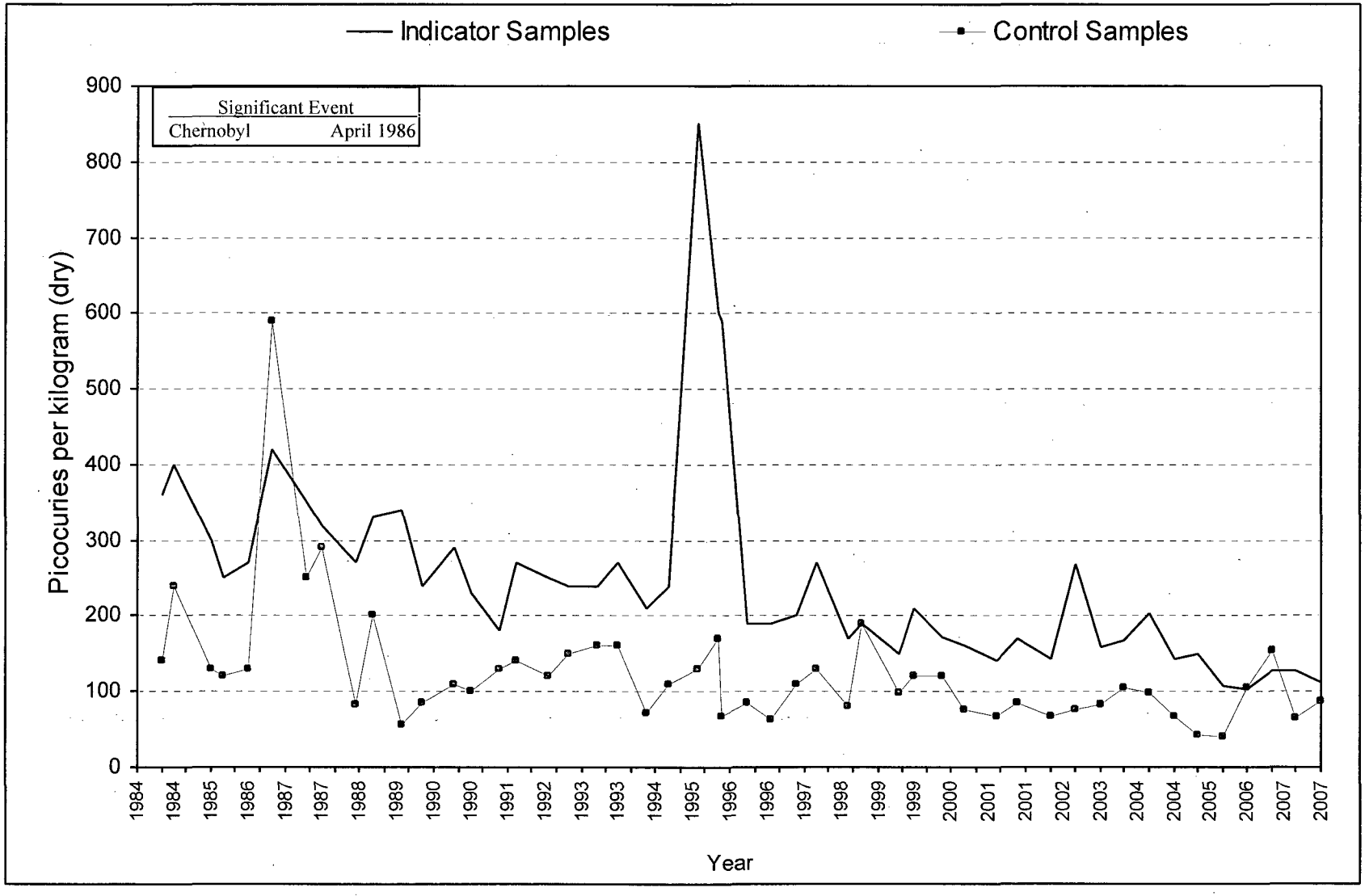


FIGURE C-6

Mean Quarterly Gross Beta Concentrations in Air Particulates

Three Mile Island Nuclear Station, 1972 - 2007

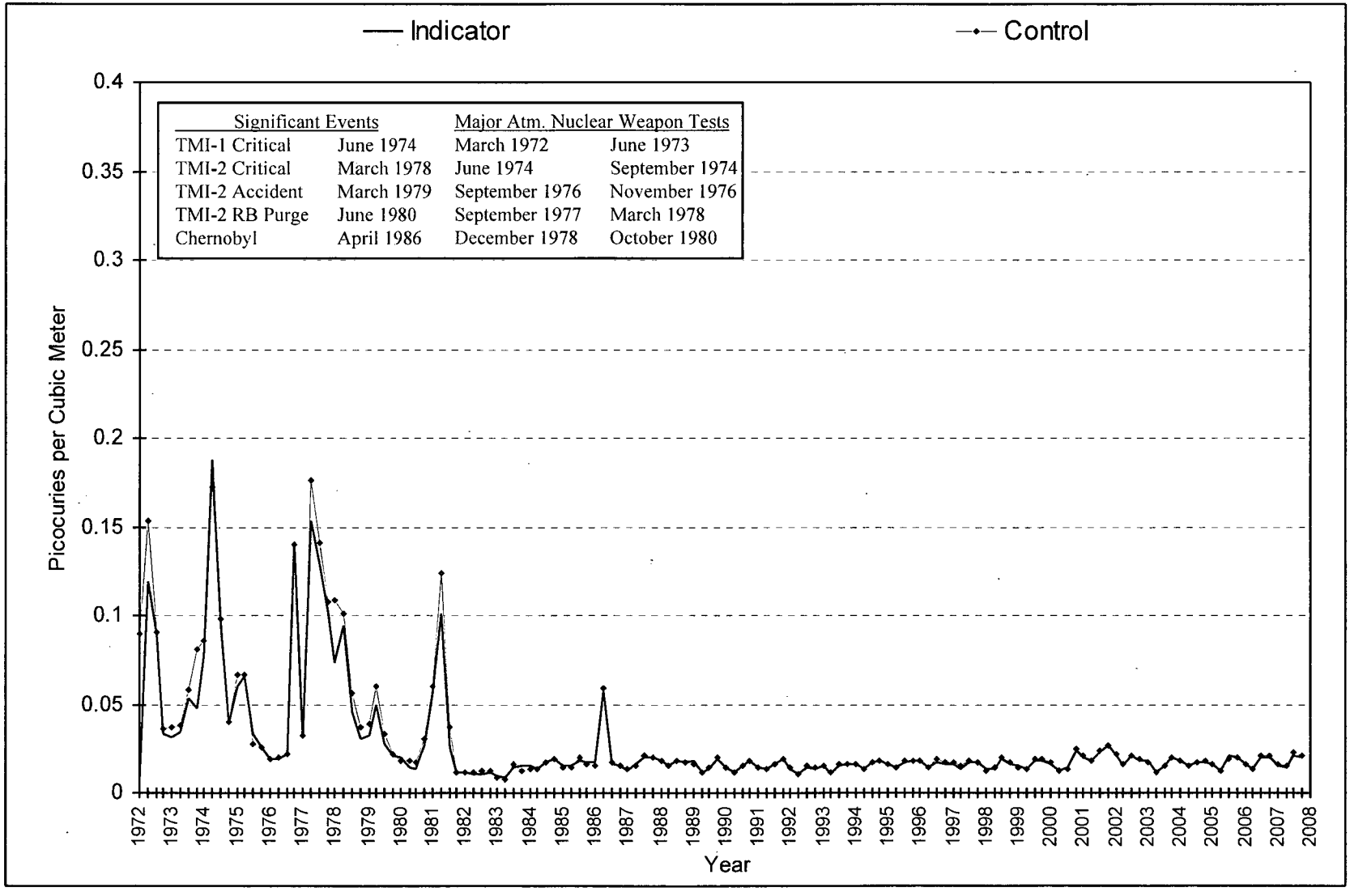


FIGURE C-7

Mean Weekly Gross Beta Concentrations in Air Particulates

Three Mile Island Nuclear Station, 2007

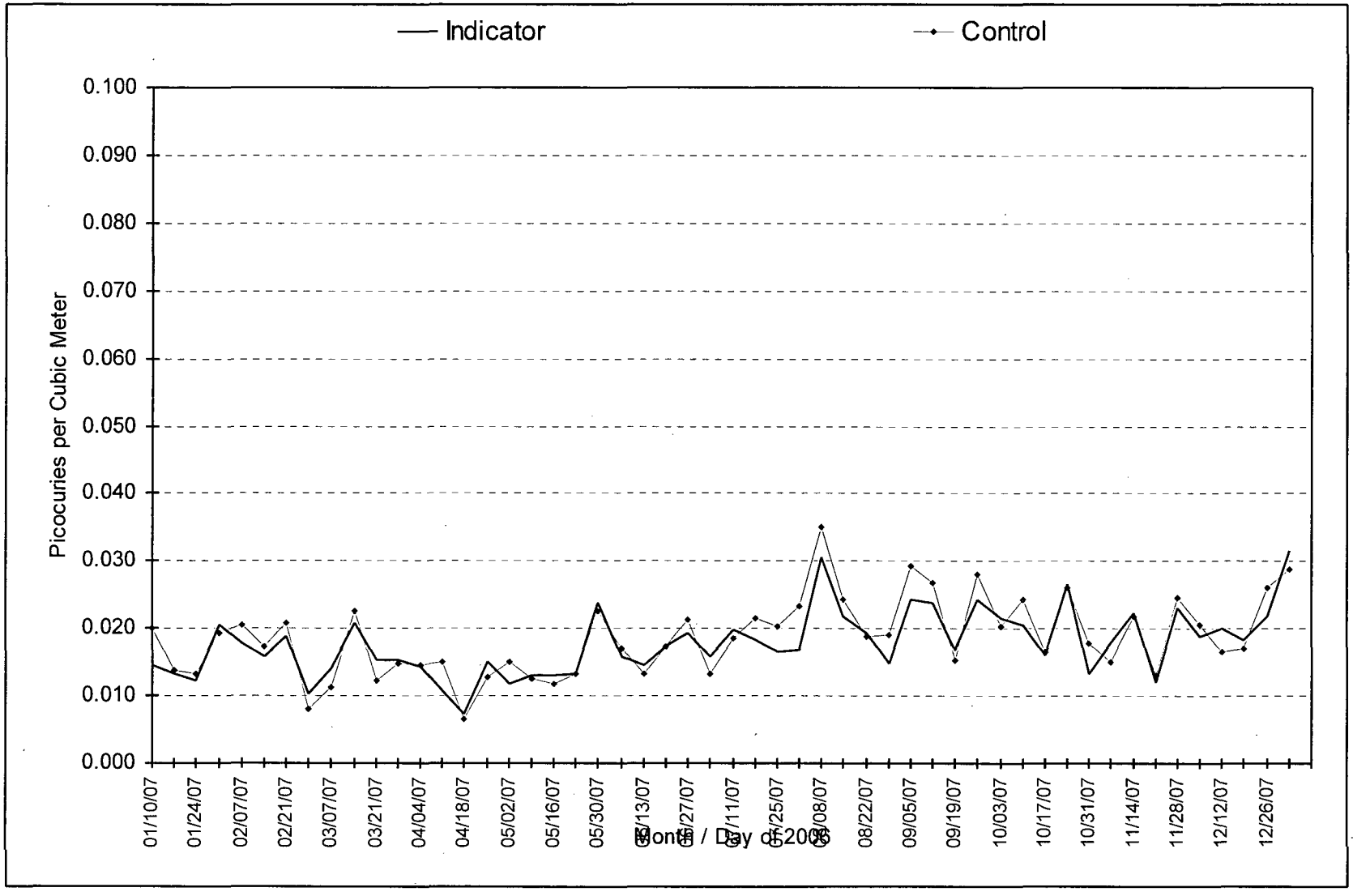


FIGURE C-8
Mean Quarterly Strontium-90 Concentrations in Cow Milk
Three Mile Island Nuclear Station, 1979 - 2007

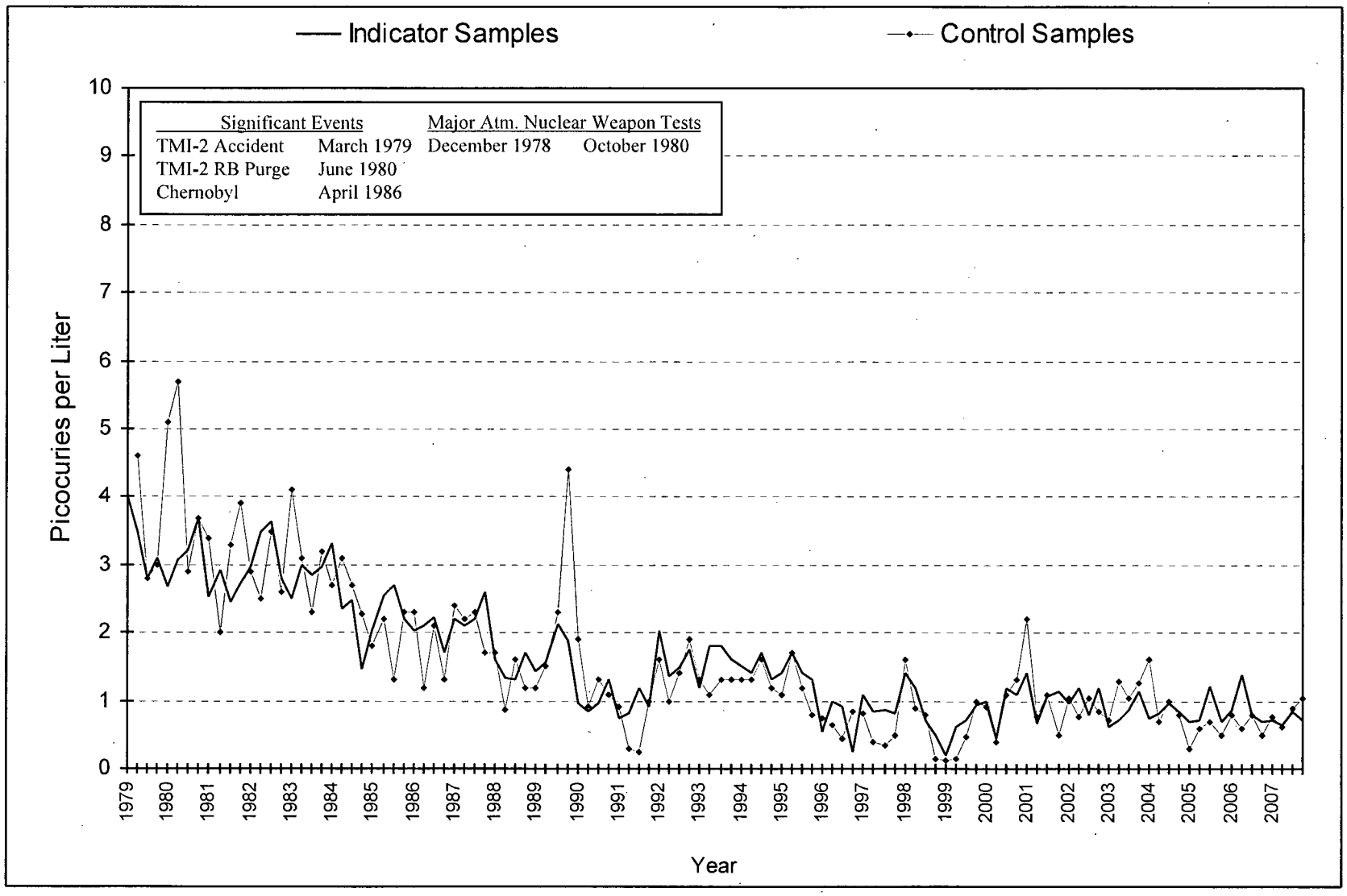
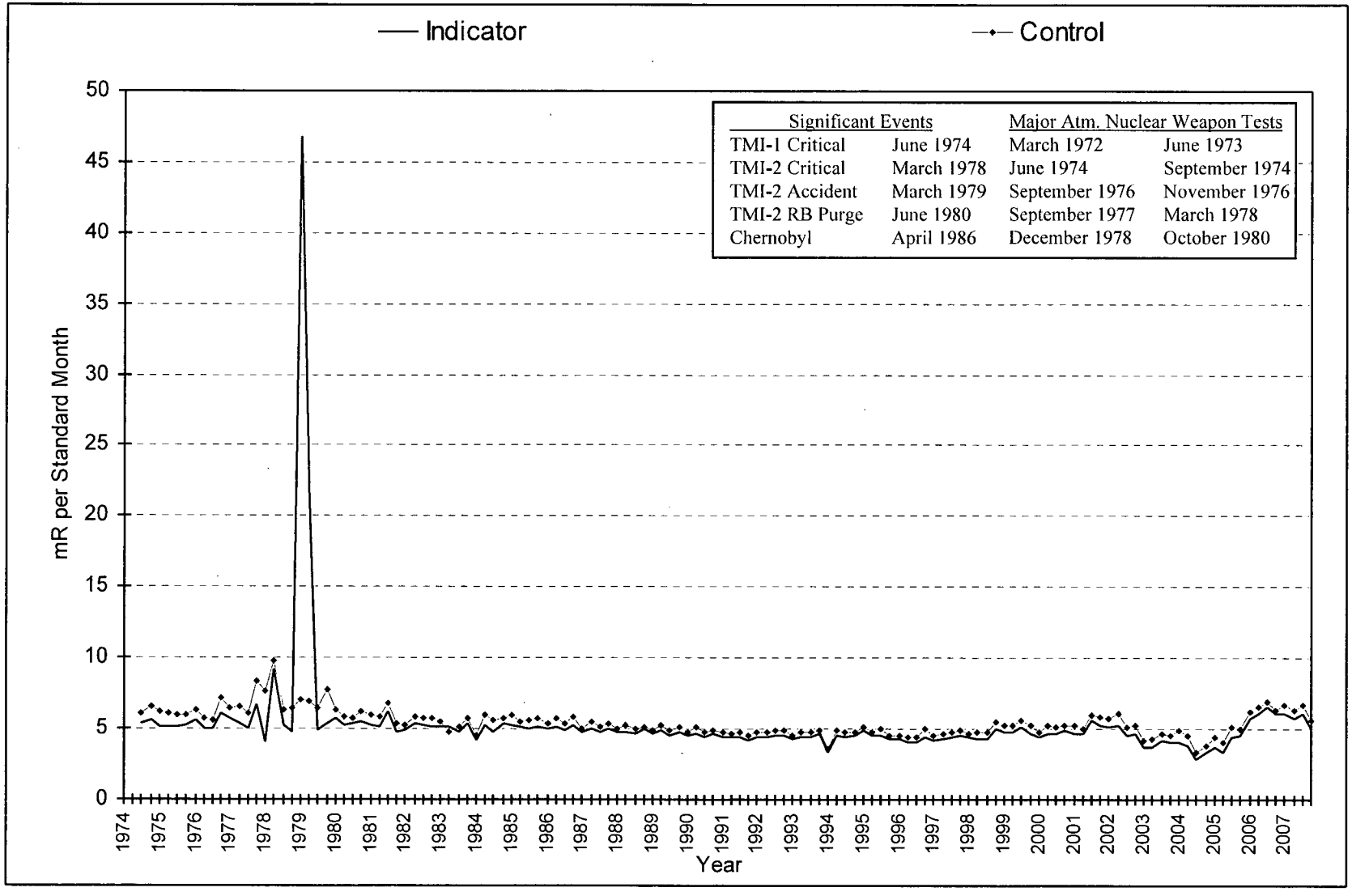


FIGURE C-9
Mean Quarterly Gamma Exposure Rates
Three Mile Island Nuclear Station, 1974 - 2007



Significant Events		Major Atm. Nuclear Weapon Tests	
TMI-1 Critical	June 1974	March 1972	June 1973
TMI-2 Critical	March 1978	June 1974	September 1974
TMI-2 Accident	March 1979	September 1976	November 1976
TMI-2 RB Purge	June 1980	September 1977	March 1978
Chernobyl	April 1986	December 1978	October 1980

APPENDIX D

DATA TABLES AND FIGURES
COMPARISON LABORATORY

The following section contains data and figures illustrating the analyses performed by the quality control laboratory, Environmental Inc. (Env). Duplicate samples were obtained from several locations and media and split between the primary laboratory, Teledyne Brown Engineering (TBE) and Environmental Inc. (Env). Comparison of the results for most media were within expected ranges.

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TABLE D-I.1 **CONCENTRATIONS OF GROSS BETA IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	Q9-1Q
01/02/07 - 01/30/07	< 1.8
01/30/07 - 02/27/07	< 0.9
02/27/07 - 04/03/07	1.0 ± 0.5
04/03/07 - 05/01/07	< 1.8
05/01/07 - 05/29/07	< 0.9
05/29/07 - 07/03/07	2.1 ± 1.0
07/03/07 - 07/31/07	2.5 ± 1.0
07/31/07 - 08/28/07	2.4 ± 1.0
08/28/07 - 10/02/07	1.6 ± 0.3
10/02/07 - 10/30/07	2.6 ± 1.0
10/30/07 - 11/27/07	4.0 ± 0.6
11/27/07 - 12/31/07	< 1.7
MEAN	2.3 ± 1.9

TABLE D-I.2 **CONCENTRATIONS OF TRITIUM IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	Q9-1Q
01/02/07 - 01/30/07	< 147
01/30/07 - 02/27/07	< 137
02/27/07 - 04/03/07	< 155
04/03/07 - 05/01/07	< 187
05/01/07 - 05/29/07	< 177
05/29/07 - 07/03/07	< 152
07/03/07 - 07/31/07	< 160
07/31/07 - 08/28/07	< 159
08/28/07 - 10/02/07	< 196
10/02/07 - 10/30/07	< 187
10/30/07 - 11/27/07	< 157
11/27/07 - 12/31/07	< 182

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

TABLE D-I.3 **CONCENTRATIONS OF IODINE-131 IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	Q9-1Q
01/02/07 - 01/30/07	< 0.2
01/30/07 - 02/27/07	< 0.3
02/27/07 - 04/03/07	< 0.4
04/03/07 - 05/01/07	< 0.3
05/01/07 - 05/29/07	< 0.3
05/29/07 - 07/03/07	< 0.4
07/03/07 - 07/31/07	< 0.2
07/31/07 - 08/28/07	< 0.4
08/28/07 - 10/02/07	< 0.3
10/02/07 - 10/30/07	< 0.3
10/30/07 - 11/27/07	< 0.3
11/27/07 - 12/31/07	< 0.3

TABLE D-I.4 **CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-95	Nb-95	Cs-134	Cs-137	Ba-140	La-140
Q9-1Q	01/02/07 - 01/30/07	< 1.6	< 2.9	< 5.7	< 2.7	< 5.3	< 4.6	< 2.4	< 2.5	< 3.7	< 14	< 1.9
	01/30/07 - 02/27/07	< 1.6	< 3.0	< 5.0	< 2.2	< 4.4	< 6.1	< 1.8	< 3.6	< 2.3	< 17	< 2.2
	02/27/07 - 04/03/07	< 2.3	< 3.1	< 5.5	< 3.6	< 8.5	< 5.8	< 3.0	< 4.3	< 4.1	< 17	< 4.8
	04/03/07 - 05/01/07	< 4.3	< 5.1	< 15	< 3.6	< 9.1	< 6.2	< 5.7	< 4.9	< 6.2	< 15	< 3.3
	05/01/07 - 05/29/07	< 2.4	< 1.5	< 6.6	< 2.3	< 5.8	< 4.1	< 4.2	< 3.3	< 3.2	< 13	< 2.6
	05/29/07 - 07/03/07	< 3.0	< 3.3	< 8.9	< 2.1	< 4.1	< 4.9	< 3.7	< 3.8	< 3.4	< 11	< 5.5
	07/03/07 - 07/31/07	< 2.0	< 2.6	< 8.4	< 2.7	< 2.3	< 6.4	< 3.0	< 1.5	< 3.7	< 17	< 3.1
	07/31/07 - 08/28/07	< 3.5	< 5.1	< 12	< 4.3	< 6.5	< 9.0	< 3.8	< 5.5	< 4.5	< 27	< 5.9
	08/28/07 - 10/02/07	< 3.5	< 2.6	< 11	< 3.6	< 5.0	< 7.0	< 3.6	< 4.1	< 2.5	< 10	< 6.1
	10/02/07 - 10/30/07	< 3.3	< 2.5	< 10	< 4.8	< 7.0	< 9.2	< 3.6	< 3.6	< 4.1	< 15	< 8.4
	10/30/07 - 11/27/07	< 1.9	< 2.7	< 4.0	< 1.1	< 2.7	< 2.0	< 2.8	< 2.0	< 2.3	< 6.5	< 1.2
	11/27/07 - 12/31/07	< 4.2	< 4.8	< 9.7	< 3.8	< 4.2	< 8.2	< 3.4	< 6.1	< 4.3	< 15	< 5.9

TABLE D-II.1 **CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN FISH SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	Sr-89	Sr-90	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137
INDPQ	11/15/07	< 13	< 6	2400 ± 338	< 9	< 4	< 32	< 12	< 20	< 9	< 9

TABLE D-III.1 CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	Cs-134	Cs-137
J2-1Q	11/21/07	11212 ± 771	< 32	113 ± 30

TABLE D-IV.1 CONCENTRATIONS OF GAMMA EMITTERS AND STRONTIUM IN FOOD PRODUCT SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD	K-40	I-131	Cs-134	Cs-137	Sr-89	Sr-90
B10-2Q	07/24/07	2101 ± 343	< 29	< 12	< 14	< 3	< 2

TABLE D-V.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

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

COLLECTION PERIOD	E1-2Q
01/03/07 - 01/10/07	19 ± 4
01/10/07 - 01/17/07	19 ± 4
01/17/07 - 01/24/07	22 ± 4
01/24/07 - 01/31/07	28 ± 5
01/31/07 - 02/07/07	27 ± 5
02/07/07 - 02/14/07	28 ± 5
02/14/07 - 02/21/07	21 ± 4
02/21/07 - 02/28/07	16 ± 4
02/28/07 - 03/07/07	21 ± 4
03/07/07 - 03/14/07	31 ± 5
03/14/07 - 03/21/07	19 ± 4
03/21/07 - 03/28/07	16 ± 4
03/28/07 - 04/04/07	18 ± 4
04/04/07 - 04/11/07	13 ± 4
04/11/07 - 04/18/07	8 ± 4
04/18/07 - 04/25/07	22 ± 4
04/25/07 - 05/02/07	13 ± 4
05/02/07 - 05/09/07	18 ± 4
05/09/07 - 05/16/07	20 ± 4
05/16/07 - 05/23/07	20 ± 4
05/23/07 - 05/30/07	25 ± 5
05/30/07 - 06/06/07	29 ± 5
06/06/07 - 06/13/07	22 ± 4
06/13/07 - 06/20/07	22 ± 4
06/20/07 - 06/27/07	27 ± 5
06/27/07 - 07/04/07	19 ± 4
07/04/07 - 07/11/07	35 ± 5
07/11/07 - 07/18/07	28 ± 5
07/18/07 - 07/25/07	19 ± 4
07/25/07 - 08/01/07	24 ± 5
08/01/07 - 08/08/07	51 ± 5
08/08/07 - 08/15/07	23 ± 5
08/15/07 - 08/22/07	26 ± 5
08/22/07 - 08/29/07	20 ± 4
08/29/07 - 09/05/07	33 ± 5
09/05/07 - 09/12/07	34 ± 4
09/12/07 - 09/19/07	19 ± 5
09/19/07 - 09/26/07	35 ± 5
09/26/07 - 10/03/07	28 ± 5
10/03/07 - 10/10/07	21 ± 4
10/10/07 - 10/17/07	21 ± 4
10/17/07 - 10/24/07	32 ± 4
10/24/07 - 10/31/07	19 ± 4
10/31/07 - 11/07/07	25 ± 5
11/07/07 - 11/14/07	23 ± 5
11/14/07 - 11/20/07	18 ± 5
11/20/07 - 11/28/07	27 ± 4
11/28/07 - 12/04/07	28 ± 5
12/04/07 - 12/12/07	38 ± 5
12/12/07 - 12/19/07	20 ± 5
12/19/07 - 12/26/07	29 ± 5
12/26/07 - 01/01/08	32 ± 6
MEAN	24 ± 15

TABLE D-V.2 CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

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

STC	COLLECTION PERIOD	Be-7	Cs-134	Cs-137
E1-2Q	01/03/07 - 03/28/07	66 ± 12	< 0.6	< 0.7
	03/28/07 - 06/28/07	107 ± 20	< 0.8	< 0.4
	06/28/07 - 10/03/07	92 ± 16	< 0.7	< 0.5
	10/03/07 - 01/01/08	64 ± 19	< 0.3	< 0.5
	MEAN	82 ± 42	-	-

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

TABLE D-VI.1 CONCENTRATIONS OF I-131 BY CHEMICAL SEPARATION,GAMMA EMITTERS, & STRONTIUM IN MILK SAMPLES COLLECTED IN THE VICINITY OF THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	I-131	K-40	Cs-134	Cs-137	Ba-140	La-140	Sr-89	Sr-90
G2-1Q	01/10/07	< 0.4	991 ± 103	< 3.5	< 3.0	< 18	< 4.0		
	02/07/07	< 0.4	1415 ± 93	< 2.8	< 2.0	< 16	< 3.0		
	03/07/07	< 0.3	1311 ± 109	< 2.9	< 2.7	< 13	< 1.2		
	03/21/07	< 0.5	1283 ± 104	< 3.0	< 2.8	< 10	< 2.3	< 1.7	< 0.8
	04/04/07	< 0.3	862 ± 147	< 7.2	< 8.0	< 34	< 4.8		
	04/18/07	< 0.4	1404 ± 114	< 3.0	< 3.7	< 17	< 2.4		
	05/02/07	< 0.4	1294 ± 116	< 5.6	< 4.4	< 17	< 3.0		
	05/16/07	< 0.4	1188 ± 109	< 4.3	< 3.9	< 16	< 2.8		
	05/30/07	< 0.3	1189 ± 119	< 4.6	< 3.5	< 12	< 3.8		
	06/13/07	< 0.4	1386 ± 204	< 5.1	< 4.8	< 33	< 7.4		
	06/27/07	< 0.3	1086 ± 116	< 6.1	< 6.2	< 17	< 2.3	< 0.8	< 0.9
	07/11/07	< 0.3	1295 ± 127	< 4.7	< 3.8	< 19	< 4.0		
	07/25/07	< 0.2	1339 ± 126	< 2.4	< 4.3	< 19	< 2.9		
	08/08/07	< 0.3	1385 ± 195	< 8.0	< 7.1	< 15	< 6.8		
	08/22/07	< 0.3	1370 ± 127	< 3.9	< 2.9	< 11	< 1.9		
	09/05/07	< 0.4	1396 ± 181	< 4.2	< 3.7	< 35	< 8.4		
	09/19/07	< 0.3	1361 ± 165	< 3.6	< 5.6	< 26	< 6.6	< 0.7	1.0 ± 0.5
	10/03/07	< 0.3	1234 ± 112	< 3.4	< 3.5	< 21	< 2.0		
	10/17/07	< 0.4	1401 ± 110	< 3.6	< 1.9	< 13	< 2.5		
	10/31/07	< 0.3	1294 ± 120	< 5.2	< 4.6	< 15	< 6.3		
	11/14/07	< 0.3	1328 ± 116	< 2.9	< 2.6	< 12	< 4.0		
	11/28/07	< 0.3	1157 ± 99	< 2.4	< 3.4	< 19	< 3.1		
	12/12/07	< 0.2	1282 ± 115	< 2.4	< 2.7	< 24	< 3.9	< 0.8	0.7 ± 0.3
	MEAN	-	1272 ± 281	-	-	-	-	-	0.9 ± 0.4

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

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FIGURE D-1
MONTHLY GROSS BETA CONCENTRATIONS IN
DRINKING WATER SAMPLES COLLECTED FROM TMINS LOCATION Q9-1Q, 2007

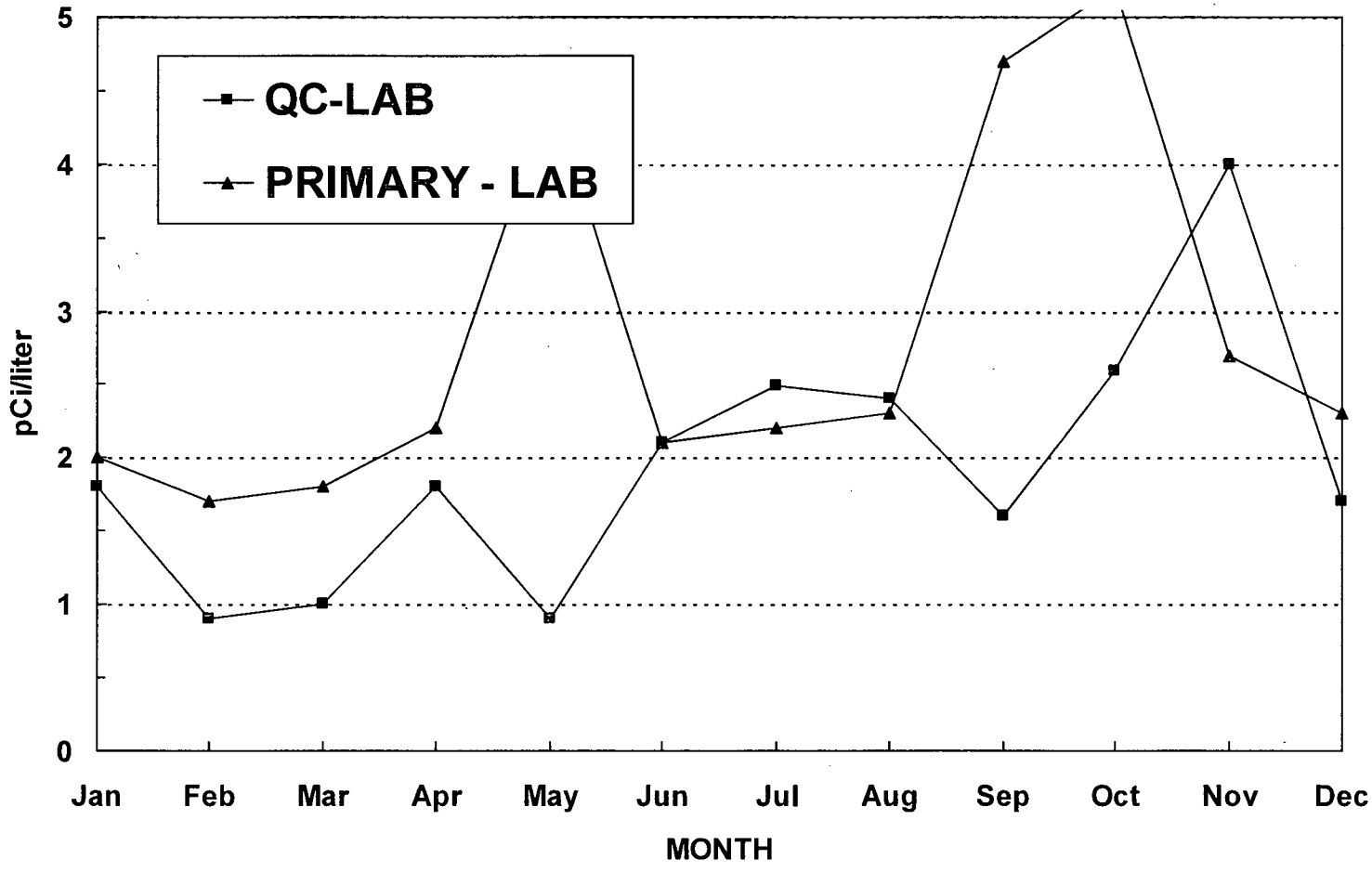
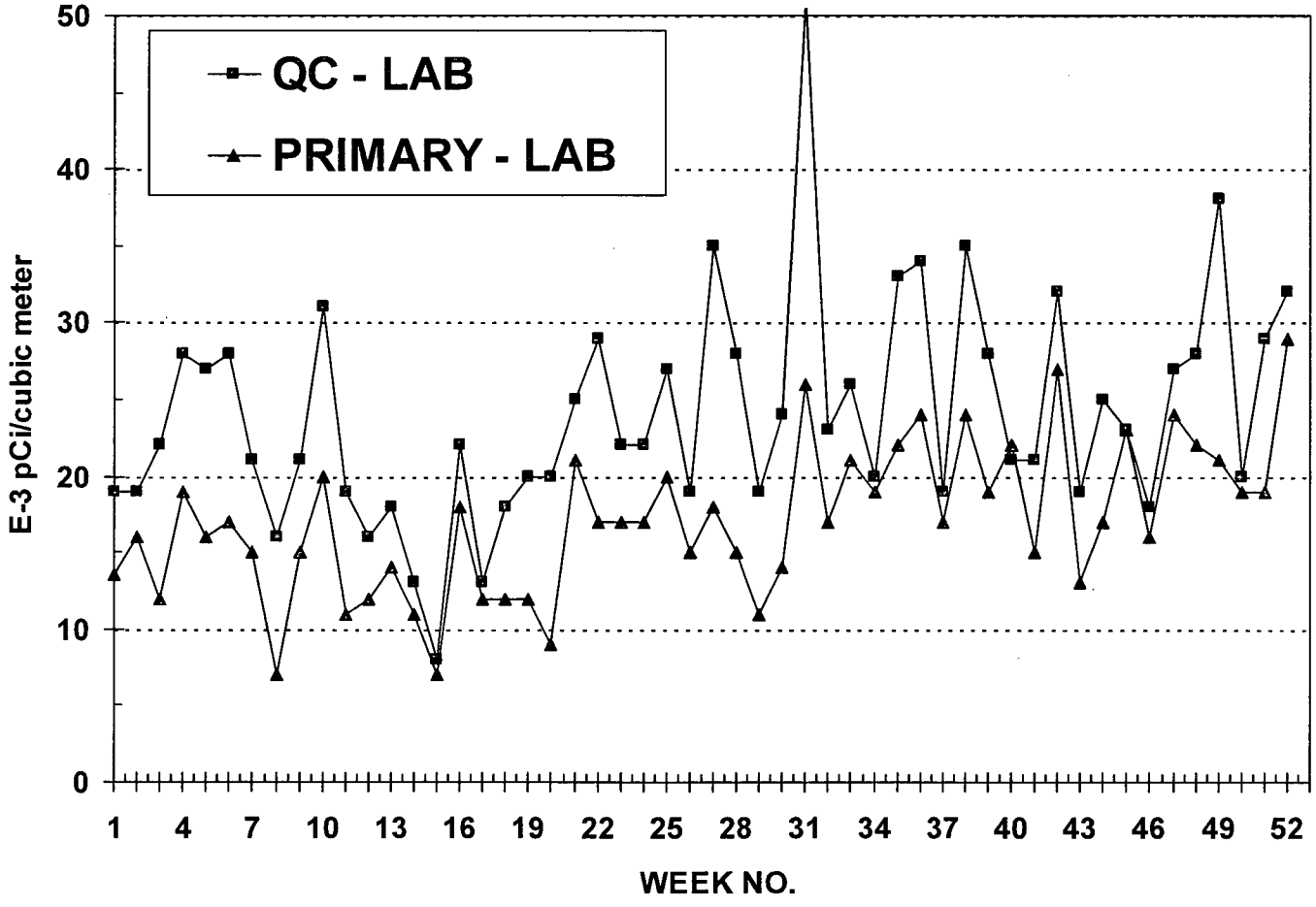


FIGURE D-2
WEEKLY GROSS BETA CONCENTRATIONS IN AIR PARTICULATE SAMPLES COLLECTED FROM TMINS LOCATION E1-2Q, 2007



APPENDIX E

INTER-LABORATORY COMPARISON PROGRAM

TABLE E-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2007
(PAGE 1 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
March 2007	E5255-396	Milk	Sr-89	pCi/L	125	137	0.91	A
			Sr-90	pCi/L	10.8	10	1.08	A
	E5256-396	Milk	I-131	pCi/L	107	85.2	1.26	W
			Ce-141	pCi/L	269	297	0.91	A
			Cr-51	pCi/L	244	245	1.00	A
			Cs-134	pCi/L	98.1	112	0.88	A
			Cs-137	pCi/L	227	234	0.97	A
			Co-58	pCi/L	92.5	98.8	0.94	A
			Mn-54	pCi/L	182.0	182	1.00	A
			Fe-59	pCi/L	108.0	106	1.02	A
			Zn-65	pCi/L	985	1000	0.99	A
			Co-60	pCi/L	143	152	0.94	A
	E5258-396	AP	Ce-141	pCi	252	245	1.03	A
			Cr-51	pCi	204	202	1.01	A
			Cs-134	pCi	74.9	92.3	0.81	A
			Cs-137	pCi	190.0	197.0	0.96	A
			Co-58	pCi	79.7	81.6	0.98	A
			Mn-54	pCi	156	151	1.03	A
			Fe-59	pCi	99.1	87.2	1.14	A
			Zn-65	pCi	894	826	1.08	A
			Co-60	pCi	122	126	0.97	A
	E5257-396	Charcoal	I-131	pCi	34.7	71.3	0.49	N (1)
June 2007	E5384-396	Milk	Sr-89	pCi/L	98.3	95.2	1.03	A
			Sr-90	pCi/L	16.1	12.9	1.25	W
	E5385-396	Milk	I-131	pCi/L	71.0	70.1	1.01	A
			Ce-141	pCi/L	176	200	0.88	A
			Cr-51	pCi/L	459	512	0.90	A
			Cs-134	pCi/L	197	242	0.81	A
			Cs-137	pCi/L	158	169	0.93	A
			Co-58	pCi/L	180	198	0.91	A
			Mn-54	pCi/L	163	166	0.98	A
			Fe-59	pCi/L	158	167	0.95	A
			Zn-65	pCi/L	318	334	0.95	A
			Co-60	pCi/L	212	238	0.89	A
	E5387-396	AP	Ce-141	pCi	87.5	105	0.83	A
			Cr-51	pCi	232	268	0.87	A
			Cs-134	pCi	101	127	0.80	A
			Cs-137	pCi	78.9	88.5	0.89	A
			Co-58	pCi	91.8	104.0	0.88	A
			Mn-54	pCi	85.6	87	0.99	A
			Fe-59	pCi	89.8	87.3	1.03	A
			Zn-65	pCi	178	175	1.02	A
			Co-60	pCi	111	125	0.89	A
	E5386-396	Charcoal	I-131	pCi	79.3	79.1	1.00	A

TABLE E-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2007
(PAGE 2 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
September 2007	E5492-396	Milk	Sr-89	pCi/L	99.0	94.9	1.04	A
			Sr-90	pCi/L	13.9	13.1	1.06	A
	E5493-396	Milk	I-131	pCi/L	81.9	85.2	0.96	A
			Ce-141	pCi/L	200	211	0.95	A
			Cr-51	pCi/L	271	289	0.94	A
			Cs-134	pCi/L	131	147	0.89	A
			Cs-137	pCi/L	131	131	1.00	A
			Co-58	pCi/L	114	114	1.00	A
			Mn-54	pCi/L	171	168	1.02	A
			Fe-59	pCi/L	117	111	1.05	A
			Zn-65	pCi/L	212	202	1.05	A
			Co-60	pCi/L	143	148	0.97	A
	E5495-396	AP	Ce-141	pCi	128	136	0.94	A
			Cr-51	pCi	181	186	0.97	A
			Cs-134	pCi	85.9	94.7	0.91	A
			Cs-137	pCi	83.2	83.9	0.99	A
			Co-58	pCi	69.4	73.3	0.95	A
			Mn-54	pCi	112	108	1.04	A
			Fe-59	pCi	79.6	71.1	1.12	A
			Zn-65	pCi	159	130	1.22	W
			Co-60	pCi	92.0	95.2	0.97	A
	E5494-396	Charcoal	I-131	pCi	70.8	69.5	1.02	A
December 2007	E5749-396	Milk	Sr-89	pCi/L	87.6	93.7	0.93	A
			Sr-90	pCi/L	15.5	15.2	1.02	A
	E5750-396	Milk	I-131	pCi/L	60.6	60.8	1.00	A
			Ce-141	pCi/L	137	141	0.97	A
			Cr-51	pCi/L	497	512	0.97	A
			Cs-134	pCi/L	117	137	0.85	A
			Cs-137	pCi/L	166	166	1.00	A
			Co-58	pCi/L	159	174	0.91	A
			Mn-54	pCi/L	190	190	1.00	A
			Fe-59	pCi/L	149	148	1.01	A
			Zn-65	pCi/L	231	234	0.99	A
			Co-60	pCi/L	198	211	0.94	A
	E5752-396	AP	Ce-141	pCi	88.6	93.4	0.95	A
			Cr-51	pCi	352	340	1.04	A
			Cs-134	pCi	84.6	91.2	0.93	A
			Cs-137	pCi	111	110.0	1.01	A
			Co-58	pCi	114	116.0	0.98	A
			Mn-54	pCi	135	126	1.07	A
			Fe-59	pCi	119	98.5	1.21	W
			Zn-65	pCi	172	155	1.11	A
			Co-60	pCi	137	141	0.97	A

TABLE E-1 **ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM**
TELEDYNE BROWN ENGINEERING, 2007
(PAGE 3 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
December 2007	E5751-396	Charcoal	I-131	pCi	65.8	74.1	0.89	A

(1) New technician counted charcoal cartridge on the back rather than the face, resulting in low activity. If the charcoal cartridge had been counted on the face, the ratio would have been approximately 1.07, which is acceptable. NCR 07-02

(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 E-2 ERA ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2007
(PAGE 1 OF 1)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Control Limits	Evaluation (c)
July 2007	Rad 70	Water	Sr-89	pCi/L	58.6	58.2	49.5 - 66.9	A
			Sr-90	pCi/L	18.7	19.0	10.3 - 27.7	A
			Ba-133	pCi/L	18.6	19.4	10.7 - 28.1	A
			Cs-134	pCi/L	57.6	68.9	60.2 - 77.6	N (1)
			Cs-137	pCi/L	55.4	61.3	52.6 - 70.0	A
			Co-60	pCi/L	31.3	33.5	24.8 - 42.2	A
			Zn-65	pCi/L	49.0	54.6	45.2 - 64.0	A
			Gr-A	pCi/L	26.8	27.1	15.4 - 38.8	A
			Gr-B	pCi/L	12	11.5	2.84 - 20.2	A
			I-131	pCi/L	31.1	26.5	21.3 - 31.7	A
			H-3	pCi/L	1700	1770	1180 - 2360	A
October 2007	RAD 71	Water	Sr-89	pCi/L	27.07	27.4	19.3 - 33.9	A
			Sr-90	pCi/L	17.40	18.2	12.9 - 21.6	A
			Ba-133	pCi/L	12.57	12.6	8.64 - 15.5	A
			Cs-134	pCi/L	63.33	71.1	58.0 - 78.2	A
			Cs-137	pCi/L	168	180	162 - 200	A
			Co-60	pCi/L	21.93	23.2	19.9 - 28.3	A
			Zn-65	pCi/L	245.33	251	226 - 294	A
			Gr-A	pCi/L	55.60	58.6	30.6 - 72.9	A
			Gr-B	pCi/L	15.23	9.73	4.26 - 18.2	A
			I-131	pCi/L	27.43	28.9	24.0 - 33.8	A
			H-3	pCi/L	9263.3	9700	8430 - 10700	A

(1) The Cs-134 TBE found/ERA known ratio is 83.6%, which TBE considers acceptable. NCR 07-07

(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 E-3 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2007
(PAGE 1 OF 1)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
February 2007	07-MaW17	Water	Cs-134	Bq/L	74.5	83.5	58.5 - 108.6	A
			Cs-137	Bq/L	162	163.0	114-1 - 211.9	A
			Co-57	Bq/L	140	143.7	100.6 - 186.8	A
			Co-60	Bq/L	27.9	26.9	18.8 - 35.0	A
			H-3	Bq/L	346	283.0	198.1 - 367.9	W
			Mn-54	Bq/L	125	123.8	86.7 - 160.9	A
			Sr-90	Bq/L	8.90	8.87	6.21- 11.53	A
			Zn-65	Bq/L	117	114.8	80.4 - 149.2	A
	07-GrW17	Water	Gr-A	Bq/L	0.502	0.327	>0.0 - 0.654	A
			Gr-B	Bq/L	0.975	0.851	0.426 - 1.277	A
	07-MaS17	Soil	Cs-134	Bq/kg	322	327.4	229.2 - 425.6	A
			Cs-137	Bq/kg	893	799.7	559.8 - 1039.6	A
			Co-57	Bq/kg	508.3	471.2	329.8 - 612.6	A
			Co-60	Bq/kg	300.3	274.7	192.3 - 357.1	A
			Mn-54	Bq/kg	779	685.2	479.6 - 890.8	A
			K-40	Bq/kg	682	602	421 - 783	A
			Sr-90	Bq/kg	293	319.0	223.3 - 414.7	A
			Zn-65	Bq/kg	618.7	536.8	375.8 - 697.8	A
	07-RdF17	AP	Cs-134	Bq/sample	3.230	1.4960	2.9372 - 5.4548	W
			Cs-137	Bq/sample	2.453	2.5693	1.7985 - 3.3401	A
			Co-57	Bq/sample	3.067	2.8876	2.0213 - 3.7539	A
			Co-60	Bq/sample	2.767	2.9054	2.0338 - 3.7770	A
			Mn-54	Bq/sample	3.557	3.5185	2.4630 - 4.5741	A
			Sr-90	Bq/sample	0.584	0.6074	0.4252 - 0.7896	A
			Zn-65	Bq/sample	2.463	2.6828	1.8780 - 3.4876	A
	07-GrF17	AP	Gr-A	Bq/sample	0.353	0.601	>0.0 - 1.202	A
			Gr-B	Bq/sample	0.500	0.441	0.221 - 0.662	A
February 2007	07-RdV17	Vegetation	Cs-134	Bq/sample	6.207	6.2101	4.3471 - 8.0731	A
			Cs-137	Bq/sample	7.80	6.9949	4.8964 - 9.0934	A
			Co-57	Bq/sample	8.64	8.1878	5.7315 - 10.6441	A
			Co-60	Bq/sample	6.10	5.8215	4.0751 - 7.5680	A
			Mn-54	Bq/sample	9.41	8.4492	5.9144 - 10.9840	A
			K-40	Bq/sample	63.5	Not evaluated by MAPEP		
			Sr-90	Bq/sample	1.51	1.5351	1.0746 - 1.9956	A
			Zn-65	Bq/sample	7.15	5.6991	3.9894 - 7.4088	W

(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.

TABLE E-4 **ERA[(a)] STATISTICAL SUMMARY PROFICIENCY TESTING PROGRAM**
ENVIRONMENTAL, INC., 2007
(Page 1 of 2)

Lab Code *	Date	Analysis	Concentration (pCi/L) Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance
STAP-1116	03/19/07	Gr. Alpha	34.64 ± 2.56	25.8	12.4 - 39	Pass
STAP-1116	03/19/07	Gr. Beta	93.41 ± 3.20	79.5	48.8 - 116	Pass
STAP-1117	03/19/07	Co-60	1610.00 ± 8.40	1300.0	1010.0 - 1620	Pass
STAP-1117	03/19/07	Cs-134	1340.40 ± 48.84	1120.0	732.0 - 1380	Pass
STAP-1117 [e]	03/19/07	Cs-137	345.30 ± 8.20	255.0	192.0 - 336	Fail
STAP-1117 [f]	03/19/07	Mn-54	< 5.0	0.0		Pass
STAP-1117	03/19/07	Sr-90	156.10 ± 6.60	156.0	66.6 - 246	Pass
STAP-1117	03/19/07	Zn-65	363.80 ± 11.90	245.0	208.0 - 412	Pass
STSO-1118	03/19/07	Ac-228	3097.77 ± 94.96	2790.0	1790.0 - 3930	Pass
STSO-1118	03/19/07	Bi-212	2467.87 ± 114.33	2500.0	658.0 - 3730	Pass
STSO-1118	03/19/07	Co-60	7847.40 ± 86.60	7330.0	5340.0 - 9820	Pass
STSO-1118	03/19/07	Cs-134	7910.60 ± 356.88	7560.0	4850.0 - 9070	Pass
STSO-1118	03/19/07	Cs-137	4635.00 ± 99.10	4300.0	3290.0 - 5580	Pass
STSO-1118	03/19/07	K-40	12201.60 ± 423.20	11100.0	8050.0 - 15000	Pass
STSO-1118 [f]	03/19/07	Mn-54	< 34.0	0.0		Pass
STSO-1118	03/19/07	Pb-212	2046.80 ± 127.20	1730.0	1120.0 - 2430	Pass
STSO-1118	03/19/07	Pb-214	4142.80 ± 110.40	3330.0	1980.0 - 4980	Pass
STSO-1118	03/19/07	Sr-90	6163.30 ± 791.60	7500.0	2610.0 - 12400	Pass
STSO-1118	03/19/07	Th-234	4329.40 ± 569.10	3590.0	2190.0 - 4560	Pass
STSO-1118 [f]	03/19/07	Zn-65	0.00 ± 0.00	0.0	0.0 - 0	Pass
STVE-1119	03/19/07	Co-60	2827.90 ± 62.40	2600.0	1760.0 - 3720	Pass
STVE-1119	03/19/07	Cs-134	654.80 ± 48.40	579.0	308.0 - 822	Pass
STVE-1119	03/19/07	Cs-137	3307.30 ± 58.80	2920.0	2150.0 - 4060	Pass
STVE-1119	03/19/07	K-40	40814.20 ± 618.80	37900.0	27200.0 - 53600	Pass
STVE-1119 [f]	03/19/07	Mn-54	< 27.6	0.0		Pass
STVE-1119	03/19/07	Sr-90	8999.70 ± 580.90	8890.0	4900.0 - 11800	Pass
STVE-1119	03/19/07	Zn-65	474.30 ± 45.70	366.0	267.0 - 500	Pass
STW-1120	03/19/07	Co-60	541.40 ± 9.00	536.0	467.0 - 631	Pass
STW-1120	03/19/07	Cs-134	1623.80 ± 66.10	1750.0	1290.0 - 2020	Pass
STW-1120	03/19/07	Cs-137	1839.10 ± 17.90	1850.0	1570.0 - 2220	Pass
STW-1120 [f]	03/19/07	Mn-54	< 8.1	0.0		Pass
STW-1120	03/19/07	Sr-90	949.40 ± 16.70	989.0	630.0 - 1320	Pass
STW-1120	03/19/07	Zn-65	2009.00 ± 36.40	1910.0	1600.0 - 2410	Pass
STW-1121	04/09/07	Sr-89	30.7 ± 4.3	35.4	26.7 - 44.1	Pass
STW-1121	04/09/07	Sr-90	39.3 ± 1.8	42.1	33.4 - 50.8	Pass

TABLE E-4 **ERA[a] STATISTICAL SUMMARY PROFICIENCY TESTING PROGRAM ENVIRONMENTAL, INC., 2007**

(Page 2 of 2)

Lab Code *	Date	Analysis	Concentration (pCi/L) Laboratory Result[b]	ERA Result[c]	Control Limits	Acceptance
STW-1122	04/09/07	Ba-133	30.0 ± 2.4	29.3	20.6 - 38.0	Pass
STW-1122	04/09/07	Co-60	118.5 ± 3.9	119.0	109.0 - 129.0	Pass
STW-1122	04/09/07	Cs-134	52.6 ± 2.3	54.3	45.6 - 63.0	Pass
STW-1122	04/09/07	Cs-137	49.5 ± 3.8	50.3	41.6 - 59.0	Pass
STW-1122	04/09/07	Zn-65	91.7 ± 6.3	88.6	73.3 - 104.0	Pass
STW-1123	04/09/07	Gr. Alpha	33.8 ± 3.5	56.5	32.0 - 81.0	Pass
STW-1123	04/09/07	Gr. Beta	24.2 ± 2.3	25.3	16.6 - 34.0	Pass
STW-1124	04/09/07	I-131	19.2 ± 1.2	18.9	13.7 - 24.1	Pass
STW-1125	04/09/07	H-3	7540.0 ± 255.0	8060.0	6660.0 - 9450.0	Pass
STW-1127	07/09/07	Sr-89	51.7 ± 5.0	58.2	49.5 - 66.9	Pass
STW-1127	07/09/07	Sr-90	21.4 ± 2.3	19.0	10.3 - 27.7	Pass
STW-1128	07/09/07	Ba-133	19.4 ± 2.2	19.4	10.7 - 28.1	Pass
STW-1128	07/09/07	Co-60	32.8 ± 2.0	33.5	24.8 - 42.2	Pass
STW-1128	07/09/07	Cs-134	67.0 ± 2.9	68.9	60.2 - 77.6	Pass
STW-1128	07/09/07	Cs-137	61.6 ± 3.8	61.3	52.6 - 70.0	Pass
STW-1128	07/09/07	Zn-65	55.6 ± 7.5	54.6	45.2 - 64.0	Pass
STW-1129	07/09/07	Gr. Alpha	19.2 ± 1.6	27.1	15.4 - 38.8	Pass
STW-1129	07/09/07	Gr. Beta	9.1 ± 0.9	11.5	2.8 - 20.2	Pass
STW-1131	10/05/07	Sr-89	27.3 ± 3.3	27.4	19.3 - 33.9	Pass
STW-1131	10/05/07	Sr-90	17.7 ± 1.2	18.2	12.9 - 21.6	Pass
STW-1132	10/05/07	Ba-133	12.2 ± 3.3	12.6	8.6 - 15.5	Pass
STW-1132	10/05/07	Co-60	23.8 ± 1.4	23.2	19.9 - 28.3	Pass
STW-1132	10/05/07	Cs-134	70.5 ± 4.2	71.1	58.0 - 78.2	Pass
STW-1132	10/05/07	Cs-137	178.2 ± 3.3	180.0	162.0 - 200.0	Pass
STW-1132	10/05/07	Zn-65	263.9 ± 6.9	251.0	226.0 - 294.0	Pass
STW-1133	10/05/07	Gr. Alpha	54.7 ± 2.1	58.6	30.6 - 72.9	Pass
STW-1133	10/05/07	Gr. Beta	11.9 ± 0.9	9.7	4.3 - 18.2	Pass
STW-1134	10/05/07	I-131	33.0 ± 1.5	28.9	24.0 - 33.8	Pass
STW-1135	10/05/07	H-3	9965.0 ± 250.0	9700.0	8430.0 - 10700.0	Pass

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

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

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

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

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

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

TABLE E-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)[a] ENVIRONMENTAL, INC., 2007

(Page 1 of 1)

		Concentration [b]				
Lab Code[c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STW-1110	01/01/07	Gr. Alpha	0.45 ± 0.08	0.33	0.00 - 0.65	Pass
STW-1110	01/01/07	Gr. Beta	0.90 ± 0.14	0.85	0.43 - 1.28	Pass
STW-1111	01/01/07	Co-57	151.60 ± 10.00	143.70	100.60 - 186.80	Pass
STW-1111	01/01/07	Cs-134	79.20 ± 8.00	83.50	58.50 - 108.60	Pass
STW-1111	01/01/07	Cs-137	168.70 ± 12.10	163.00	114.10 - 211.90	Pass
STW-1111	01/01/07	H-3	262.20 ± 9.10	283.00	198.10 - 367.90	Pass
STW-1111	01/01/07	Mn-54	130.60 ± 11.50	123.80	86.70 - 160.90	Pass
STW-1111	01/01/07	Sr-90	9.60 ± 1.40	8.87	6.21 - 11.53	Pass
STW-1111	01/01/07	Zn-65	123.70 ± 17.00	114.80	80.40 - 149.20	Pass
STSO-1112	01/01/07	Co-57	501.20 ± 2.90	471.20	329.80 - 612.60	Pass
STSO-1112	01/01/07	Co-60	285.90 ± 2.10	274.70	192.30 - 357.10	Pass
STSO-1112	01/01/07	Cs-134	325.90 ± 7.40	327.40	229.20 - 425.60	Pass
STSO-1112	01/01/07	Cs-137	855.70 ± 4.60	799.70	559.80 - 1039.60	Pass
STSO-1112	01/01/07	Mn-54	750.90 ± 4.70	685.20	479.60 - 890.80	Pass
STAP-1113	01/01/07	Gr. Alpha	0.27 ± 0.04	0.60	0.00 - 1.20	Pass
STAP-1113	01/01/07	Gr. Beta	0.57 ± 0.05	0.44	0.22 - 0.66	Pass
STAP-1114	01/01/07	Co-57	3.51 ± 0.07	2.89	2.02 - 3.75	Pass
STAP-1114	01/01/07	Co-60	2.98 ± 0.10	2.91	2.03 - 3.78	Pass
STAP-1114	01/01/07	Cs-134	4.02 ± 0.16	4.20	2.94 - 5.45	Pass
STAP-1114	01/01/07	Cs-137	2.75 ± 0.12	2.57	1.80 - 3.34	Pass
STAP-1114	01/01/07	Mn-54	3.94 ± 0.12	3.52	2.46 - 4.57	Pass
STAP-1114	01/01/07	Sr-90	0.58 ± 0.18	0.61	0.43 - 0.79	Pass
STAP-1114	01/01/07	Zn-65	2.70 ± 0.10	2.68	1.88 - 3.49	Pass
STVE-1115	01/01/07	Co-57	8.90 ± 0.20	8.19	5.73 - 10.64	Pass
STVE-1115	01/01/07	Co-60	6.50 ± 0.20	5.82	4.08 - 7.57	Pass
STVE-1115	01/01/07	Cs-134	6.90 ± 0.30	6.21	4.35 - 8.07	Pass
STVE-1115	01/01/07	Cs-137	8.20 ± 0.30	6.99	4.90 - 9.09	Pass
STVE-1115	01/01/07	Mn-54	10.10 ± 0.30	8.46	5.91 - 10.98	Pass

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

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

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

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

APPENDIX F

ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

Docket No: 50-289
50-320

THREE MILE ISLAND NUCLEAR STATION UNITS 1 and 2

Annual Radiological Groundwater Protection Program Report (ARGPPR)

1 January Through 31 December 2007

Prepared By

Teledyne Brown Engineering
Environmental Services

AmerGen SM
An Exelon Company

Three Mile Island Nuclear Station
Middletown, PA 17057

April 2008

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Appendices

Appendix A Location Designation

Tables

Table A-1: Radiological Groundwater Protection Program - Sampling Locations, Distance and Direction, Three Mile Island Nuclear Station, 2007

Figures

Figure A-1: Sampling Locations Near the Site Boundary of the Three Mile Island Nuclear Station, 2007

Appendix B Data Tables

Tables

Table B-I.1 Concentrations of Tritium and Strontium in Well Water Samples Collected as Part of the Radiological Groundwater Protection Program, Three Mile Island Nuclear Station, 2007.

Table B-I.2 Concentrations of Tritium and Strontium in Surface Water Samples Collected as Part of the Radiological Groundwater Protection Program, Three Mile Island Nuclear Station, 2007.

Table B-I.3 Concentrations of Tritium in Well Water Split Samples Collected as Part of the Radiological Groundwater Protection Program, Three Mile Island Nuclear Station, 2007.

Table B-I.4 Concentrations of Tritium in Surface Water Split Samples Collected as Part of the Radiological Groundwater Protection Program, Three Mile Island Nuclear Station, 2007.

Table B-I.5 Concentrations of Gamma Emitters in Well Water Samples Collected in the Vicinity of Three Mile Island Nuclear Station, 2007.

Table B-I.6 Concentrations of Gamma Emitters in Surface Water Samples Collected in the Vicinity of Three Mile Island Nuclear Station, 2007.

Table B-I.7 Concentrations of Gamma Emitters in Well Water Split Samples Collected in the Vicinity of Three Mile Island Nuclear Station, 2007.

I. Summary and Conclusions

In 2006, Exelon instituted a comprehensive program to evaluate the impact of station operations on groundwater and surface water in the vicinity of Three Mile Island Nuclear Station. At Three Mile Island Nuclear, 31 new permanent groundwater monitoring wells were installed in 2006. The results of the special investigations for all TMI wells are included in this report. This report covers groundwater and surface water samples, collected from the environment, both on and off station property in 2007. During that time period, 570 analyses were performed on 498 samples from 68 locations.

In assessing all the data gathered for this report, it was concluded that the operation of Three Mile Island Nuclear Station had no adverse radiological impact on the environment, and there were no known active releases at the end of 2007 into the groundwater at Three Mile Island Nuclear Station.

Gamma-emitting radionuclides associated with licensed plant operations were not detected at concentrations greater than their respective Lower Limits of Detection (LLDs) as specified in the Offsite Dose Calculation Manual (ODCM) in any of the groundwater or surface water samples. In the case of tritium, Exelon specified that its laboratories achieve a lower limit of detection 10 times lower than that required by federal regulation.

Strontium-89/90 was not detected at a concentration greater than the LLD of 2.0 picoCuries per liter (pCi/L) in the groundwater sample tested.

Tritium was detected in 15 groundwater samples at 3 locations at concentrations greater than the United States Environmental Protection Agency (USEPA) drinking water standard (and the Nuclear Regulatory Commission Reporting Limit) of 20,000 pCi/L. The elevated groundwater samples were a result of a leak in a condensate deice line. Low levels of tritium were detected at concentrations greater than the LLD of 200 pCi/L in 47 of 68 groundwater monitoring locations. The tritium concentrations ranged from 206 ± 130 pCi/L to 29,600 ± 3,430 pCi/L. Tritium that was detected in groundwater at the Station is believed to be the result of the condensate deice line leak, historical releases and/or background from external sources greater than 200 pCi/L.

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II. Introduction

The Three Mile Island Nuclear Station (TMINS) established a revised and more comprehensive groundwater monitoring program in 2006 as part of an Exelon Nuclear fleetwide assessment.

Conestoga Rovers & Associates (CRA) performed the initial assessment. CRA prepared a Hydrogeologic Investigation Report (HIR) for Exelon to determine whether groundwater at and near TMINS has been adversely impacted by any releases of radionuclides. The CRA report documents the results of the May 2006 Hydrogeologic Investigation Work Plan. CRA assessed groundwater quality at the Station in locations designated as Areas for Further Evaluation. The results and conclusions of this Phase 1 study were made available to state and federal regulators as well as the public on an Exelon web site in station specific reports. The summary report for the Three Mile Island Nuclear Station may be found at the following web page:

http://www.exeloncorp.com/ourcompanies/powergen/nuclear/Tritium.htm

As a result of the Phase 1 study, the Radiological Groundwater Protection Program (RGPP) was revised to a long term monitoring program. This report covers those analyses performed by Teledyne Brown Engineering (TBE) on well water and surface water samples collected in 2007. All wells that were established were located in the owner controlled areas of the site. No offsite wells were established because the groundwater movement is to the Susquehanna River.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) and Environmental Inc. (Midwest Labs) on samples collected in 2007.

A. Objective of the RGPP

The long-term objectives of the RGPP are as follows:

1. Identify suitable locations to monitor and evaluate potential impacts from station operations before significant radiological impact to the environment and potential drinking water sources.

2. Understand the local hydrogeologic regime in the vicinity of the station and maintain up-to-date knowledge of flow patterns on the surface and shallow subsurface.

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

4. Notify stakeholders in a timely manner for new leaks, spills, or other detections with potential radiological significance.

5. Regularly assess analytical results to identify adverse trends.

6. Take necessary corrective actions to protect groundwater resources.

B. Implementation of the Objectives

The objectives identified have been implemented at Three Mile Island Nuclear Station as discussed below:

1. Three Mile Island Nuclear Station continues to sample and monitor the groundwater at the station in accordance with station procedures. Sample frequencies and locations are adjusted based on monitoring results and investigations.

2. The Three Mile Island Nuclear Station reports describe the local hydrogeologic regime. Periodically, the flow patterns on the surface and shallow subsurface are updated based on ongoing measurements.

3. Three Mile Island Nuclear Station will continue to perform routine sampling and radiological analysis of water from selected locations.

4. Three Mile Island Nuclear Station has implemented new procedures to identify and report new leaks, spills, or other detections with potential radiological significance in a timely manner.

5. Three Mile Island Nuclear Station staff and consulting hydrogeologist assess analytical results on an ongoing basis to identify adverse trends.

C. Program Description

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>

Samples of water are collected, managed, transported and analyzed in accordance with approved procedures. Both groundwater and surface water are collected. Sample locations, sample collection frequencies and analytical frequencies are

controlled in accordance with approved station procedures. Contractor and/or station personnel are trained in the collection, preservation management, and shipment of samples, as well as in documentation of sampling events. Analytical laboratories are subject to internal quality assurance programs, industry cross-check programs, as well as nuclear industry audits. Station personnel review and evaluate all analytical data deliverables as data are received.

Analytical data results are reviewed by both station personnel and an independent hydrogeologist for adverse trends or changes to hydrogeologic conditions.

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." 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 is created in the environment from naturally occurring processes both cosmic and subterranean, as well as from anthropogenic (i.e., man-made) sources. Tritium is produced naturally in the upper atmosphere when cosmic rays strike air molecules. This “cosmogenic” tritium 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.

The chemical properties of tritium are essentially those of ordinary hydrogen. 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, all tritium is essentially cleared. Organically bound tritium (tritium that is incorporated in organic compounds) can remain in the body for a longer period.

Tritium has a half-life of approximately 12.3 years. It decays spontaneously to helium-3 (He-3). 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 TBE and EIML to analyze the environmental samples for radioactivity for the Three Mile Island Nuclear Station RGPP in 2007.

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

1. <u>Lower Limit of Detection and Minimum Detectable Concentration</u>

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)

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.

The radio-analytical laboratory is counting tritium results to an 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. Clearly, these sample results cannot be distinguished as different from background at this concentration.

IV. Results and Discussion

A. Groundwater Results

Samples were collected from on and off-site wells throughout the year in accordance with the station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from 68 locations were analyzed for tritium activity (Table B–I.1 - B-I.3 Appendix B). Tritium values ranged from the detection limit to 29,600 pCi/l. Two of the locations were offsite drinking

water wells with no detectable concentration of tritium.

Strontium

Strontium-90 was not detected above the required detection limit of 2.0 pCi/liter. (Table B–I.1 - B-I.4, Appendix B).

Gamma Emitters and Strontium

Potassium-40 was detected in 4 of 71 samples. The concentrations ranged from 96 pCi/liter to 151 pCi/liter. No other gamma emitting nuclides were detected. (Table B–I.5 - B–I.7, Appendix B).

B. Leaks, Spills, and Releases

As mentioned above, a leak was discovered in a condensate storage tank underground pipe flange connection in April 2007. The source of the water was TMI secondary plant water and the concentration of tritium in the source tank was 4.5E-5 uCi/ml. An investigation was performed under TMI's Corrective Action Program issue reports- 618944, 618443 and 618929. Elevated groundwater results were being investigated at that time under separate issue reports (IR 609783, 616995, 630556) when the leak was discovered. A 30 day voluntary report was made to the NRC in May 2007. The leaking flange was a result of settling of the backfill from the 2006 pipe leak repair. The entire deice line was subsequently excavated and replaced during 2007.

On July 2, 2007, approximately 200 gallons of filtered water containing 1.15E-6 uCi/ml of tritium spilled on the ground from a hose rupture on an Ecolochem water treatment trailer. The leak was isolated immediately and the hose was repaired. Issue report 646650 documents this event and the review of similar hoses for extent of condition.

Six different issue reports document leakage from the industrial coolers onto the intermediate building roof which drains to the yard drains. See IRs 620466, 628416, 650810, 652199, 652211 and 686881. The makeup water for these coolers contains low level concentrations of tritium ranging from 1.18E-6 to 3.01E-6 uCi/ml. The estimated volumes ranged from 129 to 2000 gallons for these spills/leaks in 2007.

Two issue reports also document the industrial cooler blowdown tank overflowing on 12/7/07 and 12/8/07 into the yard area. A check valve connected to a secondary sump was leaking by allowing secondary plant water to backflow into this system. Also contributing to this event was the

fact that local drains in the building were clogged and water overflowed through a doorway to a grated fan intake area. The investigation, isolation and redirecting of leakage are all described in the correction actions to issue reports 709071 and 709169.

As a result of the comprehensive groundwater study performed by consultants at TMI during 2006, peripheral wells near the edge of the island were installed. Because of low levels of tritium being present in these wells notifications were made to federal, state and local officials that TMI now believes very low levels of tritium in groundwater are now migrating from the site into the river. TMI continues to report this offsite effluent release in its Annual Radiological Effluent Release Report (ARERR). A total dose of <0.08 mrem was calculated for 2007.

C. Actions Taken

1. Compensatory Actions

   TMI has implemented a buried pipe program in accordance with ER-AA-5400, Buried Pipe and Raw Water Corrosion Guide. TMI has completed the identification, database and ranking phases of the program. Soil data collection is complete and mitigation work for two environmentally important lines are at the 90% point for engineering, planning, and preparation. Buried anodes were purchased in 2007 and are available for installation for any pipe that is excavated for other reasons. Funding is in place for 2008 to perform the engineering work associated with installation of cathodic protection systems for the key high risk systems at TMI.

2. Installation of Monitoring Wells

   TMI installed 31 new monitoring wells in 2006. TMI has over 60 monitoring locations that it regularly samples for trending historical leaks and detecting new leaks.

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APPENDIX A

LOCATION DESIGNATION & DISTANCE

TABLE A-1: **Radiological Groundwater Protection Program - Sampling Locations and Distance, Three Mile Island Nuclear Station, 2007**

Site	Site Type
#3	Monitoring Well
48S	Production Potable Well
E1-2	Monitoring Well, Offsite
GP-12	Monitoring Well
GP-6	Monitoring Well
GP-8	Monitoring Well
GP-9	Monitoring Well
MS-1	Monitoring Well
MS-19	Monitoring Well
MS-2	Monitoring Well
MS-20	Monitoring Well
MS-21	Monitoring Well
MS-22	Monitoring Well
MS-3	Monitoring Well
MS-4	Monitoring Well
MS-5	Monitoring Well
MS-6	Monitoring Well
MS-7	Monitoring Well
MS-8	Monitoring Well
MW-1	Monitoring Well
MW-2	Monitoring Well
MW-3	Monitoring Well
MW-4	Monitoring Well
N2-1	Monitoring Well, Offsite
NW-A	Production Well
NW-B	Production Well
NW-C	Production Well
NW-CW	Clearwell
OS-13B	Monitoring Well
OS-14	Monitoring Well
OS-16	Monitoring Well
OS-17	Monitoring Well
OS-18	Monitoring Well
OSF	Production Well
RW-1	Monitoring Well
RW-2	Monitoring Well
SW-E-1	Surface Water
SW-E-2	Surface Water
SW-E-3	Surface Water
MW-TMI-9S*	Monitoring Well
MW-TMI-10D	Monitoring Well
MW-TMI-10I	Monitoring Well
MW-TMI-10S	Monitoring Well
MW-TMI-11S	Monitoring Well
MW-TMI-12S	Monitoring Well
MW-TMI-13I	Monitoring Well
MW-TMI-13S	Monitoring Well
MW-TMI-14D	Monitoring Well
MW-TMI-14I	Monitoring Well
MW-TMI-14S	Monitoring Well
MW-TMI-16D	Monitoring Well
MW-TMI-16I	Monitoring Well

* NO WATER PRESENT TO SAMPLE

TABLE A-1: **Radiological Groundwater Protection Program - Sampling Locations and Distance, Three Mile Island Nuclear Station, 2007**

Site	Site Type
MW-TMI-17D	Monitoring Well
MW-TMI-17I	Monitoring Well
MW-TMI-18D	Monitoring Well
MW-TMI-19D	Monitoring Well
MW-TMI-19I	Monitoring Well
MW-TMI-1D	Monitoring Well
MW-TMI-2D	Monitoring Well
MW-TMI-3I	Monitoring Well
MW-TMI-4I	Monitoring Well
MW-TMI-4S	Monitoring Well
MW-TMI-5D	Monitoring Well
MW-TMI-6D	Monitoring Well
MW-TMI-6I	Monitoring Well
MW-TMI-7S	Monitoring Well
MW-TMI-8S	Monitoring Well
MW-TMI-9I	Monitoring Well
TRAINING CENTER	Monitoring Well

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APPENDIX B

DATA TABLES

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
#3		10/15/07	636 ± 143	
48N		10/15/07	< 187	
48S		03/19/07	< 190	
48S	ORIGINAL	04/17/07	< 181	
48S	DUPLICATE	04/17/07	< 188	
48S	ORIGINAL	04/24/07	< 175	
48S	DUPLICATE	04/24/07	< 173	
48S		04/30/07	< 196	
48S		05/07/07	173 ± 106	
48S		05/14/07	< 163	
48S		05/18/07	< 168	
48S		05/21/07	< 168	
48S		05/25/07	146 ± 95	
48S		05/29/07	< 161	
48S		06/07/07	< 175	
48S		06/12/07	180 ± 113	
48S		06/19/07	< 150	
48S		07/05/07	189 ± 108	
48S		07/12/07	< 165	
48S		07/19/07	< 162	
48S		07/26/07	< 155	
48S		08/02/07	< 157	
48S		08/14/07	258 ± 102	
48S	ORIGINAL	10/16/07	< 188	
48S	DUPLICATE	10/16/07	< 188	
E1-2		05/09/07	< 194	
E1-2		10/16/07	< 188	
GP-12		03/20/07	< 200	
GP-12		05/09/07	< 192	
GP-6		03/20/07	311 ± 134	
GP-6		05/08/07	< 192	
GP-8		03/20/07	473 ± 144	
GP-8		05/08/07	< 188	
GP-9		03/20/07	206 ± 130	
GP-9		05/08/07	265 ± 133	
MS-1	ORIGINAL	03/30/07	2880 ± 364	
MS-1	DUPLICATE	03/30/07	2830 ± 357	
MS-1	ORIGINAL	04/13/07	6590 ± 723	
MS-1	DUPLICATE	04/13/07	6520 ± 715	
MS-1	ORIGINAL	04/17/07	5840 ± 647	
MS-1	DUPLICATE	04/17/07	5930 ± 657	
MS-1		04/20/07	4500 ± 502	
MS-1		04/24/07	5030 ± 558	
MS-1		04/30/07	4170 ± 221	
MS-1		05/07/07	6160 ± 661	
MS-1		05/14/07	5630 ± 615	
MS-1		05/18/07	4600 ± 511	
MS-1		05/21/07	5180 ± 556	
MS-1		05/25/07	5420 ± 591	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
MS-1		05/29/07	5600 ± 608	
MS-1	ORIGINAL	06/07/07	4130 ± 261	
MS-1	DUPLICATE	06/07/07	4250 ± 267	
MS-1		06/12/07	3060 ± 211	
MS-1		06/19/07	1800 ± 228	
MS-1	ORIGINAL	06/29/07	1220 ± 180	
MS-1	DUPLICATE	06/29/07	1410 ± 197	
MS-1		07/05/07	1160 ± 178	
MS-1		07/12/07	670 ± 132	
MS-1	ORIGINAL	07/19/07	733 ± 139	
MS-1	DUPLICATE	07/19/07	684 ± 135	
MS-1		07/26/07	579 ± 126	
MS-1	ORIGINAL	08/02/07	646 ± 131	
MS-1	DUPLICATE	08/02/07	699 ± 135	
MS-1		08/09/07	427 ± 129	
MS-1		08/14/07	446 ± 121	
MS-1		08/23/07	571 ± 125	
MS-1		08/30/07	476 ± 126	
MS-1		09/05/07	382 ± 123	
MS-1	ORIGINAL	09/11/07	602 ± 134	
MS-1	DUPLICATE	09/11/07	591 ± 132	
MS-1		09/17/07	452 ± 128	
MS-1		10/16/07	444 ± 134	
MS-19		03/29/07	372 ± 142	
MS-19		03/29/07		< 0.9
MS-19		04/24/07	333 ± 122	
MS-19		04/30/07	523 ± 135	
MS-19		05/07/07	542 ± 125	
MS-19		05/14/07	653 ± 134	
MS-19		09/25/07	629 ± 145	
MS-19		10/01/07	636 ± 153	
MS-19	ORIGINAL	10/10/07	584 ± 142	
MS-19	DUPLICATE	10/10/07	642 ± 148	
MS-2		05/08/07	270 ± 115	
MS-2		10/11/07	215 ± 120	
MS-20		03/28/07	463 ± 145	
MS-20		04/09/07	295 ± 114	
MS-20		04/17/07	< 187	
MS-20		05/08/07	193 ± 120	
MS-20		08/09/07	250 ± 120	
MS-20		08/30/07	354 ± 120	
MS-20		09/05/07	590 ± 137	
MS-20		10/15/07	385 ± 125	
MS-20		11/28/07	910 ± 141	
MS-20		12/04/07	265 ± 132	
MS-20		12/20/07	657 ± 134	
MS-21		04/02/07	451 ± 124	
MS-21		04/17/07	227 ± 127	
MS-21		05/08/07	408 ± 127	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
MS-21		05/29/07	547 ± 128	
MS-21		06/07/07	594 ± 123	
MS-21	ORIGINAL	10/15/07	2400 ± 276	
MS-21	RERUN	10/15/07	2310 ± 302	
MS-21		11/28/07	1420 ± 153	
MS-21		12/04/07	598 ± 152	
MS-21		12/20/07	779 ± 137	
MS-22		03/20/07	897 ± 177	
MS-22		05/09/07	754 ± 142	
MS-22		06/12/07	743 ± 129	
MS-22		08/30/07	926 ± 156	
MS-22		10/16/07	911 ± 170	
MS-3		05/08/07	172 ± 109	
MS-3		10/15/07	241 ± 125	
MS-4		05/09/07	398 ± 124	
MS-4		10/09/07	278 ± 130	
MS-5	ORIGINAL	05/08/07	336 ± 125	
MS-5	DUPLICATE	05/08/07	181 ± 110	
MS-5		10/11/07	199 ± 117	
MS-6		10/11/07	< 187	
MS-7		05/10/07	278 ± 124	
MS-7		10/11/07	< 183	
MS-8		05/08/07	297 ± 124	
MS-8		10/11/07	265 ± 127	
MS-8	ORIGINAL	10/11/07	260 ± 118	
MS-8	DUPLICATE	10/11/07	192 ± 123	
MW-1		05/10/07	< 185	
MW-1		10/10/07	< 193	
MW-2		04/02/07	< 159	
MW-2		05/10/07	< 187	
MW-2	ORIGINAL	05/29/07	< 159	
MW-2	DUPLICATE	05/29/07	< 159	
MW-2		06/07/07	< 174	
MW-2	ORIGINAL	06/19/07	< 152	
MW-2	DUPLICATE	06/19/07	< 151	
MW-2		08/09/07	< 173	
MW-2		08/14/07	< 161	
MW-2	ORIGINAL	08/23/07	< 153	
MW-2	DUPLICATE	08/23/07	176 ± 104	
MW-2		08/30/07	< 167	
MW-2		09/05/07	< 175	
MW-2		09/11/07	< 167	
MW-2		09/17/07	< 178	
MW-2		09/25/07	< 182	
MW-2		10/01/07	< 189	
MW-2		10/10/07	< 187	
MW-3		05/10/07	< 185	
MW-3		10/10/07	< 195	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
MW-4		05/10/07	< 188	
MW-4		10/10/07	< 196	
MW-TMI-10D		05/10/07	343 ± 134	
MW-TMI-10D		10/15/07	371 ± 130	
MW-TMI-10I	ORIGINAL	03/21/07	5010 ± 570	
MW-TMI-10I	DUPLICATE	03/21/07	4700 ± 539	
MW-TMI-10I		04/13/07	5130 ± 577	
MW-TMI-10I		05/10/07	5930 ± 638	
MW-TMI-10I		08/14/07	3740 ± 420	
MW-TMI-10I		10/16/07	3750 ± 249	
MW-TMI-10S		03/21/07	1800 ± 260	
MW-TMI-10S	ORIGINAL	05/09/07	5690 ± 611	
MW-TMI-10S	DUPLICATE	05/09/07	5010 ± 550	
MW-TMI-10S		08/14/07	7000 ± 739	
MW-TMI-10S		10/15/07	6040 ± 671	
MW-TMI-11S		03/28/07	821 ± 174	
MW-TMI-12S		03/21/07	22600 ± 2310	
MW-TMI-12S		03/28/07	8630 ± 934	
MW-TMI-12S		03/30/07	6340 ± 701	
MW-TMI-12S		04/02/07	5850 ± 629	
MW-TMI-12S		04/05/07	6490 ± 704	
MW-TMI-12S		04/09/07	5670 ± 621	
MW-TMI-12S		04/13/07	5390 ± 596	
MW-TMI-12S		04/17/07	8260 ± 889	
MW-TMI-12S		04/20/07	6230 ± 673	
MW-TMI-12S		04/24/07	1840 ± 246	
MW-TMI-12S		04/30/07	1330 ± 157	
MW-TMI-12S	ORIGINAL	05/07/07	1210 ± 180	
MW-TMI-12S	DUPLICATE	05/07/07	1200 ± 180	
MW-TMI-12S		05/18/07	2970 ± 354	
MW-TMI-12S		05/21/07	4290 ± 483	
MW-TMI-12S		05/25/07	7350 ± 778	
MW-TMI-12S		05/29/07	12100 ± 1250	
MW-TMI-12S		06/07/07	21800 ± 1140	
MW-TMI-12S		06/12/07	22000 ± 1150	
MW-TMI-12S		06/20/07	23700 ± 2400	
MW-TMI-12S		06/29/07	28100 ± 2830	
MW-TMI-12S		07/05/07	26100 ± 2640	
MW-TMI-12S		07/12/07	21600 ± 2180	
MW-TMI-12S		07/19/07	16500 ± 1690	
MW-TMI-12S		07/26/07	10800 ± 1120	
MW-TMI-12S		08/02/07	7560 ± 801	
MW-TMI-12S		08/09/07	4610 ± 515	
MW-TMI-12S	ORIGINAL	08/16/07	3120 ± 364	
MW-TMI-12S	DUPLICATE	08/16/07	3090 ± 351	
MW-TMI-12S		08/23/07	2680 ± 315	
MW-TMI-12S		08/30/07	2440 ± 300	
MW-TMI-12S		09/05/07	2060 ± 268	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
MW-TMI-12S		09/11/07	1470 ± 211	
MW-TMI-12S		09/17/07	1230 ± 192	
MW-TMI-12S		11/28/07	239 ± 123	
MW-TMI-12S		12/04/07	< 187	
MW-TMI-12S		12/20/07	285 ± 121	
MW-TMI-13I		03/30/07	3260 ± 396	
MW-TMI-13I	ORIGINAL	04/02/07	3420 ± 404	
MW-TMI-13I	DUPLICATE	04/02/07	3220 ± 384	
MW-TMI-13I		04/13/07	4140 ± 477	
MW-TMI-13I		04/20/07	4300 ± 481	
MW-TMI-13I		05/09/07	5670 ± 525	
MW-TMI-13I		08/09/07	8870 ± 938	
MW-TMI-13I		08/30/07	9610 ± 1010	
MW-TMI-13I		09/05/07	9440 ± 1000	
MW-TMI-13I		09/11/07	9240 ± 976	
MW-TMI-13I		09/17/07	9510 ± 1010	
MW-TMI-13I		09/25/07	9440 ± 1000	
MW-TMI-13I	ORIGINAL	10/01/07	9200 ± 983	
MW-TMI-13I	DUPLICATE	10/01/07	9930 ± 1060	
MW-TMI-13I		10/10/07	9030 ± 961	
MW-TMI-13I		11/08/07	3710 ± 441	
MW-TMI-13I		11/28/07	8160 ± 373	
MW-TMI-13I	ORIGINAL	12/04/07	8110 ± 885	
MW-TMI-13I	DUPLICATE	12/04/07	8010 ± 872	
MW-TMI-13I		12/20/07	6460 ± 705	
MW-TMI-13S	ORIGINAL	03/29/07	424 ± 147	
MW-TMI-13S	DUPLICATE	03/29/07	355 ± 137	
MW-TMI-13S		04/20/07	253 ± 112	
MW-TMI-13S		05/09/07	< 187	
MW-TMI-13S		08/14/07	12400 ± 1280	
MW-TMI-13S		08/23/07	11700 ± 1210	
MW-TMI-13S		08/30/07	11200 ± 1170	
MW-TMI-13S		09/05/07	11400 ± 1200	
MW-TMI-13S		09/11/07	9890 ± 1030	
MW-TMI-13S		09/17/07	7510 ± 809	
MW-TMI-13S		09/25/07	7310 ± 792	
MW-TMI-13S		10/01/07	6840 ± 741	
MW-TMI-13S		10/10/07	4690 ± 534	
MW-TMI-13S		11/08/07	6360 ± 700	
MW-TMI-13S		11/28/07	248 ± 123	
MW-TMI-13S		12/04/07	< 195	
MW-TMI-13S		12/20/07	351 ± 126	
MW-TMI-14D		04/13/07	1330 ± 204	
MW-TMI-14D		05/10/07	1690 ± 224	
MW-TMI-14D		10/10/07	1390 ± 213	
MW-TMI-14D		11/08/07	1330 ± 153	
MW-TMI-14D	ORIGINAL	11/28/07	1420 ± 154	
MW-TMI-14D	DUPLICATE	11/28/07	1480 ± 155	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
MW-TMI-14D		12/04/07	1370 ± 223	
MW-TMI-14D		12/20/07	1390 ± 151	
MW-TMI-14I		03/28/07	577 ± 155	
MW-TMI-14I		05/10/07	940 ± 170	
MW-TMI-14I		08/09/07	869 ± 154	
MW-TMI-14I		08/14/07	873 ± 151	
MW-TMI-14I		08/23/07	813 ± 141	
MW-TMI-14I		10/10/07	788 ± 160	
MW-TMI-14I	ORIGINAL	11/08/07	447 ± 139	
MW-TMI-14I	DUPLICATE	11/08/07	453 ± 142	
MW-TMI-14S		03/30/07	< 200	
MW-TMI-14S		04/24/07	253 ± 118	
MW-TMI-14S		04/30/07	322 ± 130	
MW-TMI-14S		05/07/07	674 ± 131	
MW-TMI-14S	ORIGINAL	05/14/07	754 ± 139	
MW-TMI-14S	DUPLICATE	05/14/07	807 ± 146	
MW-TMI-14S		08/09/07	430 ± 124	
MW-TMI-14S		08/14/07	325 ± 115	
MW-TMI-14S		08/23/07	< 153	
MW-TMI-14S		08/30/07	450 ± 122	
MW-TMI-14S		09/05/07	608 ± 136	
MW-TMI-14S		09/11/07	523 ± 127	
MW-TMI-14S		09/17/07	368 ± 123	
MW-TMI-14S		10/11/07	471 ± 135	
MW-TMI-14S		11/08/07	392 ± 132	
MW-TMI-14S		11/28/07	481 ± 129	
MW-TMI-14S		12/04/07	806 ± 174	
MW-TMI-14S		12/20/07	291 ± 122	
MW-TMI-16D		03/29/07	4180 ± 494	
MW-TMI-16D		04/05/07	3930 ± 453	
MW-TMI-16D		04/09/07	4360 ± 490	
MW-TMI-16D		04/13/07	3510 ± 416	
MW-TMI-16D		04/20/07	2990 ± 354	
MW-TMI-16D		05/10/07	2630 ± 314	
MW-TMI-16D		05/18/07	1020 ± 169	
MW-TMI-16D		05/29/07	3030 ± 354	
MW-TMI-16D		06/07/07	3700 ± 241	
MW-TMI-16D		06/12/07	3830 ± 248	
MW-TMI-16D		06/19/07	3950 ± 439	
MW-TMI-16D		06/29/07	3240 ± 373	
MW-TMI-16D	ORIGINAL	09/25/07	3120 ± 379	
MW-TMI-16D	DUPLICATE	09/25/07	4060 ± 471	
MW-TMI-16D		10/01/07	3490 ± 422	
MW-TMI-16D		10/09/07	3710 ± 436	
MW-TMI-16D		11/08/07	1340 ± 213	
MW-TMI-16D		11/28/07	2750 ± 182	
MW-TMI-16D		12/04/07	3180 ± 395	
MW-TMI-16D		12/20/07	2750 ± 182	
MW-TMI-16I		03/29/07	15500 ± 1620	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
MW-TMI-16I		04/02/07	14400 ± 1490	
MW-TMI-16I		04/05/07	15400 ± 1590	
MW-TMI-16I	ORIGINAL	04/09/07	19200 ± 1960	
MW-TMI-16I	DUPLICATE	04/09/07	17100 ± 1750	
MW-TMI-16I		04/13/07	20000 ± 2050	
MW-TMI-16I		04/17/07	17400 ± 1800	
MW-TMI-16I		04/20/07	17300 ± 1780	
MW-TMI-16I		04/24/07	18700 ± 1920	
MW-TMI-16I		04/30/07	18700 ± 805	
MW-TMI-16I		05/07/07	19300 ± 1960	
MW-TMI-16I		05/14/07	18000 ± 1850	
MW-TMI-16I		05/18/07	16600 ± 1710	
MW-TMI-16I		05/21/07	15800 ± 1620	
MW-TMI-16I	ORIGINAL	05/25/07	24200 ± 2460	
MW-TMI-16I	RERUN	05/25/07	21200 ± 2150	
MW-TMI-16I		05/29/07	10100 ± 1060	
MW-TMI-16I		06/07/07	6780 ± 390	
MW-TMI-16I		06/19/07	4890 ± 531	
MW-TMI-16I		06/29/07	4520 ± 500	
MW-TMI-16I		07/05/07	4680 ± 517	
MW-TMI-16I	ORIGINAL	07/12/07	3970 ± 449	
MW-TMI-16I	DUPLICATE	07/12/07	4430 ± 495	
MW-TMI-16I		07/19/07	4150 ± 464	
MW-TMI-16I		07/26/07	4230 ± 474	
MW-TMI-16I		08/02/07	9620 ± 1010	
MW-TMI-16I		08/09/07	8650 ± 917	
MW-TMI-16I		08/14/07	6910 ± 740	
MW-TMI-16I		08/23/07	4990 ± 546	
MW-TMI-16I		08/30/07	4300 ± 483	
MW-TMI-16I		09/05/07	3820 ± 441	
MW-TMI-16I		09/11/07	4860 ± 543	
MW-TMI-16I		09/17/07	4430 ± 501	
MW-TMI-16I		10/11/07	6960 ± 323	
MW-TMI-16I		11/08/07	3620 ± 430	
MW-TMI-16I		11/28/07	2340 ± 173	
MW-TMI-16I		12/04/07	1740 ± 258	
MW-TMI-16I	ORIGINAL	12/20/07	1280 ± 149	
MW-TMI-16I	DUPLICATE	12/20/07	1070 ± 183	
MW-TMI-17D		05/10/07	< 186	
MW-TMI-17D		05/18/07	177 ± 113	
MW-TMI-17D		05/21/07	259 ± 116	
MW-TMI-17D	ORIGINAL	05/25/07	166 ± 98	
MW-TMI-17D	DUPLICATE	05/25/07	< 141	
MW-TMI-17D		10/16/07	< 188	
MW-TMI-17I	ORIGINAL	04/05/07	< 168	
MW-TMI-17I	DUPLICATE	04/05/07	< 174	
MW-TMI-17I	ORIGINAL	04/24/07	< 165	
MW-TMI-17I	DUPLICATE	04/24/07	217 ± 115	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
MW-TMI-17I	ORIGINAL	04/30/07	252 ± 127	
MW-TMI-17I	DUPLICATE	04/30/07	288 ± 128	
MW-TMI-17I		05/07/07	294 ± 112	
MW-TMI-17I		05/14/07	< 162	
MW-TMI-17I	ORIGINAL	05/18/07	221 ± 112	
MW-TMI-17I	DUPLICATE	05/18/07	< 165	
MW-TMI-17I		05/21/07	233 ± 111	
MW-TMI-17I		05/25/07	263 ± 112	
MW-TMI-17I		05/29/07	238 ± 107	
MW-TMI-17I		06/07/07	187 ± 114	
MW-TMI-17I	ORIGINAL	06/12/07	< 179	
MW-TMI-17I	DUPLICATE	06/12/07	344 ± 118	
MW-TMI-17I		06/19/07	260 ± 107	
MW-TMI-17I	ORIGINAL	07/05/07	251 ± 114	
MW-TMI-17I	DUPLICATE	07/05/07	< 163	
MW-TMI-17I		07/12/07	277 ± 119	
MW-TMI-17I		07/19/07	265 ± 115	
MW-TMI-17I	ORIGINAL	07/26/07	191 ± 105	
MW-TMI-17I	DUPLICATE	07/26/07	169 ± 100	
MW-TMI-17I		08/02/07	222 ± 111	
MW-TMI-17I		10/16/07	228 ± 120	
MW-TMI-18D		05/09/07	< 159	
MW-TMI-18D		10/15/07	< 188	
MW-TMI-19D		05/09/07	< 186	
MW-TMI-19D	ORIGINAL	10/15/07	< 182	
MW-TMI-19D	DUPLICATE	10/15/07	197 ± 123	
MW-TMI-19I		05/10/07	< 188	
MW-TMI-19I		10/15/07	238 ± 131	
MW-TMI-1D		04/05/07	446 ± 132	
MW-TMI-1D		05/10/07	456 ± 134	
MW-TMI-1D	ORIGINAL	10/15/07	521 ± 137	
MW-TMI-1D	DUPLICATE	10/15/07	430 ± 134	
MW-TMI-2D		03/20/07	659 ± 158	
MW-TMI-2D		05/10/07	671 ± 144	
MW-TMI-2D	ORIGINAL	08/14/07	855 ± 144	
MW-TMI-2D	DUPLICATE	08/14/07	775 ± 136	
MW-TMI-2D		08/30/07	631 ± 132	
MW-TMI-2D	ORIGINAL	09/05/07	823 ± 156	
MW-TMI-2D	DUPLICATE	09/05/07	819 ± 155	
MW-TMI-2D		09/11/07	920 ± 161	
MW-TMI-2D		09/17/07	829 ± 157	
MW-TMI-2D		09/25/07	662 ± 148	
MW-TMI-2D		10/01/07	788 ± 165	
MW-TMI-2D		10/10/07	718 ± 155	
MW-TMI-3I		05/09/07	478 ± 120	
MW-TMI-3I		10/16/07	385 ± 125	
MW-TMI-4I		05/08/07	< 192	
MW-TMI-4I		10/12/07	< 182	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
MW-TMI-4I	ORIGINAL	10/12/07	< 182	
MW-TMI-4I	DUPLICATE	10/12/07	193 ± 116	
MW-TMI-4S	ORIGINAL	05/08/07	< 192	
MW-TMI-4S	DUPLICATE	05/08/07	< 187	
MW-TMI-4S		05/18/07	< 166	
MW-TMI-4S	ORIGINAL	05/21/07	< 169	
MW-TMI-4S	DUPLICATE	05/21/07	< 188	
MW-TMI-4S		05/25/07	< 150	
MW-TMI-4S		05/29/07	< 162	
MW-TMI-4S		06/07/07	< 180	
MW-TMI-4S		06/12/07	< 179	
MW-TMI-4S		06/19/07	< 152	
MW-TMI-4S	ORIGINAL	08/09/07	< 173	
MW-TMI-4S	DUPLICATE	08/09/07	< 172	
MW-TMI-4S		08/14/07	< 162	
MW-TMI-4S		08/23/07	< 154	
MW-TMI-4S		10/16/07	< 185	
MW-TMI-5D		05/09/07	< 163	
MW-TMI-5D		10/12/07	< 181	
MW-TMI-6D		05/10/07	323 ± 130	
MW-TMI-6D		10/11/07	357 ± 121	
MW-TMI-6I	ORIGINAL	05/10/07	< 187	
MW-TMI-6I	DUPLICATE	05/10/07	270 ± 131	
MW-TMI-6I		10/11/07	247 ± 119	
MW-TMI-7S		05/09/07	< 188	
MW-TMI-8S		05/09/07	172 ± 106	
MW-TMI-8S		10/15/07	< 186	
MW-TMI-9I		05/09/07	< 163	
MW-TMI-9I	ORIGINAL	10/15/07	< 185	
MW-TMI-9I	DUPLICATE	10/15/07	232 ± 121	
N2-1		05/09/07	< 165	
N2-1		10/10/07	< 193	
NW-A		05/10/07	1560 ± 211	
NW-A		10/14/07	1330 ± 149	
NW-B		05/10/07	1160 ± 177	
NW-B		10/14/07	679 ± 134	
NW-C		05/10/07	3140 ± 364	
NW-C		10/14/07	3360 ± 229	
NW-CW		05/10/07	1390 ± 195	
NW-CW		10/14/07	1180 ± 191	
OS-13B		05/08/07	257 ± 122	
OS-14		05/08/07	< 162	
OS-14		10/11/07	< 181	
OS-16		10/16/07	275 ± 128	
OS-17		10/15/07	< 184	
OS-18		03/20/07	238 ± 130	
OS-18		05/09/07	211 ± 106	
OS-18	ORIGINAL	08/14/07	379 ± 109	
OS-18	DUPLICATE	08/14/07	365 ± 108	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
OS-18		10/15/07	< 197	
OSF		03/19/07	536 ± 148	
OSF		05/08/07	634 ± 157	
OSF		08/14/07	669 ± 128	
OSF		10/11/07	748 ± 157	
RW-1		05/08/07	< 166	
RW-1		10/11/07	423 ± 123	
RW-2	ORIGINAL	03/21/07	13600 ± 1410	
RW-2	DUPLICATE	03/21/07	12900 ± 1350	
RW-2		03/28/07	12100 ± 1280	
RW-2		03/30/07	10700 ± 1140	
RW-2		04/05/07	11700 ± 1220	
RW-2		04/09/07	11800 ± 1230	
RW-2		04/13/07	9060 ± 967	
RW-2		04/17/07	8100 ± 868	
RW-2		04/20/07	7850 ± 838	
RW-2		04/24/07	6670 ± 722	
RW-2		04/30/07	6420 ± 319	
RW-2		05/07/07	5100 ± 557	
RW-2		05/18/07	4390 ± 491	
RW-2		05/21/07	3520 ± 407	
RW-2		05/25/07	4120 ± 459	
RW-2		05/29/07	4760 ± 522	
RW-2		06/07/07	13700 ± 732	
RW-2		06/12/07	17500 ± 923	
RW-2		06/20/07	24300 ± 2460	
RW-2		06/29/07	23500 ± 2380	
RW-2		07/05/07	29600 ± 3430	
RW-2		07/12/07	25000 ± 2540	
RW-2		07/19/07	20800 ± 2120	
RW-2		07/26/07	23600 ± 2400	
RW-2		08/02/07	17400 ± 1780	
RW-2		08/09/07	14600 ± 1510	
RW-2		08/16/07	10000 ± 1050	
RW-2		08/23/07	8360 ± 877	
RW-2	ORIGINAL	08/30/07	6190 ± 668	
RW-2	DUPLICATE	08/30/07	7080 ± 756	
RW-2		09/05/07	4950 ± 552	
RW-2		09/11/07	3610 ± 415	
RW-2	ORIGINAL	09/17/07	3510 ± 409	
RW-2	DUPLICATE	09/17/07	3440 ± 402	
RW-2		09/25/07	4660 ± 532	
RW-2		10/01/07	4600 ± 529	
RW-2		10/09/07	4810 ± 547	
RW-2		11/08/07	1250 ± 206	
RW-2		11/28/07	823 ± 140	
RW-2		12/04/07	951 ± 186	
RW-2		12/20/07	777 ± 137	
TRAINING CENTER		10/16/07	< 184	

TABLE B-I.2 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3	SR-90
SW-E-1		03/20/07	< 182	
SW-E-1		05/10/07	< 155	
SW-E-1		08/15/07	< 140	
SW-E-1		10/16/07	< 182	
SW-E-2		03/20/07	< 189	
SW-E-2		05/09/07	< 188	
SW-E-2		08/15/07	< 139	
SW-E-2		10/16/07	< 187	
SW-E-3		03/20/07	< 186	
SW-E-3	ORIGINAL	05/09/07	< 190	
SW-E-3	DUPLICATE	05/09/07	< 190	
SW-E-3		08/15/07	143 ± 93	
SW-E-3		10/16/07	< 181	

TABLE B-I.3 **CONCENTRATIONS OF TRITIUM IN WELL WATER SPLIT SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE		COLLECTION DATE	H-3
48S		04/17/07	< 159
48S		04/24/07	< 155
48S		10/15/07	235 ± 83
MS-1		03/30/07	2474 ± 161
MS-1		04/13/07	6061 ± 232
MS-1		04/17/07	5593 ± 224
MS-1		06/07/07	3598 ± 185
MS-1		06/29/07	1127 ± 123
MS-1		07/19/07	699 ± 107
MS-1		08/02/07	776 ± 129
MS-19		10/10/07	406 ± 114
MS-19		10/10/07	494 ± 116
MS-5		05/08/07	< 181
MS-8		10/11/07	< 184
MW-1		09/11/07	781 ± 108
MW-2		05/29/07	< 177
MW-2	ORIGINAL	06/19/07	< 169
MW-2	DUPLICATE	06/19/07	< 169
MW-2		08/23/07	< 154
MW-TMI-10I	ORIGINAL	03/21/07	4973 ± 209
MW-TMI-10I	DUPLICATE	03/21/07	5190 ± 213
MW-TMI-10S		05/09/07	5351 ± 216
MW-TMI-12S		05/07/07	1019 ± 122
MW-TMI-12S		08/16/07	3245 ± 181
MW-TMI-13I		04/02/07	3213 ± 177
MW-TMI-13I		10/01/07	9092 ± 270
MW-TMI-13I		12/04/07	7787 ± 253
MW-TMI-13S		03/29/07	413 ± 92
MW-TMI-14D		11/28/07	1125 ± 133
MW-TMI-14I		11/08/07	481 ± 110
MW-TMI-14S		05/14/07	779 ± 120
MW-TMI-16D		09/25/07	3564 ± 179
MW-TMI-16I		04/09/07	14243 ± 344
MW-TMI-16I		07/12/07	4684 ± 205
MW-TMI-16I		12/20/07	1093 ± 127
MW-TMI-17D	ORIGINAL	05/25/07	< 177
MW-TMI-17D	DUPLICATE	05/25/07	< 177
MW-TMI-17I		04/05/07	191 ± 90
MW-TMI-17I	ORIGINAL	04/24/07	175 ± 89
MW-TMI-17I	DUPLICATE	04/24/07	< 155
MW-TMI-17I		04/30/07	205 ± 120
MW-TMI-17I		05/18/07	261 ± 93
MW-TMI-17I		06/12/07	285 ± 91
MW-TMI-17I		07/05/07	219 ± 102
MW-TMI-17I		07/26/07	202 ± 101

TABLE B-I.3 **CONCENTRATIONS OF TRITIUM IN WELL WATER SPLIT SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3
MW-TMI-19D	10/15/07	168 ± 80
MW-TMI-1D	10/15/07	373 ± 89
MW-TMI-2D	08/14/07	741 ± 114
MW-TMI-2D	09/05/07	781 ± 108
MW-TMI-4I	10/12/07	233 ± 106
MW-TMI-4S	05/08/07	< 181
MW-TMI-4S	05/21/07	< 153
MW-TMI-4S	08/09/07	425 ± 117
MW-TMI-6I	05/10/07	256 ± 103
MW-TMI-9I	10/15/07	< 144
OS-18	08/14/07	419 ± 102
RW-2	03/21/07	12143 ± 306
RW-2	08/30/07	6892 ± 260
RW-2	09/17/07	3625 ± 181

TABLE B-I.4 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SPLIT SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION DATE	H-3
SW-E-3	05/09/07	< 181

TABLE B-I.5 **CONCENTRATIONS OF GAMMA EMITTERS IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
#3	10/15/07	< 37	< 35	< 4	< 4	< 9	< 4	< 8	< 6	< 7	< 4	< 5	< 29	< 8
48N	10/15/07	< 47	< 90	< 5	< 5	< 13	< 5	< 11	< 8	< 9	< 5	< 5	< 34	< 11
48S	10/16/07	< 41	< 86	< 4	< 4	< 10	< 4	< 9	< 5	< 7	< 4	< 4	< 30	< 8
48S	10/16/07	< 45	< 84	< 5	< 5	< 12	< 6	< 12	< 6	< 10	< 5	< 5	< 37	< 11
E1-2	10/16/07	< 46	< 48	< 5	< 5	< 11	< 6	< 11	< 6	< 9	< 5	< 5	< 32	< 10
MS-1	10/16/07	< 44	< 43	< 5	< 5	< 9	< 3	< 7	< 5	< 10	< 4	< 4	< 28	< 10
MS-19	10/10/07	< 41	< 45	< 4	< 4	< 11	< 5	< 9	< 6	< 9	< 3	< 4	< 37	< 14
MS-19	10/10/07	< 37	< 47	< 5	< 4	< 10	< 3	< 5	< 4	< 7	< 4	< 5	< 37	< 9
MS-19	10/10/07	< 49	151 ± 47	< 4	< 5	< 10	< 5	< 9	< 5	< 8	< 5	< 5	< 39	< 14
MS-2	10/11/07	< 53	< 57	< 5	< 5	< 13	< 6	< 11	< 7	< 10	< 4	< 6	< 47	< 12
MS-20	10/15/07	< 47	< 42	< 6	< 6	< 12	< 6	< 10	< 6	< 10	< 5	< 5	< 31	< 12
MS-21	10/15/07	< 41	< 65	< 4	< 5	< 8	< 4	< 9	< 6	< 9	< 4	< 5	< 33	< 12
MS-22	10/16/07	< 49	< 106	< 5	< 5	< 10	< 7	< 11	< 6	< 10	< 5	< 5	< 32	< 8
MS-3	10/15/07	< 40	< 70	< 4	< 5	< 11	< 5	< 10	< 6	< 8	< 5	< 5	< 29	< 9
MS-4	10/09/07	< 42	< 68	< 4	< 4	< 10	< 5	< 10	< 5	< 8	< 4	< 4	< 36	< 13
MS-5	10/11/07	< 41	< 48	< 3	< 5	< 9	< 4	< 9	< 5	< 7	< 4	< 4	< 34	< 14
MS-6	10/11/07	< 48	< 38	< 5	< 5	< 11	< 5	< 9	< 6	< 8	< 4	< 5	< 39	< 14
MS-7	10/11/07	< 42	< 33	< 4	< 4	< 11	< 6	< 9	< 5	< 8	< 4	< 4	< 37	< 15
MS-8	10/11/07	< 43	< 94	< 5	< 5	< 10	< 3	< 9	< 5	< 9	< 4	< 5	< 37	< 14
MS-8	10/11/07	< 49	< 91	< 5	< 5	< 13	< 4	< 10	< 6	< 10	< 5	< 4	< 43	< 14
MS-8	10/11/07	< 33	< 58	< 3	< 4	< 8	< 3	< 7	< 4	< 7	< 3	< 4	< 23	< 9
MW-1	10/10/07	< 49	< 75	< 4	< 4	< 13	< 5	< 9	< 5	< 10	< 4	< 5	< 40	< 14
MW-2	10/10/07	< 40	< 97	< 6	< 5	< 10	< 5	< 9	< 5	< 10	< 4	< 5	< 38	< 13
MW-3	10/10/07	< 38	< 64	< 4	< 5	< 9	< 5	< 8	< 5	< 8	< 4	< 4	< 32	< 10
MW-4	10/10/07	< 58	< 91	< 5	< 4	< 11	< 5	< 11	< 5	< 8	< 4	< 6	< 44	< 14
MW-TMI-10D	10/15/07	< 52	< 57	< 5	< 6	< 13	< 6	< 13	< 7	< 9	< 5	< 5	< 37	< 14
MW-TMI-10I	10/16/07	< 54	< 93	< 5	< 6	< 11	< 4	< 10	< 6	< 10	< 6	< 5	< 35	< 12
MW-TMI-10S	10/15/07	< 61	< 102	< 6	< 5	< 13	< 5	< 16	< 7	< 10	< 6	< 6	< 44	< 15
MW-TMI-13I	10/10/07	< 46	< 43	< 4	< 5	< 11	< 4	< 10	< 5	< 9	< 4	< 4	< 41	< 12
MW-TMI-13S	10/10/07	< 43	< 97	< 5	< 5	< 12	< 5	< 9	< 5	< 8	< 4	< 4	< 36	< 15

TABLE B-I.5 **CONCENTRATIONS OF GAMMA EMITTERS IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
MW-TMI-14D	10/10/07	< 43	< 66	< 4	< 5	< 10	< 3	< 9	< 5	< 8	< 4	< 4	< 37	< 10
MW-TMI-14I	10/10/07	< 29	< 49	< 3	< 3	< 7	< 3	< 5	< 4	< 6	< 3	< 3	< 25	< 11
MW-TMI-14S	10/11/07	< 41	< 36	< 4	< 4	< 9	< 4	< 8	< 5	< 8	< 4	< 4	< 39	< 12
MW-TMI-16D	10/09/07	< 30	< 46	< 4	< 4	< 7	< 3	< 6	< 3	< 7	< 3	< 3	< 27	< 8
MW-TMI-16I	10/11/07	< 40	< 60	< 4	< 4	< 8	< 2	< 8	< 5	< 6	< 5	< 4	< 36	< 13
MW-TMI-17D	10/16/07	< 51	< 110	< 5	< 6	< 13	< 5	< 12	< 7	< 10	< 5	< 6	< 36	< 11
MW-TMI-17I	10/16/07	< 42	< 103	< 5	< 6	< 13	< 6	< 9	< 6	< 10	< 4	< 5	< 33	< 12
MW-TMI-18D	10/15/07	< 47	< 47	< 5	< 5	< 10	< 6	< 12	< 6	< 9	< 4	< 6	< 31	< 12
MW-TMI-19D	10/15/07	< 44	< 122	< 4	< 4	< 11	< 5	< 10	< 6	< 10	< 4	< 4	< 32	< 9
MW-TMI-19D	10/15/07	< 46	< 91	< 5	< 5	< 12	< 5	< 9	< 6	< 10	< 5	< 5	< 32	< 7
MW-TMI-19I	10/15/07	< 41	< 37	< 4	< 4	< 9	< 5	< 9	< 5	< 8	< 4	< 4	< 35	< 11
MW-TMI-1D	10/15/07	< 45	< 40	< 4	< 6	< 10	< 6	< 14	< 6	< 9	< 5	< 6	< 37	< 13
MW-TMI-1D	10/15/07	< 47	96 ± 58	< 5	< 5	< 12	< 5	< 10	< 7	< 10	< 5	< 5	< 35	< 12
MW-TMI-2D	10/10/07	< 36	< 61	< 4	< 4	< 9	< 3	< 8	< 4	< 7	< 4	< 4	< 31	< 8
MW-TMI-3I	10/16/07	< 53	< 47	< 5	< 6	< 13	< 6	< 13	< 7	< 10	< 5	< 6	< 44	< 12
MW-TMI-4I	10/12/07	< 40	< 80	< 5	< 4	< 10	< 5	< 9	< 5	< 8	< 3	< 5	< 34	< 12
MW-TMI-4I	10/12/07	< 40	< 36	< 5	< 5	< 11	< 4	< 9	< 6	< 9	< 4	< 5	< 38	< 13
MW-TMI-4IF	10/12/07	< 48	< 105	< 5	< 6	< 11	< 5	< 10	< 6	< 10	< 4	< 5	< 33	< 15
MW-TMI-4S	10/16/07	< 29	< 61	< 3	< 3	< 5	< 3	< 5	< 4	< 4	< 3	< 3	< 20	< 7
MW-TMI-5D	10/12/07	< 51	< 77	< 5	< 5	< 10	< 5	< 10	< 7	< 9	< 5	< 5	< 44	< 14
MW-TMI-6D	10/11/07	< 51	< 97	< 5	< 5	< 11	< 5	< 10	< 7	< 9	< 5	< 6	< 43	< 14
MW-TMI-6I	10/11/07	< 44	< 97	< 5	< 5	< 11	< 5	< 10	< 6	< 9	< 4	< 4	< 34	< 14
MW-TMI-8S	10/15/07	< 43	147 ± 57	< 4	< 5	< 11	< 5	< 9	< 6	< 10	< 4	< 5	< 34	< 10
MW-TMI-9I	10/15/07	< 52	< 103	< 6	< 6	< 13	< 5	< 10	< 7	< 10	< 6	< 7	< 41	< 12
MW-TMI-9I	10/15/07	< 45	< 50	< 5	< 4	< 10	< 4	< 9	< 6	< 9	< 4	< 4	< 33	< 10
N2-1	10/10/07	< 36	< 31	< 4	< 4	< 8	< 4	< 7	< 5	< 7	< 4	< 4	< 29	< 11
NW-A	10/16/07	< 52	< 50	< 5	< 5	< 11	< 5	< 8	< 6	< 10	< 5	< 5	< 39	< 12
NW-B	10/16/07	< 50	< 44	< 6	< 6	< 13	< 3	< 12	< 6	< 9	< 6	< 6	< 37	< 14
NW-C	10/16/07	< 43	< 82	< 4	< 5	< 11	< 5	< 11	< 5	< 8	< 4	< 5	< 33	< 11
NW-CW	10/16/07	< 47	< 94	< 6	< 5	< 10	< 5	< 12	< 7	< 9	< 5	< 5	< 36	< 10

TABLE B-I.5 **CONCENTRATIONS OF GAMMA EMITTERS IN WELL WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
OS-14	10/11/07	< 36	< 79	< 3	< 4	< 8	< 4	< 7	< 3	< 7	< 3	< 4	< 28	< 8
OS-16	10/16/07	< 38	< 41	< 4	< 5	< 10	< 6	< 9	< 5	< 7	< 4	< 4	< 29	< 13
OS-17	10/15/07	< 50	143 ± 69	< 5	< 5	< 10	< 5	< 11	< 6	< 10	< 5	< 5	< 40	< 12
OS-18	10/15/07	< 46	< 61	< 5	< 6	< 13	< 5	< 11	< 5	< 10	< 4	< 5	< 41	< 12
OSF	10/11/07	< 43	< 88	< 4	< 5	< 12	< 4	< 9	< 5	< 8	< 4	< 5	< 28	< 9
RW-1	10/11/07	< 43	< 63	< 4	< 4	< 10	< 4	< 9	< 5	< 9	< 3	< 4	< 34	< 12
RW-2	10/09/07	< 41	< 69	< 4	< 4	< 10	< 4	< 8	< 4	< 7	< 4	< 4	< 35	< 14
TRAINING CENTER	10/16/07	< 58	< 52	< 6	< 7	< 14	< 6	< 14	< 8	< 9	< 6	< 6	< 43	< 12

TABLE B-I.6 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
SW-E-1	10/16/07	< 49	< 111	< 7	< 6	< 9	< 6	< 15	< 7	< 10	< 5	< 7	< 33	< 11
SW-E-2	10/16/07	< 56	< 43	< 6	< 6	< 13	< 6	< 11	< 7	< 10	< 6	< 6	< 39	< 13
SW-E-3	10/16/07	< 43	< 45	< 4	< 5	< 13	< 6	< 10	< 7	< 9	< 5	< 5	< 32	< 15

TABLE B-I.7 **CONCENTRATIONS OF GAMMA EMITTERS IN WELL WATER SPLIT SAMPLES COLLECTED AS PART OF THE RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM, THREE MILE ISLAND NUCLEAR STATION, 2007**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	Cs-134	Cs-137	Ba-140	La-140
48S	10/15/07	< 24	< 62	< 3	< 2	< 4	< 1	< 3	< 2	< 3	< 2	< 2	< 22	< 3
MS-19	10/10/07	< 63	< 55	< 2	< 5	< 16	< 2	< 3	< 6	< 6	< 3	< 2	< 672	< 129
MS-8	10/11/07	< 68	< 51	< 3	< 3	< 17	< 2	< 2	< 18	< 12	< 3	< 2	< 949	< 228
MW-TMI-19D	10/15/07	< 31	< 63	< 2	< 2	< 6	< 2	< 3	< 3	< 5	< 2	< 3	< 21	< 3
MW-TMI-1D	10/15/07	< 18	60 ± 32	< 2	< 3	< 5	< 3	< 3	< 3	< 4	< 2	< 2	< 13	< 4
MW-TMI-4I	10/12/07	< 46	< 68	< 2	< 5	< 30	< 3	< 6	< 11	< 10	< 3	< 3	< 974	< 319
MW-TMI-9I	10/15/07	< 41	< 71	< 3	< 2	< 6	< 2	< 4	< 4	< 5	< 3	< 3	< 27	< 9