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OYSTER CREEK GENERATING STATION
UNIT 1

Annual Radiological
Environmental Operating Report

1 January Through 31 December 2008

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I. Summary and Conclusions

This report on the Radiological Environmental Monitoring Program conducted for the Oyster Creek Generating Station (OCGS) by Exelon Nuclear covers the period 01 January 2008 through 31 December 2008. During that time period, 1372 analyses were performed on 1165 samples. In assessing all the data gathered for this report and comparing these results with historical data, it was concluded that the operation of OCGS had no adverse radiological impact on the environment.

Surface and drinking water samples were analyzed for concentrations of tritium and gamma emitting nuclides. No tritium and no fission or activation products were detected in any of the surface or drinking water samples collected as part of the Radiological Environmental Monitoring Program during 2008.

Fish (predator and bottom feeder), clams, crabs, and sediment samples were analyzed for concentrations of gamma emitting nuclides. No OCGS-produced fission or activation products were detected in fish, clams, crabs or sediment.

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.

Strontium-89 and strontium-90 and gamma analyses were performed on quarterly composites of air particulate samples. All strontium-89 and strontium-90 results were below the minimum detectable activity.

Vegetation samples were analyzed for gamma emitting nuclides, strontium-89, and strontium-90. Concentrations of naturally occurring K-40 were consistent with those detected in previous years. All strontium-89 results were below the minimum detectable activity. Strontium-90 activity was detected at levels consistent with those detected in previous years at both control and indicator stations, and can be attributed to historical nuclear weapons testing and the Chernobyl accident.

Environmental gamma radiation measurements were performed quarterly using thermoluminescent dosimeters. Similar to previous years, there was no indication of an increase in offsite direct radiation dose rates with the exception of a few locations at or near the site boundary where public access is restricted. The maximum dose to any member of the public attributable to radioactive effluents and direct radiation from the OCGS was less than the 25 mRem/year limit established by the United States Environmental Protection Agency.

II. Introduction

The Oyster Creek Generating Station (OCGS), consisting of one boiling water reactor owned and operated by Exelon, is located on the Atlantic Coastal Plain Physiographic Province in Ocean County, New Jersey, about 60 miles south of Newark, 9 miles south of Toms River, and 35 miles north of Atlantic City. It lies approximately 2 miles inland from Barnegat Bay. The site, covering approximately 781 acres, is situated partly in Lacey Township and, to a lesser extent, in Ocean Township. Access is provided by U.S. Route 9, passing through the site and separating a 637-acre eastern portion from the balance of the property west of the highway. The station is about ¼ mile west of the highway and 1¼ miles east of the Garden State Parkway. The site property extends about 2½ miles inland from the bay; the maximum width in the north-south direction is almost 1 mile. The site location is part of the New Jersey shore area with its relatively flat topography and extensive freshwater and saltwater marshlands. The South Branch of Forked River runs across the northern side of the site and Oyster Creek partly borders the southern side.

A preoperational Radiological Environmental Monitoring Program (REMP) for OCGS was established in 1966, and continued for two years prior to the plant becoming operational in 1969. This report covers those analyses performed by Teledyne Brown Engineering (TBE), Global Dosimetry, and Environmental Inc. (Midwest Labs) on samples collected during the period 01 January 2008 through 31 December 2008.

A. Objectives of the REMP

The objectives of the REMP are to:

1. Determine whether any significant increase occurs in the concentration of radionuclides in major pathways.

2. Identify and evaluate the buildup, if any, of radionuclides in the local environment, or any changes in normal background radiation levels.

3. Verify the adequacy of the plant's controls for the release of radioactive materials.

4. Fulfill the obligations of the radiological surveillance sections of Oyster Creek's Offsite Dose Calculation Manual (ODCM).

B. Implementation of the Objectives

The implementation of the objectives is accomplished by:

1. Identifying significant exposure pathways.

2. Establishing baseline radiological data for 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.

C. Discussion

1. General Program

The Radiological Environmental Monitoring Program (REMP) was established in 1966, three years before the plant became operational. This preoperational surveillance program was established to describe and quantify the radioactivity, and its variability, in the area prior to the operation of OCGS. After OCGS became operational in 1969, the operational surveillance program continued to measure radiation and radioactivity in the surrounding areas.

A variety of environmental samples are collected as part of the REMP at OCGS. The selection of sample types is based on the established pathways for the transfer of radionuclides through the environment to humans. The selection of sampling locations is based on sample availability, local meteorological and hydrological characteristics, local population characteristics, and land usage in the area of interest. The selection of sampling frequencies for the various environmental media is based on the radionuclides of interest, their respective half-lives, and their behavior in both the biological and physical environment.

2. Preoperational Surveillance Program

The federal government requires nuclear facilities to conduct radiological environmental monitoring prior to constructing the facility. This preoperational surveillance program is aimed at collecting the data needed to identify pathways, including selection of the radioisotope and sample media combinations to be included in the environmental surveillance program conducted after facility operation begins. Radiochemical analyses performed on the

environmental samples should include not only those nuclides expected to be released during facility operation, but should also include typical radionuclides from nuclear weapons testing and natural background radioactivity. All environmental media with a potential to be affected by facility operation as well as those media directly in the major pathways, should be sampled on at least an annual basis during the preoperational phase of the environmental surveillance program.

The preoperational surveillance design, including nuclide/media combinations, sampling frequencies and locations, collection techniques, and radioanalyses performed, should be carefully considered and incorporated in the design of the operational surveillance program. In this manner, data can be compared in a variety of ways (for example, from year to year, location to location, etc.) in order to detect any radiological impact the facility has on the surrounding environment. Data collection during the preoperational phase should be planned to provide a comprehensive database for evaluating any future changes in the environment surrounding the nuclear facility.

OCGS began its preoperational environmental surveillance program three years before the plant began operating in 1969. Data accumulated during those early years provide an extensive database from which environmental monitoring personnel are able to identify trends in the radiological characteristics of the local environment. The environmental surveillance program at OCGS will continue after the plant has reached the end of its economically useful life and decommissioning has begun.

3. Consideration of Plant Effluents

Effluents are strictly monitored to ensure that radioactivity released to the environment is as low as reasonably achievable and does not exceed regulatory limits. Effluent control includes the operation of monitoring systems, in-plant and environmental sampling and analyses programs, quality assurance programs for effluent and environmental programs, and procedures covering all aspects of effluent and environmental monitoring.

Both radiological environmental and effluent monitoring indicate that the operation of OCGS does not result in significant radiation exposure of people or the environment surrounding OCGS and is well below the applicable levels set by the Nuclear Regulatory Commission (NRC) and the Environmental Protection Agency

(EPA).

There were no liquid radioactive effluent releases from the OCGS during 2008. Utilizing gaseous effluent data, the maximum hypothetical dose to any individual in the south-east sector of the plant (sector of predominant wind direction) during 2008 was calculated using a mathematical model, which is based on the methods defined by the U.S. Nuclear Regulatory Commission. These methods accurately determine the types and quantities of radioactive materials being released to the environment.

The maximum hypothetical calculated organ dose (thyroid) from iodines and particulates to any individual due to gaseous effluents was 3.58E-3 mRem (0.00358 mRem) which was approximately 0.00024 percent of the annual limit. The maximum hypothetical calculated whole body dose to any individual due to gaseous effluents was 4.22E-4 mRem (0.000422 mRem) which was 0.000084 percent of the annual limit.

The total maximum hypothetical organ dose (thyroid) due to all radiological effluents of 3.58E-3 mRem (0.00358 mRem) received by any individual from gaseous effluents from the Oyster Creek Generating Station for the reporting period is more than 83,000 times lower than the dose the average individual in the Oyster Creek area received from background radiation, including that from radon, during the same time period. The background radiation dose averages approximately 300 mRem per year in the Central New Jersey area, which includes approximately 200 mRem/year from naturally occurring radon gas.

During 2008, the maximum direct radiation dose potentially attributable to the operation of Oyster Creek beyond the site boundary in the southeast sector, as shown by offsite thermoluminescent dosimeter (TLD) readings, was 1.8 mRem/year at Station 109. Therefore, the maximum combined direct radiation and whole body effluent dose potentially attributable to Oyster Creek in the south-east sector during 2008 was 1.800422 mRem, or approximately 7.2 percent of the 40 CFR 190 limit of 25 mRem/year.

Additionally, comparison of environmental sampling results to iodine and particulate gaseous effluents released, showed no radioactivity attributable to the operation of OCGS. Both elevated and ground-level release paths were considered in this review, with total iodines released of 1.58 mCi and total particulates with half-

lives greater than 8 days released of 0.339 mCi. (1 mCi is one/one-thousandth of a Ci).

III. Program Description

A. Sample Collection

Samples for the OCGS REMP were collected for Exelon by on-site personnel and Normandeau Associates, Incorporated. This section describes the general collection methods used to obtain environmental samples for the OCGS REMP in 2008. Sample locations and descriptions can be found in Tables B–1 and B–2, and Figures B–1, B–2, and B-3, Appendix B. The collection procedures are listed in Table B–3.

Aquatic Environment

The aquatic environment was evaluated by performing radiological analyses on samples of surface water, drinking water, fish, clams, crabs, and sediment. One gallon water samples were collected monthly from two surface locations (33 and 94), semiannually at two surface water locations (23 and 24), and quarterly from four drinking water wells(1, 37, 38, and 39). Control locations were 94 and 37. All samples were collected in plastic bottles, which were rinsed at least twice with source water prior to collection. Fish samples comprising the flesh of two groups, bottom feeder and predator, were collected semiannually at three locations (33, 93 and 94 (control). Clams were collected semiannually from three locations (23, 24, and 94 (control)). One annual crab sample was collected from one location (93). Sediment samples were collected at four locations semiannually (23, 24, 33, and 94 (control)).

Atmospheric Environment

The atmospheric environment was evaluated by performing radiological analyses on samples of air particulate and airborne iodine. Airborne iodine and particulate samples were collected and analyzed weekly at eight locations (C, 3, 20, 66, 71, 72, 73, and 111). The control location was C. 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.

Terrestrial Environment

The terrestrial environment was evaluated by performing radiological analyses on samples of garden vegetation.

No commercial dairy operations and no dairy animals producing milk for human consumption are located within a 5 mile radius of the plant. Therefore, vegetation samples were collected in lieu of milk. Vegetation samples were collected, when available, at three locations (35, 36, and 66). Station 36 was the control location. All samples were collected in 18" x 24" new unused plastic bags and shipped promptly to the laboratory.

Ambient Gamma Radiation

Direct radiation measurements were made using Panasonic Model 814 calcium sulfate ($CaSO_4$) thermoluminescent dosimeters (TLD). The TLDs were placed on and around the OCGS site and were categorized as follows:

A site boundary ring consisting of 19 locations (1, T1, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66, 112, and 113) near the site boundary.

An intermediate distance ring consisting of 31 locations (4, 5, 6, 8, 9, 22, 46, 47, 48, 68, 73, 74, 75, 78, 79, 82, 84, 85, 86, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 109, and 110) extending to approximately 5 miles from the site designed to measure possible exposures to close-in population.

Special interest stations consisting of 9 locations (3, 11, 71, 72, 81, 88, 89, 90, and 92) representing special interest areas such as population centers, state parks, etc.

Background (Control) stations consisting of two locations (C and 14) greater than 20 miles distant from the site.

Indicator TLDs were placed systematically, with at least one station in each of 16 meteorological compass sectors in the general area of the site boundary. TLDs were also placed in each meteorological sector in the 3 ¾ to 5 mile range, where reasonable highway access would permit, in areas of public interest and population centers. Background locations were located greater than twenty miles distant from the OCGS and generally in an upwind direction from the OCGS.

Two TLDs – each comprised of three $CaSO_4$ thermoluminescent

phosphors enclosed in plastic – were placed at each location approximately three to eight feet above ground level. The TLDs were exchanged quarterly and sent to Global Dosimetry for analysis.

B. Sample Analysis

This section describes the general analytical methodologies used by TBE and Environmental Inc. (Midwest Labs) to analyze the environmental samples for radioactivity for the OCGS REMP in 2008. 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 air particulates.

2. Concentrations of gamma emitters in surface and drinking water, fish, clams, crabs, sediment, air particulates, and vegetation.

3. Concentrations of tritium in surface and drinking water.

4. Concentrations of I-131 in air iodine cartridges.

5. Concentrations of strontium in air particulates and vegetation.

6. Ambient gamma radiation levels at various locations around the OCGS.

C. Data Interpretation

For trending purposes, the radiological and direct radiation data collected during 2008 were compared with data from past years. The results of environmental sampling show that radioactivity levels have not increased from the background radioactivity detected prior to the operation of OCGS. The operation of OCGS continues to have no measurable radiological impact upon the environment.

Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

The lower limit of detection (LLD) is 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 is intended as a before the fact estimate of a system (including instrumentation, procedure and sample type) and not as an after the fact criterion for the presence of activity. All analyses were designed to achieve the required OCGS 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, which results in 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 and drinking water 12 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Zr-95, Nb-95, I-131, Cs-134, Cs-137, Ba-140, and La-140 were reported.

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

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

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

For sediment seven nuclides, Be-7, 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 air iodine cartridges one nuclide, I-131 was reported.

For vegetation seven nuclides, Be-7, K-40, I-131, Cs-134, Cs-137,

Ba-140, and La-140 were reported.
Means and standard deviations of the results were calculated. The standard deviations represent the variability of measured results for different samples rather than single analysis uncertainty.

D. Program Exceptions

For 2008 the OCGS REMP had a sample recovery rate in excess of 99%. Exceptions are listed below:

1. Only two fish samples were available (3 samples are desired, but not required) for spring collection for the following period and location:
   04/15/2008 – 04/16/2008, Location 33

2. Air particulate and air iodine samples were not available because the main fuse box had been turned off (vandalism suspected) for the following period and location:
   01/09/2008 – 01/16/2008, Location 20

3. Air particulate and air iodine sampler lost power for a portion of time due to a blown breaker. Sampler did not run long enough to constitute a valid sample for the following period and location:
   06/25/2008 – 07/01/2008, Location 73

4. Air particulate and air iodine sampler pump was not running for a portion of time. Although the hour timer was still running, it is not known how long the pump ran. Air sample was collected, but should not be considered valid for the following period and location:
   10/15/2008 – 10/22/2008, Location C

5. No broadleaf vegetation sample was collected due to seasonal availability for the following periods and locations: *NOTE
   06/08/2008, Location 35
   06/08/2008, Location 36
   06/08/2008, Location 66

6. A cabbage QC sample was collected in September to replace a sample collected in August that did not arrive at the primary lab:
   08-09/2008, Location 36

7. One of the two TLDs at Location 98 was missing during collection (vandalism suspected, the remaining TLD was available for analysis) for the following period and location:
   07/16/2008 – 10/08/2008, Location 98

8. Both TLDs were missing during collection for the following periods and locations:
01/08/2008 – 04/16/2008, Location 6
04/16/2008 – 07/16/2008, Location 105

*NOTE: Per the Oyster Creek ODCM, if garden vegetation samples are unobtainable due to any legitimate reason, the missed sample will be documented in the annual report, with no further actions necessary.

Program exceptions are tracked and investigated to understand the causes of the program exception. Sampling and maintenance errors are reviewed with the personnel involved to prevent recurrence.

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

E. Program Changes

Air sampling Station 111 was added to the REMP during the first quarter of 2008.

TLD sampling Stations 100, 101, 102, 103, 104, 105, 106, 107, 109 and 110 were added to the REMP in the first quarter of 2008.

TLD sampling Stations 112 and 113 were added to the REMP in the third quarter of 2008.

IV. Results and Discussion

A. Aquatic Environment

1. Surface Water

Samples were taken via grab sample methodology at two locations (33 and 94) on a monthly schedule. In addition, grab samples were collected semi-annually at two locations (23 and 24). Of these locations 23, 24, and 33, located downstream, could be affected by Oyster Creek's effluent releases. The following analyses were performed:

Tritium

Samples from all locations were analyzed for tritium activity (Table C–I.1, Appendix C). No tritium activity was detected. Data from this year indicates that surface water tritium concentrations remain very low and not significantly different from recent previous years.

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–I.2, Appendix C). All nuclides were less than the MDC.

Surface water sampling began in 1966, and the samples were analyzed for tritium as well as other radioactivity. During this preoperational program, tritium was detected at an average concentration of 1.05E+3 pCi/liter. At that time, counting instrumentation was not as sensitive as it now, and the minimum detectable concentration was 1E+3 pCi/liter versus 2E+2 pCi/liter used today. By comparing the 2008 sampling results to the decay corrected average preoperational concentration reported in the 2007 Annual Radiological Environmental Operating Report (1.11E+2 pCi/liter), it can be seen that the inventory of tritium in the environment is due to fallout from past atmospheric nuclear weapons testing and Chernobyl, and is decreasing with time.

2. Drinking water

Quarterly samples were composited from monthly grab samples from four drinking water wells (1, 37, 38, and 39). Station 1, because it is located on the OCGS site, could potentially be affected by radioactive releases from the plant. Station 38, the Ocean Township Municipal Utility Authority Well, could potentially be affected by effluent releases from the OCGS. Given its distance from the facility (1.6 miles) and depth (approximately 360 feet), however, the probability of any OCGS related impacts is very small. Stations 37 and 39, Lacey Township Municipal Utility Authority wells, are not likely to be impacted by effluents from the OCGS. These wells are located generally up-gradient of the regional groundwater flow direction (southeast). In addition, because of their depth (> 200 feet) and distance from the site (2.2 and 3.5 miles respectively), they are unlikely to be affected by OCGS operations. The following analyses were performed:

Tritium

Quarterly samples from all locations were analyzed for tritium activity (Table C–II.1, Appendix C). No tritium activity was detected.

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–II.2, Appendix C). All nuclides were less than the MDC.

Drinking water was sampled during the preoperational program and throughout the 38 years of the plant's operational program. Tritium sampling results during the preoperational years, yielded results all less than the minimum detectable concentration of 1E+3 pCi/liter. 2008 results are all less than the current MDC of 200 pCi/liter.

3. Fish

Fish samples comprised of American eel and flounder (bottom feeder) and striped bass, bluefish, sea trout, and perch (predator) were collected at three locations (33, 93, and 94) semiannually. Locations 93 and 33 could be affected by Oyster Creek's effluent releases. The following analysis was performed:

Gamma Spectrometry

The edible portions of fish samples from three locations were analyzed for gamma emitting nuclides (Table C–III.1, Appendix C). Naturally occurring potassium-40 was found at all stations and ranged from 3,080 to 5,340 pCi/kg wet and was consistent with levels detected in previous years. No fission or activation products were found.

No fish were sampled during the preoperational sampling program for OCGS.

4. Clams and Crabs

Clams were collected at three locations (23, 24, and 94) semiannually. Crabs were collected at one location (93) annually. Locations 23, 24, and 93 could be affected by Oyster Creek's effluent releases. The following analysis was performed:

Gamma Spectrometry

The edible portions of clam samples from all three locations were analyzed for gamma emitting nuclides (Table C–III.2, Appendix C). Naturally occurring potassium-40 was found at all stations and ranged from 1,610 to 2,320 pCi/kg wet and was consistent with levels detected in previous years. No fission or activation products were found. Historical levels of Co-60 in clams are shown in Figure C–1, Appendix C.

Preoperational clam sample results for potassium-40 ranged from 600 to 9,800 pCi/kg wet, which are consistent with current sample results.

The edible portions of crab samples from one location were analyzed for gamma emitting nuclides (Table C–III.2, Appendix C). Naturally occurring potassium-40 was found at a concentration of 2,730 pCi/kg wet and was consistent with levels detected in previous years. No fission or activation products were found.

Crabs were not sampled during the preoperational years of the OCGS environmental monitoring program.

5. Sediment

Aquatic sediment samples were collected at four locations (23, 24, 33, and 94) semiannually. Of these locations, stations 23, 24, and 33 located downstream, could be affected by Oyster Creek's effluent releases. The following analysis was performed:

Gamma Spectrometry

Sediment samples from all four locations were analyzed for gamma emitting nuclides (Table C–IV.1, Appendix C). The only radionuclide detected was naturally occurring K-40.

Potassium-40 was found at all stations and ranged from 505 to 15,100 pCi/kg dry. No fission or activation products were found. Figure C–3, Appendix C graphs Cs-137 concentrations in sediment from 1984 through 2008 and figure C–2, Appendix C graphs Co-60 concentrations in sediment from 1984 through 2008.

While aquatic sediment sampling was part of the preoperational program, samples were not analyzed for gamma emitting nuclides

until 1981.

In conclusion, the 2008 aquatic monitoring results for surface water, drinking water, fish, clams and crabs, and aquatic sediment showed only naturally occurring radioactivity and were consistent with levels measured prior to the operation of OCGS, and with levels measured in past years. No radioactivity attributable to activities at OCGS was detected in any aquatic samples during 2008 and no adverse long-term trends are shown in the aquatic monitoring data.

B. Atmospheric Environment

1. Airborne

a. Air Particulates

Continuous air particulate samples were collected from eight locations on a weekly basis. The eight locations were separated into three groups: Group I represents locations near the OCGS site boundary (20, 66 and 111), Group II represents the locations at an intermediate distance from the OCGS site (71, 72, and 73), and Group III represents the control and locations at a remote distance from OCGS (C and 3). The following analyses were performed:

Gross Beta

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

Detectable gross beta activity was observed at all locations. Comparison of results among the three groups aids in determining the effects, if any, resulting from the operation of OCGS. The results from the Site Boundary locations (Group I) ranged from <6 to 29 E–3 pCi/m^3 with a mean of 15 E–3 pCi/m^3. The results from the Intermediate Distance locations (Group II) ranged from <7 to 30 E–3 pCi/m^3 with a mean of 15 E–3 pCi/m^3. The results from the Distant locations (Group III) ranged from <7 to 35 E–3 pCi/m^3 with a mean of 15 E–3 pCi/m^3. The similarity of the results from the three groups indicates that there is no relationship between gross beta activity and distance from the OCGS. These results are consistent with data from previous years and indicate no effects from the operation of OCGS (Figures C-4 and C–5, Appendix C).

Air sample filters have been analyzed for gross beta activity since the inception of the preoperational environmental monitoring program in 1966. The preoperational data values ranged from 1.90E-2 to 2.77E-1 pCi/m^3. 2008 gross beta activity values ranged from <6E-3 to 35E-3 pCi/m^3. The 2008 results are consistent with historical operational data (Figure C-5, Appendix C) and fall within the range of results observed during the preoperational period.

Strontium-89 and Strontium-90

Weekly samples were composited quarterly and analyzed for strontium-89 and strontium-90 (Table C–V.3, Appendix C). No strontium was detected in any of the samples. These results are consistent with historical operational data. The preoperational environmental monitoring program did not include analysis of air samples for strontium-89 and strontium-90.

Gamma Spectrometry

Weekly samples were composited quarterly and analyzed for gamma emitting nuclides (Table C–V.4, Appendix C). Naturally occurring Be-7 due to cosmic ray activity was detected in all samples. The values ranged from 37 to 128 E–3 pCi/m^3. All other nuclides were less than the MDC. These results are consistent with historical operational data. The preoperational environmental monitoring program did not include analysis of air samples for gamma emitting nuclides.

b. Airborne Iodine

Continuous air samples were collected from eight (C, 3, 20, 66, 71, 72, 73, 111) locations and analyzed weekly for I-131 (Table C–VI.1, Appendix C). Consistent with historical operational data, all results were less than the MDC.

The preoperational environmental monitoring program for OCGS did not include analysis of air media for iodine-131.

In conclusion, the atmospheric monitoring data are consistent with preoperational and prior operational data and show no long-term trends in the environment attributable to

the operation of OCGS.

2. Terrestrial

a. Vegetation

Samples were collected from three locations (35, 36, and 66) when available. The following analyses were performed:

Strontium-89 and Strontium-90

Vegetation samples from all locations were analyzed for concentrations of strontium-89 and strontium-90 (Table C–VII.1, Appendix C). All strontium-89 results were less than the MDC. Strontium-90 was detected in 32 of 35 samples. The values ranged from 2 to 37 pCi/kg wet, which is consistent with historical data. The mean strontium-90 concentration at control location 36 (15 pCi/kg wet) was higher than the mean concentrations observed at indicator stations 35 and 66 (12 and 10 pCi/kg wet respectively). These results indicate that the strontium-90 detected in vegetation samples is attributable to fallout from past atmospheric nuclear weapons testing and the Chernobyl accident.

Gamma Spectrometry

Vegetation samples from locations 35, 36, and 66 were analyzed for concentrations of gamma emitting nuclides (Table C–VII.1, Appendix C). Naturally occurring K-40 activity was found in all samples and ranged from 1,840 to 5,300 pCi/l. All other nuclides were less than the MDC.

Preoperational vegetation sample analyses did not include strontium analyses, or gamma spectroscopy.

In conclusion, terrestrial monitoring results for vegetation samples during 2008 showed only naturally occurring radioactivity and radioactivity associated with fallout from past atmospheric nuclear weapons testing and Chernobyl. The radioactivity levels detected were consistent with levels measured in past years, and no radioactivity attributable to activities at OCGS was detected in any terrestrial samples. The terrestrial monitoring data show no adverse long-term trends in the terrestrial environment.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Panasonic Model 814 ($CaSO_4$) thermoluminescent dosimeters. Sixty-one TLD locations were monitored around the site. Results of non-background corrected TLD measurements are summarized in Tables C–VIII.1 to C–VIII.3, and Figures C-6 and C-7, Appendix C.

The non-background corrected TLD measurements ranged from 11.7 to 23.7 mR/standard quarter. In order to correct these results for background radiation, the mean of the dose rates measured at the background TLD stations (C and 14) was subtracted from the dose measured at each indicator station. The maximum annual background corrected dose was 18.5 mR/year at Station 55, located near the site boundary, 0.3 miles west of the OCGS. This TLD is located in an area where public access is restricted. All background corrected TLD measurements were less than the 40 CFR 190 limit of 25 mR/year.

Similar to previous years, there was no strong relationship between dose measured with TLDs and distance from the OCGS, and the mean background dose exceeded the mean indicator dose in three of the four quarterly monitoring periods during 2008.

The preoperational environmental monitoring program utilized film badges, the results of which are not comparable with the doses measured using thermoluminescent dosimeters during the operational REMP.

In conclusion, the 2008 TLD results are consistent with past operational measurements of direct radiation, and demonstrate that the OCGS continues to be in compliance with the 40 CFR 190 limit on maximum dose to the public.

D. Land Use Survey

A Land Use Survey, conducted during 2008 around the Oyster Creek Generating Station (OCGS), was performed by Normandeau Associates, Inc. for Exelon Nuclear. The purpose of the survey was, in part, to determine the location of animals producing milk for human consumption in each of the sixteen meteorological sectors out to a distance of 5 miles from the OCGS. None were observed. Another purpose of the survey was to determine the location of gardens greater than 500 square feet in size producing broad leaf vegetation, as well as the closest residence within each of the sixteen meteorological sectors. The distance and direction of

all locations from the OCGS Reactor Building were determined using Global Positioning System (GPS) technology. There were no changes required to the OCGS REMP, as a result of this survey. The results of this survey are summarized below.

Distance in Miles from the OCGS Reactor Building			
Sector		Residence (Miles)	Garden* (Miles)
1	N	1.1	1.3
2	NNE	0.6	1.8
3	NE	0.7	1.0
4	ENE	1.1	3.1
5	E	1.2	None
6	ESE	0.7	0.4
7	SE	0.6	0.4
8	SSE	0.9	1.0
9	S	1.6	2.1
10	SSW	1.7	4.3
11	SW	1.7	1.8
12	WSW	2.3	None
13	W	None	None
14	WNW	None	None
15	NW	5.3	None
16	NNW	1.5	2.7

*Greater than 500 ft^2 in size producing broad leaf vegetation

E. Errata Data

This section provides corrections to the 2006 and 2007 Annual Radiological Environmental Operating Reports (AREOR).

TLD data has historically been reported as mR/standard quarter in the AREOR. In the AREORs for 2006 and 2007 however, the TLD data in Tables C-VIII.1 through C-VIII.3 were inadvertently reported as mR/total exposure period, not corrected to mR/standard quarter. The corrections for this deviation involve the following sections in the 2006 and 2007 AREORs:

Appendix A – Summary Table A-1, TLD results
Appendix C - TLD Table C-VIII.1
Appendix C - TLD Table C-VIII.2
Appendix C - TLD Table C-VIII.3
Appendix C – Graphs C-6 and C-7
Text – Ambient Gamma Radiation section IV.C

The corrected pages for the 2006 and 2007 reports are contained in Appendix E of this report.

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 F). The PE samples, supplied by Analytics Inc., Environmental Resource Associates (ERA) and DOE's Mixed Analyte Performance Evaluation Program (MAPEP), were evaluated against the following pre-set acceptance criteria:

1. Analytics Evaluation Criteria

   Analytics' evaluation report provides a ratio of 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, 16 out of 18 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 December 2008 Sr-89 in milk result of 18.0 pCi/L was higher than the known value of 12.6 pCi/L, resulting in a found to known ratio of 1.43. NCR 09-02 was initiated to investigate this failure.

2. Teledyne Brown Engineering's Analytics' ERA Quik Response water sample January 2008 Sr-89 result of 37.33 pCi/L exceeded the upper acceptance limit of 25.2 pCi/L. No cause could be found for the failure. Studies bracketing these results, RAD 71 and RAD 72 had acceptable Sr-89 results. NCR 08-03

For the secondary laboratory, all 15 analytes met the specified acceptance criteria.

In conclusion, 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. Exelon Nuclear. Offsite Dose Calculation Manual for Oyster Creek Generating Station, Procedure CY-OC-170-301.

2. United States Nuclear Regulatory Commission Branch Technical Position, An Acceptable Radiological Environmental Monitoring Program, Revision 1, November 1979.

3 Pre-Operational Environmental Radiation Survey, Oyster Creek Nuclear Electric Generating Station, Jersey Central Power and Light Company, March 1968.

APPENDIX A

RADIOLOGICAL ENVIRONMENTAL MONITORING REPORT SUMMARY

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR THE OYSTER CREEK GENERATING STATION, 2008

Name of Facility: OYSTER CREEK GENERATING STATION **DOCKET NUMBER:** 50-219
Location of Facility: OCEAN COUNTY NJ **REPORTING PERIOD:** 2008

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSIS PERFORMED	NUMBER OF ANALYSIS PERFORMED	REQUIRED LOWER LIMIT OF DETECTION (LLD)	INDICATOR LOCATIONS MEAN(M) (F) RANGE	CONTROL LOCATION MEAN(M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN (M) MEAN(M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
SURFACE WATER (PCI/LITER)	H-3	28	200	<LLD	<LLD	-		0
	GAMMA	28						
	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

* 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)

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SURFACE WATER (PCI/LITER)	I-131		15	<LLD	<LLD	-		0
	CS-134		15	<LLD	<LLD	-		0
	CS-137		18	<LLD	<LLD	-		0
	BA-140		60	<LLD	<LLD	-		0
	LA-140		15	<LLD	<LLD	-		0
DRINKING WATER (PCI/LITER)	H-3	16	200	<LLD	<LLD	-		0
	GAMMA	16						
	MN-54		15	<LLD	<LLD	-		0
	CO-58		15	<LLD	<LLD	-		0

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DRINKING WATER (PCI/LITER)	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
	I-131		15	<LLD	<LLD	-		0
	CS-134		15	<LLD	<LLD	-		0
	CS-137		18	<LLD	<LLD	-		0

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DRINKING WATER (PCI/LITER)	BA-140		60	<LLD	<LLD	-		0
	LA-140		15	<LLD	<LLD	-		0
BOTTOM FEEDER FISH (PCI/KG WET)	GAMMA	7						
	K-40		NA	4537 (3/3) (4160/5020)	4395 (4/4) (3350/5340)	5020 (1/1)	33 INDICATOR EAST OF RT 9 BRIDGE IN OCGS DISCHARGE 0.4 MILES ESE OF SITE	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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BOTTOM FEEDER FISH (PCI/KG WET)	CS-134		100	<LLD	<LLD	-		0
	CS-137		100	<LLD	<LLD	-		0
PREDATOR FISH (PCI/KG WET)	GAMMA K-40	14	NA	4078 (10/10) (3680/4580)	3778 (4/4) (3080/4970)	4244 (5/5) (4010/4580)	33 INDICATOR EAST OF RT 9 BRIDGE IN OCGS DISCHARGE 0.4 MILES ESE OF SITE	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 FISH (PCI/KG WET)	CS-134		100	<LLD	<LLD	-		0
	CS-137		100	<LLD	<LLD	-		0
CLAMS (PCI/KG WET)	GAMMA	6						
	K-40		NA	1933 (4/4) (1610/2320)	1655 (2/2) (1630/1680)	1965 (2/2) (1610/2320)	24 INDICATOR BARNEGAT BAY 2.1 MILES E OF SITE	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		NA	<LLD	<LLD	-		0

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CLAMS (PCI/KG WET)	CS-134		100	<LLD	<LLD	-		0
	CS-137		100	<LLD	<LLD	-		0
CRABS (PCI/KG WET)	GAMMA	1						
	K-40		NA	2730 (1/1)	NA	2730 (1/1)	93 INDICATOR OCGS DISCHARGE CANAL 0.1 MILES WSW OF SITE	0
	MN-54		130	<LLD	NA	-		0
	CO-58		130	<LLD	NA	-		0
	FE-59		260	<LLD	NA	-		0
	CO-60		130	<LLD	NA	-		0
	ZN-65		NA	<LLD	NA	-		0

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CRABS (PCI/KG WET)	CS-134		100	<LLD	NA	-		0
	CS-137		100	<LLD	NA	-		0
SEDIMENT (PCI/KG DRY)	GAMMA	8						
	BE-7		NA	<LLD	<LLD	-		0
	K-40		NA	1661 (6/6) (505/4920)	13450 (2/2) (11800/15100)	13450 (2/2) (11800/15100)	94 CONTROL GREAT BAY/LITTLE EGG HARBOR 20.0 MILES SSW OF SITE	0
	MN-54		NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	CO-60		NA	<LLD	<LLD	-		0
	CS-134		150	<LLD	<LLD	-		0

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SEDIMENT (PCI/KG DRY)	CS-137		180	<LLD	<LLD	-		0
AIR PARTICULATE (E-3 PCI/CU.METER)	GR-B	406	10	15 (293/303) (7/30)	15 (99/103) (8/35)	16 (50/51) (8/35)	C CONTROL JCP&L OFFICE - COOKSTOWN NJ 24.7 MILES NW OF SITE	0
	SR-89	31	10	<LLD	<LLD	-		0
	SR-90	31	10	<LLD	<LLD	-		0
	GAMMA	31						
	BE-7		NA	74.8 (19/23) (37/128)	71.5 (8/8) (40/115)	87.5 (3/4) (64/128)	73 INDICATOR BAY PARKWAY - SANDS POINT HARBOR 1.8 MILES ESE OF SITE	0
	MN-54		NA	<LLD	<LLD	-		0
	CO-58		NA	<LLD	<LLD	-		0
	CO-60		NA	<LLD	<LLD	-		0

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AIR PARTICULATE (E-3 PCI/CU.METER)	CS-134		10	<LLD	<LLD	-		0
	CS-137		10	<LLD	<LLD	-		0
AIR IODINE (E-3 PCI/CU.METER)	GAMMA I-131	406	70	<LLD	<LLD	-		0
VEGETATION (PCI/KG WET)	SR-89	35	25	<LLD	<LLD	-		0
	SR-90	35	5	11.2 (21/23) (2/27)	14.7 (11/12) (3/37)	14.7 (11/12) (3/37)	36 CONTROL U-PICK FARM - NEW EGYPT NJ 23.1 MILES NW OF SITE	0
	GAMMA BE-7	35	NA	222 (14/23) (63/511)	178 (7/12) (61/571)	256 (6/12) (76/511)	35 INDICATOR EAST OF RT 9 AND NORTH OF OCGS DISCHG 0.4 MILES ESE OF SITE	0
	K-40		NA	2807 (23/23) (1930/4870)	3587 (12/12) (1840/5300)	3587 (12/12) (1840/5300)	36 CONTROL U-PICK FARM - NEW EGYPT NJ 23.1 MILES NW OF SITE	0

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VEGETATION (PCI/KG WET)	I-131		60	<LLD	<LLD	-		0
	CS-134		60	<LLD	<LLD	-		0
	CS-137		80	<LLD	<LLD	-		0
	BA-140		NA	<LLD	<LLD	-		0
	LA-140		NA	<LLD	<LLD	-		0
DIRECT RADIATION (MILLI-ROENTGEN/STD.QTR.)	TLD-QUARTERLY	238	NA	15.8 (230/230) (11.7/23.7)	17 (8/8) (13.5/21.3)	21.6 (4/4) (19.5/23.7)	55 INDICATOR SOUTHERN AREA STORES SECURITY FENCE 0.3 MILES W	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 Oyster Creek Generating Station

Sample Medium	–	APT = Air Particulate AIO = Air Iodine DW = Drinking Water VEG = Vegetation SWA = Surface Water AQS = Aquatic Sediment	Clam = Clam TLD = Thermoluminescent Dosimetry Fish = Fish Crab = Crab
Station Code	–	Station's Designation	
Distance	–	Distance from the OCGS in miles	
Azimuth	–	Azimuth with respect to the OCGS in degrees	
Description	–	Meteorological sector in which the station is located and a narrative description	

TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction, Oyster Creek Generating Station, 2008

Sample Medium	Station Code	Distance (miles)	Azimuth (degrees)	Description	Latitude North	Longitude West
TLD	1	0.4	219	SW of site at OCGS Fire Pond, Forked River, NJ	39 Degrees 48 Minutes 44.8 Seconds	74 Degrees 12 Minutes 26.8 Seconds
DW	1	0.1	209	On-site southern domestic well at OCGS, Forked River, NJ	39 Degrees 48 Minutes 44.8 Seconds	74 Degrees 12 Minutes 26.8 Seconds
DW	1	0.2	349	On-site northern domestic well at OCGS, Forked River, NJ	39 Degrees 48 Minutes 44.8 Seconds	74 Degrees 12 Minutes 26.8 Seconds
APT, AIO, TLD	3	6.0	97	East of site, near old Coast Guard Station, Island Beach State Park	39 Degrees 48 Minutes 12.7 Seconds	74 Degrees 5 Minutes 39.1 Seconds
TLD	4	4.6	213	SSW of site, Route 554 and Garden State Parkway, Barnegat, NJ	39 Degrees 45 Minutes 34.4 Seconds	74 Degrees 15 Minutes 9.30 Seconds
TLD	5	4.2	353	North of site, at Garden State Parkway Rest Area, Forked River, NJ	39 Degrees 52 Minutes 27.9 Seconds	74 Degrees 12 Minutes 51.7 Seconds
TLD	6	2.1	13	NNE of site, Lane Place, behind St. Pius Church, Forked River, NJ	39 Degrees 50 Minutes 38.2 Seconds	74 Degrees 11 Minutes 46.1 Seconds
TLD	8	2.3	177	South of site, Route 9 at the Waretown Substation, Waretown, NJ	39 Degrees 46 Minutes 52.2 Seconds	74 Degrees 12 Minutes 12.5 Seconds
TLD	9	2.0	230	SW of site, where Route 532 and the Garden State Parkway meet, Waretown, NJ	39 Degrees 47 Minutes 47.4 Seconds	74 Degrees 14 Minutes 42.7 Seconds
APT, AIO, TLD	C	24.7	313	NW of site, JCP&L office in rear parking lot, Cookstown, NJ	40 Degrees 3 Minutes 30.9 Seconds	74 Degrees 32 Minutes 45.6 Seconds
TLD	11	8.2	152	SSE of site, 80th and Anchor Streets, Harvey Cedars, NJ	39 Degrees 42 Minutes 27.3 Seconds	74 Degrees 8 Minutes 4.3 Seconds
TLD	14	20.8	2	North of site, Larrabee Substation on Randolph Road, Lakewood, NJ	40 Degrees 6 Minutes 51.9 Seconds	74 Degrees 11 Minutes 24.5 Seconds
APT, AIO	20	0.7	95	East of site, on Finninger Farm on south side of access road, Forked River, NJ	39 Degrees 48 Minutes 47.5 Seconds	74 Degrees 11 Minutes 30.7 Seconds
TLD	22	1.6	145	SE of site, on Long John Silver Way, Skippers Cove, Waretown, NJ	39 Degrees 47 Minutes 39.6 Seconds	74 Degrees 11 Minutes 19.7 Seconds

TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction, Oyster Creek Generating Station, 2008

Sample Medium	Station Code	Distance (miles)	Azimuth (degrees)	Description	Latitude North	Longitude West
SWA, CLAM, AQS	23	3.6	64	ENE of site, Barnegat Bay off Stouts Creek, approximately 400 yards SE of "Flashing Light 1"	39 Degrees 49 Minutes 59.2 Seconds	74 Degrees 8 Minutes 46.8 Seconds
SWA, CLAM, AQS	24	2.1	101	East of site, Barnegat Bay, approximately 250 yards SE of "Flashing Light 3"	39 Degrees 48 Minutes 35.6 Seconds	74 Degrees 10 Minutes 6.2 Seconds
SWA, AQS, FISH	33	0.4	123	ESE of site, east of Route 9 Bridge in OCGS Discharge Canal	39 Degrees 48 Minutes 42.6 Seconds	74 Degrees 11 Minutes 58.5 Seconds
VEG	35	0.4	111	ESE of site, east of Route 9 and north of the OCGS Discharge Canal, Forked River, NJ	39 Degrees 48 Minutes 43.6 Seconds	74 Degrees 11 Minutes 56.1 Seconds
VEG	36	23.1	319	NW of site, at "U-Pick" Farm, New Egypt, NJ	40 Degrees 4 Minutes 19.0 Seconds	74 Degrees 29 Minutes 32.8 Seconds
DW	37	2.2	18	NNE of Site, off Boox Road at Lacey MUA Pumping Station, Forked River, NJ	39 Degrees 50 Minutes 42.2 Seconds	74 Degrees 11 Minutes 30.9 Seconds
DW	38	1.6	194	SSW of Site, on Route 532, at Ocean Township MUA Pumping Station, Waretown, NJ	39 Degrees 47 Minutes 31.3 Seconds	74 Degrees 12 Minutes 45.4 Seconds
DW	39	3.5	353	North of Site, Trenton Ave. off Lacey Rd, Lacey Twp. MUA Pump Station, Forked River, NJ	39 Degrees 51 Minutes 54.6 Seconds	74 Degrees 12 Minutes 49.6 Seconds
TLD	46	5.6	323	NW of site, on Lacey Road, adjacent to utility pole BT 259 65, Forked River, NJ	39 Degrees 52 Minutes 44.7 Seconds	74 Degrees 16 Minutes 5.5 Seconds
TLD	47	4.6	26	NNE of site, Route 9 and Harbor Inn Road, Bayville, NJ	39 Degrees 52 Minutes 26.9 Seconds	74 Degrees 10 Minutes 0.6 Seconds
TLD	48	4.5	189	South of site, at intersection of Brook and School Streets, Barnegat, NJ	39 Degrees 44 Minutes 58.8 Seconds	74 Degrees 13 Minutes 12.5 Seconds
TLD	51	0.4	358	North of site, on the access road to Forked River site, Forked River, NJ	39 Degrees 49 Minutes 12.1 Seconds	74 Degrees 12 Minutes 18.1 Seconds
TLD	52	0.3	333	NNW of site, on the access road to Forked River site, Forked River, NJ	39 Degrees 49 Minutes 5.6 Seconds	74 Degrees 12 Minutes 28.8 Seconds
TLD	53	0.3	309	NW of site, at sewage lift station on the access road to the Forked River site, Forked River, NJ	39 Degrees 49 Minutes 0.1 Seconds	74 Degrees 12 Minutes 33.8 Seconds

TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction, Oyster Creek Generating Station, 2008

Sample Medium	Station Code	Distance (miles)	Azimuth (degrees)	Description	Latitude North	Longitude West
TLD	54	0.3	288	WNW of site, on the access road to Forked River site, Forked River, NJ	39 Degrees 48 Minutes 56.3 Seconds	74 Degrees 12 Minutes 41.8 Seconds
TLD	55	0.3	263	West of site, on Southern Area Stores security fence, west of OCGS Switchyard, Forked River, NJ	39 Degrees 48 Minutes 50.1 Seconds	74 Degrees 12 Minutes 39.3 Seconds
TLD	56	0.3	249	WSW of site, on utility pole east of Southern Area Stores, west of the OCGS Switchyard, Forked River, NJ	39 Degrees 48 Minutes 46.4 Seconds	74 Degrees 12 Minutes 37.8 Seconds
TLD	57	0.2	206	SSW of site, on Southern Area Stores access road, Forked River, NJ	39 Degrees 48 Minutes 41.0 Seconds	74 Degrees 12 Minutes 27.4 Seconds
TLD	58	0.2	188	South of site, on Southern Area Stores access road, Forked River, NJ	39 Degrees 48 Minutes 40.4 Seconds	74 Degrees 12 Minutes 23.0 Seconds
TLD	59	0.3	166	SSE of site, on Southern Area Stores access road, Waretown, NJ	39 Degrees 48 Minutes 37.1 Seconds	74 Degrees 12 Minutes 15.2 Seconds
TLD	61	0.3	104	ESE of site, on Route 9 south of OCGS Main Entrance, Forked River, NJ	39 Degrees 48 Minutes 46.9 Seconds	74 Degrees 12 Minutes 0.0 Seconds
TLD	62	0.2	83	East of site, on Route 9 at access road to OCGS Main Gate, Forked River, NJ	39 Degrees 48 Minutes 53.6 Seconds	74 Degrees 12 Minutes 3.5 Seconds
TLD	63	0.2	70	ENE of site, on Route 9, between main gate and OCGS North Gate access road, Forked River, NJ	39 Degrees 48 Minutes 56.2 Seconds	74 Degrees 12 Minutes 4.2 Seconds
TLD	64	0.3	42	NE of site, on Route 9 North at entrance to Finninger Farm, Forked River, NJ	39 Degrees 49 Minutes 1.6 Seconds	74 Degrees 12 Minutes 6.9 Seconds
TLD	65	0.4	19	NNE of site, on Route 9 at Intake Canal Bridge, Forked River, NJ	39 Degrees 49 Minutes 11.2 Seconds	74 Degrees 12 Minutes 9.7 Seconds
APT, AIO, TLD, VEG	66	0.4	133	SE of site, east of Route 9 and south of the OCGS Discharge Canal, inside fence, Waretown, NJ	39 Degrees 48 Minutes 37.0 Seconds	74 Degrees 11 Minutes 57.5 Seconds
TLD	68	1.3	266	West of site, on Garden State Parkway North at mile marker 71.7, Lacey Township, NJ	39 Degrees 48 Minutes 46.1 Seconds	74 Degrees 13 Minutes 46.9 Seconds
APT, AIO, TLD	71	1.6	164	SSE of site, on Route 532 at the Waretown Municipal Building, Waretown, NJ	39 Degrees 47 Minutes 28.7 seconds	74 Degrees 11 Minutes 50.3 Seconds

TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction, Oyster Creek Generating Station, 2008

Sample Medium	Station Code	Distance (miles)	Azimuth (degrees)	Description	Latitude North	Longitude West
APT, AIO, TLD	72	1.9	25	NNE of site, on Lacey Road at Knights of Columbus Hall, Forked River, NJ	39 Degrees 50 Minutes 17.7 seconds	74 Degrees 11 Minutes 24.4 Seconds
APT, AIO, TLD	73	1.8	108	ESE of site, on Bay Parkway, Sands Point Harbor, Waretown, NJ	39 Degrees 48 Minutes 20.9 Seconds	74 Degrees 10 Minutes 21.3 Seconds
TLD	74	1.8	88	East of site, Orlando Drive and Penguin Court, Forked River, NJ	39 Degrees 48 Minutes 55.3 Seconds	74 Degrees 10 Minutes 13.9 Seconds
TLD	75	2.0	71	ENE of site, Beach Blvd. and Maui Drive, Forked River, NJ	39 Degrees 49 Minutes 26.0 Seconds	74 Degrees 10 Minutes 10.9 Seconds
TLD	78	1.8	2	North of site, 1514 Arient Road, Forked River, NJ	39 Degrees 50 Minutes 36.7 Seconds	74 Degrees 12 Minutes 31.5 Seconds
TLD	79	2.9	160	SSE of site, Hightide Drive and Bonita Drive, Waretown, NJ	39 Degrees 46 Minutes 31.2 Seconds	74 Degrees 11 Minutes 12.1 Seconds
TLD	81	3.5	201	SSW of site, on Rose Hill Road at intersection with Barnegat Boulevard, Barnegat, NJ	39 Degrees 45 Minutes 57.0 Seconds	74 Degrees 13 Minutes 41.2 Seconds
TLD	82	4.4	36	NE of site, Bay Way and Clairmore Avenue, Lanoka Harbor, NJ	39 Degrees 51 Minutes 53.9 Seconds	74 Degrees 9 Minutes 26.7 Seconds
TLD	84	4.4	332	NNW of site, on Lacey Road, 1.3 miles west of the Garden State Parkway on siren pole, Lacey Township, NJ	39 Degrees 52 Minutes 16.2 Seconds	74 Degrees 14 Minutes 34.7 Seconds
TLD	85	3.9	250	WSW of site, on Route 532, just east of Wells Mills Park, Waretown, NJ	39 Degrees 47 Minutes 46.4 Seconds	74 Degrees 16 Minutes 27.9 Seconds
TLD	86	5.0	224	SW of site, on Route 554, 1 mile west of the Garden State Parkway, Barnegat, NJ	39 Degrees 45 Minutes 49.7 Seconds	74 Degrees 16 Minutes 16.7 Seconds
TLD	88	6.6	125	SE of site, eastern end of 3rd Street, Barnegat Light, NJ	39 Degrees 45 Minutes 43.8 Seconds	74 Degrees 6 Minutes 18.3 Seconds
TLD	89	6.1	108	ESE of site, Job Francis residence, Island Beach State Park	39 Degrees 47 Minutes 11.5 Seconds	74 Degrees 5 Minutes 49.3 Seconds
TLD	90	6.3	75	ENE of site, parking lot A-5, Island Beach State Park	39 Degrees 50 Minutes 12.4 Seconds	74 Degrees 5 Minutes 23.8 Seconds

TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction, Oyster Creek Generating Station, 2008

Sample Medium	Station Code	Distance (miles)	Azimuth (degrees)	Description	Latitude North	Longitude West
TLD	92	9.0	46	NE of site, at Guard Shack/Toll Booth, Island Beach State Park	39 Degrees 54 Minutes 14.8 Seconds	74 Degrees 4 Minutes 53.4 Seconds
FISH, CRAB	93	0.1	242	WSW of site, OCGS Discharge Canal between Pump Discharges and Route 9, Forked River, NJ	39 Degrees 48 Minutes 47.7 Seconds	74 Degrees 12 Minutes 27.3 Seconds
SWA, AQS, CLAM, FISH	94	20.0	198	SSW of site, in Great Bay/Little Egg Harbor	39 Degrees 34 Minutes 16.5 Seconds	74 Degrees 19 Minutes 14.5 Seconds
TLD	98	1.6	318	NW of site, on Garden State Parkway North at mile marker 73, Lacey Township, NJ	39 Degrees 49 Minutes 51.7 Seconds	74 Degrees 13 Minutes 29.3 Seconds
TLD	99	1.5	310	NW of site, on Garden State Parkway at mile marker 72.8, Lacey Township, NJ	39 Degrees 49 Minutes 41.4 Seconds	74 Degrees 13 Minutes 33.2 Seconds
TLD	100	1.4	43	NE of site, Yacht Basin Plaza South off Lakeside Dr., Lacey Township, NJ	39 Degrees 49 Minutes 43.8 Seconds	74 Degrees 11 Minutes 14.9 Seconds
TLD	101	1.7	49	NE of site, end of Lacey Rd. East, Lacey Township, NJ	39 Degrees 49 Minutes 47.6 Seconds	74 Degrees 10 Minutes 53.7 Seconds
TLD	102	1.6	344	NNW of site, end of Sheffield Dr., Barnegat Pines, Lacey Township, NJ	39 Degrees 50 Minutes 13.7 Seconds	74 Degrees 12 Minutes 49.2 Seconds
TLD	103	2.4	337	NNW of site, Llewellyn Pkwy., Barnegat Pines, Lacey Township, NJ	39 Degrees 50 Minutes 44.1 Seconds	74 Degrees 13 Minutes 21.4 Seconds
TLD	104	1.8	221	SW of site, Rt. 532 West, before Garden State Parkway, Ocean Township, NJ	39 Degrees 47 Minutes 40.1 Seconds	74 Degrees 13 Minutes 40.7 Seconds
TLD	105	2.8	222	SW of site, Garden State Parkway North beside mile marker 69.6, Ocean Township, NJ	39 Degrees 47 Minutes 3.4 Seconds	74 Degrees 14 Minutes 28.1 Seconds
TLD	106	1.2	288	NW of site, Garden State Parkway North beside mile marker 72.2, Lacey Township, NJ	39 Degrees 49 Minutes 10.6 Seconds	74 Degrees 13 Minutes 39.2 Seconds
TLD	107	1.3	301	NW of site, Garden State Parkway North beside mile marker 72.5, Lacey Township, NJ	39 Degrees 49 Minutes 26.5 Seconds	74 Degrees 13 Minutes 37.5 Seconds
TLD	109	1.2	141	SE of site, Lighthouse Dr., Waretown, Ocean Township, NJ	39 Degrees 47 Minutes 59.8 Seconds	74 Degrees 11 Minutes 27.2 Seconds

TABLE B-2: Radiological Environmental Monitoring Program – Sampling Locations, Distance and Direction, Oyster Creek Generating Station, 2008

Sample Medium	Station Code	Distance (miles)	Azimuth (degrees)	Description	Latitude North	Longitude West
TLD	110	1.5	127	SE of site, Tiller Dr. and Admiral Way, Waretown, Ocean Township, NJ	39 Degrees 48 Minutes 3.4 Seconds	74 Degrees 10 Minutes 59.2 Seconds
AP/AI	111	0.3	64	ENE of site, Finninger Farm property along access road, Lacey Township, NJ	39 Degrees 48 Minutes 58.3 Seconds	74 Degrees 11 Minutes 59.8 Seconds
TLD	112	0.2	178	S of site, along southern access road	39 Degrees 48 Minutes 38.3 Seconds	74 Degrees 12 Minutes 19.1 Seconds
TLD	113	0.3	90	E of site, along Rt. 9, North	39 Degrees 48 Minutes 50.7 Seconds	74 Degrees 12 Minutes 1.6 Seconds
TLD	T1	0.4	219	SW of site, at OCGS Fire Pond, Forked River, NJ	39 Degrees 48 Minutes 44.8 Seconds	74 Degrees 12 Minutes 26.8 Seconds

TABLE B-3: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, Oyster Creek Generating Station, 2008

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Drinking Water	Gamma Spectroscopy	Monthly samples composited quarterly	ER-OCGS-10, Collection of well water samples for radiological analysis CY-OC-120-1200, REMP sample collection procedure – well water	1 gallon	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Drinking Water	Tritium	Monthly samples composited quarterly	ER-OCGS-10, Collection of well water samples for radiological analysis CY-OC-120-1200, REMP sample collection procedure – well water	1 gallon	TBE, TBE-2010 Tritium and carbon-13 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Surface Water	Gamma Spectroscopy	Grab Sample	ER-OCGS-06, Collection of surface water samples for radiological analysis	1 gallon	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Surface Water	Tritium	Grab Sample	ER-OCGS-06, Collection of surface water samples for radiological analysis	1 gallon	TBE, TBE-2010 Tritium and carbon-13 analysis by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method)
Fish	Gamma Spectroscopy	Semi-annual samples collected via hook and line technique and traps	ER-OCGS-14, Collection of fish samples for radiological analysis	250 grams (wet)	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Clams and Crabs	Gamma Spectroscopy	Semi-annual and annual samples collected using clam tongs and traps.	ER-OCGS-16, Collection of clam and crab samples for radiological analysis	300 grams (wet)	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Sediment	Gamma Spectroscopy	Semi-annual grab samples	ER-OCGS-03, Collection of aquatic sediment samples for radiological analysis	1000 grams (dry)	TBE, TBE-2007 Gamma emitting radioisotopes 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, Oyster Creek Generating Station, 2008

Sample Medium	Analysis	Sampling Method	Collection Procedure Number	Sample Size	Analytical Procedure Number
Air Particulates	Gross Beta	One-week composite of continuous air sampling through glass fiber filter paper	ER-OCGS-05, Collection of air iodine and air particulate samples for radiological analysis	1 filter (approximately 300 cubic meters weekly)	TBE, TBE-2008 Gross alpha and/or 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 4000 cubic meters)	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Air Particulates	Strontium-89/90	Quarterly composite of each station	ER-OCGS-05, Collection of air iodine and air particulate samples for radiological analysis	13 filters (approximately 4000 cubic meters)	TBE, TBE-2019 Radiostrontium analysis by ion exchange
Air Iodine	Gamma Spectroscopy	One-week composite of continuous air sampling through charcoal filter	ER-OCGS-05, Collection of air iodine and air particulate samples for radiological analysis	1 filter (approximately 300 cubic meters weekly)	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., I-131-02 Determination of I-131 in charcoal canisters by gamma spectroscopy (batch method)
Vegetation	Gamma Spectroscopy	Grab sample during growing season	ER-OCGS-04, Collection of food products and broadleaf vegetation samples for radiological analysis	1000 grams	TBE, TBE-2007 Gamma emitting radioisotopes analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy
Vegetation	Strontium-89/90	Grab sample during growing season	ER-OCGS-04, Collection of food products and broadleaf vegetation samples for radiological analysis	1000 grams	TBE, TBE-2019 Radiostrontium analysis by ion exchange
TLD	Thermoluminescence Dosimetry	Quarterly TLDs comprised of two Panasonic 814 (containing 3 each $CaSO_4$ elements)	ER OCGS-02, Collection of thermoluminescent dosimeters (TLDs) for radiological analysis	2 dosimeters	Global Dosimetry, Inc.

Figure B-1.
Locations of REMP Stations within a 1-mile radius
of the Oyster Creek Generating Station

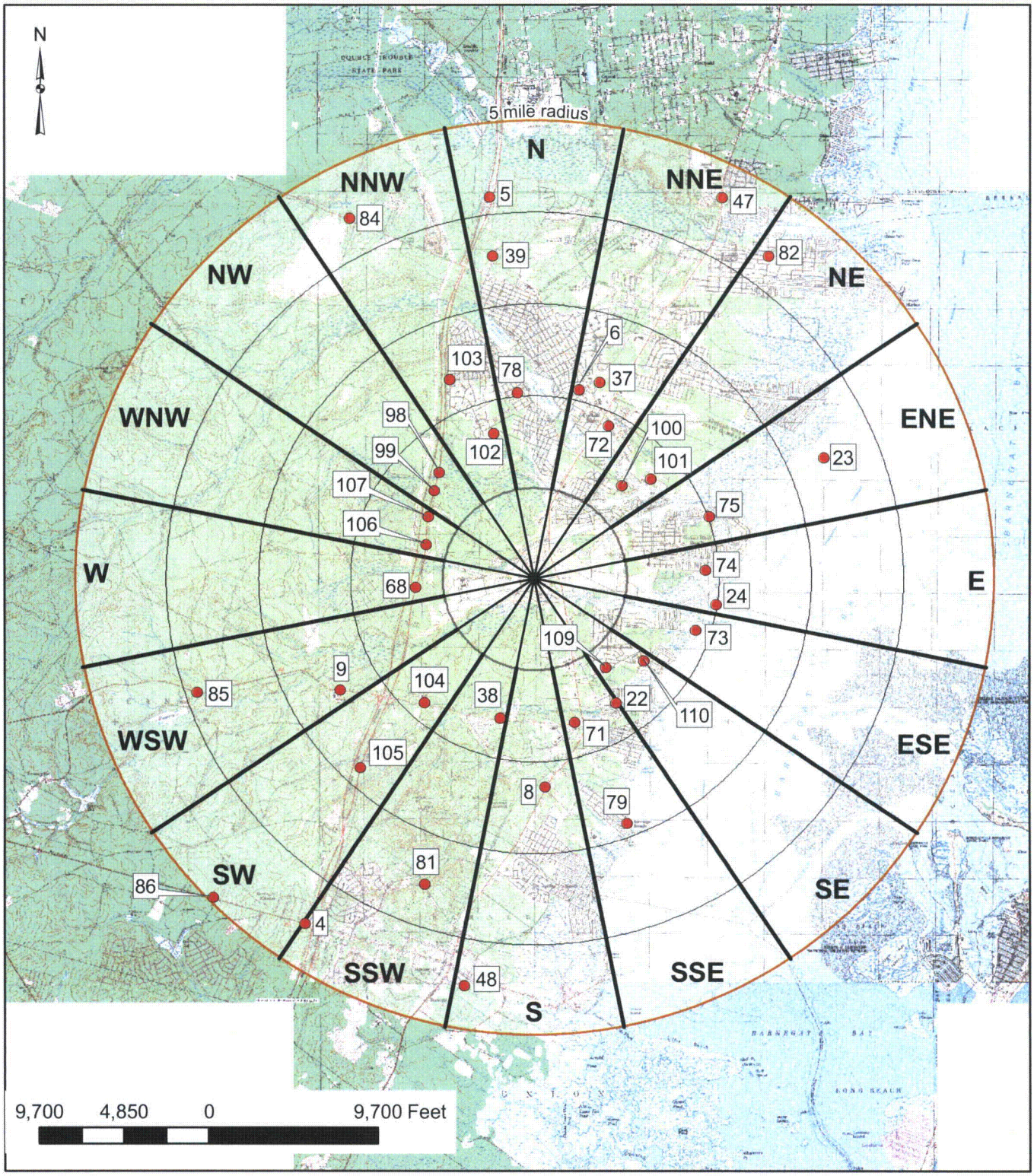


Figure B-2.
Locations of REMP Stations within a 1 to 5-mile radius
of the Oyster Creek Generating Station

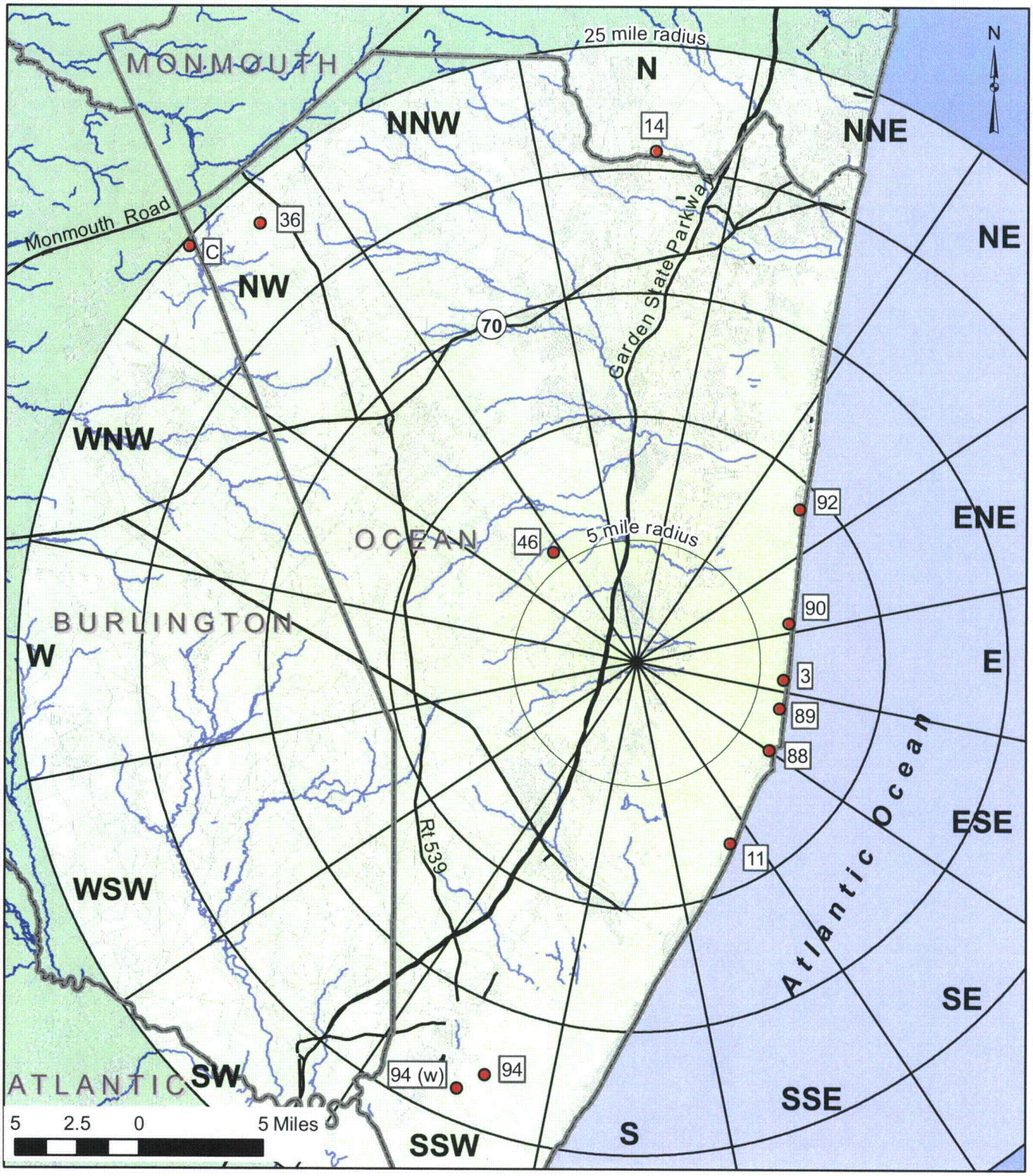


Figure B-3.
Locations of REMP Stations greater than 5 miles
from the Oyster Creek Generating Station

APPENDIX C

DATA TABLES
PRIMARY LABORATORY

TABLE C-I.1 **CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	23	24	33	94
01/09/08 - 01/09/08			< 178	< 175
02/14/08 - 02/14/08			< 165	< 164
03/12/08 - 03/12/08			< 163	< 164
04/15/08 - 04/15/08	< 184	< 185	< 169	< 171
05/07/08 - 05/07/08			< 169	< 173
06/11/08 - 06/11/08			< 178	< 174
07/01/08 - 07/01/08			< 166	< 168
08/06/08 - 08/06/08			< 177	< 181
09/03/08 - 09/03/08			< 132	< 132
10/08/08 - 10/08/08	< 134	< 134	< 127	< 128
11/05/08 - 11/05/08			< 177	< 178
12/03/08 - 12/03/08			< 176	< 174
MEAN	-	-	-	-

TABLE C-I.2 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
23	04/15/08 - 04/15/08	< 3	< 4	< 9	< 3	< 8	< 4	< 8	< 15	< 4	< 4	< 34	< 10
	10/06/08 - 10/06/08	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 14	< 1	< 1	< 20	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
24	04/14/08 - 04/14/08	< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 15	< 3	< 3	< 29	< 10
	10/06/08 - 10/06/08	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 13	< 1	< 1	< 16	< 4
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
33	01/09/08 - 01/09/08	< 3	< 4	< 9	< 4	< 8	< 4	< 7	< 8	< 3	< 4	< 22	< 6
	02/14/08 - 02/14/08	< 4	< 4	< 9	< 4	< 9	< 5	< 6	< 7	< 4	< 4	< 20	< 6
	03/12/08 - 03/12/08	< 3	< 3	< 8	< 3	< 6	< 4	< 6	< 6	< 3	< 3	< 18	< 4
	04/02/08 - 04/02/08	< 7	< 7	< 15	< 8	< 17	< 6	< 14	< 10	< 7	< 8	< 34	< 11
	05/07/08 - 05/07/08	< 4	< 5	< 8	< 4	< 9	< 5	< 8	< 13	< 4	< 5	< 30	< 10
	06/11/08 - 06/11/08	< 6	< 5	< 12	< 5	< 12	< 6	< 9	< 11	< 4	< 5	< 25	< 11
	07/01/08 - 07/01/08	< 2	< 2	< 5	< 2	< 5	< 3	< 4	< 6	< 2	< 2	< 15	< 5
	08/06/08 - 08/06/08	< 5	< 6	< 14	< 5	< 12	< 5	< 9	< 9	< 5	< 6	< 27	< 7
	09/03/08 - 09/03/08	< 1	< 1	< 4	< 1	< 3	< 1	< 3	< 12	< 1	< 1	< 18	< 5
	10/08/08 - 10/08/08	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 13	< 1	< 1	< 15	< 3
	11/05/08 - 11/05/08	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 11	< 1	< 1	< 47	< 15
	12/03/08 - 12/03/08	< 4	< 4	< 8	< 4	< 8	< 4	< 7	< 8	< 4	< 4	< 22	< 6
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-I.2 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
94	01/08/08 - 01/08/08	< 4	< 4	< 9	< 5	< 9	< 5	< 8	< 12	< 4	< 5	< 24	< 9
	02/14/08 - 02/14/08	< 4	< 4	< 10	< 6	< 10	< 5	< 10	< 9	< 4	< 5	< 27	< 8
	03/12/08 - 03/12/08	< 4	< 4	< 9	< 5	< 11	< 4	< 7	< 8	< 5	< 4	< 24	< 7
	04/02/08 - 04/02/08	< 6	< 6	< 10	< 6	< 13	< 6	< 12	< 11	< 6	< 7	< 27	< 8
	05/07/08 - 05/07/08	< 7	< 6	< 15	< 7	< 13	< 6	< 12	< 15	< 5	< 6	< 33	< 15
	06/11/08 - 06/11/08	< 5	< 5	< 10	< 6	< 12	< 7	< 11	< 11	< 5	< 5	< 23	< 8
	07/01/08 - 07/01/08	< 2	< 2	< 6	< 2	< 5	< 2	< 4	< 6	< 2	< 2	< 15	< 5
	08/06/08 - 08/06/08	< 6	< 5	< 10	< 6	< 9	< 5	< 9	< 8	< 5	< 6	< 27	< 8
	09/03/08 - 09/03/08	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 12	< 1	< 1	< 16	< 5
	10/07/08 - 10/07/08	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 14	< 1	< 1	< 18	< 5
	11/05/08 - 11/05/08	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 8	< 1	< 1	< 43	< 15
	12/03/08 - 12/03/08	< 3	< 3	< 7	< 4	< 7	< 3	< 6	< 7	< 3	< 4	< 17	< 5
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-II.1 **CONCENTRATIONS OF TRITIUM IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	1	37	38	39
01/08/08 - 03/11/08	< 168	< 164	< 163	< 162
04/08/08 - 06/25/08	< 176	< 167	< 169	< 168
07/09/08 - 09/12/08	< 138	< 145	< 146	< 142
10/10/08 - 12/10/08	< 181	< 183	< 183	< 182
MEAN	-	-	-	-

TABLE C-II.2 **CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
1	01/08/08 - 03/11/08	< 2	< 3	< 5	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 21	< 7
	04/08/08 - 06/25/08	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 20	< 5
	07/09/08 - 09/12/08	< 1	< 1	< 3	< 1	< 2	< 1	< 2	< 11	< 1	< 1	< 16	< 5
	10/10/08 - 12/10/08	< 3	< 3	< 5	< 2	< 4	< 3	< 4	< 13	< 2	< 2	< 24	< 4
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
37	01/23/08 - 03/18/08	< 3	< 5	< 9	< 4	< 8	< 5	< 8	< 12	< 4	< 4	< 28	< 8
	04/30/08 - 06/25/08	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 11	< 1	< 1	< 17	< 6
	07/23/08 - 09/17/08	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 6	< 1	< 1	< 10	< 3
	10/29/08 - 12/17/08	< 2	< 3	< 5	< 2	< 5	< 3	< 5	< 7	< 2	< 3	< 17	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
38	01/23/08 - 03/18/08	< 5	< 5	< 12	< 4	< 10	< 6	< 8	< 15	< 4	< 4	< 33	< 10
	04/30/08 - 06/25/08	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 14	< 1	< 2	< 21	< 7
	07/30/08 - 09/24/08	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 4	< 1	< 1	< 9	< 2
	10/29/08 - 12/17/08	< 4	< 5	< 8	< 4	< 8	< 5	< 8	< 14	< 4	< 5	< 29	< 9
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-
39	01/23/08 - 03/18/08	< 4	< 4	< 10	< 5	< 9	< 5	< 8	< 14	< 4	< 4	< 30	< 10
	04/30/08 - 06/25/08	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 14	< 1	< 2	< 20	< 6
	07/23/08 - 09/17/08	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 6	< 1	< 1	< 10	< 3
	10/29/08 - 12/17/08	< 3	< 4	< 8	< 3	< 6	< 4	< 6	< 10	< 3	< 3	< 25	< 7
	MEAN	-	-	-	-	-	-	-	-	-	-	-	-

TABLE C-III.1 CONCENTRATIONS OF GAMMA EMITTERS IN PREDATOR AND BOTTOM FEEDER (FISH) SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

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
33	PREDATOR								
	04/15/08	4170 ± 1080	< 65	< 82	< 160	< 57	< 135	< 62	< 55
	04/16/08	4010 ± 748	< 51	< 64	< 124	< 48	< 99	< 57	< 57
	10/07/08	4300 ± 894	< 48	< 51	< 121	< 60	< 106	< 44	< 48
	10/07/08	4160 ± 768	< 46	< 64	< 139	< 43	< 107	< 48	< 52
	10/07/08	4580 ± 1170	< 67	< 80	< 250	< 26	< 123	< 71	< 62
	MEAN	4244 ± 428	-	-	-	-	-	-	-
33	BOTTOM FEEDER								
	10/07/08	5020 ± 964	< 66	< 73	< 175	< 55	< 129	< 56	< 59
	MEAN	5020 ± 0	-	-	-	-	-	-	-
93	PREDATOR								
	04/15/08	3950 ± 647	< 37	< 34	< 96	< 33	< 74	< 32	< 40
	04/15/08	4140 ± 707	< 42	< 40	< 77	< 36	< 73	< 36	< 41
	04/15/08	3900 ± 677	< 37	< 41	< 82	< 43	< 78	< 29	< 39
	10/07/08	3890 ± 972	< 55	< 52	< 149	< 33	< 130	< 42	< 41
	10/07/08	3680 ± 1210	< 52	< 74	< 154	< 69	< 161	< 63	< 50
	MEAN	3912 ± 328	-	-	-	-	-	-	-
93	BOTTOM FEEDER								
	10/07/08	4160 ± 757	< 50	< 61	< 173	< 55	< 104	< 40	< 44
	10/07/08	4430 ± 778	< 35	< 47	< 92	< 40	< 62	< 38	< 38
	MEAN	4295 ± 382	-	-	-	-	-	-	-

TABLE C-III.1 CONCENTRATIONS OF GAMMA EMITTERS IN PREDATOR AND BOTTOM FEEDER (FISH) SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

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
94	PREDATOR								
	04/16/08	3120 ± 746	< 35	< 45	< 101	< 36	< 101	< 46	< 47
	04/16/08	3940 ± 753	< 40	< 42	< 101	< 31	< 85	< 35	< 44
	10/07/08	3080 ± 812	< 44	< 65	< 64	< 45	< 98	< 47	< 50
	10/07/08	4970 ± 901	< 49	< 57	< 157	< 50	< 99	< 40	< 53
	MEAN	3778 ± 1777	-	-	-	-	-	-	-
94	BOTTOM FEEDER								
	04/16/08	4570 ± 1120	< 72	< 75	< 205	< 63	< 139	< 61	< 73
	04/16/08	3350 ± 596	< 40	< 43	< 100	< 36	< 90	< 33	< 41
	10/07/08	4320 ± 1110	< 75	< 94	< 197	< 79	< 127	< 56	< 68
	10/07/08	5340 ± 1020	< 59	< 68	< 220	< 58	< 109	< 55	< 58
	MEAN	4395 ± 1642	-	-	-	-	-	-	-

TABLE C-III.2 CONCENTRATIONS OF GAMMA EMITTERS IN CLAM AND CRAB SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

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
23	CLAMS								
	04/14/08	2080 ± 535	< 37	< 32	< 88	< 30	< 59	< 29	< 31
	10/06/08	1720 ± 538	< 50	< 68	< 137	< 54	< 96	< 53	< 50
	MEAN	1900 ± 509	-	-	-	-	-	-	-
24	CLAMS								
	04/14/08	2320 ± 489	< 31	< 34	< 76	< 46	< 69	< 36	< 31
	10/06/08	1610 ± 731	< 48	< 51	< 136	< 49	< 79	< 45	< 43
	MEAN	1965 ± 1004	-	-	-	-	-	-	-
94	CLAMS								
	04/16/08	1680 ± 450	< 32	< 36	< 81	< 26	< 64	< 33	< 37
	10/07/08	1630 ± 792	< 56	< 63	< 140	< 49	< 120	< 48	< 62
	MEAN	1655 ± 71	-	-	-	-	-	-	-
93	CRABS								
	10/01/08	2730 ± 706	< 51	< 61	< 137	< 49	< 109	< 42	< 50
	MEAN	2730 ± 0	-	-	-	-	-	-	-

TABLE C-IV.1 **CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/KG DRY ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Co-60	Cs-134	Cs-137
23	04/14/08	< 443	1720 ± 529	< 39	< 43	< 34	< 38	< 36
	10/06/08	< 406	1360 ± 451	< 28	< 36	< 30	< 27	< 32
	MEAN	-	1540 ± 509	-	-	-	-	-
24	04/14/08	< 363	842 ± 376	< 28	< 35	< 30	< 30	< 29
	10/06/08	< 490	617 ± 418	< 36	< 44	< 37	< 39	< 41
	MEAN	-	730 ± 318	-	-	-	-	-
33	04/14/08	< 403	505 ± 379	< 33	< 27	< 36	< 29	< 38
	10/08/08	< 626	4920 ± 988	< 54	< 45	< 56	< 43	< 62
	MEAN	-	2713 ± 6244	-	-	-	-	-
94	04/16/08	< 328	11800 ± 908	< 36	< 40	< 36	< 31	< 34
	10/07/08	< 621	15100 ± 1310	< 50	< 60	< 50	< 43	< 59
	MEAN	-	13450 ± 4667	-	-	-	-	-

TABLE C-V.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

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

COLLECTION	GROUP I			GROUP II			GROUP III	
PERIOD	20	66	111	71	72	73	3	C
01/02/08 - 01/09/08	20 ± 5	23 ± 5	(1)	12 ± 5	21 ± 5	17 ± 5	22 ± 5	22 ± 5
01/09/08 - 01/16/08	(2)	15 ± 5	(1)	14 ± 5	13 ± 5	15 ± 5	12 ± 5	16 ± 5
01/16/08 - 01/23/08	20 ± 5	14 ± 5	(1)	20 ± 5	16 ± 5	16 ± 5	16 ± 5	19 ± 5
01/23/08 - 01/30/08	28 ± 6	29 ± 6	(1)	13 ± 5	28 ± 6	20 ± 5	24 ± 5	29 ± 6
01/30/08 - 02/06/08	21 ± 5	19 ± 5	(1)	16 ± 5	16 ± 5	18 ± 5	17 ± 5	17 ± 5
02/06/08 - 02/14/08	19 ± 5	17 ± 4	(1)	20 ± 5	17 ± 5	20 ± 5	15 ± 4	17 ± 5
02/14/08 - 02/20/08	15 ± 6	17 ± 6	(1)	15 ± 6	19 ± 6	18 ± 6	22 ± 6	17 ± 6
02/20/08 - 02/27/08	11 ± 5	11 ± 5	10 ± 5	13 ± 5	11 ± 5	13 ± 5	10 ± 5	10 ± 5
02/27/08 - 03/05/08	19 ± 5	17 ± 5	13 ± 5	19 ± 5	17 ± 5	14 ± 5	15 ± 5	12 ± 5
03/05/08 - 03/12/08	17 ± 5	19 ± 5	18 ± 5	21 ± 5	22 ± 5	16 ± 5	22 ± 5	23 ± 5
03/12/08 - 03/18/08	14 ± 6	15 ± 6	11 ± 6	10 ± 6	10 ± 6	14 ± 6	11 ± 6	14 ± 6
03/18/08 - 03/26/08	18 ± 5	16 ± 5	15 ± 4	12 ± 4	12 ± 4	16 ± 5	11 ± 4	16 ± 4
03/26/08 - 04/02/08	17 ± 5	16 ± 5	14 ± 5	14 ± 5	18 ± 5	12 ± 5	12 ± 5	14 ± 5
04/02/08 - 04/09/08	7 ± 5	8 ± 5	14 ± 5	9 ± 5	10 ± 5	10 ± 5	10 ± 5	14 ± 5
04/09/08 - 04/16/08	8 ± 5	9 ± 5	< 6	< 7	8 ± 5	< 7	8 ± 5	11 ± 5
04/16/08 - 04/23/08	19 ± 5	19 ± 5	18 ± 5	15 ± 5	16 ± 5	15 ± 5	12 ± 5	22 ± 5
04/23/08 - 04/30/08	15 ± 5	15 ± 5	18 ± 5	15 ± 5	18 ± 5	14 ± 5	12 ± 5	16 ± 5
04/30/08 - 05/07/08	14 ± 5	15 ± 5	16 ± 5	15 ± 5	15 ± 5	16 ± 5	16 ± 5	15 ± 5
05/07/08 - 05/14/08	13 ± 5	11 ± 5	11 ± 4	12 ± 5	12 ± 5	10 ± 4	15 ± 5	12 ± 5
05/14/08 - 05/21/08	13 ± 5	14 ± 5	11 ± 5	< 7	11 ± 5	9 ± 5	10 ± 5	9 ± 5
05/21/08 - 05/28/08	8 ± 4	8 ± 4	14 ± 5	7 ± 4	8 ± 4	9 ± 4	8 ± 4	12 ± 4
05/28/08 - 06/04/08	12 ± 5	10 ± 5	17 ± 5	12 ± 5	12 ± 5	13 ± 5	12 ± 5	8 ± 4
06/04/08 - 06/11/08	11 ± 5	19 ± 5	13 ± 5	15 ± 5	15 ± 5	12 ± 5	15 ± 5	11 ± 5
06/11/08 - 06/18/08	11 ± 5	10 ± 5	10 ± 5	12 ± 5	14 ± 5	14 ± 5	14 ± 5	15 ± 5
06/18/08 - 06/25/08	13 ± 5	13 ± 5	14 ± 5	18 ± 5	12 ± 5	15 ± 5	13 ± 5	14 ± 5
06/25/08 - 07/01/08	17 ± 6	14 ± 6	16 ± 6	12 ± 6	15 ± 6	(2)	19 ± 6	17 ± 6
07/01/08 - 07/09/08	16 ± 5	11 ± 4	10 ± 4	15 ± 4	16 ± 5	12 ± 4	15 ± 4	17 ± 4
07/09/08 - 07/16/08	13 ± 5	10 ± 5	9 ± 4	14 ± 5	11 ± 5	9 ± 5	13 ± 5	11 ± 5
07/16/08 - 07/23/08	19 ± 5	20 ± 5	20 ± 5	23 ± 6	20 ± 5	22 ± 5	15 ± 5	22 ± 5
07/23/08 - 07/30/08	21 ± 5	17 ± 5	11 ± 5	16 ± 5	14 ± 5	10 ± 5	14 ± 5	17 ± 5
07/30/08 - 08/06/08	22 ± 5	24 ± 5	23 ± 5	19 ± 5	16 ± 4	14 ± 4	14 ± 4	17 ± 4
08/06/08 - 08/13/08	18 ± 5	19 ± 5	13 ± 5	14 ± 5	12 ± 5	19 ± 5	18 ± 5	14 ± 5
08/13/08 - 08/20/08	14 ± 5	17 ± 5	12 ± 5	17 ± 7	19 ± 6	11 ± 5	15 ± 5	15 ± 5
08/20/08 - 08/27/08	16 ± 5	15 ± 5	12 ± 4	19 ± 5	12 ± 4	14 ± 5	12 ± 4	14 ± 4
08/27/08 - 09/03/08	15 ± 5	18 ± 5	15 ± 5	14 ± 5	15 ± 5	16 ± 5	11 ± 5	18 ± 5
09/03/08 - 09/10/08	18 ± 5	19 ± 5	15 ± 5	20 ± 5	18 ± 5	16 ± 5	15 ± 5	18 ± 5
09/10/08 - 09/17/08	13 ± 5	10 ± 5	13 ± 5	9 ± 5	11 ± 5	9 ± 5	8 ± 4	16 ± 5
09/17/08 - 09/24/08	12 ± 5	15 ± 5	12 ± 5	9 ± 5	15 ± 5	14 ± 5	9 ± 5	16 ± 5
09/24/08 - 09/30/08	< 8	< 8	9 ± 5	8 ± 5	10 ± 5	11 ± 5	< 7	< 8
09/30/08 - 10/08/08	14 ± 5	18 ± 5	12 ± 4	14 ± 5	11 ± 4	15 ± 5	11 ± 4	14 ± 4
10/08/08 - 10/15/08	23 ± 5	18 ± 5	21 ± 5	21 ± 5	22 ± 5	24 ± 5	15 ± 5	24 ± 5
10/15/08 - 10/22/08	12 ± 5	16 ± 5	12 ± 5	18 ± 5	15 ± 5	13 ± 5	10 ± 5	(2)
10/22/08 - 10/29/08	12 ± 5	8 ± 5	7 ± 5	< 7	< 7	< 7	< 7	12 ± 5
10/29/08 - 11/05/08	15 ± 5	18 ± 5	18 ± 5	16 ± 5	15 ± 5	17 ± 5	17 ± 5	21 ± 5
11/05/08 - 11/12/08	15 ± 5	9 ± 5	8 ± 4	9 ± 5	11 ± 5	10 ± 5	10 ± 5	13 ± 5
11/12/08 - 11/18/08	12 ± 5	9 ± 5	< 7	10 ± 5	10 ± 5	11 ± 5	< 8	11 ± 5
11/18/08 - 11/25/08	13 ± 5	10 ± 5	12 ± 5	15 ± 5	11 ± 5	13 ± 5	15 ± 5	12 ± 5
11/25/08 - 12/03/08	18 ± 5	17 ± 5	16 ± 4	18 ± 5	16 ± 5	18 ± 5	19 ± 5	16 ± 4
12/03/08 - 12/10/08	17 ± 5	17 ± 5	19 ± 5	13 ± 5	13 ± 5	22 ± 6	14 ± 5	17 ± 5
12/10/08 - 12/17/08	12 ± 5	15 ± 5	12 ± 4	12 ± 5	14 ± 5	13 ± 5	12 ± 5	13 ± 5
12/17/08 - 12/23/08	17 ± 6	22 ± 6	20 ± 6	20 ± 6	15 ± 6	23 ± 6	14 ± 6	24 ± 6
12/23/08 - 12/30/08	26 ± 5	27 ± 5	22 ± 5	27 ± 6	27 ± 5	30 ± 6	23 ± 5	35 ± 6
MEAN	16 ± 9	15 ± 9	14 ± 8	15 ± 8	15 ± 9	15 ± 9	14 ± 8	16 ± 10

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

(1) SEE PROGRAM CHANGES SECTION FOR EXPLANATION

(2) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-V.2 **MONTHLY AND YEARLY MEAN VALUES OF GROSS BETA CONCENTRATIONS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

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

GROUP I - ON-SITE LOCATIONS				GROUP II - INTERMEDIATE DISTANCE LOCATIONS				GROUP III - CONTROL LOCATIONS			
COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD	COLLECTION PERIOD	MIN	MAX	MEAN ± 2SD
01/02/08 - 01/30/08	< 34	29	21 ± 11	01/02/08 - 01/30/08	12	28	17 ± 9	01/02/08 - 01/30/08	12	29	20 ± 11
01/30/08 - 02/27/08	10	21	15 ± 8	01/30/08 - 02/27/08	11	20	16 ± 6	01/30/08 - 02/27/08	10	22	16 ± 8
02/27/08 - 04/02/08	11	19	16 ± 5	02/27/08 - 04/02/08	10	22	15 ± 7	02/27/08 - 04/02/08	11	23	15 ± 9
04/02/08 - 04/30/08	< 6	19	14 ± 9	04/02/08 - 04/30/08	< 7	18	13 ± 7	04/02/08 - 04/30/08	8	22	13 ± 9
04/30/08 - 05/28/08	8	16	12 ± 5	04/30/08 - 05/28/08	< 7	16	11 ± 6	04/30/08 - 05/28/08	8	16	12 ± 6
05/28/08 - 07/01/08	10	19	13 ± 5	05/28/08 - 07/01/08	12	19	14 ± 4	05/28/08 - 07/01/08	8	19	14 ± 6
07/01/08 - 07/30/08	9	21	15 ± 9	07/01/08 - 07/30/08	9	23	15 ± 9	07/01/08 - 07/30/08	11	22	15 ± 7
07/30/08 - 09/03/08	12	24	17 ± 8	07/30/08 - 09/03/08	11	19	15 ± 5	07/30/08 - 09/03/08	11	18	15 ± 5
09/03/08 - 09/30/08	< 8	19	14 ± 7	09/03/08 - 09/30/08	8	20	12 ± 8	09/03/08 - 09/30/08	< 7	18	14 ± 8
09/30/08 - 10/29/08	7	23	14 ± 10	09/30/08 - 10/29/08	< 7	24	17 ± 9	09/30/08 - 10/29/08	< 7	24	14 ± 10
10/29/08 - 12/03/08	< 7	18	13 ± 7	10/29/08 - 12/03/08	9	18	13 ± 6	10/29/08 - 12/03/08	< 8	21	15 ± 8
12/03/08 - 12/30/08	12	27	19 ± 10	12/03/08 - 12/30/08	12	30	19 ± 13	12/03/08 - 12/30/08	12	35	19 ± 16
01/02/08 - 12/30/08	< 6	29	15 ± 9	01/02/08 - 12/30/08	< 7	30	15 ± 9	01/02/08 - 12/30/08	< 7	35	15 ± 9

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

TABLE C-V.3 **CONCENTRATIONS OF STRONTIUM IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

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

STC	COLLECTION PERIOD	SR-89	SR-90
3	01/02/08 - 04/02/08	< 9	< 4
	04/02/08 - 07/01/08	< 7	< 3
	07/01/08 - 09/30/08	< 26	< 2
	09/30/08 - 12/30/08	< 9	< 4
	MEAN	-	-
20	01/02/08 - 04/02/08	< 8	< 5
	04/02/08 - 07/01/08	< 8	< 3
	07/01/08 - 09/30/08	< 24	< 2
	09/30/08 - 12/30/08	< 5	< 3
	MEAN	-	-
66	01/02/08 - 04/02/08	< 8	< 3
	04/02/08 - 07/01/08	< 5	< 2
	07/01/08 - 09/30/08	< 32	< 2
	09/30/08 - 12/30/08	< 6	< 2
	MEAN	-	-
71	01/02/08 - 04/02/08	< 9	< 5
	04/02/08 - 07/01/08	< 6	< 3
	07/01/08 - 09/30/08	< 31	< 2
	09/30/08 - 12/30/08	< 6	< 2
	MEAN	-	-
72	01/02/08 - 04/02/08	< 8	< 4
	04/02/08 - 07/01/08	< 5	< 3
	07/01/08 - 09/30/08	< 31	< 2
	09/30/08 - 12/30/08	< 5	< 2
	MEAN	-	-
73	01/02/08 - 04/02/08	< 7	< 4
	04/02/08 - 07/01/08	< 6	< 2
	07/01/08 - 09/30/08	< 26	< 2
	09/30/08 - 12/30/08	< 6	< 3
	MEAN	-	-
111	01/02/08 - 04/02/08	(1)	
	04/02/08 - 07/01/08	< 6	< 2
	07/01/08 - 09/30/08	< 27	< 2
	09/30/08 - 12/30/08	< 6	< 2
	MEAN	-	-
C	01/02/08 - 04/02/08	< 8	< 4
	04/02/08 - 07/01/08	< 4	< 3
	07/01/08 - 09/30/08	< 29	< 2
	09/30/08 - 12/30/08	< 7	< 3
	MEAN	-	-

(1) SEE PROGRAM CHANGES SECTION FOR EXPLANATION

TABLE C-V.4 **CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

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
3	01/02 - 04/02/08	58 ± 17	< 1	< 2	< 2	< 2	< 2
	04/02 - 07/01/08	115 ± 42	< 4	< 5	< 5	< 4	< 4
	07/01 - 09/30/08	88 ± 43	< 3	< 6	< 4	< 3	< 3
	09/30 - 12/30/08	53 ± 25	< 3	< 2	< 3	< 4	< 4
	MEAN	78 ± 58	-	-	-	-	-
20	01/02 - 04/02/08	65 ± 18	< 2	< 2	< 2	< 2	< 1
	04/02 - 07/01/08	62 ± 25	< 3	< 3	< 3	< 3	< 3
	07/01 - 09/30/08	< 99	< 4	< 10	< 4	< 4	< 4
	09/30 - 12/30/08	37 ± 15	< 3	< 3	< 3	< 3	< 3
	MEAN	55 ± 31	-	-	-	-	-
66	01/02 - 04/02/08	87 ± 23	< 3	< 3	< 2	< 2	< 2
	04/02 - 07/01/08	< 54	< 3	< 5	< 3	< 3	< 3
	07/01 - 09/30/08	< 112	< 4	< 8	< 4	< 5	< 4
	09/30 - 12/30/08	57 ± 27	< 3	< 3	< 3	< 3	< 2
	MEAN	72 ± 43	-	-	-	-	-
71	01/02 - 04/02/08	97 ± 22	< 3	< 3	< 3	< 2	< 3
	04/02 - 07/01/08	66 ± 33	< 4	< 6	< 1	< 3	< 3
	07/01 - 09/30/08	102 ± 49	< 4	< 6	< 3	< 3	< 3
	09/30 - 12/30/08	65 ± 25	< 3	< 4	< 4	< 4	< 4
	MEAN	83 ± 39	-	-	-	-	-
72	01/02 - 04/02/08	78 ± 20	< 2	< 2	< 2	< 2	< 2
	04/02 - 07/01/08	105 ± 51	< 3	< 5	< 4	< 4	< 3
	07/01 - 09/30/08	84 ± 37	< 3	< 7	< 3	< 3	< 2
	09/30 - 12/30/08	42 ± 24	< 3	< 4	< 4	< 3	< 3
	MEAN	77 ± 53	-	-	-	-	-
73	01/02 - 04/02/08	64 ± 15	< 2	< 2	< 2	< 2	< 2
	04/02 - 07/01/08	128 ± 39	< 3	< 5	< 3	< 3	< 3
	07/01 - 09/30/08	71 ± 46	< 3	< 6	< 3	< 3	< 2
	09/30 - 12/30/08	< 35	< 4	< 4	< 3	< 3	< 2
	MEAN	88 ± 70	-	-	-	-	-
111	01/02 - 04/02/08	(1)					
	04/02 - 07/01/08	89 ± 32	< 3	< 6	< 4	< 4	< 4
	07/01 - 09/30/08	57 ± 40	< 3	< 6	< 2	< 3	< 2
	09/30 - 12/30/08	65 ± 21	< 3	< 4	< 1	< 4	< 3
	MEAN	70 ± 34	-	-	-	-	-
C	01/02 - 04/02/08	60 ± 19	< 2	< 3	< 2	< 2	< 2
	04/02 - 07/01/08	97 ± 46	< 3	< 6	< 4	< 4	< 3
	07/01 - 09/30/08	62 ± 32	< 3	< 4	< 3	< 3	< 2
	09/30 - 12/30/08	40 ± 19	< 3	< 3	< 3	< 3	< 3
	MEAN	65 ± 47	-	-	-	-	-

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

(1) SEE PROGRAM CHANGES SECTION FOR EXPLANATION

TABLE C-VI.1 CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

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

COLLECTION	GROUP I			GROUP II			GROUP III	
PERIOD	20	66	111	71	72	73	3	C
01/02/08 - 01/09/08	< 26	< 26	(1)	< 26	< 25	< 26	< 24	< 24
01/09/08 - 01/16/08	(2)	< 30	(1)	< 30	< 29	< 29	< 28	< 28
01/16/08 - 01/23/08	< 23	< 24	(1)	< 24	< 24	< 16	< 29	< 30
01/23/08 - 01/30/08	< 33	< 33	(1)	< 33	< 31	< 33	< 30	< 30
01/30/08 - 02/06/08	< 33	< 34	(1)	< 34	< 33	< 33	< 32	< 33
02/06/08 - 02/14/08	< 56	< 58	(1)	< 57	< 49	< 57	< 47	< 48
02/14/08 - 02/20/08	< 41	< 42	(1)	< 42	< 45	< 41	< 43	< 44
02/20/08 - 02/27/08	< 35	< 36	< 36	< 22	< 33	< 36	< 31	< 32
02/27/08 - 03/05/08	< 29	< 30	< 29	< 18	< 39	< 29	< 37	< 39
03/05/08 - 03/12/08	< 29	< 29	< 28	< 22	< 70	< 29	< 70	< 67
03/12/08 - 03/18/08	< 57	< 57	< 55	< 29	< 41	< 56	< 41	< 40
03/18/08 - 03/26/08	< 35	< 36	< 34	< 18	< 33	< 35	< 34	< 20
03/26/08 - 04/02/08	< 53	< 53	< 51	< 23	< 61	< 53	< 61	< 59
04/02/08 - 04/09/08	< 40	< 40	< 39	< 22	< 39	< 40	< 38	< 37
04/09/08 - 04/16/08	< 66	< 67	< 69	< 69	< 64	< 67	< 65	< 62
04/16/08 - 04/23/08	< 57	< 40	< 39	< 41	< 57	< 40	< 57	< 55
04/23/08 - 04/30/08	< 48	< 61	< 59	< 62	< 48	< 61	< 48	< 46
04/30/08 - 05/07/08	< 45	< 24	< 43	< 46	< 43	< 45	< 43	< 42
05/07/08 - 05/14/08	< 13	< 13	< 12	< 13	< 13	< 12	< 13	< 12
05/14/08 - 05/21/08	< 24	< 43	< 41	< 44	< 24	< 43	< 24	< 23
05/21/08 - 05/28/08	< 48	< 55	< 54	< 56	< 49	< 55	< 48	< 46
05/28/08 - 06/04/08	< 24	< 24	< 23	< 15	< 34	< 24	< 35	< 33
06/04/08 - 06/11/08	< 34	< 48	< 46	< 49	< 34	< 48	< 34	< 33
06/11/08 - 06/18/08	< 38	< 40	< 38	< 40	< 38	< 40	< 38	< 37
06/18/08 - 06/25/08	< 45	< 38	< 37	< 39	< 44	< 38	< 44	< 43
06/25/08 - 07/01/08	< 43	< 24	< 23	< 25	< 43	(2)	< 43	< 42
07/01/08 - 07/09/08	< 24	< 26	< 25	< 26	< 24	< 25	< 23	< 23
07/09/08 - 07/16/08	< 31	< 40	< 39	< 40	< 31	< 39	< 30	< 29
07/16/08 - 07/23/08	< 46	< 43	< 41	< 44	< 46	< 43	< 47	< 45
07/23/08 - 07/30/08	< 60	< 60	< 58	< 34	< 45	< 60	< 45	< 44
07/30/08 - 08/06/08	< 28	< 38	< 36	< 39	< 28	< 38	< 28	< 27
08/06/08 - 08/13/08	< 50	< 43	< 42	< 44	< 49	< 43	< 50	< 48
08/13/08 - 08/20/08	< 43	< 46	< 45	< 61	< 42	< 46	< 42	< 41
08/20/08 - 08/27/08	< 27	< 26	< 25	< 26	< 27	< 26	< 27	< 26
08/27/08 - 09/03/08	< 53	< 55	< 53	< 56	< 53	< 55	< 53	< 51
09/03/08 - 09/10/08	< 39	< 44	< 43	< 45	< 39	< 44	< 39	< 38
09/10/08 - 09/17/08	< 38	< 38	< 37	< 39	< 37	< 38	< 37	< 36
09/17/08 - 09/24/08	< 50	< 65	< 62	< 66	< 49	< 64	< 53	< 48
09/24/08 - 09/30/08	< 58	< 54	< 53	< 55	< 57	< 54	< 56	< 59
09/30/08 - 10/08/08	< 61	< 62	< 60	< 64	< 61	< 62	< 60	< 56
10/08/08 - 10/15/08	< 36	< 33	< 31	< 33	< 36	< 32	< 36	< 35
10/15/08 - 10/22/08	< 47	< 56	< 54	< 57	< 58	< 56	< 58	(2)
10/22/08 - 10/29/08	< 61	< 56	< 54	< 57	< 61	< 56	< 62	< 59
10/29/08 - 11/05/08	< 41	< 46	< 44	< 46	< 41	< 45	< 41	< 39
11/05/08 - 11/12/08	< 70	< 58	< 56	< 59	< 69	< 58	< 69	< 67
11/12/08 - 11/18/08	< 52	< 54	< 52	< 55	< 52	< 54	< 53	< 50
11/18/08 - 11/25/08	< 56	< 47	< 45	< 48	< 56	< 47	< 56	< 54
11/25/08 - 12/03/08	< 38	< 64	< 62	< 66	< 38	< 64	< 38	< 37
12/03/08 - 12/10/08	< 57	< 64	< 62	< 65	< 56	< 64	< 57	< 54
12/10/08 - 12/17/08	< 68	< 67	< 64	< 68	< 70	< 67	< 70	< 67
12/17/08 - 12/23/08	< 40	< 38	< 36	< 38	< 40	< 38	< 40	< 39
12/23/08 - 12/30/08	< 59	< 59	< 57	< 30	< 35	< 59	< 52	< 50
MEAN	-	-	-	-	-	-	-	-

(1) SEE PROGRAM CHANGES SECTION FOR EXPLANATION
(2) SEE PRGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VII.1 **CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD		SR-89	SR-90	Be-7	K-40	I-131	Cs-134	Cs-137	Ba-140	La-140
35	07/16/08	Cabbage	< 14	13 ± 2	< 80	2500 ± 194	< 45	< 7	< 8	< 78	< 22
	07/16/08	Collards	< 10	17 ± 2	< 77	2320 ± 118	< 46	< 8	< 7	< 83	< 25
	07/16/08	Kale	< 13	17 ± 2	< 89	2270 ± 162	< 53	< 9	< 8	< 90	< 30
	08/12/08	Cabbage	< 6	9 ± 1	319 ± 182	2520 ± 323	< 40	< 18	< 22	< 508	< 115
	08/12/08	Collards	< 7	16 ± 1	511 ± 197	2890 ± 325	< 46	< 15	< 18	< 427	< 150
	08/12/08	Kale	< 8	20 ± 1	233 ± 193	2570 ± 334	< 44	< 18	< 20	< 513	< 118
	09/09/08	Cabbage	< 15	4 ± 2	76 ± 60	2760 ± 140	< 47	< 4	< 28	< 68	< 18
	09/09/08	Collards	< 17	17 ± 7	< 63	2270 ± 145	< 59	< 5	< 25	< 89	< 22
	09/09/08	Kale	< 15	13 ± 6	< 50	1930 ± 111	< 44	< 4	< 25	< 58	< 17
	10/16/08	Cabbage	< 16	5 ± 2	< 82	2360 ± 211	< 56	< 6	< 7	< 78	< 24
	10/16/08	Collards	< 24	8 ± 2	155 ± 117	2340 ± 224	< 57	< 6	< 6	< 84	< 26
	10/16/08	Kale	< 20	7 ± 2	243 ± 53	3610 ± 142	< 57	< 5	< 19	< 75	< 21
	MEAN		-	12 ± 11	256 ± 300	2528 ± 843	-	-	-	-	-

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

TABLE C-VII.1 **CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD		SR-89	SR-90	Be-7	K-40	I-131	Cs-134	Cs-137	Ba-140	La-140
36	07/16/08	Cabbage	< 11	3 ± 2	< 53	2330 ± 121	< 31	< 5	< 5	< 54	< 14
	07/16/08	Collards	< 11	5 ± 1	< 45	2460 ± 95	< 26	< 4	< 5	< 45	< 13
	07/16/08	Kale	< 15	37 ± 2	61 ± 46	3810 ± 142	< 28	< 5	< 5	< 54	< 15
	08/12/08	Cabbage	< 7	8 ± 1	< 195	2520 ± 273	< 38	< 14	< 15	< 409	< 103
	08/12/08	Collards	< 7	24 ± 2	262 ± 148	5060 ± 408	< 49	< 17	< 18	< 510	< 103
	08/12/08	Mustard Greens	< 25	13 ± 1	571 ± 227	5300 ± 426	< 50	< 16	< 17	< 476	< 100
	09/10/08	Cabbage	< 16	4 ± 2	< 68	1840 ± 122	< 59	< 6	< 6	< 88	< 22
	09/10/08	Collards	< 25	14 ± 2	72 ± 64	3620 ± 135	< 58	< 5	< 6	< 82	< 23
	09/10/08	Kale	< 16	10 ± 2	88 ± 58	4270 ± 160	< 46	< 5	< 5	< 68	< 16
	10/16/08	Cabbage	< 21	< 3	< 80	2220 ± 178	< 57	< 7	< 8	< 99	< 31
	10/16/08	Collards	< 23	28 ± 3	114 ± 37	5100 ± 107	< 48	< 4	< 4	< 67	< 20
	10/16/08	Kale	< 22	15 ± 3	78 ± 45	4510 ± 126	< 56	< 4	< 5	< 73	< 18
	MEAN		-	15 ± 22	178 ± 373	3587 ± 2535	-	-	-	-	-

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

TABLE C-VII.1 **CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC	COLLECTION PERIOD		SR-89	SR-90	Be-7	K-40	I-131	Cs-134	Cs-137	Ba-140	La-140
66	07/16/08	Cabbage	< 18	27 ± 2	120 ± 110	3870 ± 297	< 53	< 8	< 9	< 97	< 22
	07/16/08	Collards	< 21	9 ± 3	63 ± 36	2360 ± 117	< 29	< 4	< 5	< 53	< 14
	07/16/08	Kale	< 20	10 ± 3	102 ± 75	2780 ± 170	< 45	< 7	< 8	< 84	< 25
	08/12/08	Cabbage	< 12	3 ± 1	< 189	2730 ± 285	< 45	< 12	< 16	< 382	< 101
	08/12/08	Collards	< 9	15 ± 2	< 262	2310 ± 299	< 46	< 17	< 19	< 456	< 147
	08/12/08	Kale	< 10	13 ± 1	232 ± 207	2790 ± 285	< 45	< 15	< 17	< 443	< 145
	09/09/08	Cabbage	< 15	< 3	< 44	2320 ± 131	< 42	< 4	< 5	< 64	< 18
	09/09/08	Collards	< 19	4 ± 2	216 ± 74	3250 ± 183	< 59	< 5	< 22	< 88	< 23
	09/09/08	Kale	< 11	2 ± 1	159 ± 56	3380 ± 136	< 50	< 4	< 5	< 70	< 18
	10/16/08	Collards	< 22	6 ± 2	325 ± 48	3560 ± 103	< 54	< 4	< 5	< 73	< 19
	10/16/08	Kale	< 23	< 3	348 ± 72	4870 ± 158	< 52	< 4	< 4	< 73	< 20
	MEAN		-	10 ± 16	196 ± 207	3111 ± 1569	-	-	-	-	-

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

TABLE C-VIII.1 QUARTERLY TLD RESULTS FOR OYSTER CREEK GENERATING STATION, 2008

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

STATION CODE	MEAN ± 2 S.D.	FIRST	SECOND	THIRD	FOURTH
1	16.2 ± 3.7	16.5 ± 1.2	13.8 ± 0.6	18.3 ± 1.5	16.2 ± 1.8
3	14.6 ± 4.2	15.9 ± 2.1	12.3 ± 1.2	16.8 ± 0.9	13.5 ± 1.5
4	15.3 ± 3.9	17.7 ± 1.5	12.9 ± 1.5	15.6 ± 1.2	15.0 ± 0.6
5	20.6 ± 4.3	22.5 ± 3.0	18.0 ± 1.2	22.2 ± 2.7	19.8 ± 2.1
6	14.1 ± 2.7	(1)	12.6 ± 1.2	15.3 ± 1.5	14.4 ± 0.9
8	16.1 ± 3.7	17.1 ± 3.0	13.8 ± 1.8	18.0 ± 0.9	15.6 ± 1.2
9	14.0 ± 2.8	15.0 ± 1.2	12.0 ± 0.9	15.0 ± 4.2	13.8 ± 1.5
C	15.8 ± 3.7	18.0 ± 1.5	13.5 ± 1.8	15.9 ± 2.4	15.9 ± 0.9
11	16.3 ± 4.0	17.4 ± 1.5	13.8 ± 0.9	18.3 ± 1.8	15.6 ± 1.5
14	18.2 ± 4.6	21.3 ± 1.5	16.2 ± 2.1	18.3 ± 0.6	16.8 ± 1.5
22	14.8 ± 3.2	15.6 ± 1.8	12.6 ± 1.2	14.7 ± 0.9	16.2 ± 4.2
46	14.4 ± 3.8	15.0 ± 1.2	12.0 ± 1.2	16.5 ± 0.9	14.1 ± 0.9
47	15.9 ± 4.1	17.4 ± 0.9	12.9 ± 1.5	16.5 ± 2.4	16.8 ± 2.1
48	15.8 ± 3.1	16.8 ± 1.8	13.5 ± 0.6	16.8 ± 1.5	15.9 ± 2.1
51	17.0 ± 3.5	18.3 ± 1.8	14.4 ± 2.1	18.0 ± 3.9	17.1 ± 0.9
52	19.9 ± 5.3	21.3 ± 2.4	16.5 ± 2.4	22.5 ± 4.5	19.2 ± 1.8
53	18.3 ± 4.4	19.2 ± 2.1	15.6 ± 3.3	20.7 ± 2.1	17.7 ± 1.5
54	15.9 ± 3.8	16.5 ± 1.8	13.5 ± 1.2	18.0 ± 1.2	15.6 ± 0.6
55	21.6 ± 3.6	22.2 ± 0.9	19.5 ± 3.0	23.7 ± 2.1	21.0 ± 3.3
56	19.7 ± 5.0	21.0 ± 1.8	16.2 ± 1.2	21.9 ± 0.9	19.8 ± 2.7
57	16.4 ± 4.3	17.1 ± 1.8	13.8 ± 2.1	18.9 ± 2.4	15.9 ± 0.6
58	16.4 ± 3.7	16.2 ± 1.5	13.8 ± 0.6	18.0 ± 1.2	17.4 ± 1.5
59	16.9 ± 4.1	17.7 ± 1.8	14.1 ± 1.8	18.9 ± 1.5	16.8 ± 1.2
61	15.4 ± 3.6	16.2 ± 0.9	12.9 ± 0.6	17.1 ± 1.2	15.3 ± 1.5
62	15.6 ± 3.8	16.2 ± 1.2	12.9 ± 0.9	17.4 ± 2.7	15.9 ± 2.7
63	16.2 ± 3.8	16.8 ± 1.2	13.5 ± 0.9	18.0 ± 0.9	16.5 ± 2.1
64	15.5 ± 3.8	16.2 ± 1.2	12.9 ± 0.9	17.4 ± 0.9	15.3 ± 1.8
65	15.8 ± 2.3	15.9 ± 1.2	14.1 ± 2.1	16.5 ± 2.7	16.5 ± 1.8
66	14.9 ± 2.5	15.3 ± 0.9	13.2 ± 1.5	16.2 ± 2.1	14.7 ± 0.6
68	13.7 ± 2.6	14.1 ± 1.5	11.7 ± 0.9	14.4 ± 1.5	14.4 ± 1.5
71	15.7 ± 3.0	16.8 ± 1.8	13.5 ± 2.1	15.9 ± 0.9	16.5 ± 1.2
72	15.8 ± 3.0	17.7 ± 2.4	14.1 ± 1.5	15.9 ± 1.8	15.3 ± 0.9
73	14.8 ± 4.1	16.8 ± 2.1	12.0 ± 0.9	14.7 ± 0.9	15.6 ± 2.1
74	14.9 ± 4.6	16.8 ± 1.2	11.7 ± 1.2	16.2 ± 2.4	15.0 ± 0.9
75	16.5 ± 3.6	17.7 ± 1.5	13.8 ± 0.9	17.4 ± 1.8	17.1 ± 2.1
78	15.4 ± 3.2	17.4 ± 1.5	13.5 ± 0.6	15.3 ± 0.9	15.3 ± 0.9
79	16.2 ± 4.5	18.0 ± 2.1	12.9 ± 0.9	17.1 ± 2.7	16.8 ± 2.1
81	15.5 ± 4.7	17.4 ± 2.1	12.6 ± 0.6	17.4 ± 1.5	14.7 ± 0.9
82	16.3 ± 5.4	19.2 ± 2.4	12.9 ± 0.6	17.4 ± 1.5	15.6 ± 2.4
84	16.0 ± 4.9	17.7 ± 1.5	13.2 ± 1.2	18.3 ± 2.1	14.7 ± 1.5
85	14.3 ± 3.3	15.9 ± 0.6	12.0 ± 0.6	15.0 ± 3.6	14.1 ± 1.5
86	15.2 ± 3.7	17.1 ± 2.1	12.9 ± 1.2	16.2 ± 1.5	14.7 ± 1.5
88	14.5 ± 3.3	16.8 ± 2.1	12.9 ± 0.6	14.1 ± 1.2	14.1 ± 1.8
89	14.6 ± 3.4	17.1 ± 2.1	13.5 ± 1.5	13.5 ± 1.2	14.1 ± 0.9
90	14.6 ± 3.1	16.8 ± 2.4	13.2 ± 0.9	14.1 ± 1.8	14.1 ± 1.8
92	16.2 ± 2.8	18.0 ± 2.1	14.7 ± 1.2	16.5 ± 1.5	15.6 ± 2.1
98	15.0 ± 2.0	16.2 ± 0.9	13.8 ± 0.6	15.0 ± 1.2	15.0 ± 2.1
99	15.5 ± 2.5	16.8 ± 3.3	13.8 ± 0.9	15.9 ± 0.9	15.3 ± 1.5
100	14.2 ± 2.4	13.5 ± 2.1	13.2 ± 1.8	15.9 ± 1.8	14.1 ± 3.6

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VIII.1 QUARTERLY TLD RESULTS FOR OYSTER CREEK GENERATING STATION, 2008

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

STATION CODE	MEAN ± 2 S.D.	FIRST	SECOND	THIRD	FOURTH
101	14.9 ± 3.6	15.3 ± 1.8	12.3 ± 1.5	16.5 ± 1.2	15.3 ± 1.8
102	15.3 ± 3.7	15.3 ± 2.7	13.2 ± 1.8	17.7 ± 2.4	15.0 ± 1.5
103	14.9 ± 3.4	14.7 ± 3.0	12.9 ± 0.9	17.1 ± 0.9	15.0 ± 1.5
104	15.7 ± 4.9	14.4 ± 1.5	13.8 ± 3.3	19.2 ± 4.8	15.3 ± 1.2
105	15.4 ± 5.1	14.4 ± 2.4	(1)	18.3 ± 2.1	13.5 ± 1.8
106	14.8 ± 4.7	15.0 ± 3.3	12.0 ± 1.2	17.7 ± 2.7	14.4 ± 2.7
107	15.0 ± 3.2	15.9 ± 1.8	12.6 ± 1.2	15.9 ± 1.2	15.6 ± 0.9
109	15.7 ± 4.9	14.1 ± 5.7	13.5 ± 1.2	18.9 ± 1.2	16.2 ± 0.6
110	14.5 ± 3.0	15.3 ± 1.2	12.3 ± 1.5	15.6 ± 2.4	14.7 ± 1.8
112	17.1 ± 1.7	(2)	(2)	16.5 ± 5.1	17.7 ± 0.9
113	14.1 ± 2.5	(2)	(2)	13.2 ± 0.9	15.0 ± 1.5
T1	16.2 ± 2.5	16.5 ± 1.2	14.7 ± 0.9	17.7 ± 1.2	15.9 ± 0.3

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION
(2) SEE PROGRAM CHANGES SECTION FOR EXPLANATION

TABLE C-VIII.2 MEAN QUARTERLY TLD RESULTS FOR THE SITE BOUNDARY, INTERMEDIATE, SPECIAL INTEREST AND CONTROL LOCATIONS FOR OYSTER CREEK GENERATING STATION, 2008

RESULTS IN UNITS OF MILLI-ROENTGEN PER STD. QUARTER ± 2 STANDARD DEVIATIONS OF THE STATION DATA

COLLECTION PERIOD	SITE BOUNDARY	INTERMEDIATE	SPECIAL INTEREST	CONTROL
JAN-MAR	17.6 ± 4.2	16.3 ± 3.6	17.1 ± 1.2	19.7 ± 4.7
APR-JUN	14.4 ± 3.4	13.0 ± 2.3	13.4 ± 1.5	14.9 ± 3.8
JUL-SEP	18.4 ± 4.9	16.7 ± 3.3	15.8 ± 3.3	17.1 ± 3.4
OCT-DEC	16.8 ± 3.4	15.3 ± 2.4	14.8 ± 1.9	16.4 ± 1.3

TABLE C-VIII.3 SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR OYSTER CREEK GENERATING STATION, 2008

RESULTS IN UNITS OF MILLI-ROENTGEN/STD. QUARTER

LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S.D.
SITE BOUNDARY	72	12.9	23.7	16.8 ± 4.9
INTERMEDIATE	122	11.7	22.5	15.3 ± 4.1
SPECIAL INTEREST	36	12.3	18.3	15.3 ± 3.4
CONTROL	8	13.5	21.3	17.0 ± 4.6

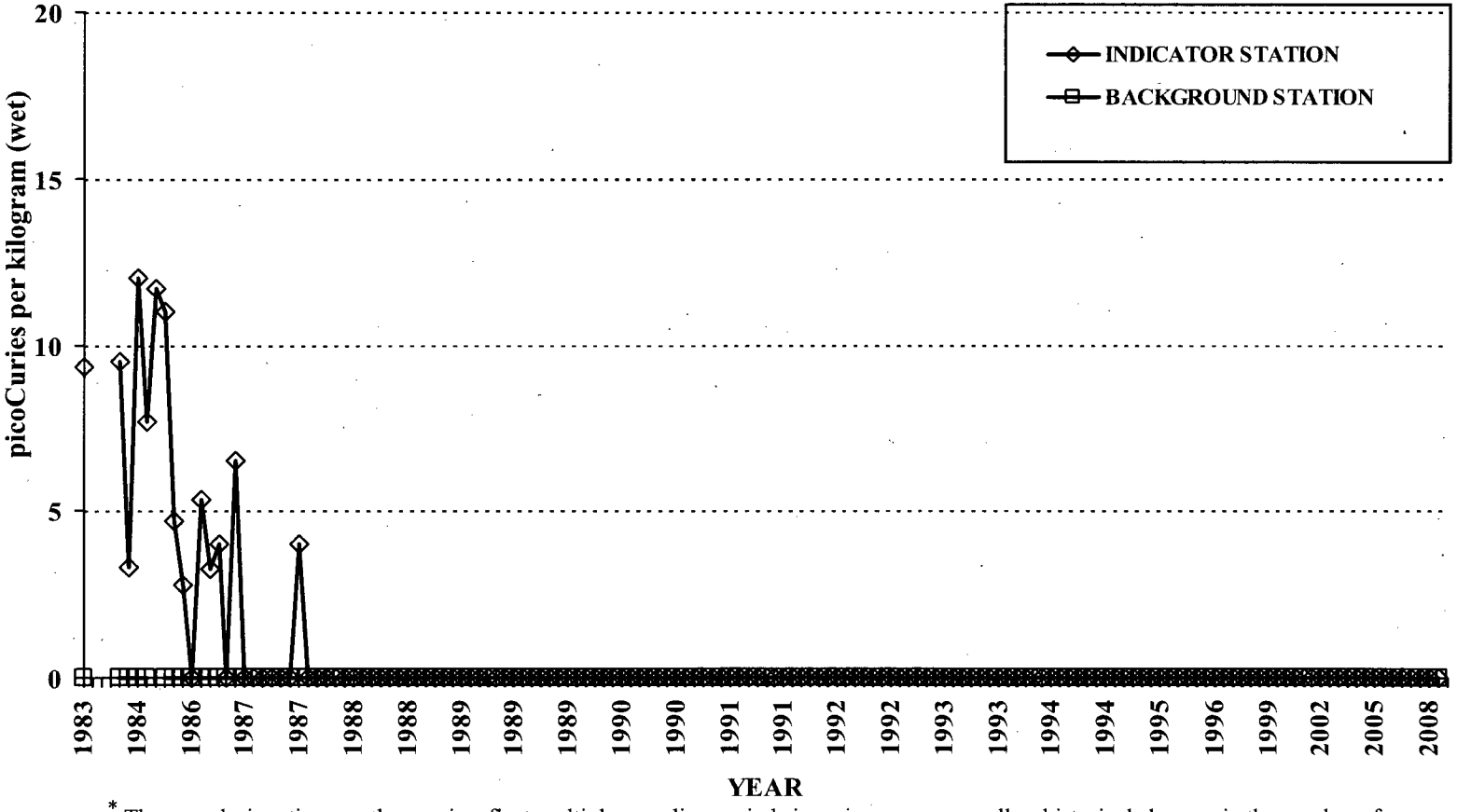
SITE BOUNDARY STATIONS - 1, T1, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66, 112, 113

INTERMEDIATE STATIONS - 4, 5, 6, 8, 9, 22, 46, 47, 48, 68, 73, 74, 75, 78, 79, 82, 84, 85, 86, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 109, 110

SPECIAL INTEREST STATIONS - 3, 11, 71, 72, 81, 88, 89, 90, 92

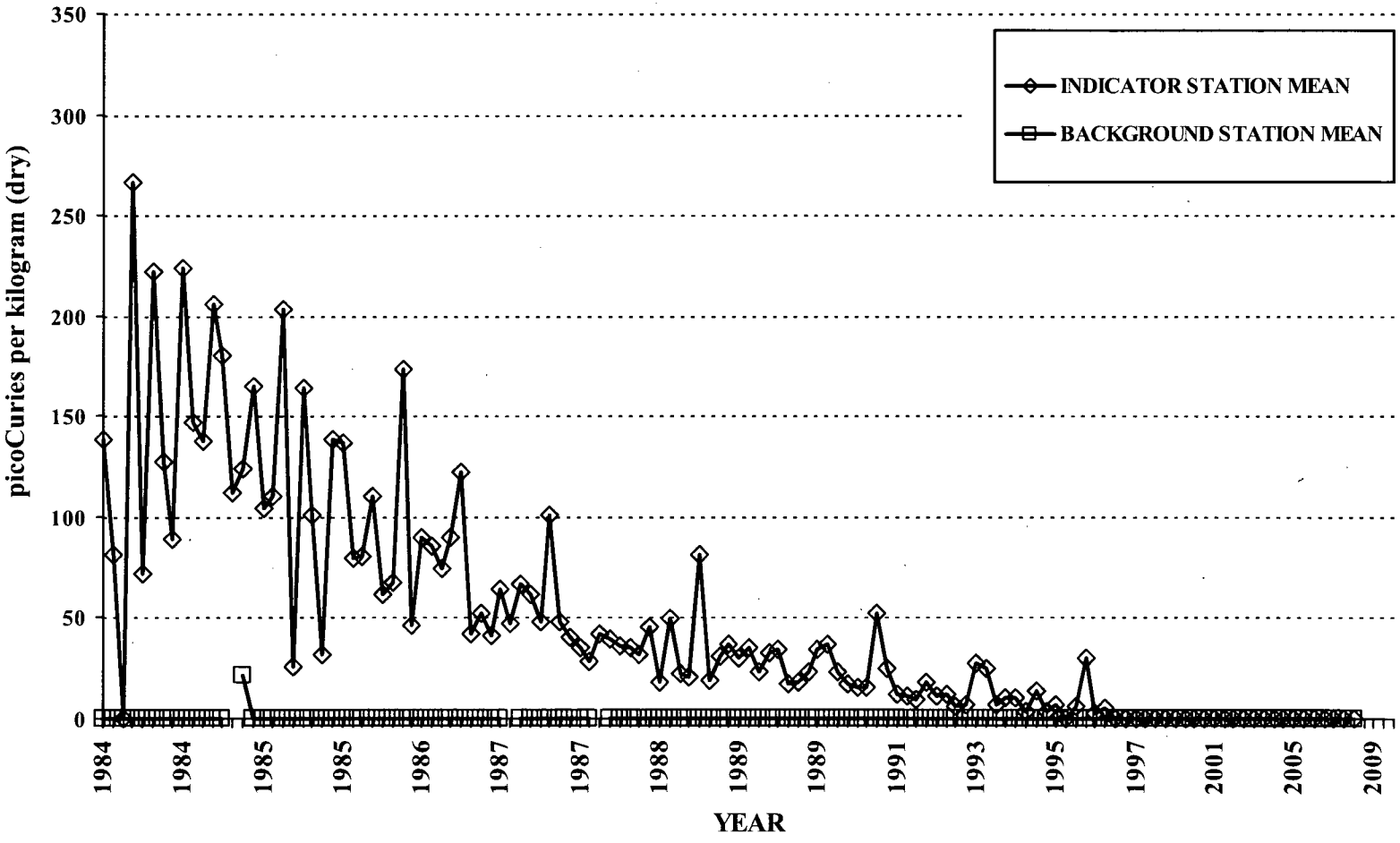
CONTROL STATIONS - 14, C

FIGURE C-1
MEAN COBALT-60 CONCENTRATION IN CLAMS
OYSTER CREEK GENERATING STATION, 1983 - 2008



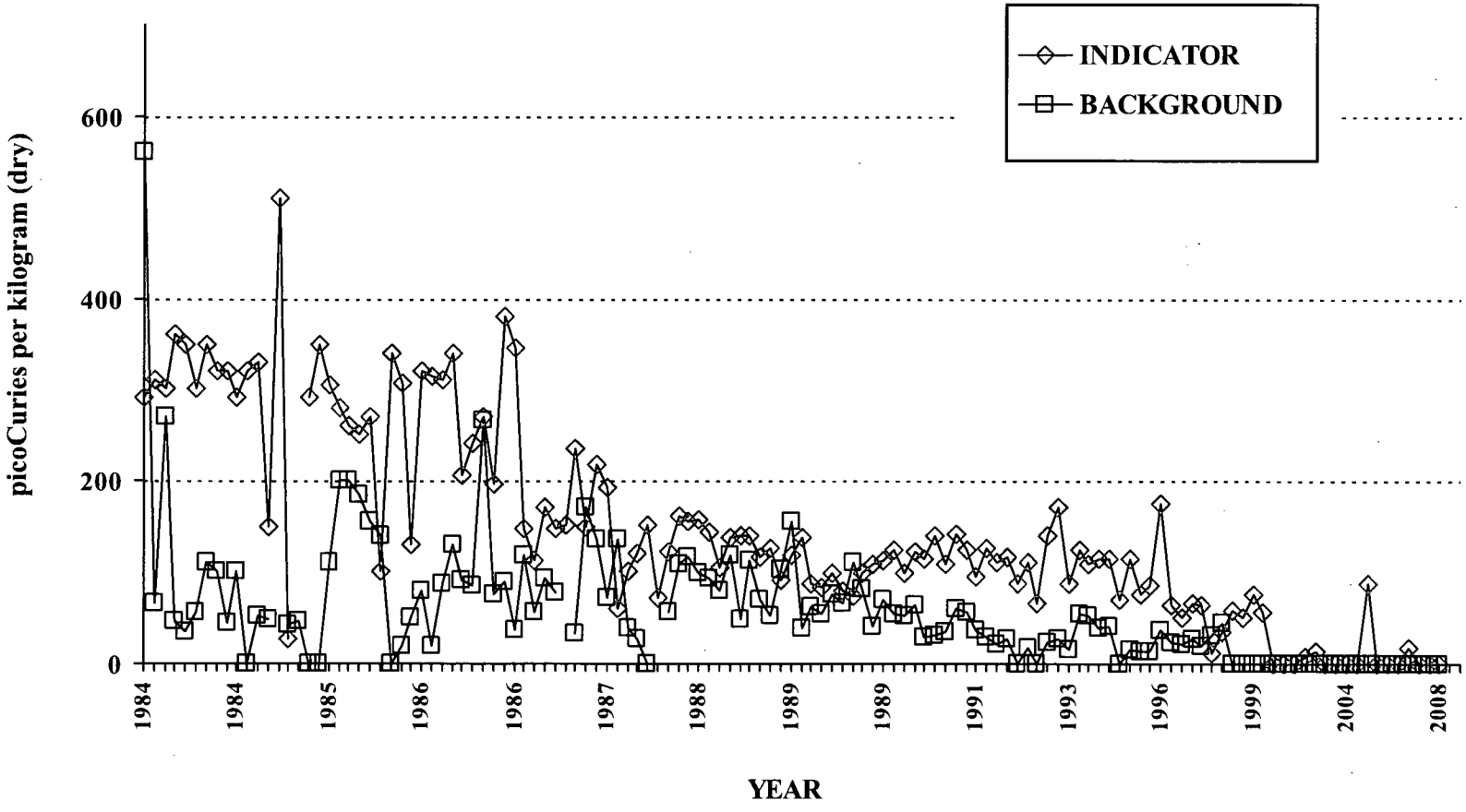
* The year designations on the x-axis reflect multiple sampling periods in a given year, as well as historical changes in the number of sampling periods per year.

FIGURE C-2
MEAN COBALT-60 CONCENTRATION IN AQUATIC SEDIMENT
OYSTER CREEK GENERATING STATION, 1984 - 2008



* The year designations on the x-axis reflect multiple sampling periods in a given year, as well as historical changes in the number of sampling periods per year.

FIGURE C-3
MEAN CESIUM-137 CONCENTRATION IN AQUATIC SEDIMENT
OYSTER CREEK GENERATING STATION, 1984 - 2008



* The year designations on the x-axis reflect multiple sampling periods in a given year, as well as historical changes in the number of sampling periods per year.

FIGURE C-4
MEAN WEEKLY GROSS BETA CONCENTRATIONS IN AIR PARTICULATES OYSTER CREEK GENERATING STATION, 2008

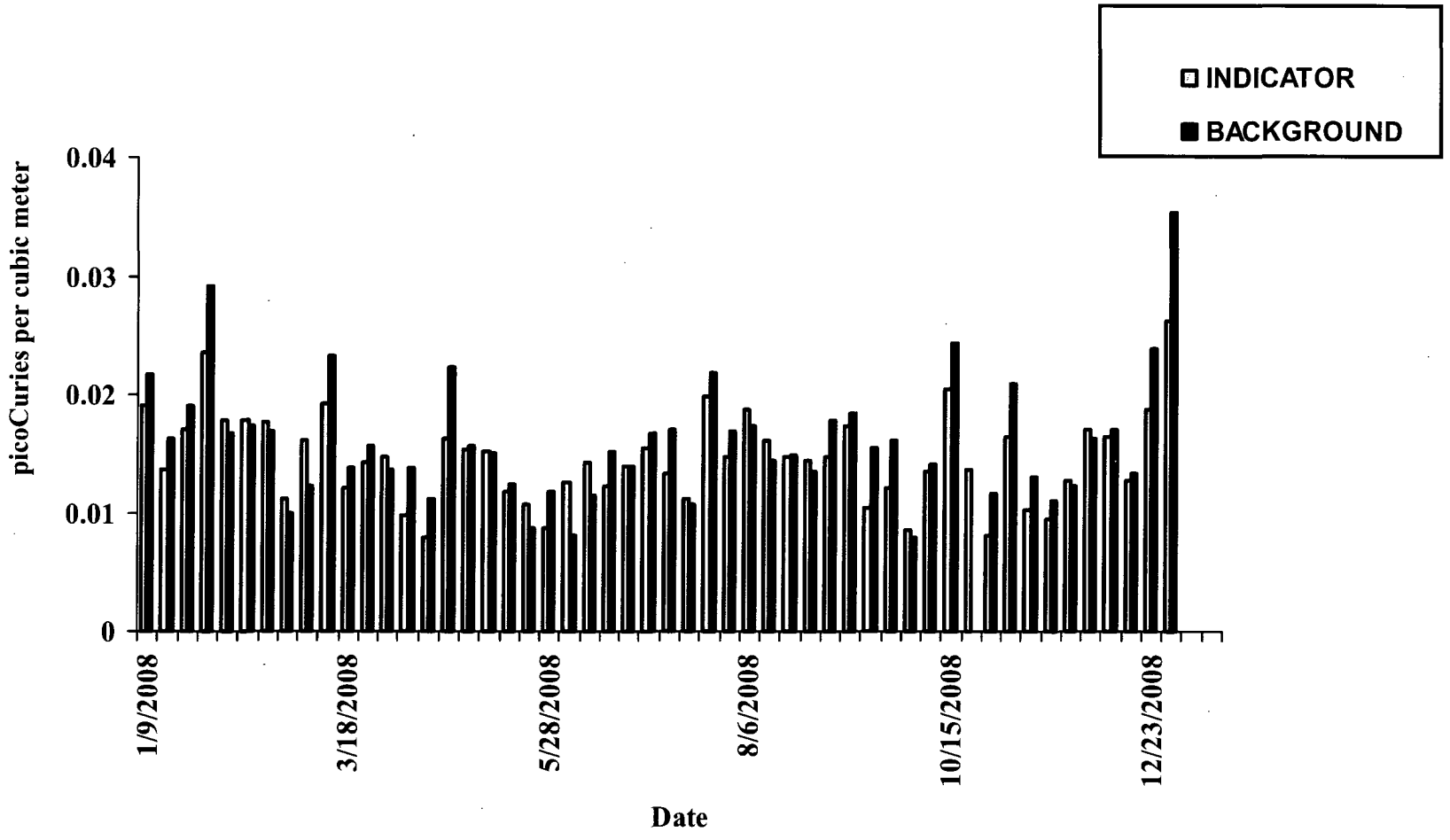
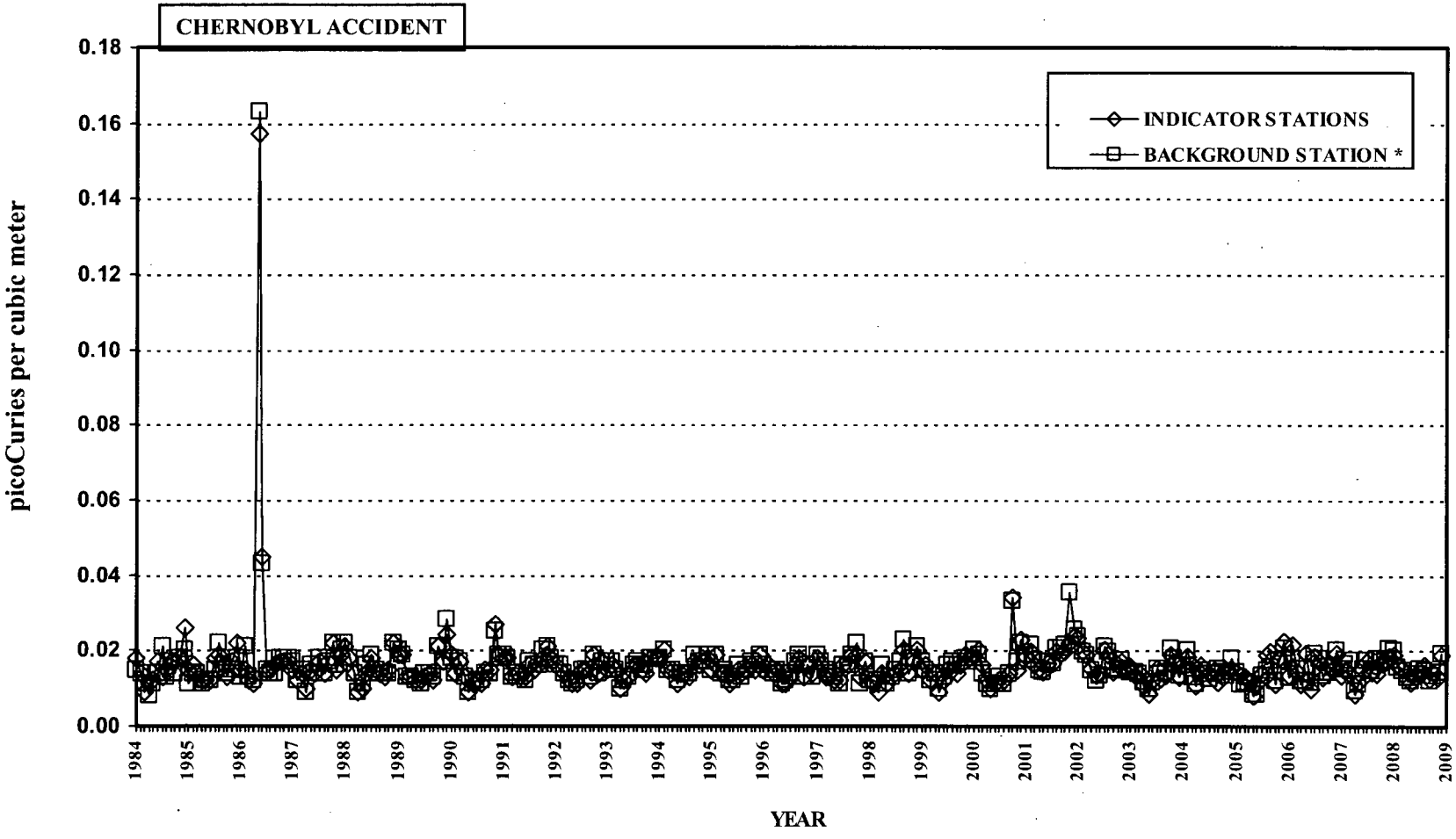


FIGURE C-5
MEAN MONTHLY GROSS BETA CONCENTRATIONS
IN AIR PARTICULATES
OYSTER CREEK GENERATING STATION, 1984 - 2008



* Data from Cookstown station ONLY after December 1996

FIGURE C-6
MEAN QUARTERLY TLD GAMMA DOSE
OYSTER CREEK GENERATING STATION, 2008

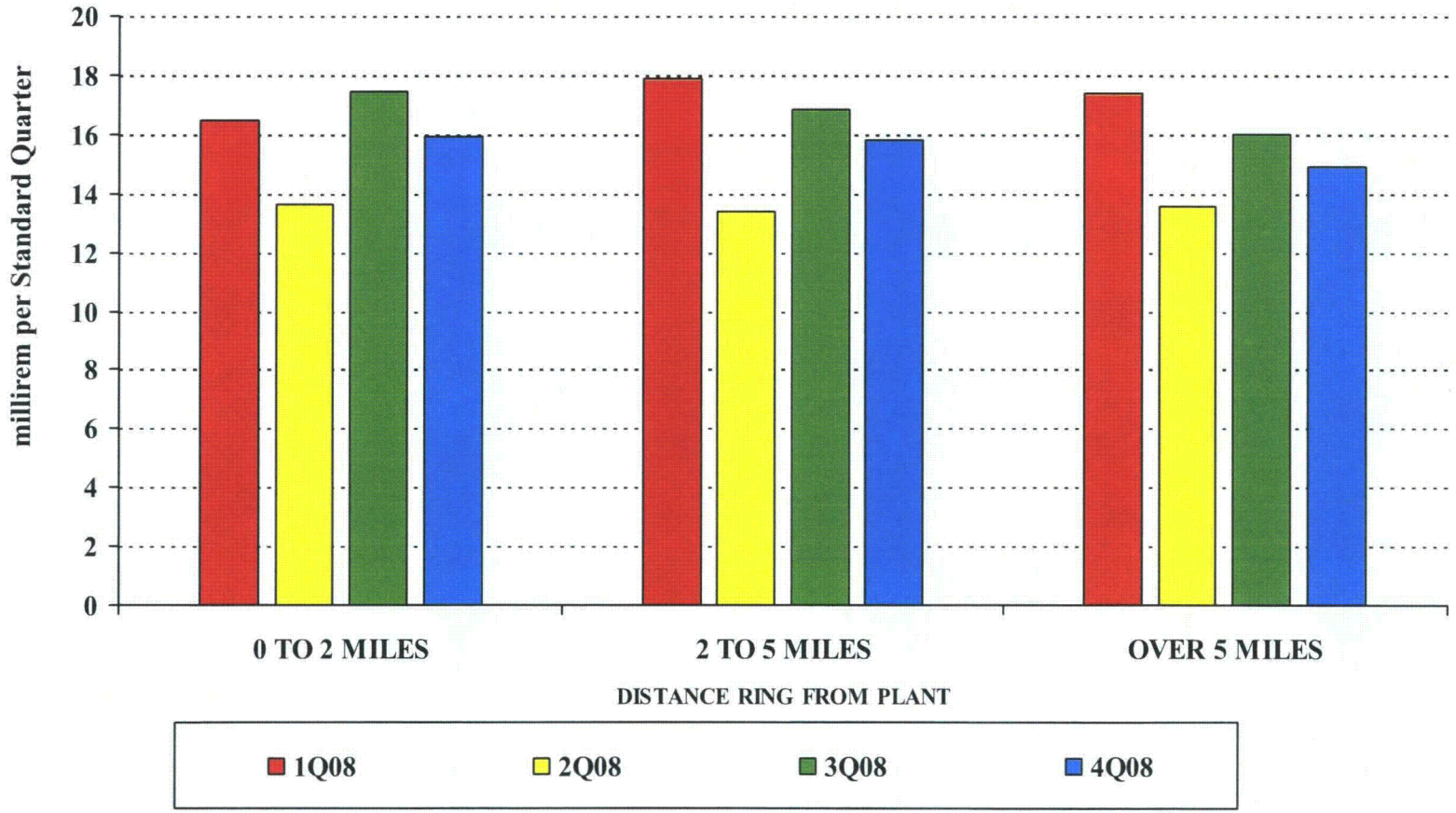
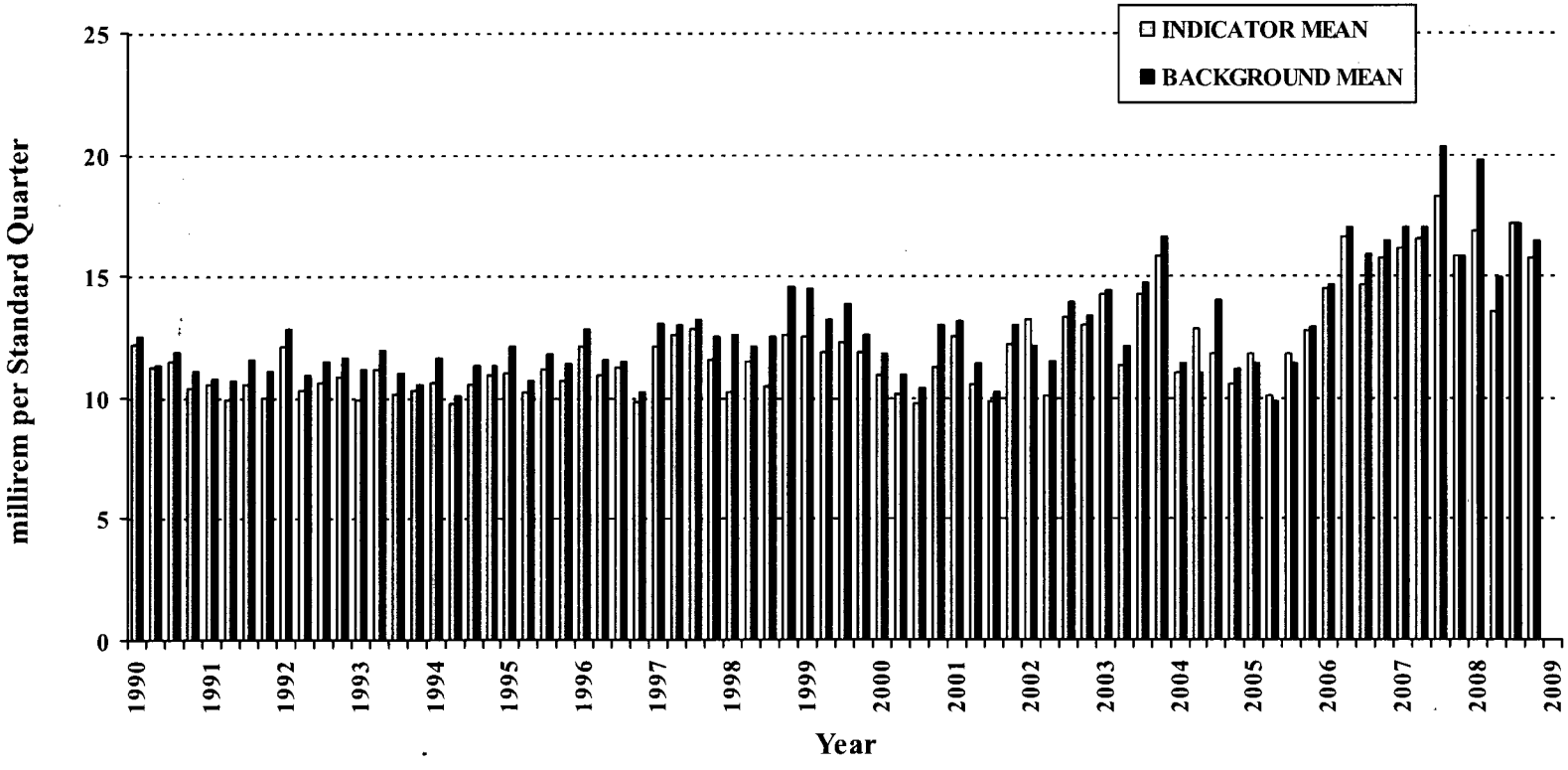


FIGURE C-7
MEAN QUARTERLY TLD GAMMA DOSE
OYSTER CREEK GENERATING STATION, 1990 – 2008*



* Harshaw Model 110 TLDs were used during the first quarter of 2001. Panasonic Model 814 TLDs were used in the second, third, and fourth quarters of 2001.

APPENDIX D

DATA TABLES
QC LABORATORY

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

TABLE D-I.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	24	QCA	QCB
04/14/08	< 185	< 185	< 180
10/06/08	< 134	< 137	< 159
MEAN	-	-	-

TABLE D-I.2 CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

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
24	04/14/08	< 4	< 4	< 9	< 4	< 8	< 4	< 7	< 3	< 3	< 29	< 10
	10/06/08	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 1	< 1	< 16	< 4
QCA	04/14/08	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 3	< 3	< 24	< 7
	10/06/08	< 1	< 1	< 2	< 1	< 2	< 1	< 2	< 1	< 1	< 13	< 4
QCB	04/14/08	< 2	< 1	< 7	< 2	< 4	< 7	< 3	< 4	< 4	< 12	< 2
	10/06/08	< 2	< 1	< 3	< 2	< 4	< 4	< 2	< 3	< 2	< 9	< 2

TABLE D-II.1 CONCENTRATIONS OF TRITIUM IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

COLLECTION PERIOD	1	QCA	QCB
01/08/08 - 03/11/08	< 168	< 168	< 172
04/08/08 - 06/25/08	< 176	< 170	< 149
07/09/08 - 09/12/08	< 138	< 142	< 162
10/10/08 - 12/10/08	< 181	< 175	< 138

TABLE D-II.2 **CONCENTRATIONS OF GAMMA EMITTERS IN DRINKING WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

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
1	01/08/08 - 03/11/08	< 2	< 3	< 5	< 2	< 4	< 2	< 4	< 2	< 2	< 21	< 7
	04/08/08 - 06/25/08	< 2	< 2	< 4.5	< 2	< 4	< 2	< 4	< 2	< 2	< 20	< 5
	07/09/08 - 09/12/08	< 1	< 1	< 2.8	< 1	< 2	< 1	< 2	< 1	< 1	< 16	< 5
	10/10/08 - 12/10/08	< 3	< 3	< 4.5	< 2	< 4	< 3	< 4	< 2	< 2	< 24	< 4
QCA	01/08/08 - 03/11/08	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 2	< 2	< 25	< 8
	04/08/08 - 06/25/08	< 2	< 2	< 6	< 2	< 5	< 3	< 5	< 3	< 2	< 22	< 7
	07/09/08 - 09/12/08	< 1	< 2	< 4	< 1	< 3	< 2	< 3	< 1	< 1	< 20	< 6
	10/10/08 - 12/10/08	< 2	< 3	< 6	< 3	< 5	< 4	< 5	< 2	< 3	< 30	< 11
QCB	01/08/08 - 03/11/08	< 2	< 2	< 5	< 2	< 5	< 4	< 3	< 2	< 3	< 15	< 2
	04/08/08 - 06/25/08	< 2	< 2	< 6	< 3	< 4	< 3	< 3	< 3	< 3	< 34	< 7
	07/09/08 - 09/12/08	< 2	< 3	< 6	< 3	< 6	< 4	< 3	< 2	< 2	< 20	< 7
	10/10/08 - 12/10/08	< 4	< 3	< 5	< 2	< 5	< 6	< 4	< 2	< 4	< 24	< 3

TABLE D-III.1 CONCENTRATIONS OF GAMMA EMITTERS IN CLAM SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

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
24	04/14/08	2320 ± 489	< 31	< 34	< 76	< 46	< 69	< 31	< 31
QCA	04/14/08	2670 ± 561	< 37	< 39	< 93	< 35	< 86	< 30	< 32
QCB	04/14/08	1734 ± 218	< 8	< 6	< 12	< 10	< 17	< 11	< 7

TABLE D-IV.1 **CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/KG DRY ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Co-60	Cs-134	Cs-137	Ra-226	Th-228	Th-232
24	04/14/08	< 363	842 ± 376	< 28	< 35	< 30	< 30	< 29	< 642	132 ± 484	< 169
	10/06/08	< 490	617 ± 418	< 36	< 44	< 37	< 39	< 41	< 914	90 ± 68	< 195
	MEAN*	-	730 ± 318	-	-	-	-	-	-	111 ± 59	-
QCA	04/14/08	< 584	< 313	< 42	< 58	< 39	< 39	< 41	< 1160	193 ± 90	< 242
	10/06/08	< 507	799 ± 430	< 39	< 51	< 40	< 40	< 43	< 753	149 ± 55	168 ± 99
	MEAN*	-	799 ± 0	-	-	-	-	-	-	171 ± 62	168 ± 0
QCB	04/14/08	< 158	639 ± 262	< 8	< 16	< 9	< 16	< 10	< 363	< 977	NA
	10/06/08	< 151	507 ± 173	< 12	< 9	< 8	< 12	< 12	512 ± 154	< 926	NA
	MEAN*	-	573 ± 187	-	-	-	-	-	512 ± 0	-	-

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

TABLE D-V.1 CONCENTRATIONS OF STRONTIUM AND GAMMA EMITTERS IN VEGETATION SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

STC		COLLECTION PERIOD	Sr-89	Sr-90	K-40	I-131	Cs-134	Cs-137	Ba-140	La-140
36	CABBAGE	AUGUST	< 7	8 ± 1	2520 ± 273	< 38	< 14	< 15	< 409	< 103
	COLLARDS	AUGUST	< 7	24 ± 2	5060 ± 408	< 49	< 17	< 18	< 510	< 103
	MUSTARD GREENS	AUGUST	< 25	13 ± 1	5300 ± 426	< 50	< 16	< 17	< 476	< 100
		MEAN*	-	15 ± 17	5180 ± 339	-	-	-	-	-
	CABBAGE	SEPTEMBER	< 16	4 ± 2	1840 ± 122	< 59	< 6	< 6	< 88	< 22
		MEAN*	-	4 ± 0	1840 ± 0	-	-	-	-	-
QCA	COLLARDS	AUGUST	< 21	21 ± 1	5290 ± 450	< 42	< 16	< 17	< 481	< 123
	MUSTARD GREENS	AUGUST	< 15	13 ± 2	5170 ± 355	< 40	< 14	< 14	< 414	< 90
		MEAN*	-	17 ± 10	5230 ± 170	-	-	-	-	-
QCA	CABBAGE	SEPTEMBER	< 16	2 ± 1.3	2010 ± 138	< 51	< 4	< 5	< 73	< 18
		MEAN*	-	2 ± 0	2010 ± 0	-	-	-	-	-
QCB	CABBAGE	AUGUST	< 2	< 1	1960 ± 280	< 15	< 8	< 7	< 41	< 10
	COLLARDS	AUGUST	< 6	6 ± 2	4930 ± 420	< 15	< 12	< 9	< 59	< 8
	MUSTARD GREENS	AUGUST	< 5	< 2	4400 ± 400	< 17	< 16	< 11	< 53	< 11
		MEAN*	-	6 ± 0	3763 ± 3168	-	-	-	-	-
QCB	CABBAGE	SEPTEMBER	< 2	< 1	1770 ± 320	< 36	< 17	< 14	< 54	< 11
		MEAN*	-	-	1770 ± 0	-	-	-	-	-

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

APPENDIX E

ERRATA DATA

Corrections to the 2006 AREOR

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR THE OYSTER CREEK GENERATING STATION, 2006

Name of Facility: OYSTER CREEK GENERATING STATION **DOCKET NUMBER:** 50-219
Location of Facility: OCEAN COUNTY, NJ **REPORTING PERIOD:** 2006

MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPES OF ANALYSES PERFORMED	NUMBER OF ANALYSES 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
VEGETATION (PCI/KG WET)	I-131		60	68 (0/11) (<19/<155)	39 (0/9) (<20/<54)	84 (0/7) (<26/<155)	66 INDICATOR EAST OF RT 9 AND SOUTH OF OCGS DISCHG 0.4 MILES SE OF SITE	0
	CS-134		60	24 (0/11) (<7/<55)	12 (0/9) (<5/<23)	29 (0/7) (<9/<55)	66 INDICATOR EAST OF RT 9 AND SOUTH OF OCGS DISCHG 0.4 MILES SE OF SITE	0
	CS-137		80	28 (0/11) (<7/<63)	13 (0/9) (<5/<26)	33 (0/7) (<11/<63)	66 INDICATOR EAST OF RT 9 AND SOUTH OF OCGS DISCHG 0.4 MILES SE OF SITE	0
	BA-140		N/A	412 (0/11) (<49/<1040)	194 (0/9) (<46/<532)	516 (0/7) (<68/<1040)	66 INDICATOR EAST OF RT 9 AND SOUTH OF OCGS DISCHG 0.4 MILES SE OF SITE	0
	LA-140		N/A	130 (0/11) (<14/<404)	57 (0/9) (<13/<182)	166 (0/7) (<22/<404)	66 INDICATOR EAST OF RT 9 AND SOUTH OF OCGS DISCHG 0.4 MILES SE OF SITE	0
DIRECT RADIATION (MILLI-ROENTGEN/STD.QTR.)	TLD-QUARTERLY	184	N/A	15.2 (176/176) (9.3/22.5)	15.9 (8/8) (13.8/18.0)	21.4 (4/4) (20.7/22.5)	55 INDICATOR SOUTHERN AREA STORES SECURITY FENCE 0.3 MILES W	0

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

TABLE C-VIII.1 QUARTERLY TLD RESULTS FOR OYSTER CREEK GENERATING STATION, 2006

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

STATION CODE	MEAN ± 2 S.D.	FIRST	SECOND	THIRD	FOURTH
1	16.0 ± 2.0	15.0 ± 0.9	17.4 ± 2.7	15.9 ± 0.7	15.6 ± 0.9
3	14.3 ± 1.3	13.8 ± 1.2	15.3 ± 0.9	14.1 ± 0.9	14.1 ± 1.2
4	14.0 ± 1.3	(2)	(2)	13.5 ± 0.8	14.4 ± 0.9
5	20.1 ± 2.5	(2)	(2)	19.2 ± 0.4	21.0 ± 1.2
6	15.3 ± 1.8	15.3 ± 0.6	16.2 ± 1.5	14.4 ± 0.9	(1)
8	15.2 ± 3.0	15.3 ± 0.9	17.1 ± 0.6	13.5 ± 1.2	15.0 ± 1.8
9	13.9 ± 1.2	13.2 ± 1.2	14.4 ± 1.2	14.4 ± 0.3	13.5 ± 0.9
C	15.2 ± 1.9	13.8 ± 0.9	15.9 ± 1.5	15.3 ± 1.3	15.6 ± 0.6
11	13.9 ± 4.1	13.8 ± 0.9	15.9 ± 0.6	11.1 ± 9.8	14.7 ± 0.9
14	16.7 ± 2.3	15.3 ± 1.2	18.0 ± 1.2	16.5 ± 1.2	17.1 ± 1.2
22	14.8 ± 2.1	13.5 ± 1.5	15.9 ± 0.9	14.4 ± 1.0	15.3 ± 1.5
46	14.3 ± 1.3	(2)	(2)	13.8 ± 0.6	14.7 ± 1.5
47	15.5 ± 1.3	(2)	(2)	15.0 ± 0.7	15.9 ± 0.9
48	16.7 ± 2.1	(2)	(2)	17.4 ± 6.2	15.9 ± 0.9
51	17.0 ± 1.0	16.8 ± 2.1	17.7 ± 1.5	16.5 ± 2.3	16.8 ± 1.5
52	18.2 ± 1.7	17.7 ± 1.2	19.5 ± 0.9	17.7 ± 1.6	18.0 ± 0.6
53	17.4 ± 0.8	17.1 ± 1.5	18.0 ± 1.5	17.4 ± 1.7	17.1 ± 0.9
54	13.6 ± 5.8	14.1 ± 0.9	15.6 ± 0.9	9.3 ± 9.1	15.3 ± 1.5
55	21.4 ± 1.6	21.0 ± 1.5	22.5 ± 2.4	20.7 ± 1.2	21.3 ± 1.8
56	19.2 ± 2.0	18.0 ± 2.7	20.4 ± 2.1	19.2 ± 1.3	19.2 ± 0.9
57	14.9 ± 6.6	15.0 ± 0.3	17.7 ± 1.2	10.2 ± 9.2	16.5 ± 1.5
58	15.5 ± 2.3	14.1 ± 0.9	16.8 ± 2.1	15.9 ± 0.8	15.0 ± 1.8
59	16.3 ± 2.6	14.7 ± 0.6	17.7 ± 0.9	15.9 ± 1.9	16.8 ± 0.9
61	14.6 ± 2.3	13.5 ± 0.3	15.6 ± 1.2	13.8 ± 1.1	15.6 ± 0.6
62	15.5 ± 2.3	14.1 ± 1.8	16.8 ± 1.2	15.0 ± 1.3	15.9 ± 1.2
63	14.3 ± 5.0	14.4 ± 0.9	15.9 ± 1.2	10.8 ± 9.0	16.2 ± 0.9
64	15.9 ± 1.3	15.9 ± 1.2	16.8 ± 1.5	15.3 ± 1.1	15.6 ± 0.9
65	15.5 ± 2.1	14.4 ± 2.7	15.9 ± 0.9	14.9 ± 0.7	16.8 ± 0.9
66	14.3 ± 2.3	13.5 ± 1.2	15.6 ± 2.7	13.2 ± 0.8	15.0 ± 0.9
68	13.4 ± 1.8	12.9 ± 0.9	14.1 ± 1.5	12.3 ± 1.7	14.1 ± 2.4
71	15.7 ± 1.3	15.0 ± 0.9	16.5 ± 1.2	15.3 ± 1.8	15.9 ± 1.5
72	15.5 ± 3.1	14.7 ± 1.2	17.4 ± 1.5	13.8 ± 0.2	15.9 ± 0.9
73	13.9 ± 2.0	12.9 ± 0.9	15.0 ± 0.9	13.2 ± 1.8	14.4 ± 3.0
74	14.4 ± 2.3	13.2 ± 0.9	15.9 ± 1.5	13.8 ± 0.4	14.7 ± 1.5
75	15.7 ± 1.8	14.7 ± 1.5	16.5 ± 1.2	(1)	15.9 ± 1.2
78	15.2 ± 2.3	14.1 ± 0.9	16.8 ± 1.8	15.0 ± 1.4	15.0 ± 1.5
79	15.8 ± 1.9	14.7 ± 1.2	16.8 ± 0.6	15.3 ± 1.4	16.2 ± 2.1
81	14.9 ± 2.7	13.2 ± 0.9	16.5 ± 1.5	15.0 ± 1.1	14.7 ± 1.5
82	15.5 ± 2.5	14.1 ± 0.9	17.1 ± 2.4	15.6 ± 1.4	15.3 ± 1.2
84	15.3 ± 2.0	13.8 ± 1.8	15.9 ± 0.9	15.9 ± 0.7	15.6 ± 0.6
85	14.4 ± 2.5	13.2 ± 0.9	16.2 ± 0.9	14.1 ± 0.4	14.1 ± 1.5
86	15.1 ± 3.2	12.9 ± 0.9	16.5 ± 0.3	15.0 ± 0.5	15.9 ± 1.2
88	13.4 ± 2.5	12.0 ± 1.5	14.4 ± 0.6	12.6 ± 1.6	14.4 ± 0.9
89	13.9 ± 2.4	12.9 ± 1.2	15.3 ± 0.9	12.9 ± 1.4	14.4 ± 1.5
90	13.9 ± 1.8	12.9 ± 0.6	15.0 ± 1.8	13.5 ± 0.9	14.1 ± 1.8
92	15.3 ± 2.1	14.7 ± 2.1	16.8 ± 1.2	14.4 ± 1.4	15.3 ± 0.6
98	14.3 ± 2.2	13.5 ± 1.2	15.9 ± 1.2	13.8 ± 0.5	14.1 ± 0.6
99	13.7 ± 3.0	12.3 ± 1.5	15.6 ± 0.9	12.6 ± 2.6	14.1 ± 0.6
T1	16.1 ± 2.3	15.3 ± 1.8	17.7 ± 0.9	15.9 ± 0.7	15.3 ± 0.9

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION
(2) SEE PROGRAM CHANGES SECTION FOR EXPLANATION

TABLE C-VIII.2 MEAN QUARTERLY TLD RESULTS FOR THE SITE BOUNDARY, INTERMEDIATE, SPECIAL INTEREST AND CONTROL LOCATIONS FOR OYSTER CREEK GENERATING STATION, 2006

RESULTS IN UNITS OF MILLI-ROENTGEN PER STD. QUARTER ± 2 STANDARD DEVIATIONS OF THE STATION DATA

COLLECTION PERIOD	SITE BOUNDARY ± 2 S.D.	INTERMEDIATE	SPECIAL INTEREST	CONTROL
JAN-MAR	15.6 ± 4.1	13.5 ± 1.6	14.0 ± 2.1	14.6 ± 2.1
APR-JUN	17.5 ± 3.8	16.0 ± 1.7	16.1 ± 2.1	17.0 ± 3.0
JUL-SEP	15.1 ± 6.2	14.8 ± 3.8	14.0 ± 2.3	15.9 ± 1.7
OCT-DEC	16.7 ± 3.3	15.4 ± 3.5	14.8 ± 1.3	16.4 ± 2.1

TABLE C-VIII.3 SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR OYSTER CREEK GENERATING STATION, 2006

RESULTS IN UNITS OF MILLI-ROENTGEN/STD. QUARTER

LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S.D.
SITE BOUNDARY	64	9.3	22.5	16.2 ± 4.8
INTERMEDIATE	51	12.3	21.0	14.9 ± 3.4
SPECIAL INTEREST	61	11.1	17.7	14.7 ± 2.6
CONTROL	8	13.8	18	15.9 ± 2.6

SITE BOUNDARY STATIONS - 1, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66

INTERMEDIATE STATIONS - 4, 47, 48, 5, 68, 73, 74, 75, 79, 82, 84, 85, 86, 98, 99

SPECIAL INTEREST STATIONS - 11, 22, 3, 46, 6, 71, 72, 78, 8, 81, 88, 89, 9, 90, 92, T1

CONTROL STATIONS - 14, C

FIGURE C-6
MEAN QUARTERLY TLD GAMMA DOSE
OYSTER CREEK GENERATING STATION, 2006

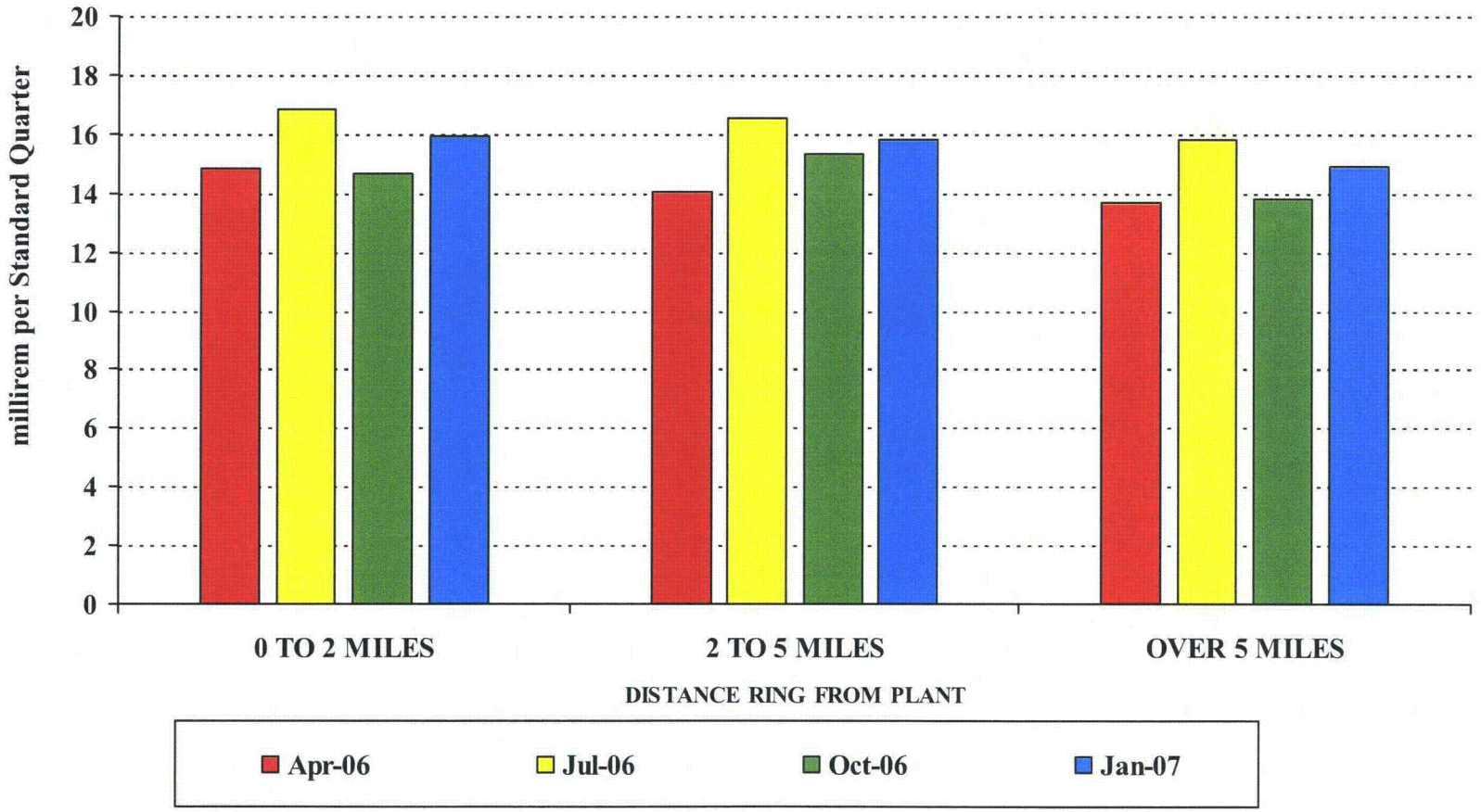
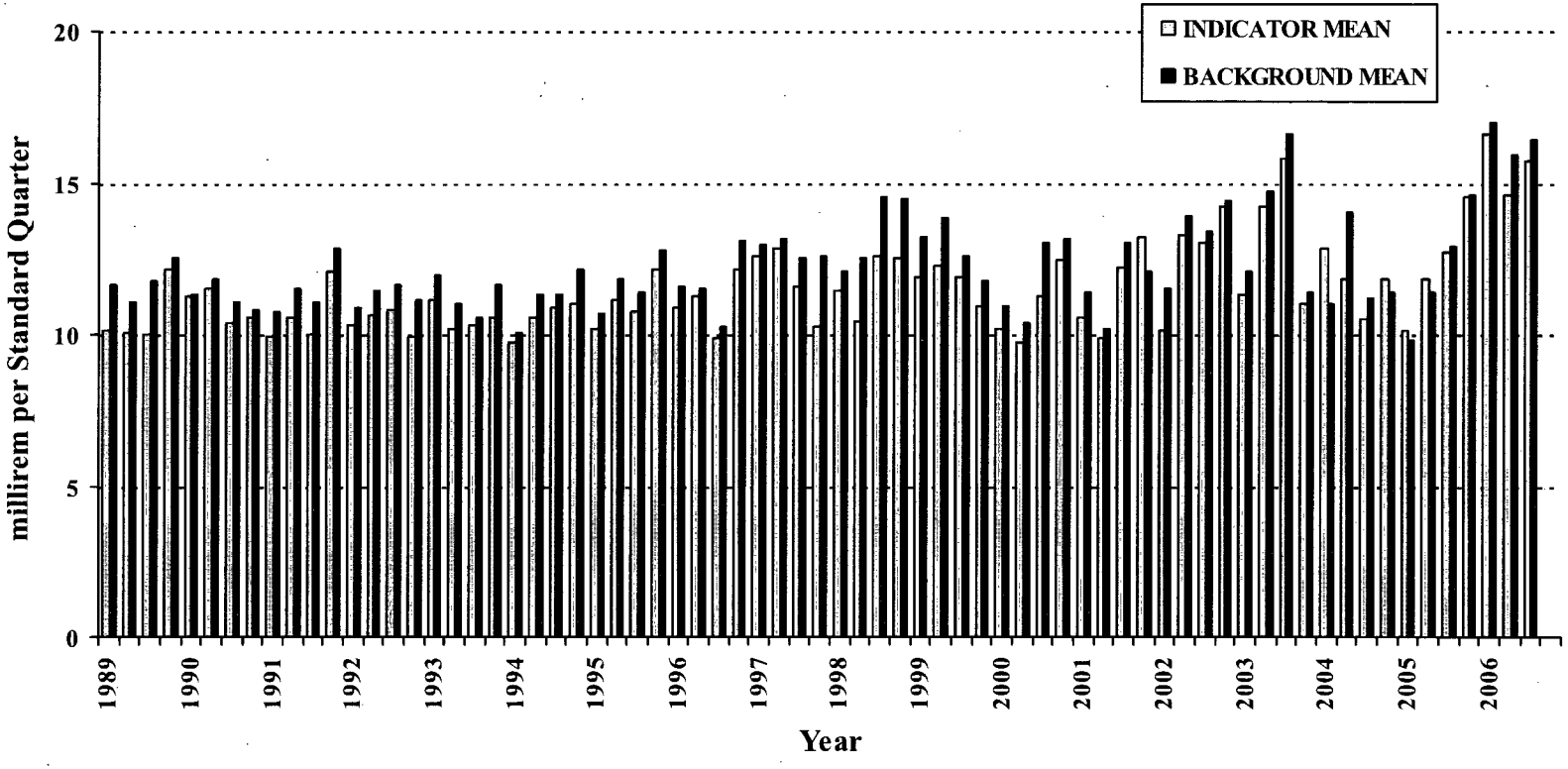


FIGURE C-7
MEAN QUARTERLY TLD GAMMA DOSE
OYSTER CREEK GENERATING STATION, 1989 – 2006*



* Harshaw Model 110 TLDs were used during the first quarter of 2001. Panasonic Model 814 TLDs were used in the second, third, and fourth quarters of 2001.

concentrations of strontium-89 and strontium-90 (Table C–VII.1, Appendix C). All strontium-89 results were less than the MDC. Strontium-90 was detected in eight of twenty samples. The values ranged from <2 to 124 pCi/kg wet, which is consistent with historical data.

Gamma Spectrometry

Vegetation samples from locations 35, 36, and 66 were analyzed for concentrations of gamma emitting nuclides (Table C–VII.1, Appendix C). Naturally occurring K-40 activity was found in all samples and ranged from 1,930 to 8,480 pCi/l. No Cs-137 activity was detected in any routine REMP samples. (See Section III.D.4.) All other nuclides were less than the MDC.

Preoperational vegetation sample analyses did not include strontium-89, strontium-90, or gamma spectroscopy.

In conclusion, terrestrial monitoring results for 2006 of vegetation samples, showed only naturally occurring radioactivity and radioactivity associated with fallout from past atmospheric nuclear weapons testing and Chernobyl. The radioactivity levels detected were consistent with levels measured in past years, and no radioactivity attributable to activities at OCGS was detected in any terrestrial samples. The terrestrial monitoring data show no adverse long-term trends in the terrestrial environment.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Panasonic Model 814 ($CaSO_4$) thermoluminescent dosimeters. Forty-nine TLD locations were monitored around the site. Results of TLD measurements are listed in Tables C–VIII.1 to C–VIII.3, Appendix C.

All TLD measurements were below 23 mR/standard quarter, with a range of 9.3 to 22.5 mR/standard quarter. 2006 gamma radiation data from the control location were plotted along with similar data from the Site, Intermediate Distance, and Outer Ring Locations (Figure C-6, Appendix C). Historical ambient gamma radiation data from the control location was plotted along with similar data from the Site, Intermediate Distance and

Outer Ring Locations (Figure C–7, Appendix C). In conclusion, the 2006 TLD results are proportionally consistent with preoperational and past operational measurements of direct radiation.

D. Land Use Survey

A Land Use Survey, conducted during 2006 around the Oyster Creek Generating Station (OCGS), was performed by Normandeau Associates, RMC Environmental Services Division for Exelon Nuclear. The purpose of the survey was, in part, to determine the location of animals producing milk for human consumption in each of the sixteen meteorological sectors out to a distance of 5 miles from the OCGS. None were observed. Another purpose of the survey was to determine the location of gardens greater than 500 square feet in size producing broad leaf vegetation, as well as the closest residence within each of the sixteen meteorological sectors. The distance and direction of all locations from the OCGS Reactor Building were positioned using Global Positioning System (GPS) technology. There were no changes required to the OCGS REMP, as a result of this survey. In conclusion, the results of this survey are summarized below.

Distance in Miles from the OCGS Reactor Building		
Sector	Residence (Miles)	Garden* (Miles)
1 N	1.1	1.3
2 NNE	0.6	1.8
3 NE	0.7	1.5
4 ENE	1.1	3.1
5 E	1.2	-
6 ESE	0.7	0.4
7 SE	0.6	0.4
8 SSE	0.9	1.3
9 S	1.6	2.1
10 SSW	1.7	4.3
11 SW	1.7	1.8
12 WSW	2.3	-
13 W	-	-
14 WNW	-	-
15 NW	5.3	-
16 NNW	1.5	2.7

*Greater than 500 ft^2 in size producing broad leaf vegetation

Corrections to the 2007 AREOR

TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR THE OYSTER CREEK GENERATING STATION, 2007

Name of Facility: OYSTER CREEK GENERATING STATION **DOCKET NUMBER:** 50-219
Location of Facility: OCEAN COUNTY NJ **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(M) (F) RANGE	CONTROL LOCATION MEAN(M) (F) RANGE	LOCATION WITH HIGHEST ANNUAL MEAN(M) MEAN(M) (F) RANGE	STATION # NAME DISTANCE AND DIRECTION	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
VEGETATION (PCI/KG WET)	LA-140		NA	<LLD	<LLD	-		0
DIRECT RADIATION (MILLI-ROENTGEN/STD.QTR.)	TLD-QUARTERLY	195	NA	16.6 (187/187) (12.6/24.0)	17.5 (8/8) (14.7/21.6)	22.0 (4/4) (21.0/23.1)	55 INDICATOR SOUTHERN AREA STORES SECURITY FENCE 0.3 MILES W	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 C-VIII.1 QUARTERLY TLD RESULTS FOR OYSTER CREEK GENERATING STATION, 2007

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

STATION CODE	MEAN ± 2 S.D.	FIRST	SECOND	THIRD	FOURTH
1	16.6 ± 2.5	16.2 ± 1.2	17.7 ± 3.0	17.4 ± 1.5	15.0 ± 1.2
3	15.5 ± 2.7	15.9 ± 0.9	15.3 ± 1.8	17.1 ± 4.2	13.8 ± 1.5
4	15.7 ± 3.3	15.3 ± 0.9	15.3 ± 0.3	18.0 ± 3.0	14.1 ± 1.2
5	21.4 ± 4.0	20.7 ± 2.1	21.6 ± 3.0	24.0 ± 0.9	19.2 ± 2.1
6	15.8 ± 1.2	15.6 ± 2.4	15.3 ± 1.2	16.5 ± 2.1	(1)
8	15.7 ± 2.5	15.3 ± 1.5	15.6 ± 1.5	17.4 ± 1.5	14.4 ± 1.5
9	14.7 ± 0.8	14.7 ± 1.5	15.0 ± 1.2	15.0 ± 1.2	14.1 ± 1.5
C	16.4 ± 3.5	15.9 ± 1.8	16.2 ± 0.9	18.9 ± 1.5	14.7 ± 1.2
11	16.0 ± 2.1	15.6 ± 0.9	17.1 ± 3.0	16.5 ± 1.8	14.7 ± 1.5
14	18.5 ± 4.2	18.0 ± 2.4	17.7 ± 1.5	21.6 ± 1.5	16.8 ± 0.6
22	15.4 ± 2.8	15.3 ± 2.4	15.9 ± 0.6	16.8 ± 1.5	13.5 ± 0.6
46	14.8 ± 4.4	13.8 ± 0.9	15.0 ± 0.9	17.7 ± 1.8	12.6 ± 1.5
47	16.7 ± 3.2	15.6 ± 1.2	17.7 ± 1.8	18.3 ± 0.9	15.0 ± 0.6
48	17.3 ± 6.6	15.3 ± 2.1	16.5 ± 2.1	22.2 ± 14	15.3 ± 0.9
51	18.2 ± 2.5	17.7 ± 0.9	18.3 ± 1.2	19.8 ± 2.4	16.8 ± 1.8
52	19.3 ± 3.2	20.1 ± 0.9	19.2 ± 2.1	20.7 ± 1.5	17.1 ± 0.6
53	17.9 ± 2.0	17.7 ± 1.2	18.6 ± 3.0	18.6 ± 2.1	16.5 ± 1.2
54	15.8 ± 1.3	15.6 ± 1.5	16.5 ± 1.5	16.2 ± 1.5	15.0 ± 2.1
55	22.0 ± 1.8	22.2 ± 2.7	21.6 ± 1.2	23.1 ± 2.4	21.0 ± 1.5
56	20.3 ± 1.7	19.2 ± 2.4	20.4 ± 0.9	20.4 ± 1.5	21.3 ± 2.1
57	17.7 ± 1.6	17.4 ± 1.5	17.4 ± 1.8	18.9 ± 1.2	17.1 ± 1.2
58	16.8 ± 1.2	16.5 ± 1.2	16.5 ± 1.8	17.7 ± 1.2	16.5 ± 1.2
59	17.9 ± 2.0	17.1 ± 0.9	17.1 ± 1.5	19.2 ± 0.9	18.0 ± 2.7
61	16.3 ± 1.3	15.3 ± 1.5	16.5 ± 0.6	16.8 ± 1.2	16.5 ± 1.2
62	16.8 ± 0.8	16.8 ± 4.8	17.1 ± 1.5	17.1 ± 1.2	16.2 ± 0.9
63	17.2 ± 1.7	16.2 ± 1.5	18.0 ± 1.8	17.7 ± 1.8	16.8 ± 1.5
64	17.3 ± 2.9	16.5 ± 1.8	16.5 ± 2.4	19.5 ± 2.1	16.8 ± 2.7
65	17.3 ± 2.9	15.9 ± 2.4	16.5 ± 1.2	19.2 ± 4.2	17.4 ± 1.8
66	15.8 ± 1.6	14.7 ± 1.8	16.2 ± 1.2	16.5 ± 2.4	15.9 ± 2.4
68	15.5 ± 1.8	14.7 ± 0.9	15.3 ± 1.2	16.8 ± 1.8	15.3 ± 0.6
71	17.3 ± 2.8	15.6 ± 1.2	17.7 ± 2.1	18.9 ± 1.2	16.8 ± 0.9
72	16.4 ± 2.5	15.0 ± 0.6	16.2 ± 0.6	18.0 ± 1.2	16.2 ± 2.1
73	15.5 ± 1.7	14.4 ± 0.9	15.3 ± 1.2	16.5 ± 1.5	15.6 ± 1.2
74	15.6 ± 2.9	15.0 ± 1.8	14.4 ± 0.9	17.7 ± 1.8	15.3 ± 1.2
75	16.5 ± 2.9	15.6 ± 0.3	15.6 ± 0.9	18.6 ± 1.8	16.2 ± 0.6
78	16.5 ± 3.0	15.6 ± 0.9	15.3 ± 0.9	18.6 ± 2.1	16.5 ± 1.8
79	16.6 ± 2.4	15.6 ± 0.9	17.1 ± 6.6	18.0 ± 2.1	15.6 ± 2.1
81	16.4 ± 2.7	15.6 ± 1.2	15.3 ± 1.8	18.3 ± 1.2	16.2 ± 0.9
82	16.9 ± 2.8	15.9 ± 1.8	15.9 ± 0.9	18.9 ± 1.2	16.8 ± 0.9
84	17.0 ± 1.9	16.2 ± 4.5	16.5 ± 1.5	18.3 ± 1.8	16.8 ± 0.9
85	15.8 ± 2.3	15.3 ± 1.5	14.7 ± 1.8	17.4 ± 1.2	15.9 ± 0.9
86	16.2 ± 3.3	15.9 ± 1.5	15.3 ± 1.5	18.6 ± 1.5	15.0 ± 2.1
88	14.8 ± 4.0	13.8 ± 0.9	14.4 ± 1.5	17.7 ± 1.5	13.2 ± 1.8
89	14.7 ± 3.3	15.0 ± 0.9	14.1 ± 0.9	16.8 ± 1.8	12.9 ± 0.9
90	14.5 ± 2.8	14.1 ± 0.3	14.1 ± 1.5	16.5 ± 1.8	13.2 ± 1.2
92	16.4 ± 3.4	15.6 ± 0.3	16.8 ± 2.4	18.6 ± 1.5	14.7 ± 0.9
98	15.2 ± 3.0	14.7 ± 1.2	15.6 ± 1.5	17.1 ± 1.5	13.5 ± 1.2
99	15.3 ± 2.5	15.0 ± 1.5	15.6 ± 0.9	16.8 ± 0.9	13.8 ± 1.2
T1	17.1 ± 2.4	18.0 ± 0.6	17.4 ± 0.9	17.7 ± 1.2	15.3 ± 1.8

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-VIII.2 MEAN QUARTERLY TLD RESULTS FOR THE SITE BOUNDARY, INTERMEDIATE, SPECIAL INTEREST AND CONTROL LOCATIONS FOR OYSTER CREEK GENERATING STATION, 2007

RESULTS IN UNITS OF MILLI-ROENTGEN PER STD. QUARTER ± 2 STANDARD DEVIATIONS OF THE STATION DATA

COLLECTION PERIOD	SITE BOUNDARY ± 2 S.D.	INTERMEDIATE	SPECIAL INTEREST	CONTROL
JAN-MAR	17.2 ± 3.8	15.7 ± 3.0	15.3 ± 2.0	17.0 ± 3.0
APR-JUN	17.8 ± 3.1	16.2 ± 3.5	15.7 ± 2.2	17.0 ± 2.1
JUL-SEP	18.7 ± 3.6	18.5 ± 4.1	17.4 ± 2.0	20.3 ± 3.8
OCT-DEC	17.1 ± 3.5	15.6 ± 2.8	14.5 ± 2.8	15.8 ± 3.0

TABLE C-VIII.3 SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR OYSTER CREEK GENERATING STATION, 2008

RESULTS IN UNITS OF MILLI-ROENTGEN/STD. QUARTER

LOCATION	SAMPLES ANALYZED	PERIOD MINIMUM	PERIOD MAXIMUM	PERIOD MEAN ± 2 S.D.
SITE BOUNDARY	64	14.7	23.1	17.7 ± 3.7
INTERMEDIATE	60	13.5	24.0	16.5 ± 4.1
SPECIAL INTEREST	63	12.6	18.9	15.7 ± 3.0
CONTROL	8	14.7	21.6	17.5 ± 4.3

SITE BOUNDARY STATIONS - 1, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66

INTERMEDIATE STATIONS - 4, 47, 48, 5, 68, 73, 74, 75, 79, 82, 84, 85, 86, 98, 99

SPECIAL INTEREST STATIONS - 11, 22, 3, 46, 6, 71, 72, 78, 8, 81, 88, 89, 9, 90, 92, T1

CONTROL STATIONS - 14, C

FIGURE C-6
MEAN QUARTERLY TLD GAMMA DOSE
OYSTER CREEK GENERATING STATION, 2007

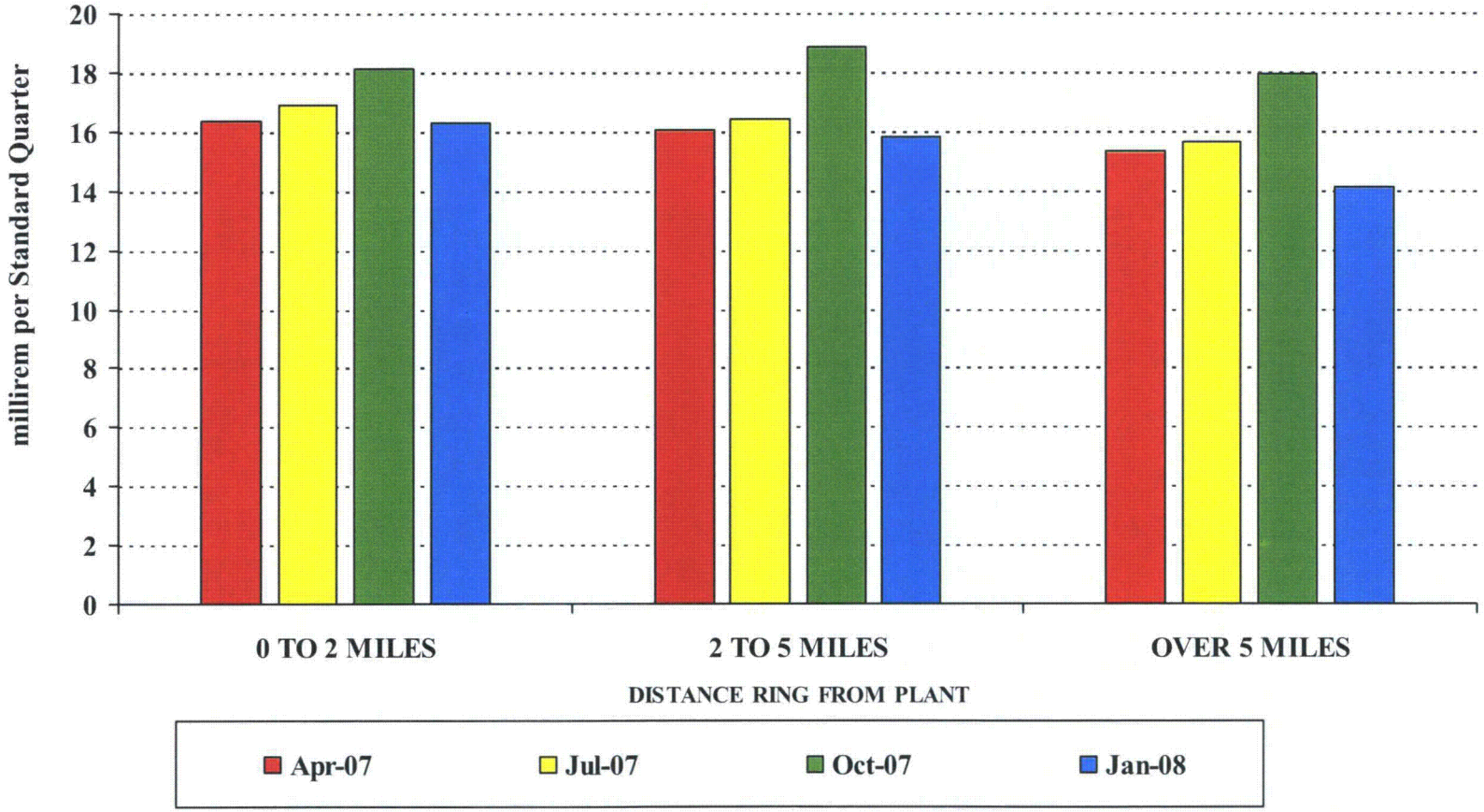
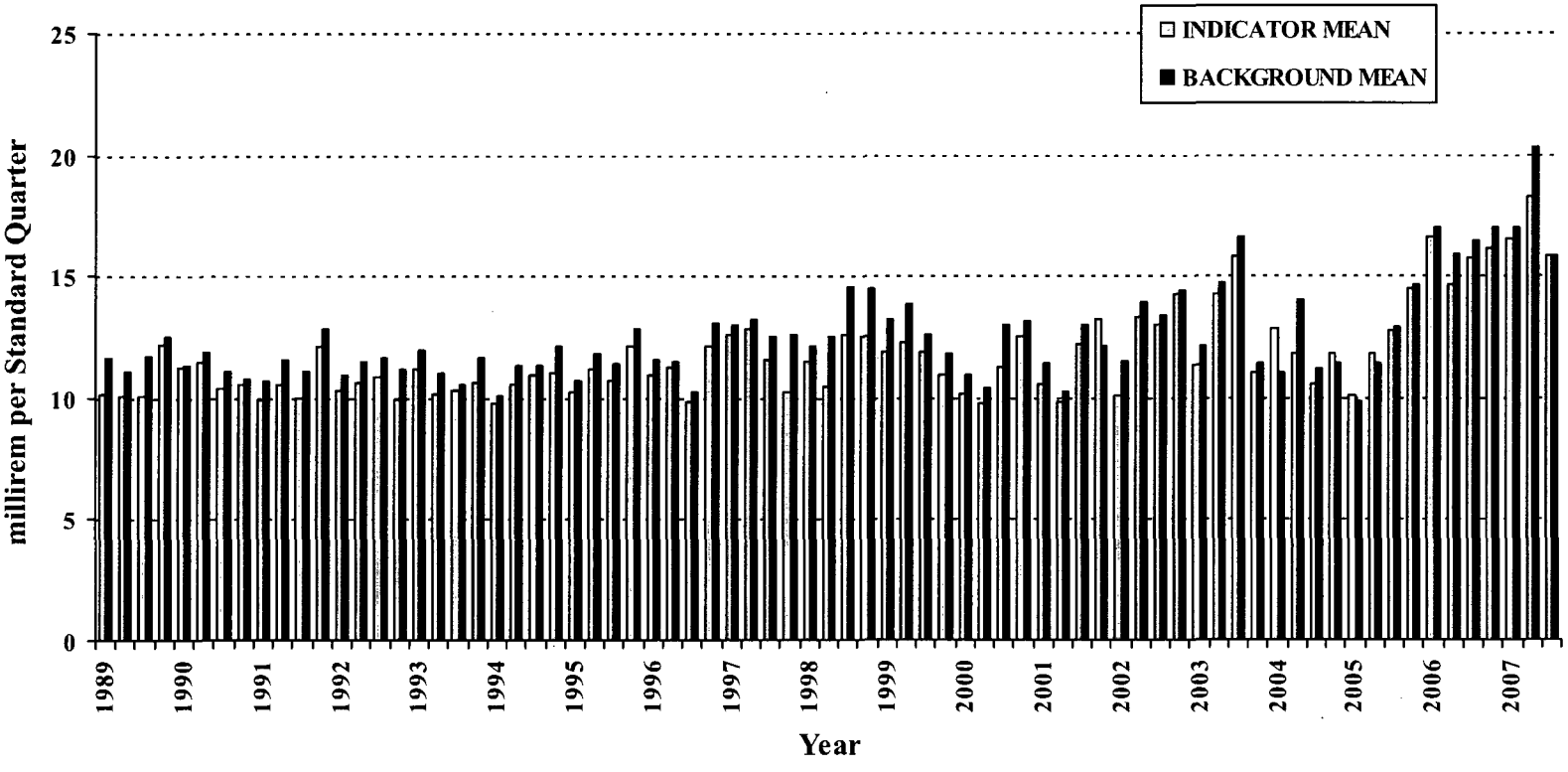


FIGURE C-7
MEAN QUARTERLY TLD GAMMA DOSE
OYSTER CREEK GENERATING STATION, 1989 – 2007*



* Harshaw Model 110 TLDs were used during the first quarter of 2001. Panasonic Model 814 TLDs were used in the second, third, and fourth quarters of 2001.

Strontium-89 and Strontium-90

Vegetation samples from all locations were analyzed for concentrations of strontium-89 and strontium-90 (Table C–VII.1, Appendix C). All strontium-89 results were less than the MDC. Strontium-90 was detected in 23 of 30 samples. The values ranged from 3 to 37 pCi/kg wet, which is consistent with historical data.

Gamma Spectrometry

Vegetation samples from locations 35, 36, and 66 were analyzed for concentrations of gamma emitting nuclides (Table C–VII.1, Appendix C). Naturally occurring K-40 activity was found in all samples and ranged from 1,690 to 4,890 pCi/l. All other nuclides were less than the MDC.

Preoperational vegetation sample analyses did not include strontium-89, strontium-90, or gamma spectroscopy.

In conclusion, terrestrial monitoring results for 2007 of vegetation samples, showed only naturally occurring radioactivity and radioactivity associated with fallout from past atmospheric nuclear weapons testing and Chernobyl. The radioactivity levels detected were consistent with levels measured in past years, and no radioactivity attributable to activities at OCGS was detected in any terrestrial samples. The terrestrial monitoring data show no adverse long-term trends in the terrestrial environment.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Panasonic Model 814 ($CaSO_4$) thermoluminescent dosimeters. Forty-nine TLD locations were monitored around the site. Results of non-background corrected TLD measurements are listed in Tables C–VIII.1 to C–VIII.3, Appendix C.

All non-background corrected TLD measurements were below 25 mR/standard quarter, with a range of 12.6 to 24.0 mR/standard quarter. Subtracting the appropriate background gives a range of 0 – 5.5 mR/standard quarter. No location exceeded the 40CFR190 limit of 25 mRem/year.

2007 gamma radiation data from the control location were plotted along with similar data from the Site, Intermediate Distance, and Outer Ring

Locations (Figure C-6, Appendix C). Historical ambient gamma radiation data from the control location was plotted along with similar data from the Site, Intermediate Distance and Outer Ring Locations (Figure C–7, Appendix C). A review of the TLD data from 2005 through 2007, showed three step-change biases attributable to processing, two of the biases were in the positive direction (adding dose). One of these was in 2006 and one was in 2007. These account for the slightly higher doses seen in Figure C-7.

In conclusion, the 2007 TLD results are consistent with preoperational and past operational measurements of direct radiation.

D. Land Use Survey

A Land Use Survey, conducted during 2007 around the Oyster Creek Generating Station (OCGS), was performed by Normandeau Associates, RMC Environmental Services Division for Exelon Nuclear. The purpose of the survey was, in part, to determine the location of animals producing milk for human consumption in each of the sixteen meteorological sectors out to a distance of 5 miles from the OCGS. None were observed. Another purpose of the survey was to determine the location of gardens greater than 500 square feet in size producing broad leaf vegetation, as well as the closest residence within each of the sixteen meteorological sectors. The distance and direction of all locations from the OCGS Reactor Building were positioned using Global Positioning System (GPS) technology. There were no changes required to the OCGS REMP, as a result of this survey. The results of this survey are summarized below.

APPENDIX F

INTER-LABORATORY COMPARISON PROGRAM

TABLE F-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2008
(PAGE 1 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
March 2008	E5847-396	Milk	Sr-89	pCi/L	83.5	95.8	0.87	A
			Sr-90	pCi/L	13.9	12.9	1.08	A
	E5848-396	Milk	I-131	pCi/L	57.3	60.0	0.96	A
			Ce-141	pCi/L	229	249	0.92	A
			Cr-51	pCi/L	336	359	0.94	A
			Cs-134	pCi/L	106	125	0.85	A
			Cs-137	pCi/L	141	146	0.97	A
			Co-58	pCi/L	71.8	70.8	1.01	A
			Mn-54	pCi/L	98.1	94.2	1.04	A
			Fe-59	pCi/L	102	102	1.00	A
			Zn-65	pCi/L	135	137	0.99	A
			Co-60	pCi/L	230	236	0.97	A
	E5850A-396	AP	Ce-141	pCi	163	157	1.04	A
			Cr-51	pCi	233	227	1.03	A
			Cs-134	pCi	72.6	79.0	0.92	A
			Cs-137	pCi	98.3	92.0	1.07	A
			Co-58	pCi	46.7	44.7	1.04	A
			Mn-54	pCi	69.8	59.4	1.18	A
			Fe-59	pCi	72.2	64.5	1.12	A
			Zn-65	pCi	106	86.4	1.23	W
			Co-60	pCi	156	149	1.05	A
	E5849-396	Charcoal	I-131	pCi	65.5	60.1	1.09	A
June 2008	E5971-396	Milk	Sr-89	pCi/L	83.9	85.0	0.99	A
			Sr-90	pCi/L	14.4	15.8	0.91	A
	E5972-396	Milk	I-131	pCi/L	70.9	71.4	0.99	A
			Ce-141	pCi/L	157	174	0.90	A
			Cr-51	pCi/L	159	138	1.15	A
			Cs-134	pCi/L	69.7	76.7	0.91	A
			Cs-137	pCi/L	115	116	0.99	A
			Co-58	pCi/L	59.1	61.9	0.95	A
			Mn-54	pCi/L	139	135	1.03	A
			Fe-59	pCi/L	98.4	91.7	1.07	A
			Zn-65	pCi/L	129	127	1.02	A
			Co-60	pCi/L	101	104	0.97	A
	E5974-396	AP	Ce-141	pCi	206	207	1.00	A
			Cr-51	pCi	173	164	1.05	A
			Cs-134	pCi	95.9	91.0	1.05	A
			Cs-137	pCi	142.0	138.0	1.03	A
			Co-58	pCi	72.0	73.4	0.98	A
			Mn-54	pCi	180	160.0	1.13	A
			Fe-59	pCi	108.0	109.0	0.99	A
			Zn-65	pCi	159	150	1.06	A
			Co-60	pCi	129	124	1.04	A

TABLE F-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2008
(PAGE 2 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
June 2008	E5973-396	Charcoal	I-131	pCi	73.8	84.1	0.88	A
September 2008	E6284-396	Milk	Sr-89	pCi/L	76.2	73.9	1.03	A
			Sr-90	pCi/L	12.3	11.0	1.12	A
	E6285-396	Milk	I-131	pCi/L	65.7	67.9	0.97	A
			Ce-141	pCi/L	145	161	0.90	A
			Cr-51	pCi/L	406	421	0.96	A
			Cs-134	pCi/L	196	232	0.84	A
			Cs-137	pCi/L	147	162	0.91	A
			Co-58	pCi/L	167	179	0.93	A
			Mn-54	pCi/L	165	166	0.99	A
			Fe-59	pCi/L	161	144	1.12	A
			Zn-65	pCi/L	305	319	0.96	A
			Co-60	pCi/L	218	234	0.93	A
	E6287-396	AP	Ce-141	pCi	79.5	76.3	1.04	A
			Cr-51	pCi	208	199	1.05	A
			Cs-134	pCi	106	110	0.96	A
			Cs-137	pCi	79.3	76.7	1.03	A
			Co-58	pCi	87.7	84.4	1.04	A
			Mn-54	pCi	90.3	78.6	1.15	A
			Fe-59	pCi	81.7	68.3	1.20	A
			Zn-65	pCi	144	151	0.95	A
			Co-60	pCi	111	111	1.00	A
	E6286-396	Charcoal	I-131	pCi	93.2	90.0	1.04	A
December 2008	E6415-396	Milk	Sr-89	pCi/L	98.4	91.9	1.07	A
			Sr-90	pCi/L	18.0	12.6	1.43	N (1)
	E6416-396	Milk	I-131	pCi/L	69.2	79.9	0.87	A
			Ce-141	pCi/L	177	191	0.93	A
			Cr-51	pCi/L	231	246	0.94	A
			Cs-134	pCi/L	117	134	0.87	A
			Cs-137	pCi/L	119	120	0.99	A
			Co-58	pCi/L	104	104	1.00	A
			Mn-54	pCi/L	153	152	1.01	A
			Fe-59	pCi/L	99.6	100	1.00	A
			Zn-65	pCi/L	177	183	0.97	A
			Co-60	pCi/L	133	133	1.00	A
	E6418-396	AP	Ce-141	pCi	148	146	1.01	A
			Cr-51	pCi	202	187	1.08	A
			Cs-134	pCi	103	102	1.01	A
			Cs-137	pCi	95.4	91.2	1.05	A
			Co-58	pCi	81.4	79.2	1.03	A
			Mn-54	pCi	113	116.0	0.97	A
			Fe-59	pCi	76.5	76.4	1.00	A
			Zn-65	pCi	122	139	0.88	A
			Co-60	pCi	108	101	1.07	A

TABLE F-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2008
(PAGE 3 OF 3)

Month/Year	Identification Number	Matrix	Nuclide	Units	Reported Value (a)	Known Value (b)	Ratio (c) TBE/Analytics	Evaluation (d)
December 2008	E6417-396	Charcoal	I-131	pCi	65.8	74.1	0.89	A

(1) NCR 09-02 initiated to investigate the failure.

(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 F-2 **ERA ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM**
TELEDYNE BROWN ENGINEERING, 2008
(PAGE 1 OF 1)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Control Limits	Evaluation (c)
January 2008	Quik[tm] Response	Water	Sr-89	pCi/L	37.33	19.0	11.8 - 25.2	N (1)
			Sr-90	pCi/L	40.40	42.7	31.5 - 49.0	A
			Ba-133	pCi/L	87.8	90.5	76.2 - 99.6	A
			Cs-134	pCi/L	80.67	88.9	72.9 - 97.8	A
			Cs-137	pCi/L	222.33	231	208 - 256	A
			Co-60	pCi/L	98.9	101.0	90.9 - 113	A
			Zn-65	pCi/L	352	350	315 - 408	A
			Gr-A	pCi/L	13.0	12.7	6.02 - 18.7	A
			Gr-B	pCi/L	32.7	36.2	23.8 - 43.8	A
			H-3	pCi/L	11100	11300	9840 - 12400	A
January 2008	RAD 72	Water	Sr-89	pCi/L	69.0	65.3	53.0 - 73.4	A
			Sr-90	pCi/L	35.6	41.4	30.5 - 47.6	A
			Ba-133	pCi/L	25.9	25.7	20.0 - 29.5	A
			Cs-134	pCi/L	86.5	92.6	76.0 - 102	A
			Cs-137	pCi/L	155	158	142 - 176	A
			Co-60	pCi/L	16.0	14.4	11.4 - 18.7	A
			Zn-65	pCi/L	214	204	184 - 240	A
			Gr-A	pCi/L	13.3	14.8	7.15 - 21.2	A
			Gr-B	pCi/L	21.2	22.5	13.7 - 30.6	A
			I-131	pCi/L	22.8	23.6	19.6 - 28.0	A
			H-3	pCi/L	3390	3540	3000 - 3910	A
April 2008	Rad 73	Water	Sr-89	pCi/L	65.47	60.4	48.6 - 68.2	A
			Sr-90	pCi/L	39.80	39.2	28.8 - 45.1	A
			Ba-133	pCi/L	59.63	58.3	48.3 - 64.3	A
			Cs-134	pCi/L	45.00	46.6	37.4 - 51.3	A
			Cs-137	pCi/L	97.97	102	91.8 - 115	A
			Co-60	pCi/L	75.47	76.6	68.9 - 86.7	A
			Zn-65	pCi/L	109	106	95.4 - 126	A
			Gr-A	pCi/L	41.03	50.8	26.5 - 63.7	A
			Gr-B	pCi/L	50.20	51.4	35.0 - 58.4	A
			I-131	pCi/L	26.67	28.7	23.9 - 33.6	A
			H-3	pCi/L	11633	12000	10400 - 13200	A

(1) Could find no cause for Sr-89 failure. Sample sent to outside lab for verification, but the outside laboratory was unable to confirm our numbers or ERA numbers. Studies bracketing these results, RAD 71 and RAD 72, had acceptable Sr-89 results. NCR 08-03

(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 F-3 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2008
(PAGE 1 OF 2)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
January 2008	07-MaW18	Water	Cs-134	Bq/L	-0.26		(1)	A
			Cs-137	Bq/L	0.029		(1)	A
			Co-57	Bq/L	21	22.8	16.0 - 29.6	A
			Co-60	Bq/L	8.2	8.40	5.88 - 10.92	A
			H-3	Bq/L	473	472	330 - 614	A
			Mn-54	Bq/L	12	12.1	8.5 - 15.7	A
			Sr-90	Bq/L	10.70	11.4	7.98- 14.82	A
			Zn-65	Bq/L	15.6	16.3	11.4 - 21.2	A
	07-GrW18	Water	Gr-A	Bq/L	1.4	1.399	>0.0 - 2.798	A
			Gr-B	Bq/L	3.06	2.43	1.22 - 3.65	A
	07-MaS18	Soil	Cs-134	Bq/kg	790	854.0	598 - 1110	A
			Cs-137	Bq/kg	568	545	382 - 709	A
			Co-57	Bq/kg	424	421	295 - 547	A
			Co-60	Bq/kg	2.307	2.9	(2)	A
			Mn-54	Bq/kg	611	570	399 - 741	A
			K-40	Bq/kg	6.09	571	400 - 742	A
			Sr-90	Bq/kg	454	493.0	345 - 641	A
			Zn-65	Bq/kg	0.162		(1)	A
	07-RdF18	AP	Cs-134	Bq/sample	2.73	2.5200	1.76 - 3.28	A
			Cs-137	Bq/sample	2.88	2.7	1.89 - 3.51	A
			Co-57	Bq/sample	3.493	3.55	2.49 - 4.62	A
			Co-60	Bq/sample	1.357	1.31	0.92 - 1.70	A
			Mn-54	Bq/sample	0.006		(1)	A
			Sr-90	Bq/sample	1.61	1.548	1.084 - 2.012	A
			Zn-65	Bq/sample	2.59	2.04	1.43 - 2.65	A
	07-GrF18	AP	Gr-A	Bq/sample	0.131	0.348	>0.0 - 0.696	A
			Gr-B	Bq/sample	0.261	0.286	0.143 - 0.429	A
January 2008	07-RdV18	Vegetation	Cs-134	Bq/sample	5.25	6.28	4.40 - 8.16	A
			Cs-137	Bq/sample	3.13	3.41	2.39 - 4.43	A
			Co-57	Bq/sample	6.837	6.89	4.82 - 8.96	A
			Co-60	Bq/sample	2.44	2.77	1.94 - 3.60	A
			Mn-54	Bq/sample	4.45	4.74	3.32 - 6.16	A
			K-40	Bq/sample	61.3		(1)	
			Sr-90	Bq/sample	1.33	1.273	0.891 - 1.655	A
			Zn-65	Bq/sample	0.085		(1)	A
August 2008	08-MaW19	Water	Cs-134	Bq/L	17.1	19.5	13.7 - 25.4	A
			Cs-137	Bq/L	21.4	23.6	16.5 - 30.7	A
			Co-57	Bq/L	-0.044		(1)	A
			Co-60	Bq/L	10.8	11.6	8.1 - 15.1	A
			H-3	Bq/L	334	341	239 - 443	A
			Mn-54	Bq/L	13.0	13.7	9.6 - 17.8	A
			Sr-90	Bq/L	6.55	6.45	4.52- 8.39	A
			Zn-65	Bq/L	16.5	17.1	12.0 - 22.2	A

TABLE F-3 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2008
(PAGE 2 OF 2)

Month/Year	Identification Number	Media	Nuclide	Units	Reported Value (a)	Known Value (b)	Acceptance Range	Evaluation (c)
August 2008	08-GrW19	Water	Gr-A	Bq/L	0.0612	<0.56	(3)	A
			Gr-B	Bq/L	0.222	<1.85	(3)	A
	08-MaS19	Soil	Cs-134	Bq/kg	546	581	407 - 755	A
			Cs-137	Bq/kg	2.52	2.8	(2)	A
			Co-57	Bq/kg	340	333	233 - 433	A
			Co-60	Bq/kg	157	145.0	102 - 189	A
			Mn-54	Bq/kg	460	415	291 - 540	A
			K-40	Bq/kg	650	571	399 - 741	A
			Sr-90	Bq/kg	1.40		(1)	A
			Zn-65	Bq/kg	-1.53		(1)	A
	08-RdF19	AP	Cs-134	Bq/sample	2.46	2.6300	1.84 - 3.42	A
			Cs-137	Bq/sample	0.0063		(1)	A
			Co-57	Bq/sample	1.36	1.50	1.05 - 1.95	A
			Co-60	Bq/sample	0.0143		(1)	A
			Mn-54	Bq/sample	2.70	2.64	1.85 - 3.43	A
			Sr-90	Bq/sample	1.42	1.12	0.78 - 1.46	W
			Zn-65	Bq/sample	0.975	0.94	0.66 - 1.22	A
	08-GrF19	AP	Gr-A	Bq/sample	-0.0037		(4)	A
			Gr-B	Bq/sample	0.540	0.525	0.263 - 0.788	A
	08-RdV19	Vegetation	Cs-134	Bq/sample	4.36	5.5	3.9 - 7.2	W
			Cs-137	Bq/sample	-0.03		(1)	A
			Co-57	Bq/sample	6.72	7.1	5.0 - 9.2	A
			Co-60	Bq/sample	4.04	4.70	3.3 - 6.1	A
			Mn-54	Bq/sample	5.22	5.8	4.1 - 7.5	A
			K-40	Bq/sample	64.4		(1)	
			Sr-90	Bq/sample	1.62	1.9	1.3 - 2.5	A
			Zn-65	Bq/sample	6.160	6.9	4.8 - 9.0	A

(1) Not evaluated by MAPEP.

(2) Reported a statistically zero result.

(3) Designed to test the Safe Drinking Water screening levels. Labs reporting values less than ref values were found to be acceptable.

(4) False positive test.

(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 F-4 **ERA (a) STATISTICAL SUMMARY PROFICIENCY TESTING PROGRAM ENVIRONMENTAL, INC., 2008**

Lab Code [b]	Date	Analysis	Concentration (pCi/L) Laboratory Result [c]	ERA Result [d]	Control Limits	Acceptance
STAP-1143	03/24/08	Co-60	650.72 ± 3.00	730.0	565.0 - 912.0	Pass
STAP-1143	03/24/08	Cs-134	467.50 ± 5.53	523.0	341.0 - 647.0	Pass
STAP-1143	03/24/08	Cs-137	1375.90 ± 25.41	1450.0	1090.0 - 1900.0	Pass
STAP-1143 [e]	03/24/08	Mn-54	0.00 ± 0.00	0.0	0.0 - 10.0	Pass
STAP-1143	03/24/08	Sr-90	157.60 ± 7.70	152.0	66.9 - 236.0	Pass
STAP-1143	03/24/08	Zn-65	889.90 ± 15.90	872.0	604.0 - 1210.0	Pass
STAP-1144	03/24/08	Gr. Beta	99.90 ± 3.09	92.2	56.80 - 135.0	Pass
STSO-1145	03/24/08	Ac-228	1269.02 ± 36.81	1180.0	757.0 - 1660.0	Pass
STSO-1145	03/24/08	Bi-212	1407.10 ± 56.64	1360.0	357.0 - 2030.0	Pass
STSO-1145	03/24/08	Co-60	5219.70 ± 90.30	5130.0	3730.0 - 6890.0	Pass
STSO-1145	03/24/08	Cs-134	5427.30 ± 102.94	5640.0	3630.0 - 6790.0	Pass
STSO-1145	03/24/08	Cs-137	6346.60 ± 201.80	6010.0	4600.0 - 7810.0	Pass
STSO-1145	03/24/08	K-40	11052.70 ± 181.80	11000.0	7980.0 - 14900.0	Pass
STSO-1145 [e]	03/24/08	Mn-54	0.00 ± 0.00	0.0	0.0 - 10.0	Pass
STSO-1145	03/24/08	Pb-212	1198.20 ± 96.58	1080.0	697.0 - 1520.0	Pass
STSO-1145	03/24/08	Pb-214	2253.30 ± 291.60	2020.0	1210.0 - 3010.0	Pass
STSO-1145	03/24/08	Sr-90	6407.00 ± 277.00	5360.0	1940.0 - 8750.0	Pass
STSO-1145	03/24/08	Th-234	2421.80 ± 321.00	2030.0	644.0 - 3870.0	Pass
STSO-1145	03/24/08	Zn-65	2936.20 ± 73.50	2660.0	2110.0 - 3570.0	Pass
STVE-1146	03/24/08	Co-60	912.41 ± 13.59	888.0	600.0 - 1280.0	Pass
STVE-1146	03/24/08	Cs-134	1547.70 ± 38.81	1540.0	882.0 - 2130.0	Pass
STVE-1146	03/24/08	Cs-137	1163.80 ± 20.62	1100.0	807.0 - 1530.0	Pass
STVE-1146	03/24/08	K-40	22186.00 ± 339.40	24600.0	17700.0 - 34800.0	Pass
STVE-1146 [e]	03/24/08	Mn-54	0.00 ± 0.00	0.0	0.0 - 10.0	Pass
STVE-1146	03/24/08	Sr-90	3825.90 ± 140.66	4130.0	2310.0 - 5480.0	Pass
STVE-1146	03/24/08	Zn-65	1676.80 ± 43.00	1430.0	1030.0 - 1960.0	Pass
STW-1147	03/24/08	Co-60	1430.00 ± 33.33	1420.0	1240.0 - 1680.0	Pass
STW-1147	03/24/08	Cs-134	730.18 ± 33.39	751.0	555.0 - 862.0	Pass
STW-1147	03/24/08	Cs-137	1947.80 ± 13.80	1990.0	1690.0 - 2380.0	Pass
STW-1147 [e]	03/24/08	Mn-54	0.00 ± 0.00	0.0	0.0 - 10.0	Pass
STW-1147	03/24/08	Sr-90	512.03 ± 43.37	512.0	325.0 - 684.0	Pass
STW-1147	03/24/08	Zn-65	708.90 ± 29.00	694.0	588.0 - 865.0	Pass
STW-1120	03/19/07	Zn-65	2009.00 ± 36.40	1910.0	1600.0 - 2410.0	Pass

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

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

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

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

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

TABLE F-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)[a] ENVIRONMENTAL, INC., 2008

		Concentration [b]				
Lab Code[c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STW-1137	01/01/08	Co-57	23.80 ± 0.60	22.80	16.00 - 29.60	Pass
STW-1137	01/01/08	Co-60	8.60 ± 0.50	8.40	5.88 - 10.92	Pass
STW-1137	01/01/08	Cs-134	-0.021 ± 0.10	0.00	-1.00 - 1.00	Pass
STW-1137	01/01/08	Cs-137	0.00 ± 0.10	0.00	-1.00 - 1.00	Pass
STW-1137	01/01/08	H-3	515.10 ± 12.70	472.00	330.00 - 614.00	Pass
STW-1137	01/01/08	Mn-54	12.90 ± 0.80	12.10	8.50 - 15.70	Pass
STW-1137	01/01/08	Sr-90	12.00 ± 1.50	11.40	7.98 - 14.82	Pass
STW-1137	01/01/08	Zn-65	16.90 ± 1.40	16.30	11.40 - 21.20	Pass
STW-1138	01/01/08	Gr. Beta	2.30 ± 0.15	2.43	1.22 - 3.65	Pass
STAP-1139	01/01/08	Co-57	3.90 ± 0.07	3.55	2.49 - 4.62	Pass
STAP-1139	01/01/08	Co-60	1.43 ± 0.07	1.31	0.92 - 1.70	Pass
STAP-1139	01/01/08	Cs-134	2.59 ± 0.16	2.52	1.76 - 3.28	Pass
STAP-1139	01/01/08	Cs-137	3.05 ± 0.12	2.70	1.89 - 3.51	Pass
STAP-1139	01/01/08	Mn-54	0.43 ± 0.58	0.00	0.00 - 1.00	Pass
STAP-1139	01/01/08	Sr-90	1.30 ± 0.27	1.55	1.08 - 2.01	Pass
STAP-1139	01/01/08	Zn-65	2.36 ± 0.18	2.04	1.43 - 2.65	Pass
STAP-1140	01/01/08	Gr. Beta	0.34 ± 0.04	0.29	0.14 - 0.43	Pass
STVE-1141	01/01/08	Co-57	8.30 ± 0.18	6.89	4.82 - 8.96	Pass
STVE-1141	01/01/08	Co-60	3.03 ± 0.13	2.77	1.94 - 3.60	Pass
STVE-1141	01/01/08	Cs-134	6.53 ± 0.29	6.28	4.40 - 8.16	Pass
STVE-1141	01/01/08	Cs-137	3.90 ± 0.19	3.41	2.39 - 4.43	Pass
STVE-1141	01/01/08	Mn-54	5.43 ± 0.21	4.74	3.32 - 6.16	Pass
STVE-1141	01/01/08	Zn-65	0.033 ± 0.10	0.00	0.00 - 1.00	Pass
STSO-1142	01/01/08	Co-57	483.00 ± 3.00	421.00	295.00 - 547.00	Pass
STSO-1142	01/01/08	Co-60	3.00 ± 0.80	2.90	0.00 - 5.00	Pass
STSO-1142	01/01/08	Cs-134	896.50 ± 7.40	854.00	598.00 - 1110.00	Pass
STSO-1142	01/01/08	Cs-137	624.40 ± 4.10	545.00	382.00 - 709.00	Pass
STSO-1142	01/01/08	Mn-54	667.20 ± 3.80	570.00	399.00 - 741.00	Pass
STSO-1142	01/01/08	Zn-65	0.093 ± 0.91	0.00	0.00 - 1.00	Pass
STSO-1158	08/01/08	Co-57	353.02 ± 2.01	333.00	233.00 - 433.00	Pass
STSO-1158	08/01/08	Co-60	151.99 ± 1.58	145.00	102.00 - 189.00	Pass
STSO-1158	08/01/08	Cs-134	499.72 ± 2.65	581.00	407.00 - 755.00	Pass
STSO-1158	08/01/08	Cs-137	2.54 ± 0.25	2.80	0.00 - 5.00	Pass
STSO-1158	08/01/08	K-40	643.94 ± 15.50	570.00	399.00 - 741.00	Pass
STSO-1158	08/01/08	Mn-54	452.14 ± 2.96	415.00	291.00 - 540.00	Pass
STSO-1158	08/01/08	Sr-90	1.95 ± 2.04	0.00	0.00 - 5.00	Pass
STSO-1158	08/01/08	Zn-65	0.10 ± 2.04	0.00	0.00 - 5.00	Pass

TABLE F-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)[a] ENVIRONMENTAL, INC., 2008

		Concentration [b]				
Lab Code[c]	Date	Analysis	Laboratory result	Known Activity	Control Limits [d]	Acceptance
STVE-1159	08/01/08	Co-57	8.52 ± 0.23	7.10	5.00 - 9.20	Pass
STVE-1159	08/01/08	Co-60	5.08 ± 0.19	4.70	3.30 - 6.10	Pass
STVE-1159	08/01/08	Cs-134	5.26 ± 0.18	5.50	3.90 - 7.20	Pass
STVE-1159	08/01/08	Cs-137	0.01 ± 0.14	0.00	0.00 - 1.00	Pass
STVE-1159	08/01/08	Mn-54	6.39 ± 0.28	5.80	4.10 - 7.50	Pass
STVE-1159	08/01/08	Zn-65	7.73 ± 0.45	6.90	4.80 - 9.00	Pass
STW-1162	08/01/08	Co-57	0.03 ± 0.16	0.00	0.00 - 5.00	Pass
STW-1162	08/01/08	Co-60	11.27 ± 0.23	11.60	8.10 - 15.10	Pass
STW-1162	08/01/08	Cs-134	17.93 ± 0.52	19.50	13.70 - 25.40	Pass
STW-1162	08/01/08	Cs-137	23.72 ± 0.43	23.60	16.50 - 30.70	Pass
STW-1162	08/01/08	H-3	385.15 ± 8.93	341.00	239.00 - 443.00	Pass
STW-1162	08/01/08	Mn-54	13.87 ± 0.37	13.70	9.60 - 17.80	Pass
STW-1162	08/01/08	Sr-90	6.49 ± 1.12	6.45	4.52 - 8.39	Pass
STW-1162	08/01/08	Zn-65	17.64 ± 0.61	17.10	12.00 - 22.20	Pass
STW-1163	08/01/08	Gr. Beta	0.12 ± 0.05	0.00	0.00 - 1.85	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 G

ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

Docket No: 50-219

OYSTER CREEK GENERATING STATION
UNIT 1

Annual Radiological
Groundwater Protection Program Report

1 January Through 31 December 2008

Prepared By

Teledyne Brown Engineering
Environmental Services

Exelon SM
Nuclear

Oyster Creek Generating Station
Forked River, NJ 08731

April 2009

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Appendices

I. Summary and Conclusions

This report on the Radiological Groundwater Protection Program (RGPP) conducted for the Oyster Creek Generating Station (OCGS) by Exelon covers the period 01 January 2008 through 31 December 2008.

In 2006, Exelon instituted a comprehensive program to evaluate the impact of station operations on groundwater and surface water in the vicinity of the Oyster Creek Generating Station. This evaluation involved numerous station personnel and contractor support personnel.

This is the second in a series of annual reports on the status of the Radiological Groundwater Protection Program (RGPP) conducted at the Oyster Creek Generating Station. This report covers groundwater and surface water samples collected from the environment, both on and off station property in 2008. One hundred and sixty-seven (167) analyses were performed on 81 samples from 35 locations.

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 100 times lower than the drinking water limit specified by the United States Environmental Protection Agency (USEPA) (200 pCi/liter versus 20,000 pCi/liter).

Tritium was not detected in groundwater or surface water samples at concentrations above the LLD of 200 pCi/liter. These results are consistent with historical background tritium levels in surface water and groundwater at the OCGS.

Strontium-90 was not detected in any groundwater or surface water sample during 2008.

In assessing all the data gathered for this report, it was concluded that the operation of the Oyster Creek Generating Station had no adverse radiological impact on the environment, and there are no known active releases into the groundwater or surface water at the Oyster Creek Generating Station.

II. Introduction

The Oyster Creek Generating Station (OCGS), consisting of one boiling water reactor owned and operated by Exelon, is located on the Atlantic Coastal Plain Physiographic Province in Ocean County, New Jersey, about 60 miles south of Newark, 9 miles south of Toms River, and 35 miles north of Atlantic City. It lies approximately 2 miles inland from Barnegat Bay. The site, covering approximately 781 acres, is situated partly in Lacey Township and, to a lesser extent, in Ocean Township. Access is provided by U.S. Route 9, passing through the site and separating a 637-acre eastern portion from the balance of the property west of the highway. The station is about ¼ mile west of the highway and 1¼ miles east of the Garden State Parkway. The site property extends about 2½ miles inland from the bay; the maximum width in the north-south direction is almost 1 mile. The site location is part of the New Jersey shore area with its relatively flat topography and extensive freshwater and saltwater marshlands. The South Branch of Forked River runs across the northern side of the site and Oyster Creek partly borders the southern side.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) and Environmental Inc. (Midwest Labs) on samples collected in 2008.

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

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 the Oyster Creek Generating Station as discussed below:

1. Exelon and its consultant identified locations as described in the Phase 1 study. Phase 1 studies were conducted by Connestoga Rovers and Associates (CRA) and the results and conclusions were made available to state and federal regulators as well as the public on an Exelon web site in station specific reports. http://www.exeloncorp.com/ourcompanies/powergen/nuclear/Tritium.htm

2. The Oyster Creek Generating Station report describes the local hydrogeologic regime. Periodically, the groundwater flow patterns are updated based on ongoing measurements.

3. The Oyster Creek Generating Station will continue to perform routine sampling and radiological analysis of water from selected locations.

4. The Oyster Creek Generating Station has implemented new procedures to identify and report new leaks, spills, or other detections with potential radiological significance in a timely manner.

5. The Oyster Creek Generating Station staff and independent consultants, including a hydrogeologist, assess analytical results on an ongoing basis to identify adverse trends.

C. Program Description

Samples for the OCGS site were collected for Exelon by on-site personnel and Normandeau Associates, Inc. This section describes the general collection methods used to obtain environmental samples for the OCGS RGPP in 2008. Sample locations can be found in Table A–1, Appendix A.

1. Sample Collection

Groundwater and Surface Water

Samples of water are collected, managed, transported and analyzed in accordance with approved procedures following EPA methods. 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 and 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 independent consultants, including a 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." The chemical properties of tritium are essentially those of ordinary hydrogen.

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

Tritium is produced naturally in the upper atmosphere when cosmic rays strike air molecules. Tritium is also produced during nuclear weapons explosions, as a by-product in reactors producing electricity, and in special production reactors, where the isotopes lithium-7 and/or boron-10 are activated to produce tritium. Also, tritium was released into the atmosphere from Chernobyl in 1986. Like normal water, tritiated water is colorless and odorless. Tritiated water behaves chemically and physically like non-tritiated water in the subsurface, and therefore tritiated water will travel at the same velocity as the average groundwater velocity.

Tritium has a half-life of approximately 12.3 years. It decays spontaneously to helium-3 (He-3). This radioactive decay releases a beta

particle (18.6 keV 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 to analyze the environmental samples for radioactivity for the Oyster Creek Generating Station RGPP in 2008.

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

1. Biennial concentrations of gamma emitters in groundwater and surface water.

2. Biennial concentrations of strontium-90 in groundwater and surface water.

3. Semi-annual concentrations of tritium in groundwater and surface water.

B. Data Interpretation

The radiological data collected prior to Oyster Creek Generating Station becoming operational, as well as background data from publicly available databases, were used as a baseline with which these operational data were compared. For the purpose of this report, Oyster Creek Generating Station was considered operational at initial criticality. Several factors were important in the interpretation of the data:

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

   The lower limit of detection (LLD) is 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 is intended as a before the fact

estimate of a system (including instrumentation, procedure and sample type) and not as an after the fact criterion for the presence of activity. All analyses were designed to achieve the required OCGS 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. Laboratory Measurements Uncertainty

The estimated uncertainty in measurement of tritium in environmental samples is frequently on the order of 50% of the measurement value.

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

Analytical uncertainties are reported at the 95% confidence level in this report for reporting consistency with the AREOR.

C. Background Analysis

A pre-operational radiological environmental monitoring program (pre-operational REMP) was conducted to establish background radioactivity levels prior to operation of the station. The environmental media sampled and analyzed during the pre-operational REMP were atmospheric radiation, fall-out, domestic water, surface water, marine life, and foodstuffs. The results of the monitoring were detailed in the report entitled, Pre-Operational Environmental Radiation Survey, Oyster Creek Nuclear Electric Generating Station, Jersey Central Power & Light Company, dated March 1968.

This report contains analytical results from samples collected from both surface water and groundwater.

Monthly surface water sampling began in 1966, and the samples were analyzed for tritium as well as other radioactivity. During the preoperational program, tritium was detected at an average concentration of 1.05E+3 pCi/liter, indicating that these preoperational results were from nuclear weapons testing and are radioactively decaying as predicted. At that time, counting instrumentation was not as sensitive as it is now, and the minimum detectable concentration was 1E+3 pCi/liter versus 2E+2 pCi/liter used today. Gamma isotopic and radio strontium analyses results average concentrations were all greater than radioisotope analyses results from operational data.

1. Background Concentrations of Tritium

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

   a. Tritium Production

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

      A major anthropogenic source of tritium and strontium-90 comes from the former atmospheric testing of thermonuclear weapons. Levels of tritium in precipitation increased significantly during the 1950s and early 1960s, and later with additional testing, resulting in the release of significant amounts of tritium to the atmosphere. The Canadian heavy water nuclear power reactors, other commercial power reactors, nuclear research and weapons production continue to influence tritium concentrations in the environment. Also, tritium was released into the atmosphere from Chernobyl in 1986.

b. Precipitation Data

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

c. Surface Water Data

Tritium concentrations are routinely measured in large surface water bodies, including Forked River and Barnegat Bay. New Jersey surface water data were typically less than 100 pCi/liter.

The USEPA RadNet surface water data typically has a reported 'Combined Standard Uncertainty' of 35 to 50 pCi/liter. According to USEPA, this corresponds to a ±70 to 100 pCi/liter 95% confidence bound on each given measurement. Therefore, the typical background data provided may be subject to measurement uncertainty of approximately ± 70 to 100 pCi/liter.

The radio-analytical laboratory is counting tritium results to an Exelon specified LLD of 200 pCi/liter. Typically, the lowest positive measurement will be reported within a range

of 40 – 240 pCi/liter or 140 ± 100 pCi/liter. Clearly, these sample results cannot be distinguished as different from background at this concentration.

IV. Results and Discussion

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

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

A. Groundwater Results

Samples were collected from on-site wells in May, September and October in accordance with the station radiological groundwater protection program. In addition to the wells sampled during 2007, a groundwater sample was also obtained from lysimeter CST-9, located near the Station's main condenser discharge, during the fall 2008 sampling event. As reported in CRA's 2006 Hydrogeologic Investigation Report and previous groundwater investigations at the Station, groundwater flow in the vicinity of the Torus Water Storage Tank and the Condensate Storage Tank is towards the intake and discharge structures. Groundwater accumulating in the vicinity of the intake and discharge structures is directed into the discharge canal via a system of gravel drains installed during Station construction. Lysimeter CST-9 is positioned to intercept this flow. Due to the limited amount of water available from this lysimeter, the sample was only analyzed for tritium. Analytical results and anomalies are discussed below.

Tritium

Samples from 31 locations were analyzed for tritium activity (Table B–I.1 Appendix B). Tritium was not detected at a level above the LLD of 200 pCI/liter.

Strontium

Strontium-90 was not detected in any location sampled in 2008.

Gamma Emitters

No gamma emitting nuclides, other than naturally occurring

potassium-40, were detected in any of the samples analyzed during 2008. (Table B–I.2, Appendix B).

B. Surface Water Results

Samples were collected from on-site locations in May, September and October in accordance with the station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from three locations were analyzed for tritium activity (Table B–II.1, Appendix B). Tritium was not detected at a level above the LLD of 200 pCI/liter.

Strontium

Strontium-90 was not detected in any location sampled in 2008.

Gamma Emitters

No gamma emitting nuclides, other than naturally occurring potassium-40, were detected in any of the samples analyzed. (Table B–II.2, Appendix B).

C. Drinking Water Well Survey

A drinking water well survey was conducted during the summer of 2006 by CRA (CRA 2006) around the Oyster Creek Generating Station. CRA reviewed the New Jersey Geological Survey Bureau of Water Allocation Database Search included in the report entitled "Remedial Action Work Plan – Non-Radiological GPU Nuclear, Inc.; Oyster Creek Nuclear Generating Station U.S. Route 9 Forked River New Jersey" (URS GWC, 2000). The database provides a list of permitted wells within a 5-mile radius of the station and includes private, public, and industrial water supply wells and monitoring wells. The database indicates no public water supply well permits exist within a 0.5-mile radius of the center of the station (i.e., Reactor Building).

In addition to the two domestic water supply wells located on the OCGS site, the database indicated that there were three individually owned locations permitted for a water supply well within a 0.5-mile radius of the station.

In addition to the water supply wells identified in the database, there are seven wells located on the property to the west of the station (i.e., combustion turbine facility). These seven wells supply water for fire protection (4 wells), process water for the combustion turbine system (2 wells) and one domestic water supply well.

D. Summary of Results – Inter-Laboratory Comparison Program

Inter-Laboratory Comparison Program results for TBE and Environmental Inc. (Midwest Labs) are presented in the 2008 Oyster Creek AREOR.

E. Leaks, Spills, and Releases

The OCGS records inadvertent releases of radioactive liquids in accordance with 10 CFR 50.75(g). As part of the hydrogeologic investigation associated with Exelon's fleet wide assessment in 2006, a third party environmental engineering firm was contracted to evaluate historic releases, if any, and determine if a potential pathway to the environment existed. Those releases that were determined to have potentially impacted groundwater were subsequently investigated as part of the fleet wide assessment. The hydrogeologic investigation determined that there were no radiological impacts to groundwater at the Oyster Creek Generating Station.

There were no inadvertent radiological leaks, spills, or releases during 2008, other than one actuation of the Isolation Condensers. The Isolation Condensers were actuated during a reactor scram on November 28, 2008, resulting in a ground-level release of approximately 4.57 microcuries of tritium. Based upon the results of historical groundwater monitoring at the OCGS, this release is not expected to have any impact on groundwater quality.

F. Trends

No trends have been identified.

G. Investigations

Conclusions from the Phase 1 report have been made available to state and federal regulators as well as the public on an Exelon web site: **http://www.exeloncorp.com/ourcompanies/powergen/nuclear/Tritium.htm**

H. Actions Taken

1. Compensatory Actions

   There have been no station events requiring compensatory actions at the Oyster Creek Generating Station.

2. Installation of Monitoring Wells

   No new wells were required to be installed.

3. Actions to Recover/Reverse Plumes

   There have been no station events requiring actions to recover/reverse any plumes.

V. References

1. Conestoga Rovers and Associates, Hydrogeologic Investigation Report, Fleetwide Assessment, Oyster Creek Generating Station, Forked River, New Jersey, Ref. No. 045136(18), September 2006

APPENDIX A

LOCATION DESIGNATION

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Oyster Creek Generating Station, 2008

Site	Site Type	Location
CST-9	Monitoring Well	Onsite
LW-3	Monitoring Well	Onsite
LW-4	Monitoring Well	Onsite
MW-15K-1A	Monitoring Well	Onsite
MW-16D	Monitoring Well	Onsite
MW-1A-2A	Monitoring Well	Onsite
MW-1I-1A	Monitoring Well	Onsite
MW-1I-2A	Monitoring Well	Onsite
NORTH DOMESTIC WELL	Monitoring Well	Onsite
SOUTH DOMESTIC WELL	Monitoring Well	Onsite
SW-1	Surface Water	Onsite
SW-2	Surface Water	Onsite
SW-3	Surface Water	Offsite
W-10	Monitoring Well	Onsite
W-12	Monitoring Well	Onsite
W-13	Monitoring Well	Onsite
W-14	Monitoring Well	Onsite
W-15	Monitoring Well	Onsite
W-16	Monitoring Well	Onsite
W-1A	Monitoring Well	Onsite
W-2	Monitoring Well	Onsite
W-20	Monitoring Well	Onsite
W-24	Monitoring Well	Onsite
W-2A	Monitoring Well	Onsite
W-2B	Monitoring Well	Onsite
W-3	Monitoring Well	Onsite
W-31	Monitoring Well	Onsite
W-4	Monitoring Well	Onsite
W-4A	Monitoring Well	Onsite
W-4B	Monitoring Well	Onsite
W-5	Monitoring Well	Onsite
W-6	Monitoring Well	Onsite
W-7	Monitoring Well	Onsite
W-9	Monitoring Well	Onsite

APPENDIX B

DATA TABLES

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	H-3	SR-90
CST-9	09/12/08	187 ± 107	
CST-9	10/01/08	< 150	
LW-3	05/07/08	< 174	
LW-3	05/07/08	< 175	
LW-3	10/01/08	< 153	< 1.7
LW-4	05/07/08	< 168	
LW-4	10/01/08	< 147	< 0.8
MW-15K-1A	05/06/08	< 188	
MW-15K-1A	09/10/08	< 164	< 1.7
MW-15K-1A	09/30/08	< 147	< 1.7
MW-16D	05/06/08	< 190	
MW-16D	10/01/08	< 151	< 1.4
MW-1A-2A	05/06/08	< 196	
MW-1A-2A	10/01/08	< 144	< 0.9
MW-1I-1A	05/06/08	< 188	
MW-1I-1A	09/10/08	< 163	< 1.0
MW-1I-1A	10/01/08	< 148	< 1.1
MW-1I-2A	09/10/08	< 167	< 0.9
MW-1I-2A	10/01/08	< 146	< 0.9
NORTH DOMESTIC WELL	05/05/08	< 190	
NORTH DOMESTIC WELL	09/30/08	< 141	< 1.2
SOUTH DOMESTIC WELL	05/05/08	< 185	
SOUTH DOMESTIC WELL	09/30/08	< 153	< 1.1
SOUTH DOMESTIC WELL	09/30/08	< 153	< 1.5
W-10	05/28/08	< 188	
W-10	10/01/08	< 150	< 1.6
W-12	05/06/08	< 174	
W-12	05/28/08	< 189	
W-12	05/28/08	< 190	
W-12	10/01/08	< 152	< 0.9
W-13	05/06/08	< 169	
W-13	09/30/08	< 153	< 1.3
W-14	05/07/08	< 170	
W-14	10/01/08	< 153	< 1.0
W-14	10/01/08	< 155	< 1.2
W-15	05/07/08	< 172	
W-15	10/01/08	< 143	< 0.9
W-16	05/06/08	< 173	
W-16	10/01/08	< 155	< 1.2
W-1A	05/05/08	< 188	
W-1A	10/01/08	< 150	< 1.0
W-2	05/06/08	< 184	
W-2	09/30/08	< 148	< 1.5
W-20	05/07/08	< 174	
W-20	10/01/08	< 154	< 1.0
W-24	09/30/08	< 150	< 1.4
W-2A	05/28/08	< 190	
W-2A	10/01/08	< 153	< 1.0
W-2B	05/05/08	< 169	

TABLE B-I.1 **CONCENTRATIONS OF TRITIUM AND STRONTIUM IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	H-3	SR-90
W-2B	10/01/08	< 152	< 1.0
W-3	05/06/08	< 187	
W-3	09/30/08	< 146	< 1.1
W-31	10/01/08	< 153	< 1.2
W-4	05/06/08	< 184	
W-4	09/30/08	< 147	< 1.2
W-4A	05/06/08	< 188	
W-4A	09/30/08	< 144	< 1.0
W-4A	09/30/08	< 146	< 1.0
W-4B	05/06/08	< 191	
W-4B	09/30/08	< 150	< 1.3
W-5	05/06/08	< 184	
W-5	09/10/08	< 160	< 1.0
W-5	09/30/08	< 148	< 1.7
W-5	09/30/08	< 152	< 0.8
W-6	05/06/08	< 185	
W-6	09/10/08	< 163	< 0.9
W-6	09/30/08	< 142	< 1.0
W-7	05/06/08	185 ± 113	
W-7	05/28/08	< 190	
W-7	05/28/08	< 187	
W-7	09/30/08	< 148	< 1.2
W-9	05/07/08	< 175	
W-9	10/01/08	< 143	< 1.1

TABLE B-I.2

CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
LW-3	10/01/08	< 23	< 43	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 12	< 2	< 2	< 21	< 7
LW-4	10/01/08	< 17	< 17	< 2	< 2	< 5	< 2	< 3	< 2	< 4	< 9	< 2	< 2	< 16	< 5
MW-15K-1A	09/10/08	< 45	< 38	< 5	< 5	< 10	< 4	< 9	< 6	< 9	< 18	< 4	< 6	< 32	< 13
MW-15K-1A	09/30/08	< 17	72 ± 26	< 2	< 2	< 4	< 2	< 4	< 2	< 3	< 10	< 2	< 2	< 16	< 6
MW-16D	10/01/08	< 37	< 27	< 4	< 4	< 8	< 3	< 7	< 4	< 7	< 21	< 3	< 4	< 36	< 11
MW-1A-2A	10/01/08	< 32	< 26	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 17	< 3	< 3	< 30	< 10
MW-1I-1A	09/10/08	< 49	< 43	< 5	< 5	< 10	< 4	< 9	< 6	< 9	< 24	< 4	< 5	< 41	< 11
MW-1I-1A	10/01/08	< 19	< 37	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 19	< 6
MW-1I-2A	09/10/08	< 36	< 82	< 4	< 5	< 10	< 4	< 10	< 4	< 9	< 13	< 4	< 5	< 30	< 11
MW-1I-2A	10/01/08	< 22	< 47	< 2	< 3	< 6	< 2	< 5	< 3	< 5	< 11	< 2	< 3	< 22	< 7
NORTH DOMESTIC WELL	09/30/08	< 27	< 49	< 3	< 3	< 7	< 3	< 6	< 3	< 5	< 18	< 3	< 3	< 30	< 10
SOUTH DOMESTIC WELL	09/30/08	< 36	< 74	< 3	< 4	< 10	< 3	< 7	< 4	< 7	< 23	< 3	< 3	< 38	< 13
SOUTH DOMESTIC WELL	09/30/08	< 22	< 41	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 14	< 2	< 2	< 24	< 7
W-10	10/01/08	< 18	< 16	< 2	< 2	< 4	< 2	< 3	< 2	< 3	< 10	< 2	< 2	< 18	< 6
W-12	10/01/08	< 38	< 30	< 4	< 4	< 10	< 5	< 8	< 4	< 7	< 22	< 3	< 4	< 35	< 14
W-13	09/30/08	< 42	< 29	< 4	< 4	< 10	< 4	< 6	< 5	< 8	< 24	< 4	< 4	< 45	< 14
W-14	10/01/08	< 29	< 24	< 3	< 3	< 7	< 3	< 6	< 3	< 6	< 17	< 3	< 3	< 28	< 10
W-14	10/01/08	< 35	< 31	< 3	< 4	< 10	< 4	< 7	< 4	< 7	< 21	< 3	< 4	< 37	< 12
W-15	10/01/08	< 38	< 86	< 4	< 5	< 10	< 3	< 9	< 5	< 8	< 23	< 4	< 4	< 45	< 15
W-16	10/01/08	< 44	< 30	< 4	< 4	< 10	< 4	< 8	< 5	< 8	< 26	< 4	< 4	< 44	< 12
W-1A	10/01/08	< 19	< 17	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 9	< 2	< 2	< 17	< 6
W-2	09/30/08	< 42	< 75	< 4	< 5	< 11	< 4	< 8	< 5	< 8	< 23	< 4	< 4	< 41	< 12
W-20	10/01/08	< 35	77 ± 47	< 3	< 4	< 10	< 4	< 7	< 4	< 8	< 22	< 3	< 3	< 39	< 13
W-24	09/30/08	< 34	< 69	< 3	< 4	< 10	< 4	< 7	< 4	< 7	< 23	< 3	< 4	< 39	< 10
W-2A	10/01/08	< 33	< 38	< 3	< 4	< 8	< 4	< 7	< 4	< 7	< 16	< 3	< 3	< 31	< 12
W-2B	10/01/08	< 39	< 82	< 4	< 4	< 10	< 4	< 9	< 5	< 8	< 21	< 3	< 4	< 38	< 13
W-3	09/30/08	< 33	< 56	< 3	< 3	< 9	< 3	< 7	< 4	< 6	< 18	< 3	< 3	< 31	< 12
W-31	10/01/08	< 30	< 29	< 3	< 4	< 6	< 3	< 5	< 3	< 5	< 19	< 3	< 3	< 31	< 10
W-4	09/30/08	< 36	< 36	< 4	< 4	< 9	< 4	< 8	< 4	< 8	< 21	< 3	< 4	< 38	< 11
W-4A	09/30/08	< 20	< 15	< 2	< 2	< 4	< 2	< 3	< 2	< 4	< 14	< 2	< 2	< 21	< 6
W-4A	09/30/08	< 39	< 40	< 3	< 4	< 8	< 3	< 8	< 5	< 8	< 22	< 3	< 4	< 38	< 13
W-4B	09/30/08	< 32	< 26	< 3	< 3	< 7	< 3	< 6	< 4	< 6	< 17	< 3	< 3	< 32	< 9
W-5	09/10/08	< 51	< 48	< 5	< 5	< 9	< 5	< 9	< 6	< 8	< 24	< 4	< 5	< 41	< 12
W-5	09/30/08	< 21	< 19	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 12	< 2	< 2	< 22	< 7
W-5	09/30/08	< 40	< 73	< 4	< 4	< 9	< 4	< 7	< 5	< 7	< 22	< 3	< 4	< 38	< 11
W-6	09/10/08	< 43	< 35	< 4	< 4	< 10	< 3	< 7	< 4	< 8	< 15	< 4	< 4	< 30	< 8
W-6	09/30/08	< 38	< 73	< 3	< 4	< 8	< 3	< 6	< 4	< 7	< 21	< 3	< 4	< 36	< 9
W-7	09/30/08	< 18	< 15	< 2	< 2	< 4	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 19	< 6
W-9	10/01/08	< 20	< 19	< 2	< 2	< 5	< 2	< 4	< 2	< 4	< 11	< 2	< 2	< 21	< 6

TABLE B-II.1 CONCENTRATIONS OF TRITIUM AND STRONTIUM IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

SITE	COLLECTION PERIOD	H-3	SR-90
SW-1	05/05/08	< 186	
SW-1	05/28/08	< 192	
SW-1	05/28/08	< 184	
SW-1	09/30/08	< 153	< 2.2
SW-2	05/05/08	< 174	
SW-2	10/01/08	< 151	< 0.9
SW-3	05/05/08	< 165	
SW-3	10/01/08	< 149	< 1.6

TABLE B-II.2 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES COLLECTED IN THE VICINITY OF OYSTER CREEK GENERATING STATION, 2008**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

STC	COLLECTION PERIOD	Be-7	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Nb-95	Zr-95	I-131	Cs-134	Cs-137	Ba-140	La-140
SW-1	09/30/08	< 39	280 ± 63	< 4	< 4	< 10	< 4	< 7	< 5	< 7	< 26	< 4	< 4	< 40	< 13
SW-2	10/01/08	< 37	291 ± 58	< 3	< 3	< 8	< 3	< 7	< 4	< 6	< 21	< 3	< 3	< 36	< 11
SW-3	10/01/08	< 38	< 30	< 3	< 4	< 9	< 3	< 6	< 4	< 8	< 21	< 3	< 4	< 40	< 11