2005

New Jersey Department of Environmental Protection
Bureau of Nuclear Engineering

ENVIRONMENTAL SURVEILLANCE AND MONITORING REPORT – For the Environs of New Jersey's Nuclear Power Generating Stations

Jon S. Corzine, Governor
www.state.nj.us/dep/rpp

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LIST OF ACRONYMS

ADAMS	Agency-wide Documents Access and Management System
BNE	Bureau of Nuclear Engineering
CREST	Continuous Radiological Environmental Surveillance Telemetry
ELCP	Environmental Laboratory Certification Program
ESMP	Environmental Surveillance Monitoring Program
HCNGS	Hope Creek Nuclear Generating Station
MWt	Megawatts (thermal)
NAREL	National Air and Radiation Environmental Laboratory
NEES	Nuclear Engineering Environmental Section
NRC	United States Nuclear Regulatory Commission
OCNGS	Oyster Creek Nuclear Generating Station
PIC	Pressurized Ion Chamber
PSEG	Public Service Electric and Gas
REMP	Radiological Environmental Monitoring Program
SNGS	Salem Nuclear Generating Station
SC&A	Sanford, Cohen and Associates
TLD	Thermoluminescent Dosimeter
USEPA	United States Environmental Protection Agency

LIST OF FIGURES

1.0 EXECUTIVE SUMMARY

For 2005, the New Jersey Department of Environmental Protection's Bureau of Nuclear Engineering (BNE) maintained and operated an independent Environmental Surveillance and Monitoring Program (ESMP) for the environs of the Oyster Creek and Salem/Hope Creek Nuclear Generating Stations. This activity was performed in accordance with the legislative authority of the New Jersey Radiation Accident Response (N.J.S.A. 26:2D-43.g.). Funding for these activities is provided through annual assessments against each owner of a nuclear facility located in New Jersey. By developing and implementing a comprehensive monitoring strategy, the BNE ensures that New Jersey citizens are aware of and if necessary, protected from exposure to radioactive effluent discharges from New Jersey's nuclear power plants during normal or accident operations.

The specific objectives of the ESMP are to monitor pathways for entry of radioactivity into the environment in order to identify potential exposures to the population from routine and accidental releases of radioactive effluent, and to provide a summary and interpretation of this information to members of the public and government agencies. The ESMP is divided into (1) the Radiological Environmental Monitoring Program (REMP); (2) the Thermoluminescent Dosimetry Program (TLD)[1] and (3) the Continuous Radiological Environmental Surveillance Telemetry (CREST). The REMP consists of samples collected by BNE staff of air and potable (drinking) water samples, while other media (aquatic sediment, milk, fish/shellfish, surface water and vegetation) are collected by each nuclear power plant owner and split with the BNE for analysis. The BNE's contract laboratories, Sanford, Cohen and Associates (SC&A), Eberline Services and Teledyne Brown Engineering analyzed all REMP samples. The BNE also operates an independent program to assess direct gamma radiation levels by deploying, collecting and analyzing TLDs. Results obtained through REMP and the TLD programs were compared to background readings, historical results, and to regulatory limits. Any readings above background are investigated by the BNE. Data tables containing results of all REMP and TLD analyses can be found in the appendices attached to this report. The BNE CREST program is a real-time remote network of radiation detectors that monitors the environment for unexpected releases of radiation from nuclear power plants. They are located as close as 0.3 miles to as far away as 8.4 miles from the nuclear power plant.

This report covers sampling conducted during the time period of January 1, 2005 through December 31, 2005. During 2005, the scope of the ESMP included the collection and analysis of sixty-six TLDs and the collection and analysis of 778 REMP samples. Overall, the data collected by the BNE's ESMP throughout 2005 indicate that residents living in the area around Oyster Creek and Salem/Hope Creek nuclear power plants have not received any radiation exposure from the operation of those plants.

The data collected by the BNE's ESMP throughout 2005 does not indicate any discharges to the environment above the United States Nuclear Regulatory Commission (NRC) regulatory

[1] A Thermoluminescent Dosimeter is a small device used to measure direct radiation by measuring the amount of visible light emitted from a crystal in the detector when exposed to ionizing radiation.

requirements. There also is no upward trend of radioactivity for those radionuclides of interest (cobalt, cesium, and iodine) reported within this document. There are, however, expected normal fluctuations that are seen historically in environmental radiation data.

Bi-weekly air particulate samples were analyzed for gross beta and gamma emitting radionuclides. The concentrations of radionuclides measured in air were not significantly different than ambient background concentrations. These air samples were analyzed quarterly for strontium-90 (Sr-90). The analyses indicated no measurable Sr-90 concentrations in air within 10 miles of either Oyster Creek or Salem/Hope Creek.

Surface water samples were taken monthly and potable (drinking) water samples were taken quarterly. All water samples were analyzed for gamma radionuclides and tritium[2]. No tritium, fission, or activation products (cobalt, cesium or iodine) were found in any sample analyzed.

Fish (striped bass, catfish, and bluefish) and shellfish (crabs) were sampled at locations surrounding the Salem/Hope Creek facility. Hardshell clams were sampled around the Oyster Creek Nuclear Generating Station. The nuclear power plant operator performed sample collection. Clams from Oyster Creek, fish from Salem/Hope Creek and hard-shell crabs from Salem/Hope Creek were split and analyzed by the BNE. These samples were collected semi-annually and analyzed for gamma radionuclides and Sr-90. No Sr-90, fission, or activation products were found in any sample.

Vegetation samples (cabbages, collards, kale, and lettuce) were taken during the harvest season and analyzed for gamma radionuclides. No fission or activation products (cobalt, cesium or iodine) were found in any sample analyzed.

Monthly milk samples were taken only in the vicinity of Salem/Hope Creek Nuclear Generating Station and from the BNE's control location outside of Trenton, New Jersey. Since there are no dairy farms within a 10-mile radius of Oyster Creek, no samples were taken. Samples were analyzed for gamma radionuclides and Sr-90. A trace amount of Sr-90, 2.18 picoCuries per Liter (pCi/L), was detected in a milk sample from a farm located 17 miles from Salem/Hope Creek. This trace amount of Sr-90 was an isolated reading, providing no indication of any trend in Sr-90 attributable to nuclear power plant operations. About 99.9% of strontium in the environment comes from fallout from atmospheric nuclear weapons testing conducted in the 1950's-1960's.

Direct gamma radiation measurements were performed quarterly using TLDs. CREST provides monthly average gamma radiation levels based on one minute average radiation readings. All TLD results for the surrounding areas of Oyster Creek and Salem/Hope Creek were less than 20 milliroentgens per standard quarter (mR/Std. Qtr.). These results are consistent with those observed in previous years and are considered normal background levels for those areas of New Jersey. Two TLDs were missing from the third quarter pickup in the vicinity of Oyster Creek. Losses were due to environmental damage and vandalism. Monthly CREST results in the environment around Oyster

[2] Tritium (H-3) is a radioactive isotope of the element hydrogen. It is produced naturally in the upper atmosphere when cosmic rays strike air molecules. Tritium is also a byproduct of the fission process in commercial nuclear reactors and a result of nuclear weapons testing.

Creek and Salem/Hope Creek Nuclear Generating Stations indicated average ambient radiation levels in the range of normal background (0.0050 to 0.0090 mR/hr).

2.0 UNDERSTANDING SOURCES OF IONIZING RADIATION AND PATHWAYS TO EXPOSURE

2.1 WHAT IS IONIZING RADIATION?

People are exposed to radiation every day from naturally occurring background and man-made sources (approximately 360 millirem[3] per year). Radiation is used beneficially to diagnose and treat disease, but it can also produce harmful effects, such as cancer. There are two basic types of radiation – ionizing and non-ionizing. Ionization occurs when a charged portion of a molecule (usually an electron) is given enough energy to break away from the atom. This disruption of the atom can cause biological harm, such as cancer. Types of ionizing radiation include x-rays, gamma rays, alpha and beta particles, neutrons and certain types of cosmic rays. Examples of non-ionizing radiation include electro-magnetic fields, radio frequency diathermy (physical therapy), power lines and microwaves.

People living in New Jersey receive an annual radiation dose of approximately 360 millirem. Of that dose, approximately 82%, or 300 millirem, is from natural background sources. The remaining 18%, or 60 millirem, is from man made sources. Radon accounts for the largest portion of natural radiation exposure. Radon is a gas that is found in soil, rock, well water, and building materials. Radon can enter buildings through the cracks in floors and walls. Other sources include carbon-14 and potassium-40, found naturally in food, radium, and drinking water. Building materials contain minerals and rock from the earth's crust that naturally emit radiation and contribute to the annual exposure rate. Annual dose also include radiation received from cosmic sources such as the sun. Individuals who reside in high altitude regions will receive a larger amount of radiation from cosmic sources since there is less atmosphere and ozone that shields humans from harmful radiation. The major contributors from man-made radiation sources include medical x-rays (58%) and nuclear medicine procedures (21%). Use of consumer products contributes approximately 16% to an individual's exposure from man-made radiation sources. Examples of such products include smoke detectors, lawn fertilizers, ceramics, and some gas lantern mantles.

A small portion of man-made radiation contribution is due to a variety of sources including the commercial nuclear power plant operation and fuel cycle (1%), fallout from previous years of weapons testing (2%) and occupational sources (2%).

[3] A millirem is a unit of dose, which takes into account the amount of energy absorbed by the body from the radionuclide and its effectiveness in causing harmful biological effects.

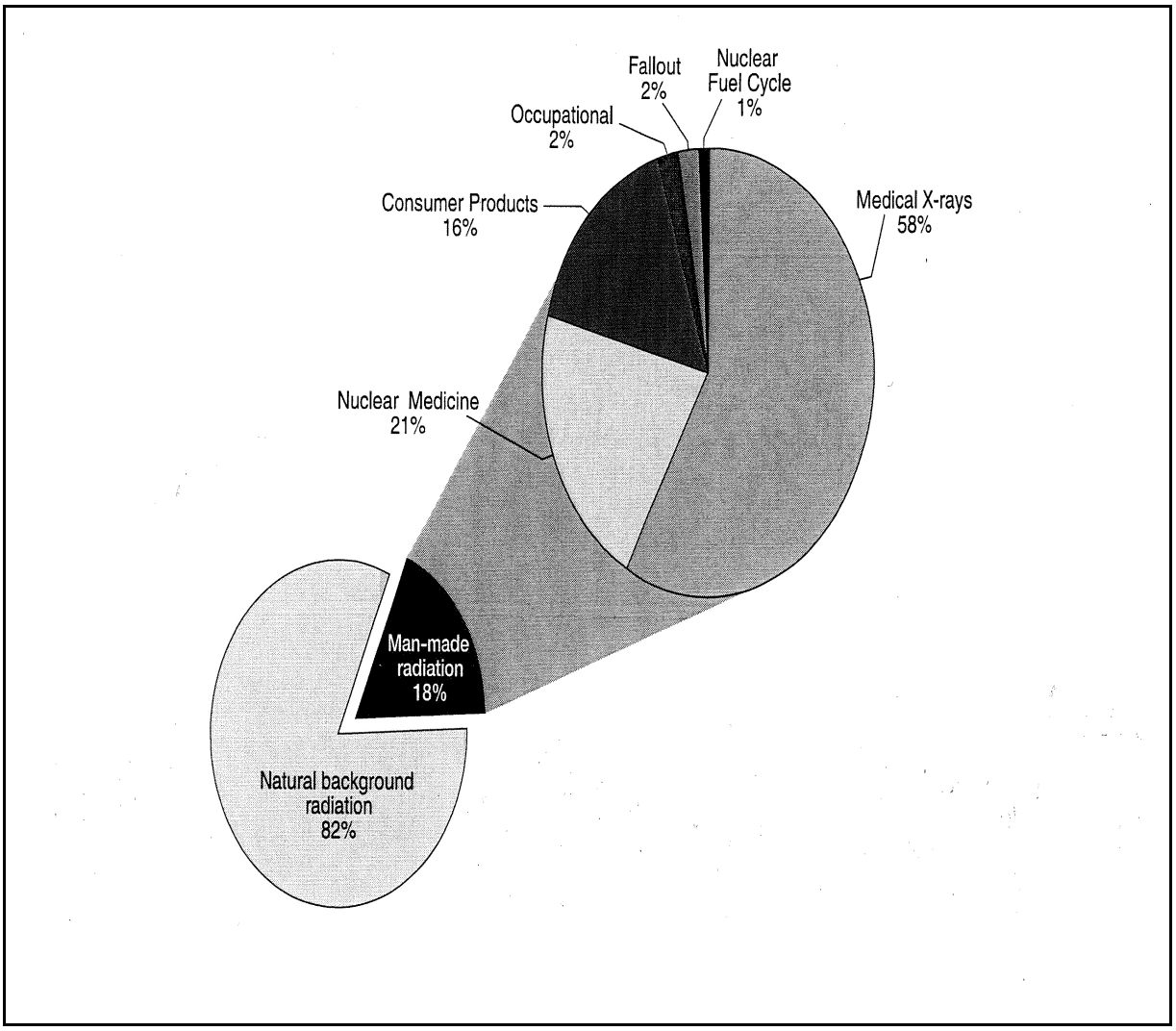


Figure 1 - Various Contributions of Radiation to a Member of the Public[4]

2.2 PLANT EFFLUENTS AND RELEASE LIMITS

A nuclear power plant operates on the same principle as a conventional power plant, except that nuclear fission[5] rather than combustion of fossil fuels (coil, oil and natural gas) provides the heat generation. A byproduct of the fission process is the production of radioactive (fission) gases in the fuel. A typical nuclear reactor may experience a small number of pinhole leaks in the fuel over its operating life. Radioactive gases may escape

[4] The National Academies, BEIR VII: Health Risks From Exposure to Low Levels of Ionizing Radiation. Figure based on data from Ionizing Radiation Exposure of the Population of the United States, National Council on Radiation Protection and Measurements, 2006.

[5] The fission process is a nuclear reaction in which an atomic nucleus splits, or fissions, into fragments, with the release of large amounts of energy in the form of heat and radiation.

the fuel rod through these leaks and enter the water coolant. As a result, radioactive fission gases are present to some extent in the coolant water of the reactor at all times. Routine liquid and airborne releases of radionuclides to the environment during normal operation of a nuclear power plant may contribute some radiation exposure to the population. However, regulatory limits are imposed to ensure that the health and safety of the public are protected.

The NRC requires all nuclear power plant operators to monitor daily radioactive effluent emissions (airborne and liquid discharges) from the plant and to file reports with the NRC on an annual basis.

The nuclear power plant operator is required to monitor the concentration of radionuclides that are released to the environment in accordance with the NRC's Appendix B to Title 10 of the Code of Federal Regulations, Part 20, "Standards for Protection Against Radiation" and the nuclear power plant's procedures. There is an additional requirement by the NRC, through Regulatory Guidance 1.21[6], that all nuclear power plants report their radionuclide releases in their Annual Radiological Effluent Release Report. Aside from the total radioactivity measurements, the report includes the limits of release set forth in the nuclear power plant's procedures[7].

The assessment of the radiological impact on members of the public is performed by the nuclear power plant operator in their Annual Radiological Environmental Monitoring Report as well as the aforementioned Effluent Release Report. The calculation of potential radiological impact through the use of a hypothetical offsite dose assessment is performed by the power plant for gaseous and liquid effluents and compared to NRC dose limits prescribed in Appendix I to 10CFR50[8]. A result of these assessments, along with copies of the nuclear power plant's environmental monitoring and effluent release reports are available on the NRC's web-based library system, ADAMS, at http://www.nrc.gov.

As part of normal operations, a nuclear power plant will release radionuclides. Radionuclides released as part of the fission process include, but are not limited to the following: gaseous (krypton and xenon), iodine and particulates (iodine, cesium, cobalt, strontium, manganese, zinc, iron and barium) and tritium. The majority of effluent released from a commercial power plant to the environment is in the form of gaseous radionuclides. However, iodine-131 is of particular interest because it has an affinity for the thyroid gland, a critical exposure organ.

In assessing the impact of radioactivity on the public or the environment, it is important to consider the amount of radioactivity released to the environment by the nuclear plant, the properties of those radionuclides released and their affect (half-life[9] of each isotope), the transport method of radioactivity (dispersion in the atmosphere and deposition of particulates in

[6] Regulatory Guide 1.21; Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power

[7] Effluent release limits are set forth in the nuclear plant's procedure entitled, "Offsite Dose Calculation Manual"

[8] 10CFR50, Appendix I, Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "As Low As Reasonably Achievable" for Radioactive Material in Light-Water Cooled Nuclear Power Reactor Effluents

the environment), how the radioactive material enters the body, and the potential biological effect of each radionuclide.

2.3 PATHWAYS OF EXPOSURE TO HUMANS

Human exposure to radionuclides can occur through three different pathways: inhalation, ingestion, and direct exposure (Figure 2).

Airborne releases to the environment are diluted and carried away from the site by the wind, which continuously acts to disperse radioactivity. The source is normally a plant-monitored release point such as a stack or vent. If released, the airborne radionuclides could be breathed into the lung or deposited in the environment and ingested through the consumption of water, fish/shellfish, vegetation, or milk. Direct radiation exposure from airborne releases (standing on contaminated ground or direct exposure to the release plume) could also occur since gamma rays can travel long distances and penetrate entirely through the body.

Liquid releases to the environment are diluted and carried away from the site by groundwater, and surface waters such as streams and rivers. Radioactive elements can deposit on the soil and settle in groundwater. Radiation can enter the human body through the consumption of drinking water. Potential sources of liquid releases include plant-monitored discharge points that are permitted by the NJDEP's Bureau of Point Source Permitting program or controlled releases within plant technical specifications, known as batch releases. The exposure pathway to humans through liquid effluents would be through aquatic biota (fish/shellfish), shoreline exposure from sediments and swimming and drinking water.

[9] The time in which one half of the atoms of a particular radioactive substance disintegrate into another nuclear form. Measured half-lives vary from millionths of a second to billions of years.

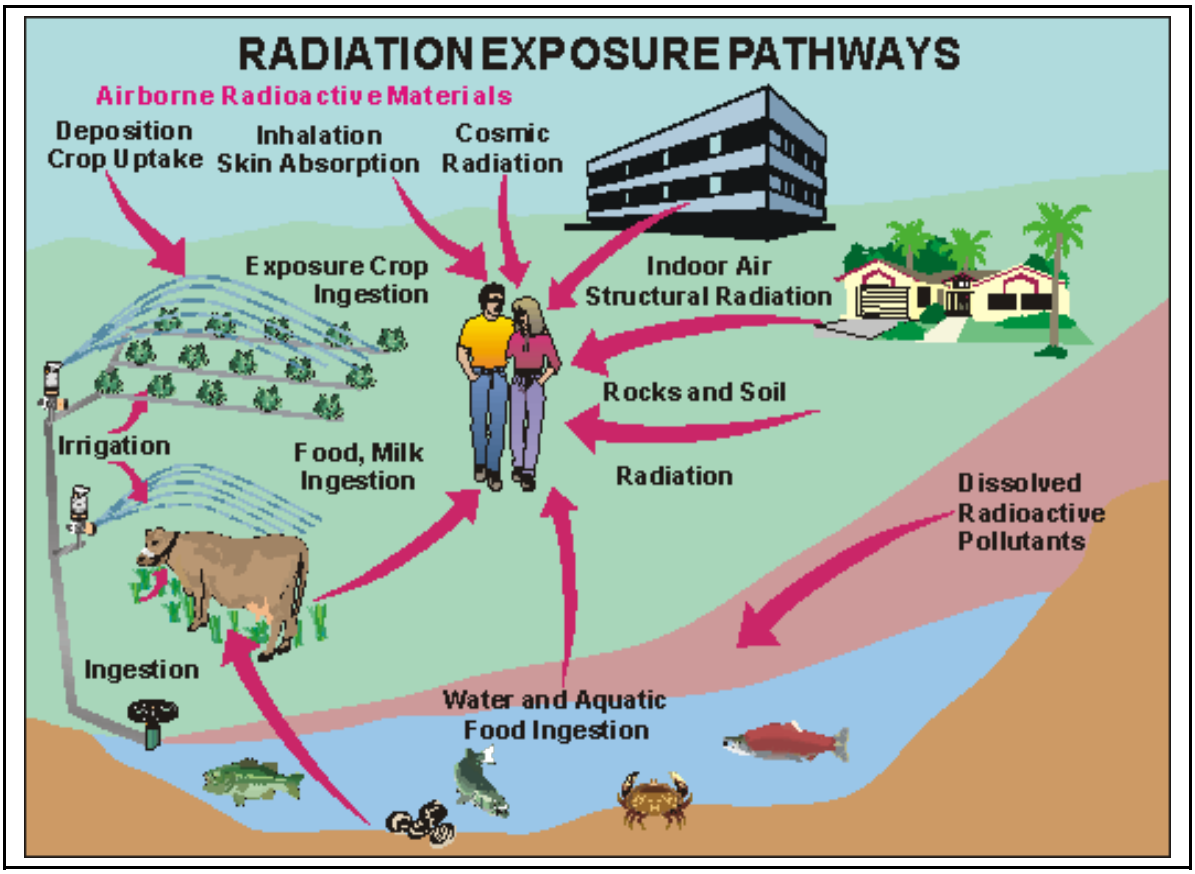


Figure 2 - Gaseous and Liquid Pathways of Radionuclides to the Environment[10]

3.0 OVERVIEW OF THE ENVIRONMENTAL SURVEILLANCE AND MONITORING PROGRAM

The purpose of the ESMP is to monitor the various pathways by which people and the environment could be exposed to radiation. Most ESMP data are collected at and beyond the site boundaries of New Jersey's nuclear generating stations. Along with continuous ambient air monitoring, environmental samples are obtained for the determination of radioactivity in air, drinking water, surface water, milk, fish/shellfish, vegetation, aquatic sediment, and occasionally soil. Direct gamma radiation measurements are taken using TLDs.

The specific objectives of the ESMP are to monitor pathways for entry of radioactive pollutants into the environment in order to identify potential exposures to the population from routine and accidental releases of radioactive effluent by the nuclear reactors; and to provide this information to members of the public and government agencies.

[10] Bobby Scott, Ph.D, The Lovelace Respiratory Research Institute, Radiation Sources and Effects In People, http://www.radiation-scott/radsource/1-0.htm

To carry out these objectives, the Bureau of Nuclear Engineering (BNE):

- Deploys fifty-two (52) Thermo-Luminescent Dosimeters (TLDs) on a quarterly basis at 26 offsite locations to provide direct gamma radiation measurements in the environs of the Oyster Creek and (Salem/Hope Creek) Nuclear Generating Stations.
- Monitors the nearby environment surrounding the nuclear power plants in New Jersey through one of the most advanced remote monitoring systems called the Continuous Radiological Environmental Surveillance Telemetry (CREST) system.
- Performs a comprehensive REMP environmental sampling program that consists of the collection and analysis of approximately 800 samples annually in the environs of the Oyster Creek and Salem/Hope Creek Nuclear Generating Stations. In addition, approximately another 50 samples are collected annually to provide comparative background radiation data for air and milk media.

3.1 THERMOLUMINESCENT DOSIMETRY (TLD) PROGRAM

The BNE maintains a TLD program, independent from that of each nuclear power plant operator, in order to determine the ambient gross gamma radiation levels in the vicinity of the Oyster Creek and Salem/Hope Creek. A TLD is a passive detector that requires no power source. The BNE utilizes Panasonic TLDs Model No. UD-814. TLDs are placed at specified locations and exchanged on a quarterly basis by BNE staff. TLDs collect data from the environment continuously 24 hours a day, 7 days a week, 365 days a year. Once collected, BNE staff use a Panasonic TLD reader (Model # UD-716) to obtain data from the TLDs. Control and transit TLDs are read along with each set of field TLDs.

Site selection follows NRC's criteria described in NUREG-0837, "NRC TLD Direction Radiation Monitoring Network", and summarized as follows:

- Within five miles of each nuclear plant site, TLD's are located offsite in each standard wind compass sector (such as North, South, North Northeast, South-Southwest). TLDs are not placed in sectors that consist entirely of open water or are unoccupied or inaccessible.
- TLD stations also were selected relative to major population centers and areas of interest such as government buildings, schools and/or hospitals. The population center closest to the Oyster Creek Nuclear Generating Station (OCNGS) is in Forked River, approximately 2 miles from the nuclear plant. There are several TLD's located in various locations around Forked River. The closest population center to Salem/Hope Creek is approximately 9.5 miles from the site, in Salem, New Jersey.

The locations, site descriptions, and distances from the plant of the BNE's TLD sites for Oyster Creek and Salem/Hope Creek are given in Appendix A, Tables A-4 and A-6

respectively. Figure 3 shows an actual BNE field TLD located on the licensee's property fence-line at Oyster Creek.

Figure 3– TLD Used in the Environment

3.2 CONTINUOUS RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE TELEMETRY (CREST)

The Continuous Radiological Environmental Surveillance Telemetry System (CREST) is a near real-time remote network of highly sensitive radiation detectors surrounding New Jersey's four nuclear power plants. It serves to monitor the environment for any unexpected releases of radiation from the Salem/Hope Creek Generating Station and the Oyster Creek Generating Station. Ten CREST stations are located around the Salem/Hope Creek Generating Stations, and sixteen station locations around the Oyster Creek Generating Station. The stations are located in every available compass sector, from outside the fence-line up to eight miles from the Salem/Hope Creek Generating Station, and 2.5 miles away from the Oyster Creek Generating Station.

Each CREST site includes a GE Reuter Stokes RSS-131 pressurized ion chamber (PIC) filled with argon gas. The PIC is able to accurately detect changes in radiation levels, from normally occurring background radiation to what might be encountered during an emergency event at one of the nuclear power plants. In addition to measuring radiation, the CREST sites are equipped with Climatronics meteorological sensors that measure wind speed and wind direction at every station. These data would be used in conjunction with elevated radiation levels during a nuclear event to determine what areas might be impacted and how quickly.

Figure 4: CREST Monitoring Station around the Salem / Hope Creek Nuclear Generating Station

The CREST system is part of the DEP's Radiation/Air Quality System (RAQS). It is supported by BNE staff utilizing a bucket truck dedicated to its operation and maintenance. The CREST radiation and meteorological data are transmitted on a minute-by-minute basis to a central RAQS computer in Trenton. If radiation levels exceed a predetermined threshold, an alarm is triggered and the BNE staff is notified to investigate. The threshold is set above normal background levels, but well below what would pose a health risk. In addition to providing continuous monitoring of ambient radiation levels, CREST also serves as an emergency response system should a radioactive release occur at any of the nuclear plant sites.

Locations and descriptions of the BNE CREST stations can be found in Appendix A, Table A-4 (OCNGS) and Table A-6 (Salem/Hope Creek).

3.3 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)

Through its REMP, the BNE independently monitors radiation in environmental media located in the surrounding area of New Jersey's nuclear generating stations. During 2005, the BNE's REMP program included the collection and analysis of 351 air particulate samples, 255 air iodine samples, 74 water samples (surface and drinking well water), 39 milk samples, 15 aquatic sediment samples, 14 fish/shellfish samples, and 30 vegetable samples from both nuclear generating stations (Oyster Creek and Salem/Hope Creek) combined. Of the 778 total samples collected, 56 were background air and/or milk samples. See Appendix A, Table A-1 for a description of the sampling media, frequency and type of analysis.

All REMP samples were analyzed for the BNE through independent contract laboratories. Each contract cycle, the BNE awards a two-year laboratory sampling analysis contract with the option to extend to a third year. At the end of every three years, the BNE must re-bid its laboratory services contract. On July 1, 2005, the BNE laboratory contract was awarded to Eberline Services for water sample analyses and Teledyne Brown Engineering for all other sampling media. Prior to that, during the first half of the year (January 1, 2005 through June 30, 2005) all REMP samples were analyzed by Sanford, Cohen and Associates.

For the analysis of samples, throughout the duration of the laboratory contract, the contractor must be in compliance with the New Jersey Administrative Code (N.J.A.C.) 7:18 (Regulations Governing the Certification of Laboratories and Environmental Measurements). This program is administered by the NJDEP's Office of Quality Assurance through its Environmental Laboratory Certification Program (ELCP). Additional information on the ELCP can be found at http://www.nj.gov/dep/oqa/

3.3.1 Air Sampling

BNE staff maintains a network of air sampling locations around Oyster Creek and Salem/Hope Creek Nuclear Generating Stations. Air samples are collected biweekly (once every two weeks) using low-volume samplers (Hi-Q VS23-052CCV) and are comprised of two parts. The first part is an air filter, designed to capture radioactive particulate, which is counted for gross beta radioactivity. This filter is then stored with other air filters collected from each individual sampling site until the end of each quarter. At that time, all of the filters from each individual sampling site are composited and analyzed for gamma emitting radionuclides and for strontium-89/90. This is a called an, "air particulate quarterly composite" sample. The second part of the biweekly air sample is a charcoal canister, which is analyzed at the end of each biweekly period for gaseous Iodine-131.

Air sampling locations have been chosen with respect to (1) atmospheric stability data; (2) the prevailing wind direction; and (3) the height of the airborne release point from each nuclear plant site. A complete list of air sampling locations for both Oyster Creek and Salem/Hope Creek can be found in Appendix A, Table A-3 for Oyster Creek and Table A-5 for Salem/Hope Creek. Background locations are found in Appendix A, Table A-2.

The air sampling location on Finninger's Farm[11] is maintained by the nuclear power plant operator and split with the BNE for analysis.

3.3.2 Water Sampling

Drinking water samples are taken quarterly by BNE staff from around each nuclear facility as a way to evaluate potential ingestion of radionuclides by humans. Sources of this water are commercial well water systems. Samples are obtained directly from tap water at each location (such as a school, administration building or state park). Sample locations are chosen in aquifers downstream and upstream of each commercial nuclear facility. Each sample obtained is analyzed for gamma emitters, such as cesium-134/137 and iodine-131, as well as for tritium.

Surface water samples are taken monthly by the nuclear power plant operator and split with the Bureau as a way to evaluate potential direct exposure of radionuclides. Samples are collected in locations in the direct liquid effluent pathway of release from each commercial nuclear facility (such as the discharge canal at Oyster Creek) and in locations that are outside the influence of the discharge point or any effects of re-circulation of liquid plant effluent (for example, effects of recirculation in the river or bay). Analysis for gamma emitters similar and tritium is performed on all surface water samples.

3.3.3 Aquatic Biota (Fish/Shellfish)

Fish and shellfish samples are collected and analyzed quarterly as an indicator of any radionuclides that may have entered the food chain and therefore could be consumed by humans. Edible portions and body fluids are analyzed to evaluate radionuclide concentrations in fish/shellfish. Biological samples of clams (Mercenaria mercenaria) are taken to monitor radionuclide concentrations in shellfish. Fish sampling is divided into two types. First, bottom feeders (such as crabs, clams or eel) are one type of fish that will ingest radioactive materials that settle to the bottom of the bays and canals. Second, predator fish (such as bluefish, flounder, weakfish and white perch) that feed upon other species of fish are collected.

All fish/shellfish samples are split with the nuclear power plant operator and analyzed for gamma emitting isotopes such as cobalt-60 and cesium-137 and for beta-emitting strontium-89/90.

3.3.4 Vegetation

The nuclear power plant operator collects samples of locally grown vegetables from a combination of seven farms during the growing season (April through October) and split these samples with the BNE for analysis. Edible portions of vegetables such as cabbage, collards, kale, corn and lettuce are analyzed for gamma emitting radionuclides in order to evaluate the concentration of radionuclide uptake by crops.

[11] Finningers Farm, located east of U.S. Route 9, is owned by Exelon Corporation. This land (approximately 650 acres) was formerly privately-owned farmland prior to the operation of the Oyster Creek nuclear plant.

3.3.5 Aquatic Sediment

Aquatic sediment samples are collected quarterly from the bottom of water passages that carry effluents from the nuclear generating stations to evaluate the concentrations of radionuclides. Sediments are fine solid materials that have settled out of a liquid stream or standing body of water. Accumulation of radionuclides in sediment can lead to exposure of humans through the ingestion of aquatic species or through direct shoreline exposure.

Around Oyster Creek, sediment samples are taken from Barnegat Bay, and Great Bay/Little Egg Harbor as well as the plant's discharge canal. Locations range from 0.4 to 20 miles from Oyster Creek. Around Salem/Hope Creek, sediment samples are taken from four locations along the Delaware River. Locations range from approximately 0.2 to 0.7 miles downstream of the release point from Salem Units 1 and 2.

All aquatic sediment samples are obtained by the nuclear power plant operator, and the sample is split with the BNE. Samples are analyzed for gamma emitting isotopes such as cesium-134/137 and cobalt 58/60.

3.3.6 Milk

Milk samples are collected quarterly from a combination of three farms located within 20 miles of the Salem/Hope Creek. All samples are split with the nuclear power plant operator and analyzed for gamma emitting radionuclides and for strontium-89/90. There are no dairy farms within a 10-mile radius of the OCNGS. Therefore no milk samples are collected from the environs of Oyster Creek for analysis.

Milk is sampled because it is a readily available food source consumed by a large portion of the population and is a good indicator of radionuclides present in the environment.

Radionuclides such as iodine-131, barium-140, strontium-90 and cesium-137 are products of nuclear power plant operation. If released, the radionuclides can settle on pastures, and ultimately be consumed by milk-producing cows.

3.4 **BUREAU OF NUCLEAR ENGINEERING BACKGROUND REMP LOCATIONS**

In order to assess the contribution of radioactivity in the environment from the commercial nuclear plants in New Jersey, the BNE has established background stations for air and milk media. For these purposes, a background sample location is one that is considered beyond the influence of either the OCNGS or Salem/Hope Creek. A background location is used to evaluate normal levels of radionuclides in the environment from natural sources and fallout from previous years' weapons testing (weapons tests conducted in the 1950's, 1960's and Chinese weapons tests during the late 1970's through October of 1980). In addition, a background station is used to monitor any

potential widespread impacts should a release from a nuclear power plant occur. The data are used to track and trend radioactivity over time and are compared to the BNE's samples taken near each nuclear plant site.

For air sampling, the BNE maintains a background monitor at Brendan T. Byrne State Park in New Lisbon, New Jersey and at the BNE Offices in Ewing, New Jersey. The air sampler at Brendan T. Byrne State Park is approximately 20 miles from the OCNGS and approximately 60 miles from Salem/Hope Creek. The air sampler at the BNE Offices is approximately 50 miles from OCNGS and 80 miles from Salem/Hope Creek. The BNE collects background air samples biweekly (once every two weeks).

A background location for milk was re-established in 2004 at a dairy farm located in suburban Trenton, New Jersey. This dairy farm is approximately 50 miles from the OCNGS and 80 miles from Salem / Hope Creek, well beyond the influence of either of New Jersey's nuclear generating stations. The nearest nuclear power plant in Pennsylvania (Limerick Nuclear Power Plant) is located approximately 50 miles west of the background dairy farm[12]. The BNE staff collects background milk samples once each quarter.

Locations and descriptions of the BNE's background sampling sites can be found in Appendix A, Table A-2.

4.0 ENVIRONMENTAL SURVEILLANCE AND MONITORING PROGRAM – SAMPLING RESULTS

4.1 REMP BACKGROUND MONITORING RESULTS

Results for background air particulate samples were consistent in magnitude with results found at sample locations in close proximity (Appendix A, Tables A-3 and A-5) to each commercial nuclear power plant.

There were no fission or activation products (cobalt-60, cesium-134, cesium-137 or iodine-131) in air particulate samples at either background location.

No activity was detected in milk samples collected from the background farm located in the Trenton area (cesium, iodine or strontium).

A complete summary of sample results from the background locations can be found in Appendix B, Table B-1 for air iodine, and Table B-4 for air particulate gross beta and Table B-16 for milk.

4.2 OYSTER CREEK NUCLEAR GENERATING STATION

The Oyster Creek Nuclear Generating Station (OCNGS) is a boiling water reactor rated at 650-megawatts electric (see Figure 5). The facility is located in Lacey Township,

[12] Limerick Nuclear Power Plant is a two-unit nuclear power plant owned and operated by the Exelon Corporation.

Ocean County, New Jersey, near Barnegat Bay. It has been in commercial operation since December of 1969. The plant is owned and operated by Amergen Energy Company, a subsidiary of the Exelon Corporation, headquartered in Illinois and Pennsylvania.

The OCNGS site is comprised of 1,316 acres located in the coastal pine barrens of New Jersey and is traversed by U.S. Highway Route 9. Geographically, the plant is situated in the Outer Coastal Plain near the Pinelands National Reserve. The area contains extensive freshwater and saltwater marshes. Barnegat Bay Inlet and the Atlantic Ocean are within 10 miles of the plant. Land use near the plant consists of commercial, residential, and recreational properties. Island Beach State Park and adjacent shore areas contribute to a large seasonal increase to the local population.

The largest concentrations of residents are to the north and the northeast. The closest residents are 0.5 miles northeast of the plant. The nearest population center is Ocean Township, which lies less than two miles south-southeast of the site. Other population centers within the 10-mile radius of the plant include Lacey Township and Toms River (Dover Township). There are a number of retirement communities in the area, including Lacey, Whiting (northwest) and Ocean Township.

Figure 5 – Oyster Creek Nuclear Generating Station

The OCNGS uses a man-made intake and discharge canal to provide cooling. Water enters the intake canal, located north and east of the site, from the Barnegat Bay, and is pumped through the station as a source of cooling water. Water returns from the plant into the discharge canal, along with existing water that is diverted from the intake canal through pumps, directly into the discharge canal, in order to maintain an acceptable temperature limit for aquatic biota. The water is then discharged from the canal south and east of the plant, and is returned to the Barnegat Bay. The Oyster Creek flows from the west and south of the plant into the discharge canal south of the plant. The branches of the Forked River flow into the intake canal, mixing with waters entering the canal from Barnegat Bay.

4.2.1 OYSTER CREEK THERMOLUMINESCENT DOSIMETRY RESULTS

The BNE maintains sixteen (16) TLD sites in the offsite surrounding area of the OCNGS. Each location has two TLDs that are exchanged at the end of each calendar quarter. Appendix A, Table A-4 provides details on TLD locations, site descriptions, and distances from the OCNGS. Figure 6 depicts locations of TLD sites near Oyster Creek. A complete summary of TLD results can be found in Appendix B, Table B-22 for TLD's surrounding the OCNGS.-

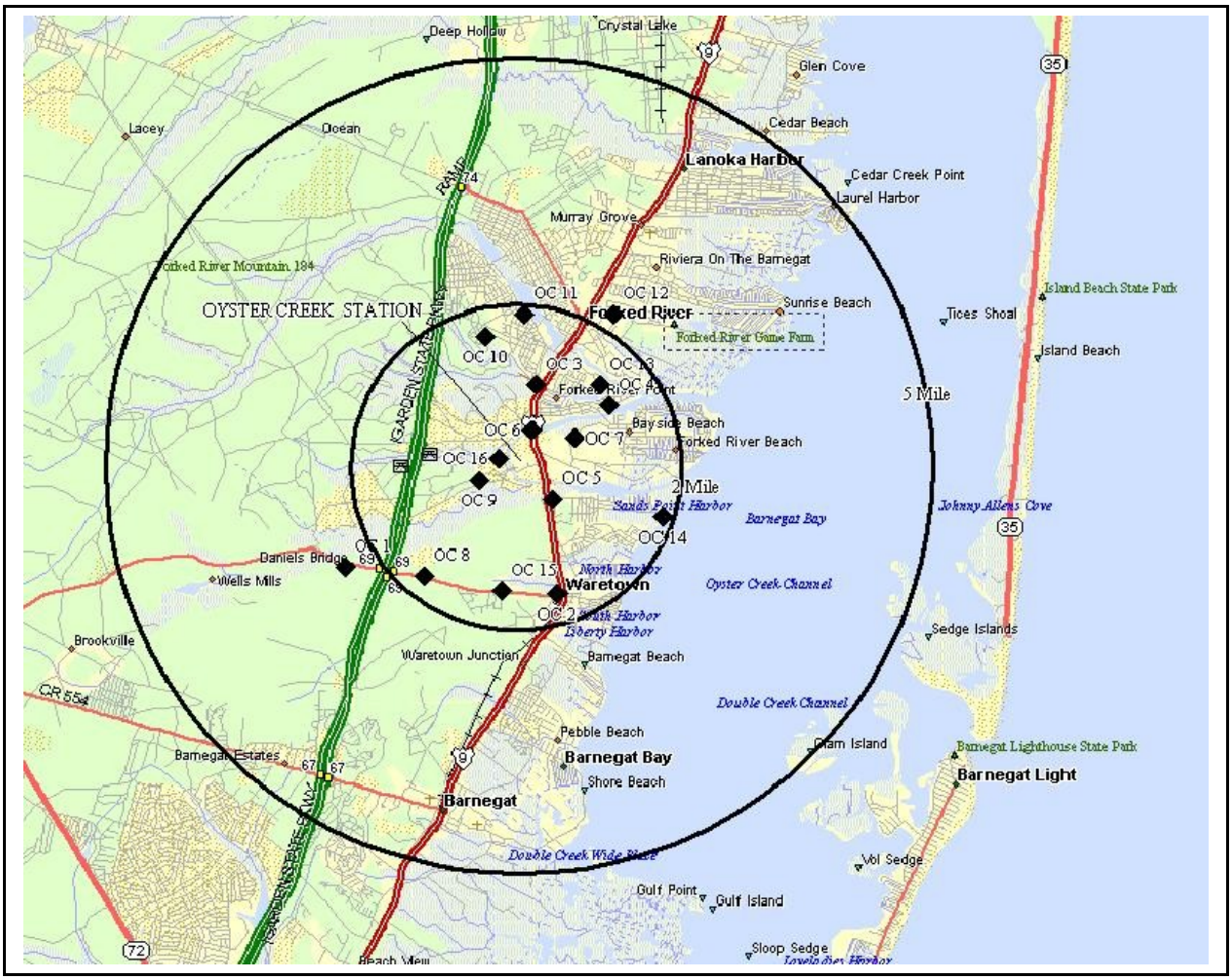


Figure 6 – CREST and Thermoluminescent Dosimeter Locations, Oyster Creek Nuclear Generating Station

All TLDs are deployed, exchanged and analyzed by BNE staff. The overall collection efficiency for the OCNGS TLD network in 2005 was 97%. Two TLDs were missing from the 3rd quarter pickup. Losses were due to environmental damage and vandalism.

Appendix B, Table B-22 represents ambient radiation levels obtained from the OCNGS TLDs during 2005. All TLD results for the environs of Oyster Creek were less than 20 milliroentgens (mR) per standard quarter (std. Qtr) with a range of 11.5 to 14.9 mR/Std. Qtr. These results are consistent with those observed in previous years.

4.2.2 OYSTER CREEK CREST DATA MONITORING

Figure 6 above identifies the locations of CREST stations around the Oyster Creek Nuclear Generating Station. Table B-24, in Appendix B, provides graphical summaries of ambient radiation results for each CREST site. The monthly average ambient radiation level recorded at

each station is graphed in milliroentgens per hour (mR/hr). Several sites (OC7, OC9, OC12 and OC13) were not in operation during 2005, and therefore, do not have graphs reflecting average radiation levels.

Normal background radiation levels range from 0.0050 to 0.0090 mR/hr around the Oyster Creek Nuclear Generating Station. The monthly average ambient radiation level at all CREST stations located in the environment around the nuclear power plant sites fell within this range during 2005.

4.2.3 OYSTER CREEK AIR SAMPLE RESULTS

In 2005, air sampling around the OCNGS was done at six locations. Figure 7 below displays and Appendix A, Table A-3 describes a detailed list of air sampling sites.

Figure 7 – Air Sampling Locations, Oyster Creek Nuclear Generating Station

Air Particulate Gross Beta Results

Gross beta activity is a measurement of all beta activity present, regardless of specific radionuclide source. Gross measurements are used as a method to screen samples for relative levels of radioactivity. Specific analyses of beta-emitting isotopes are done at the end of each quarter-annual period of time, when samples are composited by location.

Figure 8 depicts the average gross beta concentration in air for each of the BNE's sampling locations around the OCNGS, as well as the background location at Brendan T. Byrne Forest in New Lisbon, New Jersey. All air sites measured were not significantly different than the ambient background concentrations at Brendan T. Byrne State Forest.

The highest gross beta concentration was 0.0389 pCi/m3, well below the EPA's RadNet screening criteria of 1.0 pCi/m3 but greater than the minimum detectable concentration of 0.0100 pCi/m3. RadNet is a national network of monitoring stations that regularly collect air, precipitation, drinking water, and milk samples for analysis of radioactivity. RadNet, which has stations in each state, has been used to track environmental releases of radioactivity from nuclear weapons tests and nuclear accidents. Sample results are compared against EPA screening levels for the various media. A screening level is a guideline used by the EPA to decide whether or not to determine the identity and activity of radionuclides in the sample, and does not correspond to any regulatory dose limit. RadNet documents background levels of radioactivity and publishes this information in "Environmental Radiation Data" reports that are available on the EPA's internet website at http://epa.gov/narel/erams/erdononline.html.

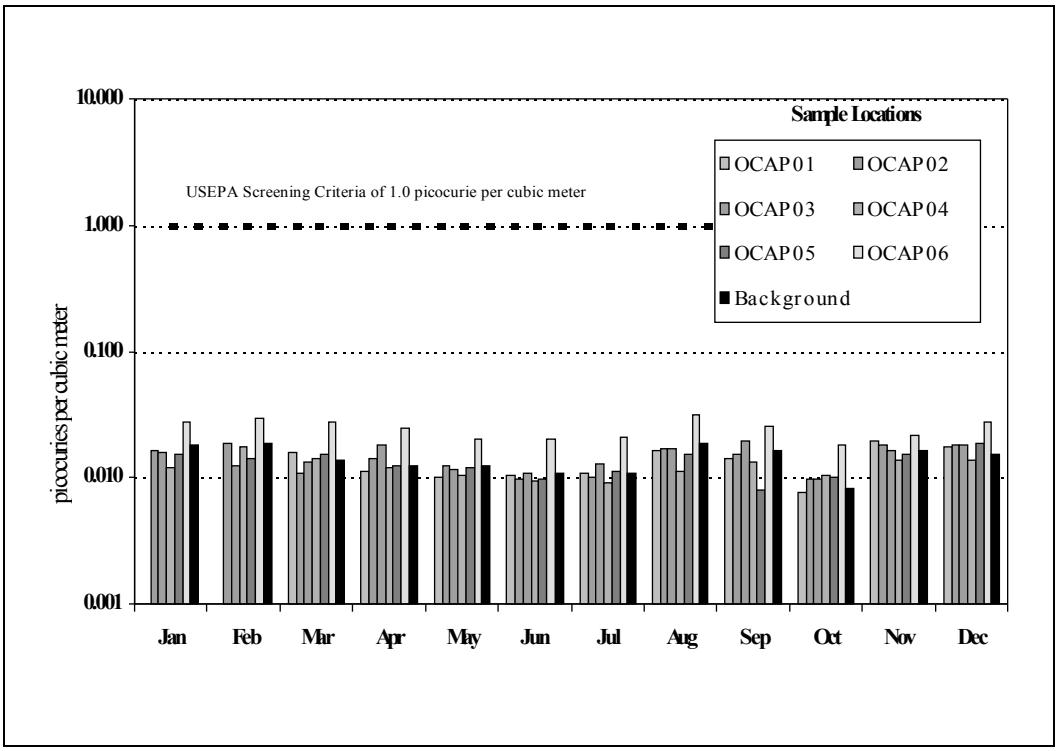


Figure 8 – Average Gross Beta Concentrations in Airborne Particulates – 2005, Oyster Creek Nuclear Generating Station

Air Particulate Quarterly Composites (Sr-90)

Sr-90 is a beta emitting fission product present in radioactive fallout[13] and in the fission process of commercial nuclear power plants. It remains in the environment for an extended period of time due to its 28.1 year half-life and is known to increase the risk of bone cancer and leukemia in animals and is presumed to do so in humans. [14] For most radionuclides, the amount of radioactive material collected on a filter during the biweekly period was too small to be readily measured. The sensitivity and accuracy of sample analysis was increased by combining biweekly samples into quarterly composite samples.

Due to concerns expressed by the public, the DEP instituted quarterly analysis of Sr-90 in air samples in 1999. The predominance of environmental data shows no increase of Sr-90 in the environment. [15]

[13] See section 3.4, page 13, for sources of fallout.

[14] USEPA, Radiation Information, Strontium, http://www.epa.gov/radiation/radionuclides/strontium.htm

[15] A Review of Understanding Patterns and Trends of Radioactive Strontium-90 in Baby Teeth of New Jersey Children and Cancer: A Report To the NJ State Department of Health and Senior Services New, January 2006, http://www.nj.gov/dep/rpp/index.htm.

Quarterly analysis of samples collected and analyzed in 2005 by the BNE's contract laboratory also indicated no measurable Sr-90 concentrations in air. This was similar to what was found at both background locations.

Air Particulate Quarterly Composites (Gamma Emitters)
Gamma isotopic analysis of the air particulate portion of the biweekly air samples did not detect any radionuclides of interest (cobalt, cesium). This was similar to what was found at both background locations (Trenton and Brendan T. Byrne State Park).

Air Iodine Results
Iodine-131 was not detected in any of the air charcoal samples collected biweekly from the six continuous air- monitoring locations around the OCNGS.

A complete summary of all air sample results can be found in Appendix B: Table B-2 for air iodine; Table B-5 for air particulate gross beta; and Table B-8 for air particulate quarterly composites.

4.2.4 OYSTER CREEK WATER SAMPLE RESULTS

The OCNGS utilizes an intake/discharge canal, along with the Barnegat Bay for the discharge of cooling water and potential effluent discharges. The facility adheres to a 'zero discharge' policy and does not release liquid effluent to the environment through this pathway.

Surface water samples are collected from four locations in the environment. These locations range from 0.4 miles in the plant's discharge canal to 20 miles away in the Great Bay/Little Egg Harbor. Surface water samples are also collected in the Barnegat Bay, located east of the discharge canal (2.1 miles from the plant) and in Stouts Creek, a tributary of the Barnegat Bay, located approximately 3.6 miles north of the plant discharge canal.

During 2005, all sample results from surface water were below minimum detectable levels (Appendix C, Table C-1). This includes fission and activation products associated with the commercial operation of the facility such as cobalt, cesium and iodine, as well as tritium (H-3). A complete summary of sample results for surface water can be found in Appendix B, Table B-18.

Well water samples were collected from two sources. Samples are taken from the OCNGS Administration Building and offsite from the New Jersey State Forked River Marina. The latter site is located approximately 1.7 miles north-northeast of the facility and considered upstream of the plant with regard to the aquifer that supplies water to the community.

Sample results for tritium and gamma emitting radionuclides associated with the operation of the nuclear facility were below minimum detectable levels. A complete summary of well water results can be found in Appendix B, Table B-20.

In recent years events at several nuclear power plants have led to the discovery of tritium contamination of groundwater. The tritium was the result of unplanned releases, such as those due to equipment degradation. As part of a fleetwide initiative, Exelon Corporation, the owners of the Oyster Creek Nuclear Generating Station have initiated the collection and analysis of groundwater samples from 36 onsite wells. Samples were taken from wells located on company property surrounding the nuclear plant, split between Exelon and the BNE, and analyzed for tritium and gamma emitting radionuclides. All of the initial sampling results from these wells were less than the minimum detectable concentration of 300 picoCuries per Liter. Results of the BNE's split samples, analyzed by the Department's independent contract laboratory, are available on the BNE website at http://www.nj.gov/dep/rpp/bne/welltab.htm. Additional information regarding tritium can be found on the NRC's website at http://www.nrc.gov/

4.2.5 OYSTER CREEK AQUATIC BIOTA SAMPLE RESULTS

During 2005, the nuclear power plant operator collected and split shellfish samples (hardshell clams) with the BNE. Six shellfish samples were collected from three locations in the environs of Oyster Creek. Samples were collected from the Barnegat Bay, approximately 2.1 miles east of the discharge canal, Stouts Creek, located 3.6 miles north and east of the discharge canal, and Great Bay/Little Egg Harbor, some 20 miles south and east of the discharge canal.

No fission or activation products (cobalt, cesium or iodine) were detected in any shellfish samples collected and analyzed during 2005. In addition, no strontium was found in any sample. One strontium analysis could not be performed from a sample collected from Stouts Creek due to spoilage. There was only enough meat to perform a gamma spectroscopy analysis on this sample.

A summary of sample results can be found in Appendix B, Table B-10.

4.2.6 OYSTER CREEK VEGETATION SAMPLE RESULTS

In 2005, 22 vegetation samples were collected during harvest season from two gardens that are maintained by the nuclear power plant owner. The gardens are located within half a mile of the OCNGS on the Finninger’s Farm site, in what would be considered high deposition areas in the event of an accidental release. A third vegetation sample was collected from a local farm beyond 20 miles upwind of the OCNGS. Vegetation samples included cabbage, collards and kale.

No fission or activation products (cobalt, cesium or iodine) were detected in any vegetation samples collected and analyzed during 2005.

A complete summary of vegetation sample results can be found Appendix B, Table B-14.

4.2.7 OYSTER CREEK AQUATIC SEDIMENT SAMPLES

Aquatic sediment samples were collected from four locations. Sample locations include the plant Discharge Canal, Barnegat Bay (East of the site), Stouts Creek and Great Bay/Little Egg Harbor.

No fission or activation products (cobalt, cesium or iodine) were detected in any aquatic sediment samples collected and analyzed during 2005.

A complete summary of sample results can be found Appendix B, Table B-12.

4.2.8 OYSTER CREEK MILK SAMPLE RESULTS

No milk samples are collected. There are no dairy farms within a 10-mile radius of the OCNGS. The closest dairy farm is about 30 miles away (Burlington County, New Jersey), as per the OCNGS Year 2000 Land Use Survey Radiological data from milk taken at the closest dairy farm would not be statistically representative of the milk pathway to humans living near the OCNGS. Therefore, the REMP monitors those pathways e.g., air, water, soil and vegetation, to determine radiological exposure to people living near the OCNGS.

4.3 ARTIFICIAL ISLAND - SALEM/HOPE CREEK GENERATING STATIONS

Artificial Island is the site of the Salem and Hope Creek Nuclear Generating Stations (Salem/Hope Creek). The Salem Generating Station consists of two pressurized water reactors. Salem Unit 1, rated at 1090 megawatts electric has been in commercial operation since June of 1977. Salem Unit 2, rated at 1115 megawatts electric has been in commercial operation since October of 1981. The Hope Creek Nuclear Generating Station (HCNGS) is a boiling water reactor rated at 1067 megawatts electric. It has been in commercial operation since February of 1987. All three plants are owned and operated by Public Service Electric and Gas (PSEG). Salem Units 1 and 2 also are partly owned by Exelon Corporation. Salem Units 1 and 2 are located on the southern half of Artificial Island, in Lower Alloways Creek Township in Salem County.

Figure 9 – Salem and Hope Creek Nuclear Generating Stations

Artificial Island is a 700-acre man-made site created by the deposition of fill from dredging operations. Land use in the areas adjacent to the site consists of commercial, government, agricultural, and residential properties. To the north and east are extensive tidal marshlands and low-lying areas. Mad Horse Creek Wildlife Management Area, located to the north and east of the site supports trapping and fishing. This wildlife area is also important for migratory birds. Within 10 miles of the site is some of South Jersey's prime agricultural land. The nearest New Jersey resident to the site is approximately four miles away.

4.3.1 SALEM/HOPE CREEK THERMOLUMINESCENT DOSIMETRY RESULTS

The Bureau of Nuclear Engineering's TLD program for Salem/Hope Creek consists of ten (10) offsite locations. Each location has two TLDs that are exchanged at the end of each calendar quarter. Appendix A, Table A-6 provides details on TLD locations, site descriptions, and distances from the Salem/Hope Creek Nuclear Generating Stations. Figure 10 depicts locations of the TLDs.

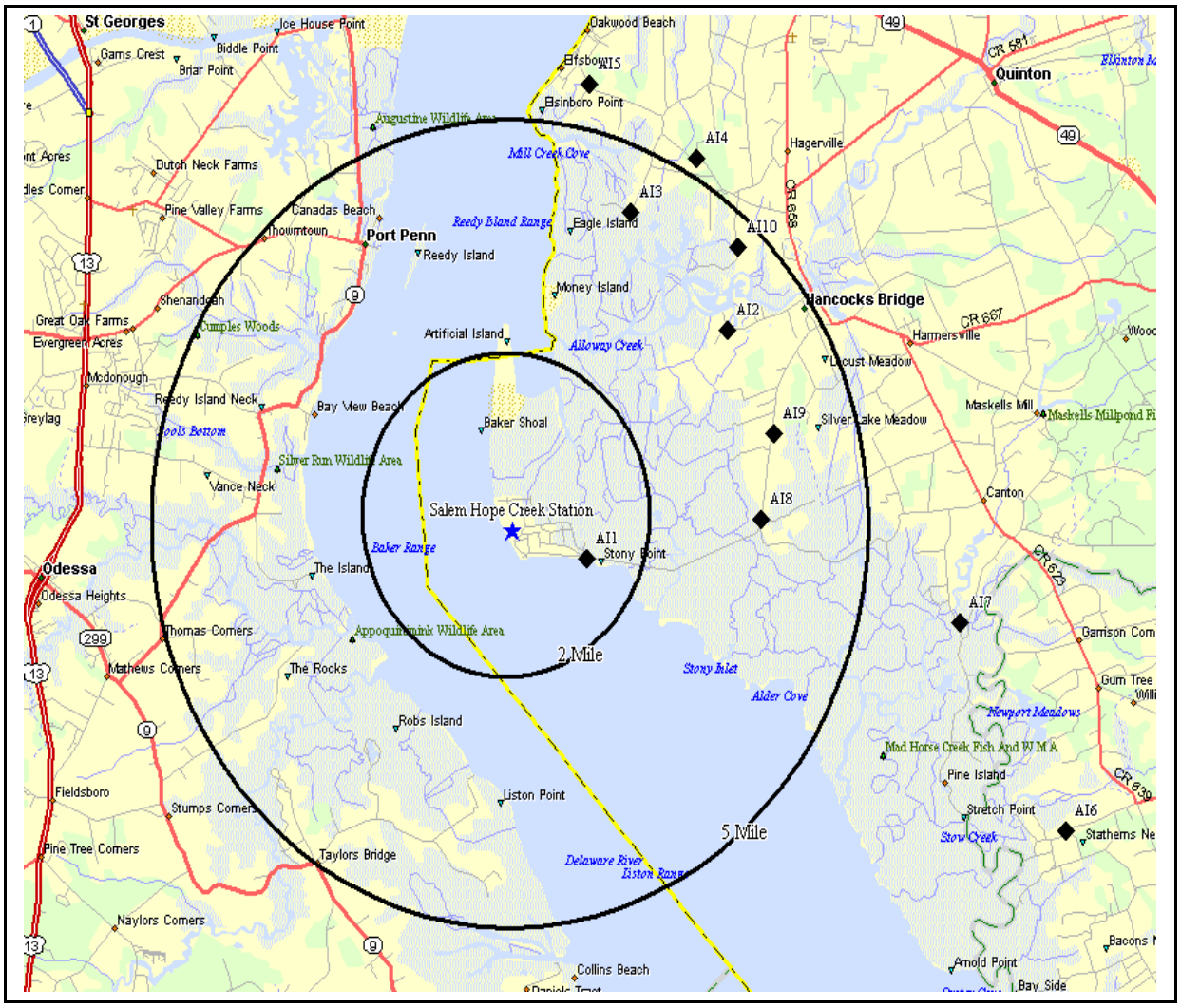


Figure 10 – CREST and Thermoluminescent Dosimeter Locations, Salem / Hope Creek

All TLDs are deployed, exchanged and analyzed by BNE staff. Overall collection efficiency for Salem/Hope Creek TLDs was 100% in 2005.

Appendix B, Table B-23 represents ambient radiation levels obtained from TLDs in the surrounding area of Salem/Hope Creek Nuclear Generating Stations during 2005. All TLD results were less than 20 milliroentgens (mR) per standard quarter (Std. Qtr.) with a range from 13.1 to 18.7 mR/std Qtr. These results are consistent with those observed in previous years. Ambient radiation levels near Salem/Hope Creek are slightly higher than levels measured in the environs of Oyster Creek**.** This is due to the geologic composition of the rock and sand around each facility.

4.3.2 SALEM/HOPE CREEK CREST DATA MONITORING

Figure 10 above identifies the locations of CREST stations around the Salem/Hope Creek Nuclear Generating Station. Table B-25, in Appendix B, provides graphical summaries of

ambient radiation results for each CREST site. The monthly average ambient radiation level recorded at each station is graphed in milliroentgens per hour (mR/hr).

Normal background radiation levels range from 0.0050 to 0.0090 mR/hr around the Salem/Hope Creek Nuclear Generating Station. The monthly average ambient radiation levels at all CREST stations located in the environment around the nuclear power plant sites fell within this range during 2005.

4.3.3 SALEM / HOPE CREEK AIR SAMPLE RESULTS

In 2005, air sampling was done at three locations. Figure 11 below displays and Appendix A, Table A-5 describes a detailed list of air sampling sites.

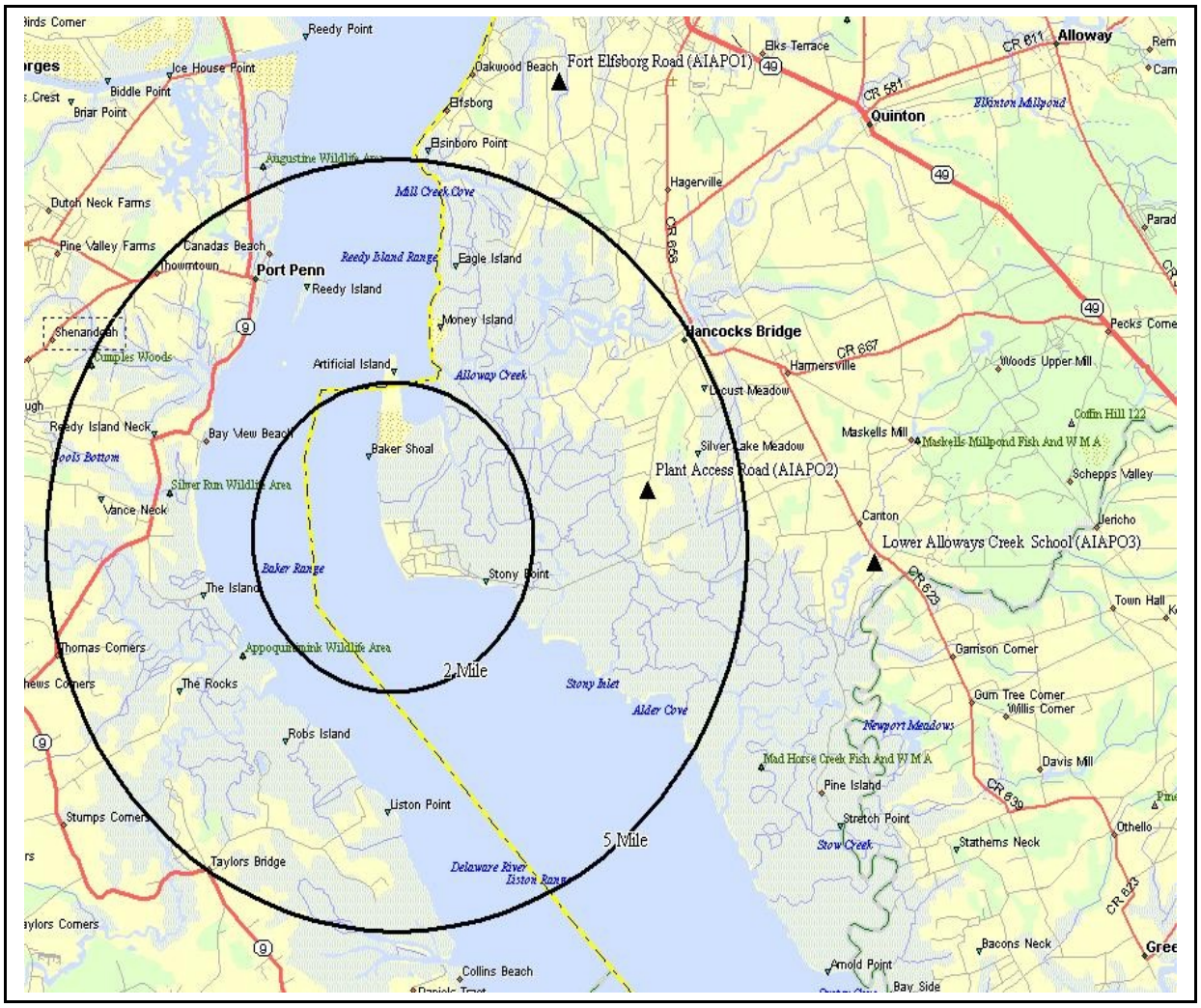


Figure 11 – Air Sample Locations, Salem/Hope Creek

Air Particulate Gross Beta Results

Gross beta activity is a measurement of all beta activity present, regardless of specific radionuclide source. Gross measurements are used as a method to screen samples for relative levels of radioactivity. Specific analyses of beta-emitting isotopes are done at the end of each quarter-annual period of time, when samples are composited by location. Figure 12 depicts the average gross beta concentration in air for each of the BNE's sampling locations around the Salem/Hope Creek, including the background location at Brendan T. Byrne Forest, in New Lisbon, New Jersey. Results were not significantly different than the ambient background concentrations at Brendan T. Byrne State Forest.

The highest gross beta concentration was 0.0236 pCi/m3, well below the USEPA's RadNet screening criteria of 1.0 pCi/m3, but greater than the minimum detectable concentration of 0.0100 pCi/m3

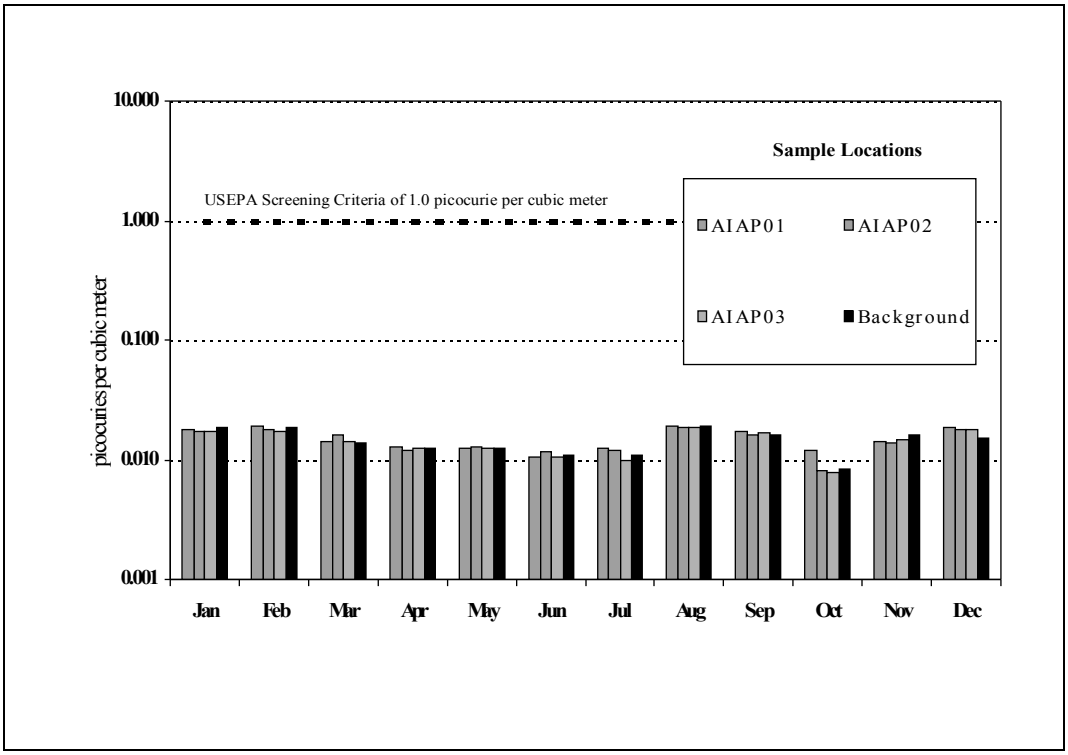


Figure 12 – Average Gross Beta Concentrations in Airborne Particulates, Salem/Hope Creek

Air Particulate Quarterly Composites (Sr-90)
Quarterly analysis of samples collected and analyzed in 2005 by the BNE's contract laboratory also indicated no measurable Sr-90 concentrations in air. This was similar to what was found at both background locations.

Sr-90 is a beta emitting fission product present in radioactive fallout.[16]

Air Particulate Quarterly Composites (Gamma Emitters)
No gamma emitting radionuclides of interest (cobalt, cesium or iodine) were detected in the air particulate portion of the bi-weekly air samples. This was similar to what was found at both background locations (Trenton and Brendan T. Byrne State Park).-

Air Iodine Results
Iodine-131 was not detected in any of the air charcoal samples collected biweekly from the three continuous air monitoring locations around the Salem/Hope Creek Nuclear Generating Stations.

A complete summary of all air sample results can be found in Appendix B: Table B-3 for air iodine; Table B-6 for air particulate gross beta; and Table B-9 for air particulate quarterly composites.

4.3.4 SALEM/HOPE CREEK WATER SAMPLE RESULTS

The stations utilize two separate methods for cooling. The Hope Creek facility utilizes a cooling tower. The two units at Salem utilize water drawn from the Delaware River for cooling purposes.

Surface water samples are collected from two locations in the environment. These locations range from 0.2 miles at the Onsite Surface Water Inlet Building Discharge to approximately 2.5 miles from the nuclear facility, in a location along the west bank of the Delaware River upstream from the liquid discharge point of Salem Nuclear Generating Station. Samples are analyzed for gamma emitters and tritium.

No gamma emitting isotopes (cobalt, cesium and iodine), or tritium were found in any routine REMP samples collected during 2005.

A complete summary of surface water results can be found in Appendix B, Table B-19.

Well water samples are taken from the site's Administration Building. In addition, samples are drawn from the following locations: the Elsinboro School (5.8 miles from the plant), Lower Alloways Creek School in Canton, New Jersey (5.1 miles from the plant) and the Lower Alloways Creek Police Station (6.5 miles miles from the plant). Sample locations are chosen in potential drinking water aquifers downstream and upstream of the site. Samples are analyzed for gamma emitters and tritium.

[16] See section 3.4, page 13, for sources of fallout.

During 2005, no gamma emitting isotopes (cobalt, cesium and iodine) or tritium was detected in any of the tap water samples.

A complete summary of well water results can be found in Appendix B, Table B-21.

While not part of the Department's routine REMP program, the BNE has been monitoring for tritium and gamma emitting radionuclides in groundwater onsite at Artificial Island. This is in response to the discovery of tritium in shallow groundwater adjacent to and south of Salem Unit 1. The source of the tritium was the Salem Unit 1 spent fuel pool. The tritium has been contained on site. No onsite or offsite dose consequences to workers or members of the public, associated with the tritium in groundwater contamination, were identified. Remediation activities are being conducted by PSEG and monitored by the BNE. As part of an Exelon fleetwide initiative, this project has been extended to include the collection and analysis of groundwater samples for Salem Unit 2 and Hope Creek. Groundwater samples are taken from wells located on company property that surrounds each reactor. The samples are split between PSEG and the BNE. Results of the BNE's split samples, analyzed by the Department's independent contract laboratory, are available on the BNE website at http://www.nj.gov/dep/rpp/bne/welltab.htm.

4.3.5 SALEM/HOPE CREEK AQUATIC BIOTA SAMPLE RESULTS

Samples of aquatic biota (fish/shellfish) are collected by the nuclear power plant operator, and split with the BNE. Samples are analyzed for gamma emitting radionuclides and strontium-89/90. Samples of fish (striped bass, catfish, bluefish, weakfish and Atlantic croakers) as well as hardshell crabs were collected from two locations, the Onsite Surface Water Inlet Building (within 0.2 miles of the plant) and along the western bank of the Delaware River (approximately 2.5 miles upstream from the plant).

No fission or activation products (cobalt, cesium, or strontium) were detected in any sample collected and analyzed (Appendix B, Table B-11) during 2005.

A summary of fish/shellfish sample results can be found in Appendix B, Table B-11.

4.3.6 SALEM/HOPE CREEK VEGETATION SAMPLE RESULTS

In 2005, during the harvest season, vegetation samples were collected from five farms ranging in distance from 6.3 to 25 miles of Salem / Hope Creek. Vegetation samples included cabbage, corn, tomatoes and peppers.

No fission or activation products (cobalt, cesium or iodine) were detected in any sample collected and analyzed during 2005.

A complete summary of vegetation sample results can be found Appendix B, Table B-15.

4.3.7 SALEM/HOPE CREEK AQUATIC SEDIMENT SAMPLE RESULTS

Aquatic sediment samples were collected from the following four locations, the Onsite Observation Building, Onsite Surface Water Inlet Building, the Cooling Tower Blowdown Discharge Line (Onsite) and the Onsite South Storm Drain Discharge Line.

No fission or activation products (cobalt, cesium or iodine) were detected in any sample collected and analyzed during 2005.

A complete summary of aquatic sediment sample results can be found Appendix B, Table B-13.

4.3.8 SALEM/HOPE CREEK MILK SAMPLE RESULTS

Milk samples were collected monthly from three farms, ranging from 7.6 to 17 miles from the plant.

A trace amount of Sr-90 (2.18 pCi/L) was detected in a milk sample (Farm B), located 17 miles from the plant site. No Sr-90 was found at any other farm in the Salem/Hope Creek vicinity (7.6 and 12 miles from Salem/Hope Creek). In addition, the background station farm also found no reportable Sr-90. Sr-90 is a beta emitting fission product present in radioactive fallout (atmospheric nuclear weapons tests conducted in the 1950's and 1960's) and in the fission process of commercial nuclear power plants. It remains available in the environment for an extended period because of its 28.1 year half-life. About 99.9% of strontium in the environment comes from fallout from atmospheric nuclear weapons testing. Although Sr-90 levels have decreased since atmospheric weapons testing were halted, Sr-90 is still being detected.

To put this into perspective, Figure 13 below shows trends for Sr-90 concentrations in milk for all regions across the nation. The average historical Sr-90 in milk (1960-2003) for all EPA regions was 10.5 pCi/L. The average Sr-90 in milk for Region 2, which includes New Jersey, was below the national average (9.3 pCi/L) and well below EPA's acceptable risk level of 1 in 10,000 (780 pCi/L).

No fission or activation products (cesium-134, cesium-137 or iodine-131) above the minimum detectable concentration were found in any milk samples collected and analyzed during 2005. A summary of results for milk samples can be found in Appendix B, Table B-17.

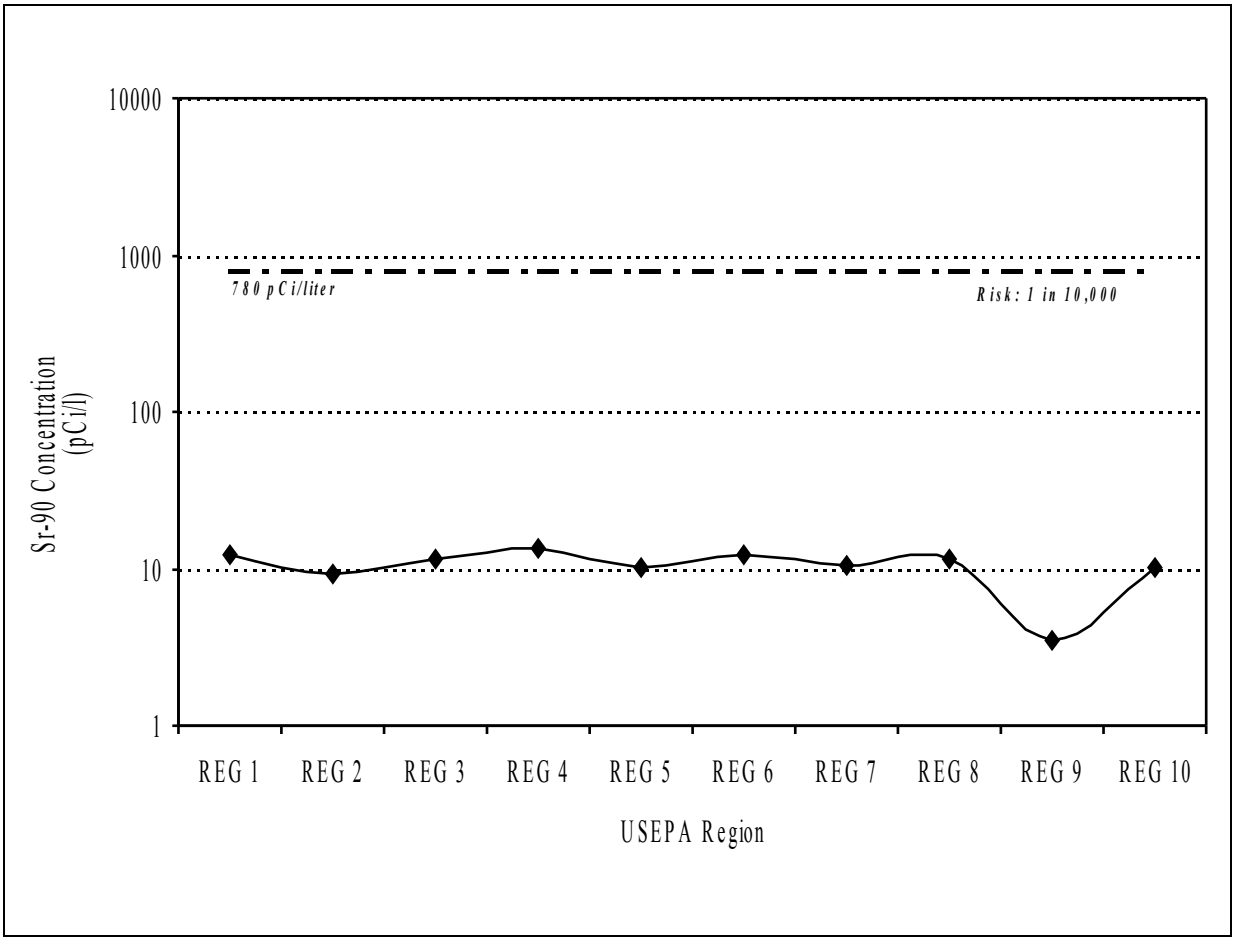


Figure 13 – Average Concentration of Strontium-90 in Milk in the US by EPA Region, 1960 through 2006

Table A-1
NJDEP / BNE
Radiological Environmental Monitoring Program

Sample Collection Summary for 2005

Description	*Parameters Analyzed For*	*Frequency*	*Number of Samples*
Milk	Gamma Emitters, Strontium-89/90 *	Monthly	39
Air Particulate Filter	Gross Beta	Bi-Weekly	307
Air Particulate Composite	Gamma Emitters, Strontium-89/90	Quarterly	44
Air Charcoal	Iodine-131	Bi-Weekly	255
Aquatic Sediment	Gamma Emitters	Semi-Annually	15
Fish & Shellfish	Gamma Emitters Strontium-89/90 *	Semi-Annually	14
Vegetables	Gamma Emitters	Harvest Season Only	30
Surface Water	Gamma Emitters Tritium	Monthly	50
Potable Well Water	Gamma Emitters Tritium	Quarterly	24
		Total Samples Collected	778

* Radiochemical analysis performed for Strontium-89/90, USEPA Analytical Method 905.0.

Table A-2
NJDEP/BNE
Radiological Environmental Monitoring Program

Background Locations

Sample Media	*Station Code*	*Description of Site*
Milk	COMI01	Farm T
Air Particulate Filter	COAP01	BNE Office, Arctic Parkway, Ewing, NJ
	COAP02	Brendan T. Byrne State Forest, New Lisbon, NJ
Air Particulate Composite	COAP01	BNE Office, Arctic Parkway, Ewing, NJ
	COAP02	Brendan T. Byrne State Forest, New Lisbon, NJ
Air Charcoal	COAI01	BNE Office, Arctic Parkway, Ewing, NJ
	COAI02	Brendan T. Byrne State Forest, New Lisbon, NJ

Table A-3
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek Nuclear Generating Station
Sample Locations and Descriptions

Sample Medium	*Station Code*	*Distance From Plant (miles)*	*Description of Site*
Milk	Not sampled	Not sampled	No milk-producing animals within 50-mile radius as per OCNGS Land Use Survey for 2000
Air Particulate Filter	OCAP01	1.7	Waretown Municipal Building, SSE of site, on County Route 532, Waretown, NJ
	OCAP02	1.8	Sands Point Harbor, ESE of site on Bay Parkway, Waretown, NJ
	OCAP03	1.7	Forked River Marina, Forked River, NJ
	OCAP04	3.2	Lacey Township Recreation Bldg., Forked River, NJ
	OCAP05	5.6	JCP&L Substation, US Route 9, Bayville, NJ
	OCAP06	0.7	Finningers Farm, OC Dredge Site, Forked River, NJ*
Air Particulate Composite	OCAP01	1.7	Waretown Municipal Building, SSE of site, on County Route 532, Waretown, NJ
	OCAP02	1.8	Sands Point Harbor, ESE of site on Bay Parkway, Waretown, NJ
	OCAP03	1.7	Forked River Marina, Forked River, NJ
	OCAP04	3.2	Lacey Township Recreation Bldg., Forked River, NJ
	OCAP05	5.6	JCP&L Substation, US Route 9, Bayville, NJ
	OCAP06	0.7	Finningers Farm, OC Dredge Site, Forked River, NJ*
Air Charcoal	OCAI01	1.7	Waretown Municipal Building, SSE of site, on County Route 532, Waretown, NJ
	OCAI02	1.8	Sands Point Harbor, ESE of site on Bay Parkway, Waretown, NJ
	OCAI03	1.7	Forked River Marina, Forked River, NJ
	OCAI04	3.2	Lacey Township Recreation Bldg., Forked River, NJ
	OCAI05	5.6	JCP&L Substation, US Route 9, Bayville, NJ

* Oyster Creek Filter ONLY – sample split with nuclear power plant operator

Table A-3 (continued)

NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek Nuclear Generating Station Locations
Sampling Locations and Descriptions *(continued)*

Sample Medium	*Station Code*	*Distance From Plant (miles)*	*Description of Site*
Vegetables*	OCVE01	0.4	OCNGS Onsite Garden, east of US Route 9 and NORTH of the OCNGS Discharge Canal, Forked River, NJ
	OCVE02	23.1	Farm J
	OCVE03	0.4	OCNGS Onsite Garden, Discharge Canal, SE of site, east of US Route 9 and south of the inside fence, Waretown, NJ
Surface Water*	OCSW01	2.1	Barnegat Bay, east of site
	OCSW02	20	Great Bay / Little Egg Harbor, SSW of site
	OCSW03	3.6	Stouts Creek, ENE of site, Barnegat Bay
	OCSW04	0.4	OCNGS Discharge Canal, ESE of site, East of U.S. Route 9 Bridge
Well Water	OCWW01	0.1	Oyster Creek Administration Building (On-site)
	OCWW02	1.7	Forked River Marina, Forked River, NJ
Aquatic Sediment*	OCAQ01	2.1	Barnegat Bay, East of site
	OCAQ02	0.4	OCNGS Discharge Canal, ESE of site, East of U.S. Route 9 Bridge
	OCAQ03	20	Great Bay / Little Egg Harbor, SSW of site
	OCAQ04	3.6	Stouts Creek, ENE of site, Barnegat Bay
Shellfish*	OCFS01	3.6	Stouts Creek, ENE of site, Barnegat Bay
	OCFS02	2.1	Barnegat Bay, east of site
	OCFS03	20	Great Bay / Little Egg Harbor, SSW of site

* Sample split with nuclear power plant operator

Table A-4
NJDEP / BNE
Radiological Environmental Monitoring Program

CREST and Thermoluminescent Dosimetry Network
Oyster Creek Nuclear Generating Station

ID	*Distance From Plant (miles*	*Description of Site*
OC-1	2.7	Ocean County Vocational School, Waretown, NJ
OC-2	1.8	Ocean Township (Waretown) Municipal Building, Waretown, NJ
OC-3	0.9	Sewage Pump Station on U.S. Route 9, Forked River, NJ
OC-4	1.3	Twin River Station, Forked River, NJ
OC-5	0.5	Sewage Pump Station, U.S. Route 9, Ocean Township, NJ
OC-6	0.5	Oyster Creek Generating Station Gate #2, North Access Road, Forked River, NJ
OC-7	0.7	Finnigers Farm, Forked River, NJ
OC-8	1.8	Ocean County Memorial Park Cemetery, Waretown, NJ
OC-9	0.3	OCNGS Amergen Building #17, Forked River, NJ
OC-10	2.3	Sheffield and Derby Roads, Forked River, NJ
OC-11	1.9	Lakeside Drive, Forked River, NJ
OC-12	2.2	Forked River Game Farm, Forked River, NJ
OC-13	1.4	Lacey Township Restrooms, Lakeside Drive, Forked River, NJ
OC-14	1.1	Sands Point Park, Dock Avenue, Waretown, NJ
OC-15	1.5	Recreational Center, Waretown, NJ
OC-16	0.3	North Access Road, Forked River Site, Forked River, NJ

Note: Each sample location above contains a CREST monitor and TLD

Table A-5
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek Nuclear Generating Station
Sample Locations and Descriptions

Sample Medium	*Station Code*	*Distance From Plant (miles)*	*Description of Site*
Milk	AIMI01	12	Farm A
	AIMI02	17	Farm B
	AIMI03	7.6	Farm C
Air Particulate Filter	AIAP01	5.6	Fort Elfsborg Rd., Elsinboro Township, NJ
	AIAP02	4.0	Plant Access Road
	AIAP03	5.1	Lower Alloways Creek School, Canton, NJ
Air Particulate Composite	AIAP01	5.6	Fort Elfsborg Rd., Elsinboro Township, NJ
	AIAP02	4.0	Plant Access Road
	AIAP03	5.1	Lower Alloways Creek School, Canton, NJ
Air Charcoal	AIAI01	5.6	Fort Elfsborg Rd., Elsinboro Township, NJ
	AIAI02	4.0	Plant Access Road
	AIAI03	5.1	Lower Alloways Creek School, Canton, NJ
Vegetable *	AIVE01	25	Farm D
	AIVE02	9.4	Farm E
	AIVE03	6.3	Farm F
	AIVE04	13.5	Farm G
	AIVE05	7.5	Farm H
	AIVE06	8.5	Farm I
Surface Water *	AISW01	0.2	Onsite, Surface Water Inlet Building Discharge
	AISW02	2.5	Delaware River, West Bank Upstream

* Sample split with nuclear power plant operator

Table A-5 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek Nuclear Generating Station
Sampling Locations and Descriptions Locations (*continued*)

Sample Medium	*Station Code*	*Distance From Plant (miles)*	*Description of Site*
Well Water *	AIWW01	5.8	Elsinboro School, Ft. Elfsborg Road, Elsinboro Township, NJ
	AIWW02	6.5	Lower Alloways Creek Police Station, 501 Locust Island Road, Hancocks Bridge, NJ
	AIWW03	Onsite	Salem Nuclear Generating Station, Admin Building
	AIWW04	5.1	Lower Alloways Creek School, Canton, NJ
Aquatic Sediment *	AIAQ01	0.2	Onsite, Observation Building
	AIAQ02	0.2	Onsite, Surface Water Inlet Building
	AIAQ03	0.3	Onsite, Cooling Tower Blowdown Discharge Line
	AIAQ04	0.7	Onsite, South Storm Drain Discharge Line
Fish & Shellfish*	AIFS01	0.2	Onsite, Surface Water Inlet Building
	AIFS02	2.5	Delaware River, West Bank Upstream

* Sample split with nuclear power plant operator

Table A-6
NJDEP / BNE
Radiological Environmental Monitoring Program

CREST and Thermoluminescent Dosimetry Network
Salem / Hope Creek Nuclear Generating Station

ID	*Distance From Plant (miles)*	*Description of Site*
AI-1	1.0	Access Road, Security Checkpoint
AI-2	4.1	Poplar Road, Lower Alloways Creek Twp., NJ
AI-3	4.1	Money and Eagle Island Roads, Elsinboro Twp., NJ
AI-4	5.4	Fort Elfsborg Road and Hancocks Bridge Road – East, Elsinboro Twp., NJ
AI-5	5.6	Fort Elfsborg Road and Hancocks Bridge Road – West, Elsinboro Twp., NJ
AI-6	8.4	Stathems Neck Road, Greenwich Twp., NJ
AI-7	6.2	Stow Neck Road, Lower Alloways Creek Twp., NJ
AI-8	3.3	Alloways Creek Neck Road, Lower Alloways Creek Twp., NJ
AI-9	3.8	Alloways Creek Neck Road, Lower Alloways Creek Twp., NJ
AI-10	4.8	Abbots Farm Road, Elsinboro Twp., NJ

Note: Each sample location above contains a CREST monitor and TLD

Table B-1
NJDEP / BNE
Radiological Environmental Monitoring Program

Background
Concentrations of I-131 in Bi-Weekly Air Iodine Samples
2005

BNE Office (COAI01)

Collection Period			I-131 (pCi/m3)
01/03/05	-	01/18/05	< 0.007
01/18/05	-	01/31/05	< 0.008
01/31/05	-	02/15/05	< 0.016
02/15/05	-	03/02/05	< 0.006
03/02/05	-	03/16/05	< 0.012
03/16/05	-	03/30/05	< 0.006
03/30/05	-	04/12/05	< 0.016
04/12/05	-	04/26/05	< 0.025
04/26/05	-	05/09/05	< 0.030
05/09/05	-	05/24/05	< 0.017
05/24/05	-	06/07/05	< 0.012
06/07/05	-	06/21/05	< 0.007
06/21/05	-	07/05/05	< 0.004
07/05/05	-	07/18/05	< 0.013
07/18/05	-	08/02/05	< 0.007
08/10/05	-	08/16/05	< 0.011
08/16/05	-	08/29/05	< 0.010
08/29/05	-	09/12/05	< 0.006
09/12/05	-	09/27/05	< 0.010
09/27/05	-	10/13/05	< 0.008
10/13/05	-	10/24/05	< 0.008
10/24/05	-	11/09/05	< 0.007
11/09/05	-	11/21/05	< 0.008
11/21/05	-	12/05/05	< 0.006
12/05/05	-	12/20/05	< 0.006
12/20/05	-	01/03/06	< 0.005

Results in picoCuries per cubic meter (pCi/m3)

A new lab contract was instituted in July 2005.

Table B-1 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Background
Concentrations of I-131 in Bi-Weekly Air Iodine Samples
2005

Brendan T. Byrne State Forest (COAI02)

Collection Period			I-131 (pCi/m3)
01/05/05	-	01/18/05	< 0.008
01/18/05	-	02/04/05	< 0.008
02/04/05	-	02/15/05	< 0.016
02/15/05	-	03/04/05	< 0.012
03/04/05	-	03/16/05	< 0.008
03/16/05	-	03/29/05	< 0.006
03/29/05	-	04/11/05	< 0.008
04/11/05	-	04/26/05	< 0.023
04/26/05	-	05/09/05	< 0.032
05/09/05	-	05/25/05	< 0.011
05/25/05	-	06/07/05	< 0.012
06/07/05	-	06/22/05	< 0.006
06/22/05	-	07/05/05	< 0.007
07/05/05	-	07/19/05	< 0.006
07/19/05	-	08/02/05	< 0.008
08/02/05	-	08/17/05	< 0.005
08/17/05	-	08/30/05	< 0.005
08/30/05	-	09/13/05	< 0.006
09/13/05	-	09/28/05	< 0.007
09/27/05	-	10/11/05	< 0.011
10/11/05	-	10/25/05	< 0.004
10/25/05	-	11/09/05	< 0.007
11/09/05	-	11/21/05	< 0.007
11/21/05	-	12/05/05	< 0.007
12/05/05	-	12/19/05	< 0.008
12/19/05	-	01/04/06	< 0.002

Results in picoCuries per cubic meter (pCi/m3)

A new lab contract was instituted in July 2005.

Table B-2
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of I-131 in Bi-Weekly Air Iodine Samples
2005

Waretown Municipal Building (OCAI01)

Collection Period			I-131 (pCi/m3)
01/05/05	-	01/18/05	No Data
01/18/05	-	02/04/05	No Data
02/04/05	-	02/15/05	No Data
02/15/05	-	03/04/05	< 0.011
03/04/05	-	03/16/05	< 0.010
03/16/05	-	03/29/05	< 0.006
03/29/05	-	04/11/05	< 0.007
04/11/05	-	04/26/05	< 0.015
04/26/05	-	05/13/05	No Data
05/13/05	-	05/25/05	< 0.017
05/25/05	-	06/07/05	< 0.012
06/07/05	-	06/22/05	< 0.006
06/22/05	-	07/05/05	< 0.006
07/05/05	-	07/19/05	< 0.006
07/19/05	-	08/02/05	< 0.005
08/02/05	-	08/17/05	< 0.005
08/17/05	-	08/30/05	< 0.006
08/30/05	-	09/13/05	< 0.007
09/13/05	-	09/27/05	< 0.043
09/27/05	-	10/13/05	< 0.005
10/13/05	-	10/26/05	< 0.009
10/26/05	-	11/09/05	< 0.006
11/09/05	-	11/21/05	< 0.005
11/21/05	-	12/06/05	< 0.004
12/06/05	-	12/19/05	< 0.006
12/19/05	-	01/04/06	< 0.006

Results in picoCuries per cubic meter (pCi/m3)

'No Data' indicates no sample results due to mechanical failures of air sampling equipment

A new lab contract was instituted in July 2005.

Table B-2 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of I-131 in Bi-Weekly Air Iodine Samples
2005

Sands Point Harbor (OCAI02)

Collection Period			I-131 (pCi/m3)	
01/05/05	-	01/18/05	<	0.009
01/18/05	-	02/04/05	<	0.009
02/04/05	-	02/15/05	<	0.026
02/15/05	-	03/04/05	<	0.013
03/04/05	-	03/16/05	<	0.016
03/16/05	-	03/29/05	<	0.009
03/29/05	-	04/11/05	<	0.010
04/11/05	-	04/26/05	<	0.022
04/26/05	-	05/13/05	<	0.029
05/13/05	-	05/25/05	<	0.021
05/25/05	-	06/07/05	<	0.016
06/07/05	-	06/22/05	<	0.006
06/22/05	-	07/05/05	<	0.007
07/05/05	-	07/19/05	<	0.007
07/19/05	-	08/02/05	<	0.007
08/02/05	-	08/17/05	<	0.003
08/17/05	-	08/30/05	<	0.007
08/30/05	-	09/13/05	<	0.006
09/13/05	-	09/27/05	<	0.009
09/27/05	-	10/13/05	<	0.009
10/13/05	-	10/26/05	<	0.009
10/26/05	-	11/09/05	<	0.003
11/09/05	-	11/21/05	<	0.008
11/21/05	-	12/06/05	<	0.004
12/06/05	-	12/19/05	<	0.005
12/19/05	-	01/04/06	<	0.006

Results in picoCuries per cubic meter (pCi/m3)

A new lab contract was instituted in July 2005.

Table B-2 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of I-131 in Bi-Weekly Air Iodine Samples
2005

Forked River Marina (OCAI03)

Collection Period			I-131 (pCi/m3)
01/05/05	-	01/18/05	< 0.011
01/18/05	-	02/04/05	< 0.009
02/04/05	-	02/15/05	< 0.028
02/15/05	-	03/04/05	< 0.013
03/04/05	-	03/16/05	< 0.014
03/16/05	-	03/29/05	< 0.005
03/29/05	-	04/11/05	< 0.018
04/11/05	-	04/26/05	< 0.023
04/26/05	-	05/13/05	< 0.037
05/13/05	-	05/25/05	< 0.022
05/25/05	-	06/07/05	< 0.015
06/07/05	-	06/22/05	< 0.007
06/22/05	-	07/05/05	< 0.008
07/05/05	-	07/19/05	< 0.007
07/19/05	-	08/02/05	< 0.010
08/02/05	-	08/17/05	< 0.004
08/17/05	-	08/30/05	< 0.044
08/30/05	-	09/13/05	< 0.006
09/13/05	-	09/27/05	< 0.008
09/27/05	-	10/13/05	< 0.008
10/13/05	-	10/26/05	< 0.008
10/26/05	-	11/09/05	< 0.005
11/09/05	-	11/21/05	< 0.005
11/21/05	-	12/06/05	< 0.004
12/06/05	-	12/19/05	< 0.005
12/19/05	-	01/04/06	< 0.005

Results in picoCuries per cubic meter (pCi/m3)

A new lab contract was instituted in July 2005.

Table B-2 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of I-131 in Bi-Weekly Air Iodine Samples
2005

Lacey Township Recreation Building (OCAI04)

Collection Period			I-131 (pCi/m3)	
01/05/05	-	01/18/05	<	0.006
01/18/05	-	02/04/05	<	0.009
02/04/05	-	02/15/05	<	0.022
02/15/05	-	03/04/05	<	0.011
03/04/05	-	03/16/05	<	0.013
03/16/05	-	03/29/05	<	0.006
03/29/05	-	04/11/05	<	0.009
04/11/05	-	04/26/05	<	0.018
04/26/05	-	05/13/05	<	0.025
05/13/05	-	05/25/05	<	0.021
05/25/05	-	06/07/05	<	0.009
06/07/05	-	06/22/05	<	0.005
06/22/05	-	07/05/05	<	0.006
07/05/05	-	07/19/05	<	0.003
07/19/05	-	08/02/05	<	0.007
08/02/05	-	08/17/05	<	0.005
08/17/05	-	08/30/05	<	0.006
08/30/05	-	09/13/05	<	0.004
09/13/05	-	09/27/05	<	0.003
09/27/05	-	10/13/05	<	0.005
10/13/05	-	10/26/05	<	0.005
10/26/05	-	11/09/05	<	0.004
11/09/05	-	11/21/05	<	0.005
11/21/05	-	12/06/05	<	0.003
12/06/05	-	12/19/05	<	0.002
12/19/05	-	01/04/06	<	0.004

Results in picoCuries per cubic meter (pCi/m3)

A new lab contract was instituted in July 2005.

Table B-2 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of I-131 in Bi-Weekly Air Iodine Samples
2005

JCP&L Substation (OCAI05)

Collection Period			I-131 (pCi/m3)
01/05/05	-	01/18/05	< 0.009
01/18/05	-	02/04/05	< 0.009
02/04/05	-	02/15/05	< 0.015
02/15/05	-	03/04/05	< 0.011
03/04/05	-	03/16/05	< 0.012
03/16/05	-	03/29/05	< 0.006
03/29/05	-	04/11/05	< 0.010
04/11/05	-	04/26/05	< 0.023
04/26/05	-	05/13/05	< 0.034
05/13/05	-	05/25/05	< 0.015
05/25/05	-	06/07/05	< 0.011
06/07/05	-	06/22/05	< 0.006
06/22/05	-	07/05/05	< 0.004
07/05/05	-	07/19/05	< 0.010
07/19/05	-	08/02/05	< 0.008
08/02/05	-	08/17/05	< 0.005
08/17/05	-	08/30/05	< 0.007
08/30/05	-	09/13/05	< 0.003
09/13/05	-	09/27/05	< 0.007
09/27/05	-	10/13/05	< 0.004
10/13/05	-	10/26/05	< 0.006
10/26/05	-	11/09/05	< 0.005
11/09/05	-	11/21/05	< 0.006
11/21/05	-	12/06/05	< 0.002
12/06/05	-	12/19/05	< 0.003
12/19/05	-	01/04/06	< 0.003

Results in picoCuries per cubic meter (pCi/m3)

A new lab contract was instituted in July 2005.

Table B-3
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of I-131 in Bi-Weekly Air Iodine Samples
2005

Fort Elfsborg Road (AIAI01)

Collection Period			I-131 (pCi/m3)
01/04/05	-	01/18/05	< 0.008
01/18/05	-	01/31/05	< 0.009
01/31/05	-	02/15/05	< 0.020
02/15/05	-	03/02/05	< 0.007
03/02/05	-	03/16/05	< 0.013
03/16/05	-	03/30/05	< 0.007
03/30/05	-	04/12/05	< 0.018
04/12/05	-	04/26/05	< 0.029
04/26/05	-	05/09/05	< 0.036
05/09/05	-	05/24/05	< 0.012
05/24/05	-	06/07/05	< 0.010
06/07/05	-	06/21/05	< 0.008
06/21/05	-	07/05/05	< 0.008
07/05/05	-	07/18/05	< 0.013
07/18/05	-	08/02/05	< 0.007
08/02/05	-	08/16/05	< 0.007
08/16/05	-	08/29/05	< 0.010
08/29/05	-	09/12/05	< 0.005
09/12/05	-	09/27/05	< 0.010
09/28/05	-	10/12/05	< 0.010
10/12/05	-	10/24/05	< 0.007
10/24/05	-	11/07/05	< 0.009
11/07/05	-	11/23/05	< 0.007
11/23/05	-	12/05/05	< 0.008
12/05/05	-	12/20/05	< 0.007
12/20/05	-	01/03/06	< 0.006

Results in picoCuries per cubic meter (pCi/m3)

A new lab contract was instituted in July 2005.

Table B-3 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of I-131 in Bi-Weekly Air Iodine Samples
2005

Plant Access Road (AIAI02)

Collection Period			I-131 (pCi/m3)
01/04/05	-	01/18/05	< 0.009
01/18/05	-	01/31/05	< 0.007
01/31/05	-	02/15/05	< 0.020
02/15/05	-	03/02/05	< 0.007
03/02/05	-	03/16/05	< 0.016
03/16/05	-	03/30/05	< 0.007
03/30/05	-	04/12/05	< 0.014
04/12/05	-	04/26/05	< 0.029
04/26/05	-	05/09/05	< 0.029
05/09/05	-	05/24/05	< 0.016
05/24/05	-	06/07/05	< 0.013
06/07/05	-	06/21/05	< 0.007
06/21/05	-	07/05/05	< 0.007
07/05/05	-	07/18/05	< 0.013
07/18/05	-	08/02/05	< 0.007
08/02/05	-	08/16/05	< 0.007
08/16/05	-	08/29/05	< 0.010
08/29/05	-	09/12/05	< 0.006
09/12/05	-	09/27/05	< 0.009
09/28/05	-	10/12/05	< 0.006
10/12/05	-	10/24/05	< 0.007
10/24/05	-	11/07/05	< 0.009
11/07/05	-	11/23/05	< 0.007
11/23/05	-	12/05/05	< 0.012
12/05/05	-	12/20/05	No Data
12/20/05	-	01/03/06	< 0.005

Results in picoCuries per cubic meter (pCi/m3)

'No Data' indicates no sample results due to mechanical failures of air sampling equipment

A new lab contract was instituted in July 2005.

Table B-3 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of I-131 in Bi-Weekly Air Iodine Samples
2005

Lower Alloways Creek School (AIAI03)

Collection Period			I-131 (pCi/m3)
01/04/05	-	01/18/05	< 0.008
01/18/05	-	01/31/05	< 0.009
01/31/05	-	02/15/05	< 0.021
02/15/05	-	03/02/05	< 0.007
03/02/05	-	03/16/05	< 0.013
03/16/05	-	03/30/05	< 0.007
03/30/05	-	04/12/05	< 0.014
04/12/05	-	04/26/05	< 0.023
04/26/05	-	05/09/05	< 0.036
05/09/05	-	05/24/05	< 0.016
05/24/05	-	06/07/05	< 0.014
06/07/05	-	06/21/05	< 0.008
06/21/05	-	07/05/05	< 0.006
07/05/05	-	07/18/05	< 0.013
07/18/05	-	08/02/05	< 0.007
08/02/05	-	08/16/05	< 0.007
08/16/05	-	08/29/05	< 0.010
08/29/05	-	09/12/05	< 0.006
09/12/05	-	09/27/05	< 0.009
09/28/05	-	10/12/05	< 0.010
10/12/05	-	10/24/05	< 0.004
10/24/05	-	11/07/05	< 0.010
11/07/05	-	11/23/05	< 0.007
11/23/05	-	12/05/05	< 0.008
12/05/05	-	12/20/05	< 0.005
12/20/05	-	01/03/06	< 0.005

Results in picoCuries per cubic meter (pCi/m3)

A new lab contract was instituted in July 2005.

Table B-4
NJDEP / BNE
Radiological Environmental Monitoring Program

Background
Concentrations of Gross Beta in Bi-Weekly Air Particulate Samples
2005

BNE Office (COAP01)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/03/05	-	01/18/05	0.017	+/-	0.0010
01/18/05	-	01/31/05	0.020	+/-	0.0011
01/31/05	-	02/15/05	0.020	+/-	0.0010
02/15/05	-	03/02/05	0.016	+/-	0.0009
03/02/05	-	03/16/05	0.016	+/-	0.0009
03/16/05	-	03/30/05	0.013	+/-	0.0009
03/30/05	-	04/12/05	0.011	+/-	0.0008
04/12/05	-	04/26/05	0.016	+/-	0.0010
04/26/05	-	05/09/05	0.016	+/-	0.0010
05/09/05	-	05/24/05	0.011	+/-	0.0008
05/24/05	-	06/07/05	0.009	+/-	0.0008
06/07/05	-	06/21/05	0.013	+/-	0.0008
06/21/05	-	07/05/05	0.010	+/-	0.0012
07/05/05	-	07/18/05	0.010	+/-	0.0013
07/18/05	-	08/02/05	0.019	+/-	0.0021
08/10/05	-	08/16/05	0.026	+/-	0.0031
08/16/05	-	08/29/05	0.014	+/-	0.0015
08/29/05	-	09/12/05	0.014	+/-	0.0015
09/12/05	-	09/27/05	0.019	+/-	0.0016
09/27/05	-	10/13/05	0.010	+/-	0.0012
10/13/05	-	10/24/05	0.005	+/-	0.0012
10/24/05	-	11/09/05	0.017	+/-	0.0015
11/09/05	-	11/21/05	0.017	+/-	0.0018
11/21/05	-	12/05/05	0.012	+/-	0.0014
12/05/05	-	12/20/05	0.005	+/-	0.0009
12/20/05	-	01/03/06	0.021	+/-	0.0017

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

A new lab contract was instituted in July 2005.

Table B-4 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Background
Concentrations of Gross Beta in Bi-Weekly Air Particulate Samples
2005

Brendan T. Byrne State Forest (COAP02)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/05/05	-	01/18/05	0.018	+/-	0.0011
01/18/05	-	02/04/05	0.018	+/-	0.0009
02/04/05	-	02/15/05	0.018	+/-	0.0011
02/15/05	-	03/04/05	0.014	+/-	0.0008
03/04/05	-	03/16/05	0.011	+/-	0.0007
03/16/05	-	03/29/05	0.014	+/-	0.0009
03/29/05	-	04/11/05	0.010	+/-	0.0007
04/11/05	-	04/26/05	0.013	+/-	0.0008
04/26/05	-	05/09/05	0.014	+/-	0.0009
05/09/05	-	05/25/05	0.009	+/-	0.0007
05/25/05	-	06/07/05	0.010	+/-	0.0008
06/07/05	-	06/22/05	0.012	+/-	0.0008
06/22/05	-	07/05/05	0.010	+/-	0.0012
07/05/05	-	07/19/05	0.012	+/-	0.0013
07/19/05	-	08/02/05	0.018	+/-	0.0016
08/02/05	-	08/17/05	0.022	+/-	0.0016
08/17/05	-	08/30/05	0.014	+/-	0.0014
08/30/05	-	09/13/05	0.015	+/-	0.0015
09/13/05	-	09/28/05	0.016	+/-	0.0016
09/27/05	-	10/11/05	0.010	+/-	0.0013
10/11/05	-	10/25/05	0.008	+/-	0.0013
10/25/05	-	11/09/05	0.016	+/-	0.0016
11/07/05	-	11/21/05	0.017	+/-	0.0017
11/21/05	-	12/05/05	0.014	+/-	0.0015
12/05/05	-	12/19/05	0.019	+/-	0.0017
12/19/05	-	01/04/06	0.019	+/-	0.0016

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

A new lab contract was instituted in July 2005.

Table B-5
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gross Beta in Bi-Weekly Air Particulate Samples
2005

Waretown Municipal Building (OCAP01)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/05/05	-	01/18/05	No Data		
01/18/05	-	02/04/05	No Data		
02/04/05	-	02/15/05	No Data		
02/15/05	-	03/04/05	0.015	+/-	0.0008
03/04/05	-	03/16/05	0.017	+/-	0.0010
03/16/05	-	03/29/05	0.015	+/-	0.0009
03/29/05	-	04/11/05	0.011	+/-	0.0007
04/11/05	-	04/26/05	0.011	+/-	0.0007
04/26/05	-	05/13/05	No Data		
05/13/05	-	05/25/05	0.010	+/-	0.0008
05/25/05	-	06/07/05	0.009	+/-	0.0006
06/07/05	-	06/22/05	0.012	+/-	0.0008
06/22/05	-	07/05/05	0.011	+/-	0.0012
07/05/05	-	07/19/05	0.011	+/-	0.0012
07/19/05	-	08/02/05	0.015	+/-	0.0014
08/02/05	-	08/17/05	0.020	+/-	0.0015
08/17/05	-	08/30/05	0.015	+/-	0.0014
08/30/05	-	09/13/05	0.014	+/-	0.0015
09/13/05	-	09/27/05	No Data		
09/27/05	-	10/13/05	0.005	+/-	0.0006
10/13/05	-	10/26/05	0.010	+/-	0.0014
10/26/05	-	11/09/05	0.018	+/-	0.0016
11/09/05	-	11/21/05	0.021	+/-	0.0020
11/21/05	-	12/06/05	0.013	+/-	0.0014
12/06/05	-	12/19/05	0.019	+/-	0.0018
12/19/05	-	01/04/06	0.020	+/-	0.0016

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

'No Data' indicates no sample results due to mechanical failures of air sampling equipment

A new lab contract was instituted in July 2005.

Table B-5 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gross Beta in Bi-Weekly Air Particulate Samples
2005

Sands Point Harbor (OCAP02)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/05/05	-	01/18/05	0.016	+/-	0.0010
01/18/05	-	02/04/05	0.018	+/-	0.0009
02/04/05	-	02/15/05	0.020	+/-	0.0013
02/15/05	-	03/04/05	0.004	+/-	0.0004
03/04/05	-	03/16/05	0.014	+/-	0.0010
03/16/05	-	03/29/05	0.014	+/-	0.0009
03/29/05	-	04/11/05	0.012	+/-	0.0008
04/11/05	-	04/26/05	0.016	+/-	0.0009
04/26/05	-	05/09/05	0.013	+/-	0.0009
05/09/05	-	05/25/05	0.011	+/-	0.0007
05/25/05	-	06/07/05	0.011	+/-	0.0009
06/07/05	-	06/22/05	0.008	+/-	0.0006
06/22/05	-	07/05/05	0.011	+/-	0.0013
07/05/05	-	07/19/05	0.010	+/-	0.0013
07/19/05	-	08/02/05	0.018	+/-	0.0016
08/02/05	-	08/17/05	0.019	+/-	0.0016
08/17/05	-	08/30/05	0.014	+/-	0.0014
08/30/05	-	09/13/05	0.015	+/-	0.0015
09/13/05	-	09/27/05	0.016	+/-	0.0015
09/27/05	-	10/13/05	0.009	+/-	0.0011
10/13/05	-	10/26/05	0.010	+/-	0.0013
10/26/05	-	11/09/05	0.018	+/-	0.0016
11/09/05	-	11/21/05	0.018	+/-	0.0018
11/21/05	-	12/06/05	0.014	+/-	0.0014
12/06/05	-	12/19/05	0.020	+/-	0.0018
12/19/05	-	01/04/06	0.021	+/-	0.0016

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

A new lab contract was instituted in July 2005.

Table B-5 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gross Beta in Bi-Weekly Air Particulate Samples
2005

Forked River Marina (OCAP03)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/05/05	-	01/18/05	0.016	+/-	0.0010
01/18/05	-	02/04/05	0.019	+/-	0.0009
02/04/05	-	02/15/05	0.006	+/-	0.0007
02/15/05	-	03/04/05	0.016	+/-	0.0009
03/04/05	-	03/16/05	0.015	+/-	0.0010
03/04/05	-	03/16/05	0.015	+/-	0.0010
03/16/05	-	03/29/05	0.009	+/-	0.0006
03/29/05	-	04/11/05	0.022	+/-	0.0017
04/11/05	-	04/26/05	0.014	+/-	0.0009
04/26/05	-	05/09/05	0.013	+/-	0.0010
05/09/05	-	05/25/05	0.010	+/-	0.0007
05/25/05	-	06/07/05	0.010	+/-	0.0008
06/07/05	-	06/22/05	0.012	+/-	0.0008
06/22/05	-	07/05/05	0.011	+/-	0.0014
07/05/05	-	07/19/05	0.014	+/-	0.0015
07/19/05	-	08/02/05	0.017	+/-	0.0017
08/02/05	-	08/17/05	0.017	+/-	0.0012
08/17/05	-	08/30/05	No Data		
08/30/05	-	09/13/05	0.014	+/-	0.0014
09/13/05	-	09/27/05	0.025	+/-	0.0018
09/27/05	-	10/13/05	0.011	+/-	0.0011
10/13/05	-	10/26/05	0.009	+/-	0.0012
10/26/05	-	11/09/05	0.017	+/-	0.0015
11/09/05	-	11/21/05	0.016	+/-	0.0016
11/21/05	-	12/06/05	0.013	+/-	0.0013
12/06/05	-	12/19/05	0.020	+/-	0.0016
12/19/05	-	01/04/06	0.021	+/-	0.0015

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

'No Data' indicates no sample results due to mechanical failures of air sampling equipment

A new lab contract was instituted in July 2005.

Table B-5 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gross Beta in Bi-Weekly Air Particulate Samples
2005

Lacey Twp. Recreation Building (OCAP04)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/05/05	-	01/18/05	0.012	+/-	0.0007
01/18/05	-	02/04/05	0.018	+/-	0.0008
02/04/05	-	02/15/05	0.017	+/-	0.0010
02/15/05	-	03/04/05	0.015	+/-	0.0007
03/04/05	-	03/16/05	0.014	+/-	0.0009
03/16/05	-	03/29/05	0.014	+/-	0.0009
03/29/05	-	04/11/05	0.010	+/-	0.0007
04/11/05	-	04/26/05	0.014	+/-	0.0008
04/26/05	-	05/09/05	0.012	+/-	0.0008
05/09/05	-	05/25/05	0.009	+/-	0.0007
05/25/05	-	06/07/05	0.008	+/-	0.0006
06/07/05	-	06/22/05	0.011	+/-	0.0007
06/22/05	-	07/05/05	0.010	+/-	0.0011
07/05/05	-	07/19/05	0.008	+/-	0.0010
07/19/05	-	08/02/05	0.015	+/-	0.0013
08/02/05	-	08/17/05	0.007	+/-	0.0009
08/17/05	-	08/30/05	0.012	+/-	0.0012
08/30/05	-	09/13/05	0.015	+/-	0.0011
09/13/05	-	09/27/05	0.011	+/-	0.0010
09/27/05	-	10/13/05	0.011	+/-	0.0010
10/13/05	-	10/26/05	0.009	+/-	0.0010
10/26/05	-	11/09/05	0.017	+/-	0.0012
11/09/05	-	11/21/05	0.011	+/-	0.0013
11/21/05	-	12/06/05	0.013	+/-	0.0012
12/06/05	-	12/19/05	0.010	+/-	0.0008
12/19/05	-	01/04/06	0.019	+/-	0.0013

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

A new lab contract was instituted in July 2005.

Table B-5 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gross Beta in Bi-Weekly Air Particulate Samples
2005

JCP&L Substation (OCAP05)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/05/05	-	01/18/05	0.015	+/-	0.0010
01/18/05	-	02/04/05	0.017	+/-	0.0009
02/04/05	-	02/15/05	0.011	+/-	0.0007
02/15/05	-	03/04/05	0.016	+/-	0.0009
03/04/05	-	03/16/05	0.014	+/-	0.0010
03/16/05	-	03/29/05	0.015	+/-	0.0010
03/29/05	-	04/11/05	0.012	+/-	0.0009
04/11/05	-	04/26/05	0.013	+/-	0.0008
04/26/05	-	05/09/05	0.013	+/-	0.0009
05/09/05	-	05/25/05	0.011	+/-	0.0008
05/25/05	-	06/07/05	0.008	+/-	0.0007
06/07/05	-	06/22/05	0.012	+/-	0.0008
06/22/05	-	07/05/05	0.012	+/-	0.0013
07/05/05	-	07/19/05	0.011	+/-	0.0013
07/19/05	-	08/02/05	0.013	+/-	0.0014
08/02/05	-	08/17/05	0.020	+/-	0.0015
08/17/05	-	08/30/05	0.013	+/-	0.0014
08/30/05	-	09/13/05	0.014	+/-	0.0014
09/13/05	-	09/27/05	0.002	+/-	0.0006
09/27/05	-	10/13/05	0.010	+/-	0.0011
10/13/05	-	10/26/05	0.010	+/-	0.0013
10/26/05	-	11/09/05	0.017	+/-	0.0015
11/09/05	-	11/21/05	0.014	+/-	0.0016
11/21/05	-	12/06/05	0.013	+/-	0.0013
12/06/05	-	12/19/05	0.024	+/-	0.0018
12/19/05	-	01/04/06	0.019	+/-	0.0015

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

A new lab contract was instituted in July 2005.

Table B-5 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gross Beta in Weekly Air Particulate Samples
2005

Finningers Farm, OC Dredge Site (OCAP06)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/04/05	-	01/12/05	0.012	+/-	0.0007
01/12/05	-	01/18/05	0.018	+/-	0.0008
01/18/05	-	01/25/05	0.017	+/-	0.0010
01/25/05	-	02/01/05	0.015	+/-	0.0007
02/01/05	-	02/08/05	0.036	+/-	0.0060
02/08/05	-	02/15/05	0.027	+/-	0.0020
02/15/05	-	02/22/05	0.031	+/-	0.0040
02/22/05	-	03/02/05	0.025	+/-	0.0029
03/02/05	-	03/08/05	0.026	+/-	0.0029
03/08/05	-	03/15/05	No Data		
03/15/05	-	03/22/05	0.028	+/-	0.0040
03/30/05	-	04/05/05	0.020	+/-	0.0020
04/05/05	-	04/12/05	0.027	+/-	0.0032
04/12/05	-	04/19/05	0.024	+/-	0.0020
04/19/05	-	04/26/05	0.027	+/-	0.0040
04/26/05	-	05/03/05	0.024	+/-	0.0027
05/03/05	-	05/10/05	0.020	+/-	0.0023
05/10/05	-	05/18/05	0.019	+/-	0.0020
05/18/05	-	05/24/05	0.018	+/-	0.0025
05/24/05	-	06/01/05	0.018	+/-	0.0020
06/01/05	-	06/07/05	0.019	+/-	0.0026
06/07/05	-	06/15/05	0.026	+/-	0.0027
06/15/05	-	06/21/05	0.017	+/-	0.0020
06/21/05	-	06/29/05	0.022	+/-	0.0023
06/29/05	-	07/06/05	0.018	+/-	0.0038
07/06/05	-	07/13/05	0.020	+/-	0.0041

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

'No Data' indicates no sample results due to mechanical failures of air sampling equipment

A new lab contract was instituted in July 2005.

Table B-5 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gross Beta in Weekly Air Particulate Samples
2005

Finningers Farm, OC Dredge Site (OCAP06)
(continued)

Collection Period			Particulate Gross Beta (pCi/m3)		
07/13/05	-	07/19/05	0.022	+/-	0.0047
07/19/05	-	07/26/05	0.024	+/-	0.0046
07/26/05	-	08/03/05	0.032	+/-	0.0047
08/03/05	-	08/10/05	0.039	+/-	0.0055
08/10/05	-	08/16/05	0.030	+/-	0.0054
08/16/05	-	08/23/05	0.034	+/-	0.0050
08/23/05	-	08/30/05	0.021	+/-	0.0041
08/30/05	-	09/07/05	0.018	+/-	0.0041
09/07/05	-	09/13/05	0.025	+/-	0.0057
09/13/05	-	09/21/05	0.023	+/-	0.0040
09/21/05	-	09/27/05	0.037	+/-	0.0059
09/27/05	-	10/05/05	0.030	+/-	0.0043
10/05/05	-	10/12/05	0.016	+/-	0.0039
10/12/05	-	10/19/05	0.016	+/-	0.0038
10/19/05	-	10/26/05	0.013	+/-	0.0038
10/26/05	-	11/02/05	0.020	+/-	0.0041
11/02/05	-	11/08/05	0.024	+/-	0.0050
11/08/05	-	11/16/05	0.022	+/-	0.0041
11/16/05	-	11/22/05	0.027	+/-	0.0051
11/22/05	-	11/30/05	0.016	+/-	0.0037
11/30/05	-	12/07/05	0.027	+/-	0.0051
12/07/05	-	12/13/05	0.038	+/-	0.0059
12/13/05	-	12/20/05	0.023	+/-	0.0043
12/20/05	-	12/28/05	0.032	+/-	0.0046
12/28/05	-	01/04/06	0.016	+/-	0.0040

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

A new lab contract was instituted in July 2005.

Table B-6
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gross Beta in Bi-Weekly Air Particulate Samples
2005

Fort Elfsborg Road (AIAP01)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/04/05	-	01/18/05	0.017	+/-	0.0010
01/18/05	-	01/31/05	0.019	+/-	0.0011
01/31/05	-	02/15/05	0.019	+/-	0.0011
02/15/05	-	03/02/05	0.014	+/-	0.0009
03/02/05	-	03/16/05	0.015	+/-	0.0010
03/16/05	-	03/30/05	0.013	+/-	0.0009
03/30/05	-	04/12/05	0.012	+/-	0.0009
04/12/05	-	04/26/05	0.014	+/-	0.0010
04/26/05	-	05/09/05	0.015	+/-	0.0010
05/09/05	-	05/24/05	0.010	+/-	0.0008
05/24/05	-	06/07/05	0.009	+/-	0.0007
06/07/05	-	06/21/05	0.012	+/-	0.0009
06/21/05	-	07/05/05	0.012	+/-	0.0014
07/05/05	-	07/18/05	0.012	+/-	0.0014
07/18/05	-	08/02/05	0.018	+/-	0.0016
08/02/05	-	08/16/05	0.024	+/-	0.0019
08/16/05	-	08/29/05	0.016	+/-	0.0016
08/29/05	-	09/12/05	0.016	+/-	0.0015
09/12/05	-	09/27/05	0.002	+/-	0.0016
09/28/05	-	10/12/05	0.012	+/-	0.0013
10/12/05	-	10/24/05	0.013	+/-	0.0016
10/24/05	-	11/07/05	0.014	+/-	0.0015
11/07/05	-	11/23/05	0.014	+/-	0.0014
11/23/05	-	12/05/05	0.015	+/-	0.0017
12/05/05	-	12/20/05	0.019	+/-	0.0017
12/20/05		01/03/06	0.021	+/-	0.0018

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

A new lab contract was instituted in July 2005.

Table B-6 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gross Beta in Bi-Weekly Air Particulate Samples
2005

Plant Access Road (AIAP02)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/04/05	-	01/18/05	0.016	+/-	0.0009
01/18/05	-	01/31/05	0.019	+/-	0.0011
01/31/05	-	02/15/05	0.018	+/-	0.0010
02/15/05	-	03/02/05	0.016	+/-	0.0009
03/02/05	-	03/16/05	0.018	+/-	0.0010
03/16/05	-	03/30/05	0.014	+/-	0.0009
03/30/05	-	04/12/05	0.011	+/-	0.0008
04/12/05	-	04/26/05	0.013	+/-	0.0009
04/26/05	-	05/09/05	0.016	+/-	0.0010
05/09/05	-	05/24/05	0.010	+/-	0.0008
05/24/05	-	06/07/05	0.011	+/-	0.0009
06/07/05	-	06/21/05	0.012	+/-	0.0008
06/21/05	-	07/05/05	0.012	+/-	0.0013
07/05/05	-	07/18/05	0.013	+/-	0.0014
07/18/05	-	08/02/05	0.017	+/-	0.0015
08/02/05	-	08/16/05	0.023	+/-	0.0018
08/16/05	-	08/29/05	0.016	+/-	0.0016
08/29/05	-	09/12/05	0.015	+/-	0.0015
09/12/05	-	09/27/05	0.001	+/-	0.0015
09/28/05	-	10/12/05	0.004	+/-	0.0009
10/12/05	-	10/24/05	0.012	+/-	0.0015
10/24/05	-	11/07/05	0.015	+/-	0.0015
11/07/05	-	11/23/05	0.013	+/-	0.0013
11/23/05	-	12/05/05	0.016	+/-	0.0028
12/05/05	-	12/20/05	No Data		
12/20/05	-	01/03/06	0.020	+/-	0.0016

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

'No Data' indicates no sample results due to mechanical failures of air sampling equipment

A new lab contract was instituted in July 2005.

Table B-6 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gross Beta in Bi-Weekly Air Particulate Samples
2005

Lower Alloways Creek School (AIAP03)

Collection Period			Particulate Gross Beta (pCi/m3)		
01/04/05	-	01/18/05	0.015	+/-	0.0010
01/18/05	-	01/31/05	0.020	+/-	0.0012
01/31/05	-	02/15/05	0.017	+/-	0.0010
02/15/05	-	03/02/05	0.017	+/-	0.0010
03/02/05	-	03/16/05	0.014	+/-	0.0009
03/16/05	-	03/30/05	0.011	+/-	0.0008
03/30/05	-	04/12/05	0.012	+/-	0.0008
04/12/05	-	04/26/05	0.013	+/-	0.0009
04/26/05	-	05/09/05	0.014	+/-	0.0010
05/09/05	-	05/24/05	0.011	+/-	0.0008
05/24/05	-	06/07/05	0.010	+/-	0.0008
06/07/05	-	06/21/05	0.011	+/-	0.0008
06/21/05	-	07/05/05	0.010	+/-	0.0011
07/05/05	-	07/18/05	0.010	+/-	0.0013
07/18/05	-	08/02/05	0.016	+/-	0.0016
08/02/05	-	08/16/05	0.023	+/-	0.0018
08/16/05	-	08/29/05	0.016	+/-	0.0016
08/29/05	-	09/12/05	0.017	+/-	0.0016
09/12/05	-	09/27/05	0.017	+/-	0.0015
09/28/05	-	10/12/05	0.004	+/-	0.0009
10/12/05	-	10/24/05	0.012	+/-	0.0015
10/24/05	-	11/07/05	0.015	+/-	0.0015
11/07/05	-	11/23/05	0.014	+/-	0.0014
11/23/05	-	12/05/05	0.013	+/-	0.0017
12/05/05	-	12/20/05	0.018	+/-	0.0016
12/20/05	-	01/03/06	0.023	+/-	0.0018

Results in picoCuries per cubic meter (pCi/m3) +/- 2 Standard Deviations

A new lab contract was instituted in July 2005.

Table B-7
NJDEP / BNE
Radiological Environmental Monitoring Program

Background
Concentrations of Gamma Emitters and Strontium-90 in Quarterly Composite Air Samples 2005

BNE Office (COAP01)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
01/03/05	-	03/30/05	< 0.0004	< 0.0004	< 0.0005	< 0.0001
03/30/05	-	06/21/05	< 0.0004	< 0.0004	< 0.0004	< 0.0001
06/21/05	-	09/27/05	< 0.0010	< 0.0014	< 0.0012	< 0.0028
09/27/05	-	12/20/05	< 0.0012	< 0.0020	< 0.0011	< 0.0019

Brendan T. Byrne State Forest (COAP02)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
01/05/05	-	03/29/05	< 0.0004	< 0.0003	< 0.0003	< 0.0001
03/29/05	-	06/22/05	< 0.0004	< 0.0003	< 0.0004	< 0.0001
06/22/05	-	09/28/05	< 0.0006	< 0.0005	< 0.0007	< 0.0020
09/28/05	-	12/19/05	< 0.0017	< 0.0020	< 0.0015	< 0.0020

Results in picoCuries per cubic meter (pCi/m3)

A new lab contract was instituted in July 2005.

Table B-8
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gamma Emitters and Strontium-90 in Quarterly Composite Air Samples 2005

Waretown Municipal Building (OCAP01)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
02/15/05	-	03/29/05	< 0.0010	< 0.0006	< 0.0009	< 0.0002
03/29/05	-	06/22/05	< 0.0003	< 0.0004	<0.0004	< 0.0001
06/22/05	-	09/28/05	< 0.0012	< 0.0011	< 0.0008	< 0.0013
09/28/05	-	12/19/05	< 0.0010	< 0.0014	< 0.0009	< 0.0019

Sands Point Harbor (OCAP02)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
01/05/05	-	03/29/05	< 0.0004	< 0.0004	< 0.0005	No Data*
03/29/05	-	06/22/05	< 0.0004	< 0.0004	< 0.0005	< 0.0001
06/22/05	-	09/28/05	< 0.0005	< 0.0005	< 0.0008	< 0.0014
09/28/05	-	12/19/05	< 0.0015	< 0.0018	< 0.0011	< 0.0019

Forked River Marina (OCAP03)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
01/05/05	-	03/29/05	< 0.0005	< 0.0004	< 0.0003	< 0.0001
03/29/05	-	06/22/05	< 0.0005	< 0.0005	< 0.0004	< 0.0001
06/22/05	-	09/28/05	< 0.0010	< 0.0006	< 0.0010	< 0.0032
09/28/05	-	12/19/05	< 0.0012	< 0.0017	< 0.0011	< 0.0021

Lacey Twp. Recreation Building (OCAP04)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
01/05/05	-	03/29/05	< 0.0002	< 0.0002	< 0.0003	< 0.0001
03/29/05	-	06/22/05	< 0.0004	< 0.0003	< 0.0003	< 0.0001
06/22/05	-	09/28/05	< 0.0006	< 0.0004	< 0.0005	< 0.0019
09/28/05	-	12/19/05	< 0.0011	< 0.0013	< 0.0010	< 0.0014

Jersey Central Power & Light Substation (OCAP05)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
01/05/05	-	03/29/05	< 0.0004	< 0.0003	< 0.0004	< 0.0001
03/29/05	-	06/22/05	< 0.0004	< 0.0003	< 0.0004	< 0.0001
06/22/05	-	09/28/05	< 0.0008	< 0.0007	< 0.0007	< 0.0021
09/28/05	-	12/19/05	< 0.0013	< 0.0018	< 0.0015	< 0.0020

Finningers Farm, OC Dredge Site (OCAP06)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
01/04/05	-	03/22/05	< 0.0013	< 0.0011	< 0.0014	< 0.0003
03/30/05	-	06/29/05	< 0.0012	< 0.0007	< 0.0009	< 0.0002
06/29/05	-	09/28/05	< 0.0020	< 0.0009	< 0.0011	< 0.0053
09/28/05	-	12/28/05	< 0.0027	< 0.0028	< 0.0027	< 0.0044

* Sr-90 analysis not performed.
Results in picoCuries per cubic meter (pCi/m3) / A new lab contract was instituted in July 2005.

Table B-9
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gamma Emitters and Strontium-90 in Bi-Weekly Quarterly Composite Air Samples 2005

Fort Elfsborg Road (AIAP01)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
01/04/05	-	03/30/05	< 0.0006	< 0.0004	< 0.0005	< 0.0001
03/30/05	-	06/21/05	< 0.0005	< 0.0005	< 0.0006	< 0.0001
06/21/05	-	09/28/05	< 0.0004	< 0.0004	< 0.0005	< 0.0015
09/28/05	-	12/20/05	< 0.0011	< 0.0015	< 0.0011	< 0.0015

Plant Access Road (AIAP02)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
01/04/05	-	03/30/05	< 0.0004	< 0.0002	< 0.0004	< 0.0001
03/30/05	-	06/21/05	< 0.0005	< 0.0004	< 0.0005	< 0.0001
06/21/05	-	09/28/05	< 0.0008	< 0.0008	< 0.0010	< 0.0020
09/28/05	-	12/20/05	< 0.0014	< 0.0022	< 0.0014	< 0.0031

Fort Elfsborg Road (AIAP03)

Collection Period			Co-60	Cs-134	Cs-137	Sr-90
01/04/05	-	03/30/05	< 0.0006	< 0.0004	< 0.0005	< 0.0001
03/30/05	-	06/21/05	< 0.0005	< 0.0005	< 0.0004	< 0.0001
06/21/05	-	09/28/05	< 0.0011	< 0.0007	< 0.0007	< 0.0015
09/28/05	-	12/20/05	< 0.0013	< 0.0020	< 0.0015	< 0.0016

Results in picoCuries per cubic meter (pCi/m3)

A new lab contract was instituted in July 2005.

Table B-10
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gamma Emitters and Strontium-90 in Shellfish Samples
2005

Stouts Creek (OCFS01)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	Sr-90*
04/26/05 - Clams	< 11	< 11	< 10	< 12	< 964
10/03/05 - Clams	< 57	< 32	< 39	< 42	No Data

East of Site – Barnegat Bay (OCFS02)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	Sr-90*
04/25/05 - Clams	< 11	< 11	< 10	< 11	< 997
10/03/05 - Clams	< 64	< 63	< 61	< 75	< 46

Great Bay / Little Egg Harbor (OCFS03)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	Sr-90*
04/25/05 - Clams	< 12	< 12	< 12	< 13	< 1030
10/04/05 - Clams	< 59	< 55	< 46	< 52	< 12

Results in picoCuries per kilogram – WET (pCi/kg)

'No Data' due to sample spoilage

* A new lab contract was instituted in July 2005. Sample count time was increased with the new laboratory resulting in reduced sample minimum detectable concentrations. Both laboratories utilized Radiochemical Analysis for Strontium-89/90.

Table B-11
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gamma Emitters and Strontium-90 in Shellfish Samples
2005

Onsite Surface Water Inlet Building (AIFS01)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	Sr-90*
05/23/05 - Fish	< 11	< 12	< 11	< 12	< 1350
07/18/05 - Crab	< 11	< 10	< 10	< 10	< 2
09/13/05 - Fish	< 13	< 11	< 11	< 11	< 6
09/15/05 - Crab	< 13	< 13	< 11	< 13	< 6

Delaware River – West Bank Upstream (AIFS02)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	Sr-90*
05/23/05 - Fish	< 13	< 13	< 10	< 12	< 1150
07/18/05 - Crab	< 14	< 13	< 13	< 13	<2
09/13/05 - Fish	< 15	< 16	< 14	< 16	< 5
09/15/05 - Crab	< 44	< 44	< 36	< 39	< 6

Results in picoCuries per kilogram – WET (pCi/kg)

* A new lab contract was instituted in July 2005. Sample count time was increased with the new laboratory resulting in reduced sample minimum detectable concentrations. Both laboratories utilized Radiochemical Analysis for Strontium-89/90.

Table B-12
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gamma Emitters in Aquatic Sediment Samples
2005

Barnegat Bay (OCAQ01)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
04/25/05	< 12.8	< 12.0	< 13.7	< 14.3	< 153.5
10/3/05	< 12.5	< 14.7	< 11.4	< 14.7	< 48.2

OCNGS Discharge Canal (OCAQ02)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
04/25/05	< 15.6	< 14.3	< 12.1	< 12.6	< 155.7
10/3/05	< 13.1	< 14.6	< 13.0	< 14.7	< 62.5

Great Bay / Little Egg Harbor (OCAQ03)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
04/26/05	< 36.6	< 32.5	< 27.0	< 31.8	< 298.1
10/4/05	< 17.4	< 16.7	< 15.6	< 16.6	< 90.7

Stouts Creek (OCAQ04)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
04/26/05	< 21.9	< 20.0	< 18.3	< 22.8	< 187.1
10/3/05	< 20.5	< 26.8	< 21.1	< 23.2	< 68.0

Results in picoCuries per kilogram – DRY (pCi/kg)

A new lab contract was instituted in July 2005.

Table B-13
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gamma Emitters in Aquatic Sediment Samples
2005

Observation Building (AIAQ01)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
06/22/05	< 13.1	< 12.6	< 11.6	< 13.8	< 67.8

Surface Water Inlet Building (AIAQ02)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
06/22/05	< 19.0	< 16.1	< 15.8	< 17.7	< 98.8
11/9/05	< 10.0	< 9.3	< 8.7	< 10.6	< 45.7

Onsite – Cooling Tower Blowdown Discharge Line (AIAQ03)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
06/22/05	< 27.0	< 25.5	< 21.2	< 25.8	< 152.1
11/9/05	< 20.5	< 20.3	< 16.4	< 19.1	< 82.5

Onsite – South Storm Drain Discharge Line (AIAQ04)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
06/22/05	< 23.6	< 22.2	< 18.6	< 21.0	< 141.0
11/9/05	< 20.0	< 17.6	< 16.1	< 19.4	< 89.5

Results in picoCuries per kilogram – DRY (pCi/kg)

A new lab contract was instituted in July 2005.

Table B-14
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gamma Emitters in Vegetable Samples
2005

OCNGS Onsite Garden (OCVE01)

Sample	Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
Cabbage	08/24/05	< 26	< 22	< 25	< 32	< 45
Collards	08/24/05	< 26	< 27	< 23	< 30	< 44
Kale	08/24/05	< 20	<23	< 31	< 45	< 37
Cabbage	09/21/05	< 11	< 18	< 13	< 13	< 23
Collards	09/21/05	<15	< 19	< 17	< 20	< 29
Kale	09/21/05	< 24	< 22	< 24	< 27	< 36
Cabbage	10/17/05	< 23	< 25	< 18	< 25	< 44
Collards	10/17/05	< 18	< 18	< 16	< 23	< 48

Farm J (OCVE02)

Sample	Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
Cabbage	08/24/05	< 23	< 35	<23	< 27	< 44
Collards	08/24/05	< 26	< 30	< 27	< 26	< 51
Kale	08/24/05	< 21	< 23	< 22	< 23	< 38
Cabbage	09/21/05	< 13	< 8	< 11	< 11	< 18
Collards	09/21/05	< 16	< 17	< 18	< 20	< 32
Kale	09/21/05	< 14	< 18	< 14	< 15	< 28
Cabbage	10/17/05	< 16	< 20	< 17	< 17	< 37
Collards	10/17/05	<14	< 16	< 18	< 21	< 40
Kale	10/17/05	<10	< 9	< 8	< 9	< 54

OCNGS Onsite Garden (OCVE03)

Sample	Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
Cabbage	08/24/05	< 19	< 41	< 28	< 41	< 44
Collards	08/24/05	< 18	< 18	< 20	< 21	< 33
Cabbage	09/21/05	< 12	< 15	< 12	< 16	< 26
Cabbage	10/17/05	< 23	< 25	< 22	< 21	< 58

Results in picoCuries per kilogram – WET (pCi/kg)

A new lab contract was instituted in July 2005.

Table B-15
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gamma Emitters in Vegetable Samples
2005

Farm D (AIVE01)

Sample	Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
Peppers	07/20/05	< 21	< 16	< 18	< 19	< 47
Collards	07/20/05	< 22	< 26	< 20	< 27	< 55

Farm F (AIVE03)

Sample	Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
Corn	07/20/05	< 23	< 21	< 16	< 20	< 47

Farm G (AIVE04)

Sample	Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
Tomato	07/20/05	< 19	< 20	< 16	< 15	< 40

Farm H (AIVE05)

Sample	Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
Cabbage	07/21/05	< 19	< 16	< 20	< 20	< 47

Farm I (AIVE06)

Sample	Collection Date	Co-58	Co-60	Cs-134	Cs-137	I-131
Cabbage	07/20/05	< 17	< 19	< 15	< 19	< 48

Results in picoCuries per kilogram – WET (pCi/kg)

A new lab contract was instituted in July 2005.

Table B-16
NJDEP / BNE
Radiological Environmental Monitoring Program

Background
Concentrations of Gamma Emitters and Strontium-90 in Milk Samples
2005

Farm T (COMI01)			
Collection Date	**Cs-137**	**I-131**	**Sr-90**
08/08/05	< 1.55	< 0.91	< 0.20
08/16/05	< 2.93	< 0.65	< 0.24
10/25/05	< 1.96	< 0.74	< 0.37

Results in picoCuries per Liter (pCi/L)

Background milk sample location was established in August 2004

A new lab contract was instituted in July 2005.

Table B-17
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gamma Emitters and Strontium-90 in Milk Samples
2005

Farm A (AIMI01)

Collection Date	Cs-137	I-131	Sr-90
01/02/05	< 3.93	< 2.89	< 0.90
02/07/05	< 4.20	< 4.00	< 0.91
03/06/05	< 4.11	< 2.07	< 1.06
04/03/05	< 4.48	< 2.79	< 0.94
05/01/05	< 4.21	< 7.73	< 1.14
06/05/05	< 4.32	< 7.30	< 1.11
07/04/05	< 3.12	< 0.30	< 0.18
07/31/05	< 0.77	< 0.60	< 0.18
09/05/05	< 2.17	< 0.47	< 0.22
10/03/05	< 2.92	< 0.45	< 0.45
10/31/05	< 0.81	< 0.74	< 0.29
12/04/05	< 2.39	< 0.62	< 0.93

Farm B (AIMI02)

Collection Date	Cs-137	I-131	Sr-90
01/03/05	< 4.94	< 2.79	< 0.96
02/08/05	< 4.60	< 4.25	< 0.99
03/07/05	< 4.74	< 2.15	2.18 +/- .81
04/04/05	< 5.19	< 2.17	< 0.89
05/02/05	< 4.67	< 5.79	< 1.04
06/06/05	< 5.20	< 5.81	< 0.97
07/05/05	< 2.00	< 0.27	< 0.22
08/01/05	< 5.84	< 0.73	< 0.20
09/06/05	< 1.44	< 0.47	< 0.24
10/04/05	< 2.15	< 0.42	< 0.72
11/02/05	< 2.86	< 0.25	< 0.33
12/06/05	< 2.89	< 0.29	< 0.59

Results in picoCuries per Liter (pCi/L) +/- 2 Standard Deviations

A new lab contract was instituted in July 2005.

Table B-17 (continued)
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gamma Emitters and Strontium-90 in Milk Samples
2005

Farm C (AIMI03)			
Collection Date	**Cs-137**	**I-131**	**Sr-90**
01/02/05	< 4.91	< 2.22	< 1.22
02/06/05	< 4.86	< 3.13	< 1.00
03/06/05	< 5.33	< 2.02	< 0.94
04/04/05	< 5.05	< 1.67	< 0.99
05/01/05	< 5.08	< 7.41	< 1.04
06/05/05	< 5.03	< 7.36	< 1.11
07/04/05	< 3.11	< 0.65	< 0.19
08/01/05	< 1.01	< 1.00	< 0.25
09/05/05	< 1.66	< 0.91	< 0.23
10/02/05	< 1.56	< 0.84	< 0.60
10/31/05	< 3.09	< 0.29	< 0.25
12/04/05	< 2.76	< 0.60	< 0.80

Results in picoCuries per Liter (pCi/L)

A new lab contract was instituted in July 2005.

Table B-18
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gamma Emitters and Tritium in Surface Water
2005

Barnegat Bay (OCSW01)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
04/25/05	< 1.99	< 1.88	< 1.65	< 1.99	< 207	< 6.65
10/03/05	< 8.32	< 8.58	< 7.46	< 7.66	< 251	< 20.19

Great Bay / Little Egg Harbor (OCSW02)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
01/04/05	< 2.05	< 1.93	< 1.83	< 2.06	< 247	< 5.05
02/01/05	< 1.93	< 2.06	< 1.84	< 2.19	< 263	< 4.60
03/02/05	< 1.90	< 2.41	< 1.90	< 2.24	< 239	< 4.80
04/05/05	< 1.80	< 2.00	< 1.50	< 1.90	< 173	< 3.00
05/03/05	< 2.25	< 1.94	< 1.94	< 2.23	< 206	< 12.00
06/01/05	< 2.01	< 1.95	< 1.72	< 1.92	< 184	< 6.81
07/06/05	< 6.49	< 6.16	< 6.17	< 6.33	< 539	< 1.15
08/03/05	< 5.57	< 5.80	< 4.93	< 5.07	< 245	< 1.05
09/07/05	< 11.05	< 12.96	< 11.08	< 14.20	< 268	< 36.81
10/05/05	< 8.83	< 9.57	< 8.02	< 8.45	< 255	< 21.07
11/01/05	< 9.03	< 8.32	< 8.53	< 9.38	< 259	< 23.38
12/07/05	< 5.78	< 6.33	< 5.04	< 6.21	< 279	< 15.70

Stouts Creek (OCSW03)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
04/26/05	< 2.10	< 2.02	< 1.87	< 2.24	< 207	< 7.56
10/03/05	< 8.43	< 9.33	< 7.89	< 7.96	< 254	< 26.10

OCNGS Discharge Canal (OCSW04)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
01/04/05	< 1.70	< 1.82	< 1.70	< 1.90	< 250	< 4.26
02/01/05	< 1.81	< 2.01	< 1.65	< 1.92	< 262	< 3.82
03/02/05	< 1.80	< 1.90	< 1.68	< 1.99	< 235	< 3.87
04/05/05	< 2.21	< 2.14	< 2.03	< 2.22	< 170	< 3.70
05/03/05	< 2.03	< 2.04	< 1.72	< 2.03	< 205	< 10.70
06/01/05	< 2.25	< 2.25	< 1.92	< 2.33	< 184	< 7.96
07/06/05	< 7.59	< 6.99	< 6.28	< 6.88	< 537	< 1.23
08/03/05	< 6.75	< 6.54	< 5.62	< 5.94	< 242	< 1.06
09/07/05	< 7.43	< 7.43	< 7.17	< 8.17	< 266	< 23.90
10/05/05	< 10.41	< 10.11	< 9.40	< 11.74	< 251	< 25.04
11/01/05	< 10.02	< 10.39	< 9.82	< 11.51	< 261	< 32.63
12/07/05	< 7.03	< 6.59	< 7.46	< 7.17	< 282	< 22.38

* Results in picoCuries per liter (pCi/L) / New lab contract instituted in July 2005. Laboratory analysis for I-131 was performed using Radiochemical Analysis (July through August). Gamma Spectrometry analysis was used for the remainder of the year.

Table B-19
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gamma Emitters and Tritium in Surface Water
2005

Surface Water Inlet Building Discharge (AISW01)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
01/05/05	< 2.06	< 2.10	< 1.59	< 1.78	< 234	< 5.32
02/07/05	< 1.91	< 1.85	< 1.71	< 1.92	< 237	< 8.03
03/07/05	< 2.10	< 1.97	< 1.80	< 2.00	< 234	< 11.30
04/07/05	< 2.10	< 1.79	< 1.63	< 2.02	< 210	< 20.00
05/03/05	< 2.44	< 1.72	< 2.05	< 2.28	< 197	< 13.50
06/07/05	< 2.21	< 2.09	< 1.94	< 2.25	< 185	< 7.56
07/07/05	< 6.91	< 6.90	< 6.43	< 7.79	< 567	< 0.98
08/04/05	< 5.58	< 5.63	< 10.85	< 5.58	< 249	< 1.27
09/06/05	< 10.74	< 10.83	< 10.85	< 11.42	< 264	< 38.18
10/04/05	< 9.36	< 8.21	< 7.20	< 7.92	< 256	< 20.59
11/03/05	< 10.78	< 10.85	< 11.49	< 11.23	< 272	< 29.81
12/14/05	< 9.07	< 9.33	< 8.94	< 9.07	< 289	< 28.96

West Bank – Delaware River (AISW02)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
01/05/05	< 1.98	< 1.81	< 1.68	< 2.07	< 234	< 6.29
02/07/05	< 2.34	< 2.09	< 1.88	< 2.43	< 238	< 9.54
03/07/05	< 2.37	< 2.25	< 2.03	< 2.39	< 234	< 14.20
04/07/05	< 2.69	< 2.15	< 1.90	< 2.31	< 208	< 25.90
05/03/05	< 2.09	< 2.05	< 1.90	< 2.26	< 197	< 17.40
06/07/05	< 2.05	< 1.88	< 1.62	< 1.83	< 186	< 6.11
07/07/05	< 10.90	< 10.83	< 10.0	< 11.19	< 557	< 1.01
08/04/05	< 5.96	< 6.87	< 6.00	< 5.78	< 244	< 1.50
09/06/05	< 7.55	< 8.50	< 6.59	< 7.51	< 262	< 23.21
10/04/05	< 8.32	< 8.40	< 8.04	< 8.88	< 254	< 23.48
11/03/05	< 7.10	< 7.77	< 6.83	< 7.92	< 282	< 19.70
12/14/05	< 6.85	< 7.33	< 7.14	< 6.96	< 299	< 19.90

Results in picoCuries per liter (pCi/L)

* New lab contract instituted in July 2005. Laboratory analysis for I-131 was performed using Radiochemical Analysis (July through August). Gamma Spectrometry analysis was used for the remainder of the year.

Table B-20
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Concentrations of Gamma Emitters and Tritium in Well Water
2005

Oyster Creek Administration Building Onsite (OCWW01)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
01/05/05	< 1.52	< 1.95	< 1.57	< 1.76	< 243	< 2.91
04/11/05	< 2.84	< 2.93	< 2.47	< 2.63	< 200	< 9.85
07/05/05	< 7.45	< 9.15	< 8.38	< 10.19	< 501	< 0.98
10/12/05	< 5.50	< 5.48	< 5.01	< 5.89	< 261	< 0.71

Forked River Marina (OCWW02)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
01/05/05	< 2.11	< 2.10	< 1.95	< 2.39	< 249	< 3.95
04/11/05	< 2.87	< 2.80	< 2.59	< 2.69	< 204	< 10.30
07/05/05	< 5.39	< 5.70	< 7.08	< 6.44	< 501	< 1.01
10/12/05	< 7.93	< 8.37	< 7.46	< 9.31	< 263	< 0.72

Results in picoCuries per Liter (pCi/L)

* A new lab contract was instituted in July 2005. Laboratory analysis for I-131 was performed using the Gamma Spectrometry process (January through April) and Radiochemical Analysis (July through October).

Table B-21
NJDEP / BNE
Radiological Environmental Monitoring Program

Salem / Hope Creek
Concentrations of Gamma Emitters and Tritium in Well Water
2005

Elsinboro School (AIWW01)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
01/04/05	< 1.60	< 1.98	< 1.71	< 1.67	< 247	< 2.38
04/12/05	< 2.19	< 1.72	< 1.84	< 2.23	< 210	< 17.30
07/05/05	< 5.85	< 6.16	< 5.82	< 6.77	< 496	< 0.96
10/13/05	< 5.59	< 5.92	< 4.88	< 4.95	< 265	< 0.86

Lower Alloways Creek Police Station (AIWW02)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
01/04/05	< 2.34	< 2.62	< 2.36	< 2.54	< 249	< 3.14
04/12/05	< 2.05	< 1.81	< 1.69	< 1.90	< 208	< 15.90
07/05/05	< 10.53	< 12.08	< 10.59	< 11.54	< 508	< 1.33
10/13/05	< 7.64	< 8.33	< 6.36	< 8.85	< 266	< 0.78

Salem Administration Building (AIWW03)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
01/04/05	< 1.79	< 1.94	< 1.76	< 1.82	< 250	< 2.97
04/14/05	< 2.86	< 2.96	< 2.56	< 2.75	< 211	< 12.00
07/07/05	< 6.70	< 7.89	< 6.06	< 6.84	< 546	< 1.06
10/13/05	< 5.48	< 5.82	< 5.45	< 6.02	< 266	< 0.79

Lower Alloways Creek School (AIWW04)

Collection Date	Co-58	Co-60	Cs-134	Cs-137	H-3	I-131*
01/04/05	< 2.07	< 2.26	< 1.97	< 2.40	< 251	< 4.01
04/12/05	< 2.55	< 2.03	< 1.98	< 2.38	< 208	< 20.40
07/0/05	< 4.98	< 5.76	< 5.01	< 5.55	< 505	< 0.97
10/13/05	< 5.08	< 5.48	< 5.34	< 5.24	< 260	< 0.86

Results in picoCuries per Liter (pCi/L)

* A new lab contract was instituted in July 2005. Laboratory analysis for I-131 was performed using the Gamma Spectrometry process (January through April) and Radiochemical Analysis (July through October).

Table B-22
NJDEP / BNE
Radiological Environmental Monitoring Program

Oyster Creek
Quarterly Thermoluminescent Dosimetry (TLD) Data
2005

Station	Location	1st Qtr	Std Dev	2nd Qtr	Std Dev	3rd Qtr	Std Dev	4th Qtr	Std Dev
1	Ocean County Vocational School	12.7	0.5	12.0	0.6	11.5	1.0	11.6	1.0
2	Ocean Twp. Municipal Building	12.8	0.3	13.4	0.5	12.3	0.4	13.2	1.5
3	Sewage Pump Station, Forked River	13.4	0.6	14.2	0.7	13.7	0.4	13.3	1.5
4	Twin River Station, Forked River	12.2	0.5	11.7	0.6	13.2	0.5	12.2	1.7
5	Sewage Pump Station, Ocean Twp., NJ	13.0	0.4	13.2	0.6	13.2	0.2	12.9	1.1
6	OCNGS, Gate #2, Forked River	13.1	0.5	13.1	0.5	13.4	0.3	13.5	0.7
7	Finningers Farm, Forked River	12.1	0.2	11.8	0.7	11.7	0.3	12.1	0.8
8	Ocean County Cemetery, Waretown	12.4	0.5	11.8	0.8	14.3	0.9	11.9	1.2
9	OCNGS Building 17, Forked River	12.9	0.2	13.7	0.7	13.3	0.4	13.2	0.6
10	Sheffield & Derby Rd, Forked River	12.7	0.3	13.2	0.8	12.5	0.5	12.1	1.2
11	Lakeside Drive, Forked River	12.3	0.5	13.7	0.4	*	*	12.9	1.1
12	Forked River Game Farm, Forked River	13.1	0.2	13.7	0.6	*	*	13.4	0.7
13	Restrooms, Lakeside Dr., Forked River	12.7	0.1	13.0	0.7	12.9	0.5	13.0	1.2
14	DEP Marina, Forked River	13.2	0.2	14.0	0.4	13.6	1.3	13.8	1.1
15	Recreation Center, Waretown	12.2	0.4	12.5	0.4	14.9	1.2	12.9	0.7
16	North Access Rd., Forked River	12.7	0.3	14.1	0.3	14.0	0.3	14.2	1.2

All exposures were normalized to 90 days (a standard quarter) and are reported in units of *milliroentgen (mR)*

* *Data lost due to environmental damage, or vandalism*

Table B-23
NJDEP / BNE
Radiological Environmental Monitoring Program

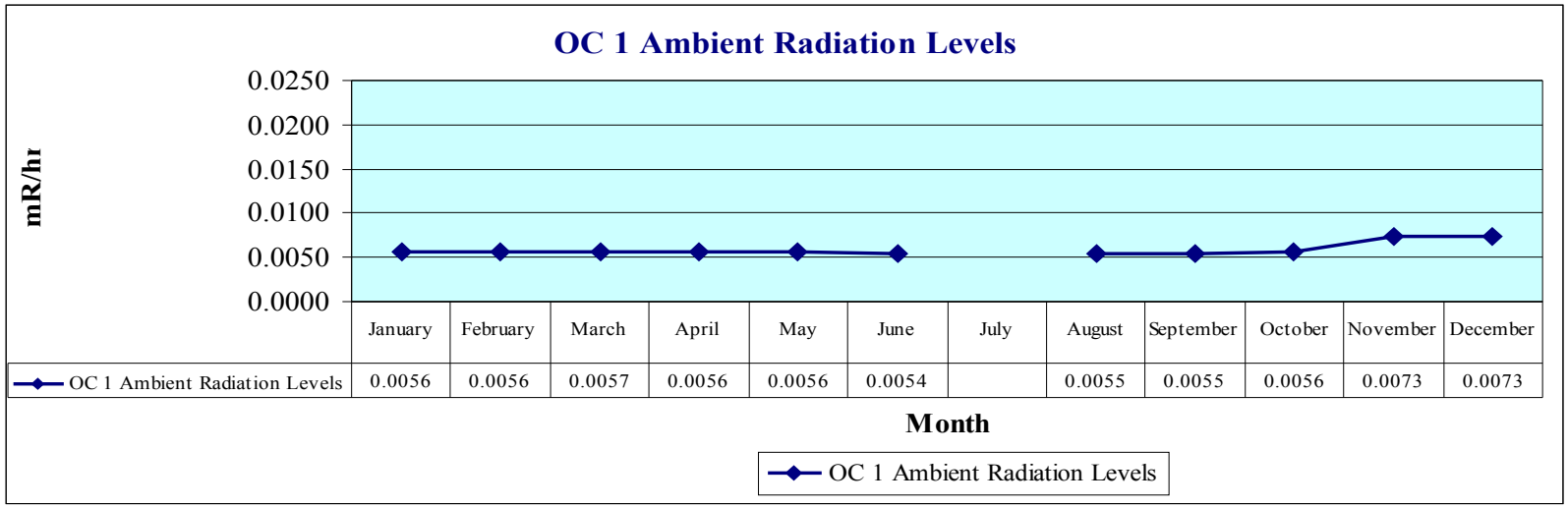
Salem / Hope Creek
Quarterly Thermoluminescent Dosimetry (TLD) Data
2005

Station	Location	1st Qtr	Std Dev	2nd Qtr	Std Dev	3rd Qtr	Std Dev	4th Qtr	Std Dev
1	Access Road - S, Lower Alloways	13.5	0.7	15.3	0.6	15.0	1.1	14.3	1.8
2	Poplar Road, Lower Alloways	14.9	0.6	15.7	1.4	16.4	0.4	15.2	1.8
3	Money and Eagle Island Road	15.2	0.4	18.0	0.9	17.3	0.8	18.2	1.2
4	Ft. Elfsborg / Hancocks – East	15.9	0.1	18.1	1.0	18.7	0.6	17.9	1.5
5	Ft. Elfsborg / Hancocks – West	15.1	0.2	17.7	2.6	17.1	0.8	16.7	1.7
6	Stathems Neck Road	14.7	0.5	17.5	0.9	16.8	1.0	16.3	2.1
7	Stow Neck Road	13.6	0.5	14.3	0.4	13.1	0.5	14.8	1.0
8	Access Road, Lower Alloways	13.7	0.1	14.0	0.8	13.8	0.4	13.6	1.4
9	Access Road, Lower Alloways	16.1	0.1	17.6	0.9	17.4	0.6	17.1	1.1
10	Abbotts Farm Road	13.4	0.2	13.7	1.2	13.2	0.8	13.2	1.1

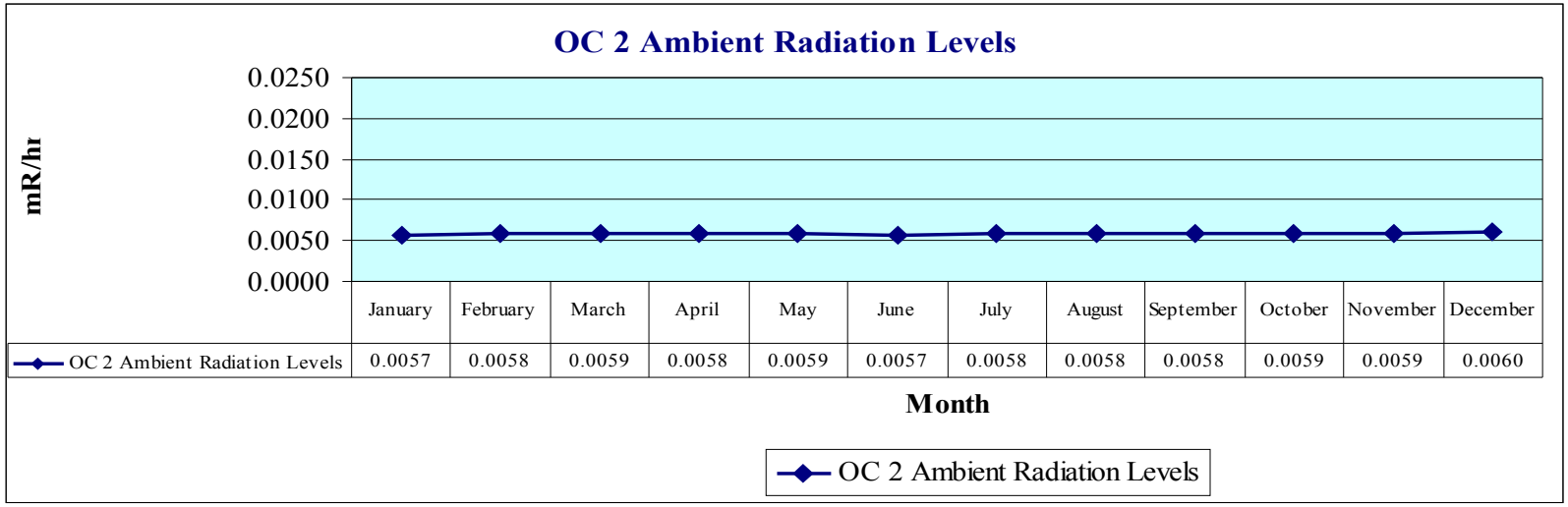
All exposures were normalized to 90 days (a standard quarter) and are reported in units of milliroentgen (mR)

Table B-24

Oyster Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data



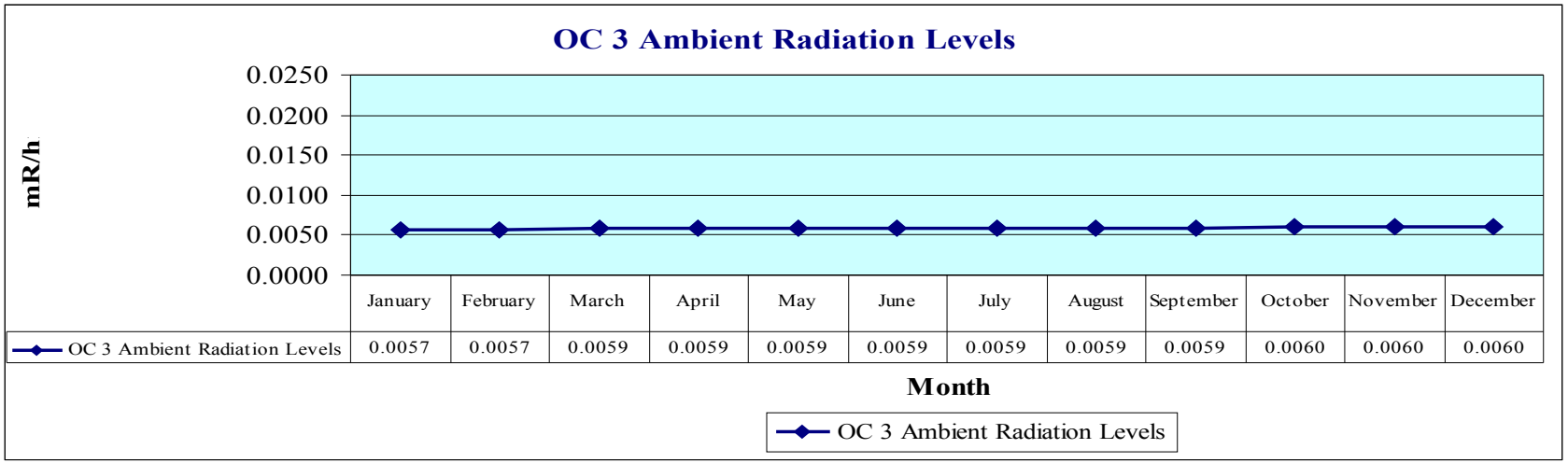
	January	February	March	April	May	June	July	August	September	October	November	December
OC 1 Ambient Radiation Levels	0.0056	0.0056	0.0057	0.0056	0.0056	0.0054		0.0055	0.0055	0.0056	0.0073	0.0073



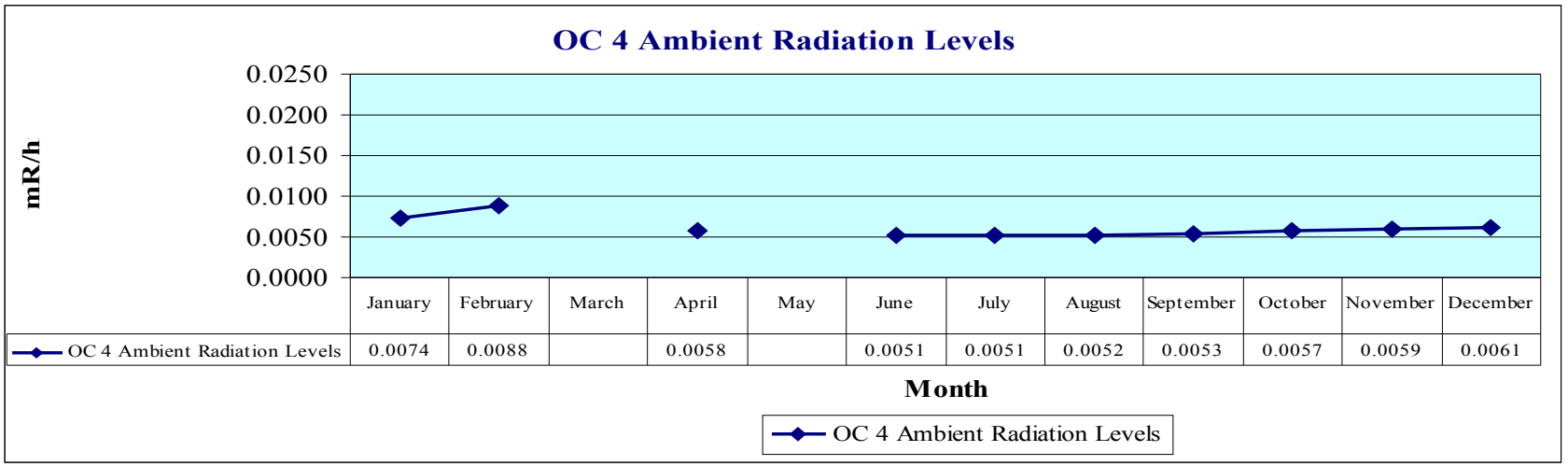
	January	February	March	April	May	June	July	August	September	October	November	December
OC 2 Ambient Radiation Levels	0.0057	0.0058	0.0059	0.0058	0.0059	0.0057	0.0058	0.0058	0.0058	0.0059	0.0059	0.0060

Table B-24 (continued)

Oyster Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data (continued)



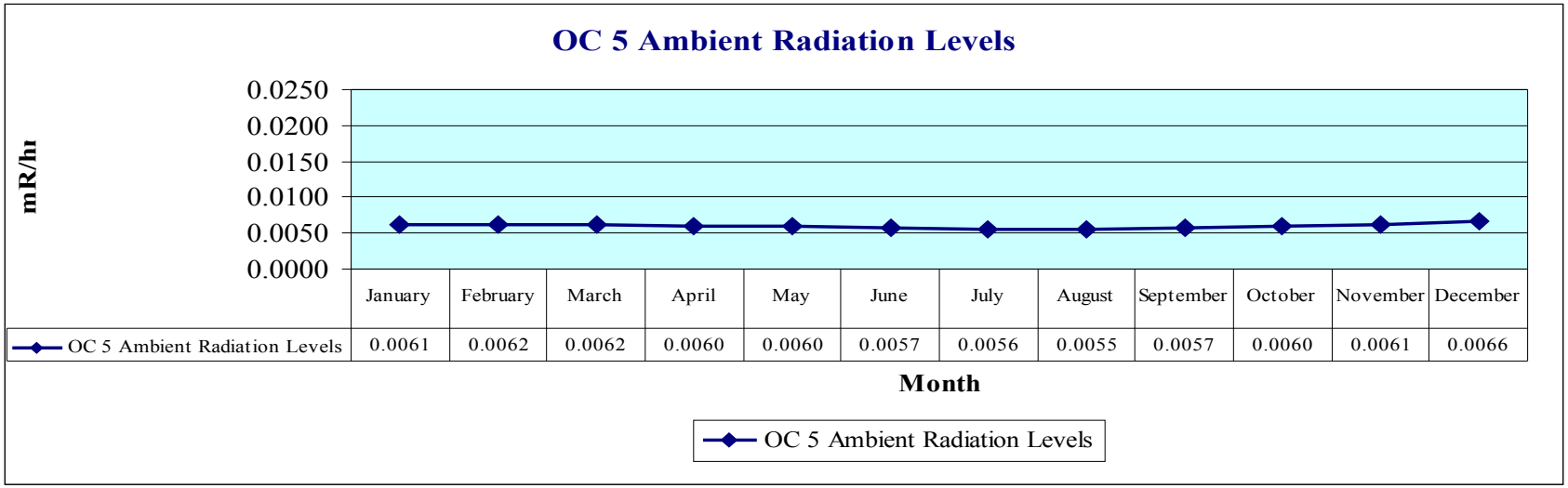
	January	February	March	April	May	June	July	August	September	October	November	December
OC 3 Ambient Radiation Levels	0.0057	0.0057	0.0059	0.0059	0.0059	0.0059	0.0059	0.0059	0.0059	0.0060	0.0060	0.0060



	January	February	March	April	May	June	July	August	September	October	November	December
OC 4 Ambient Radiation Levels	0.0074	0.0088		0.0058		0.0051	0.0051	0.0052	0.0053	0.0057	0.0059	0.0061

Table B-24 (continued)

Oyster Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data (continued



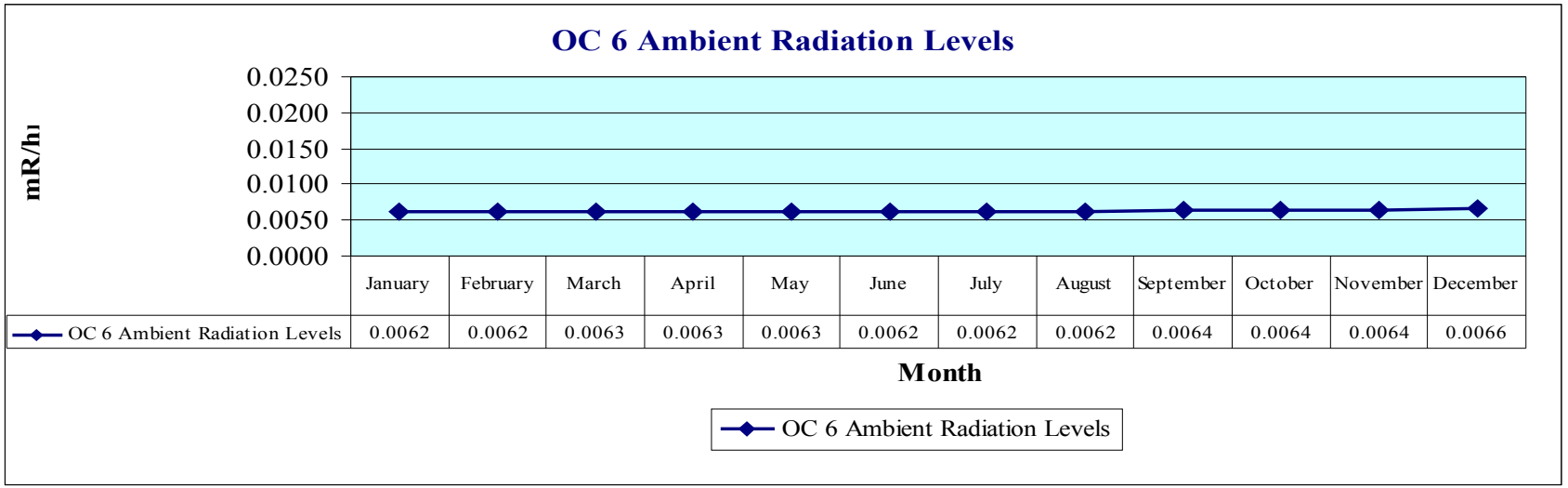
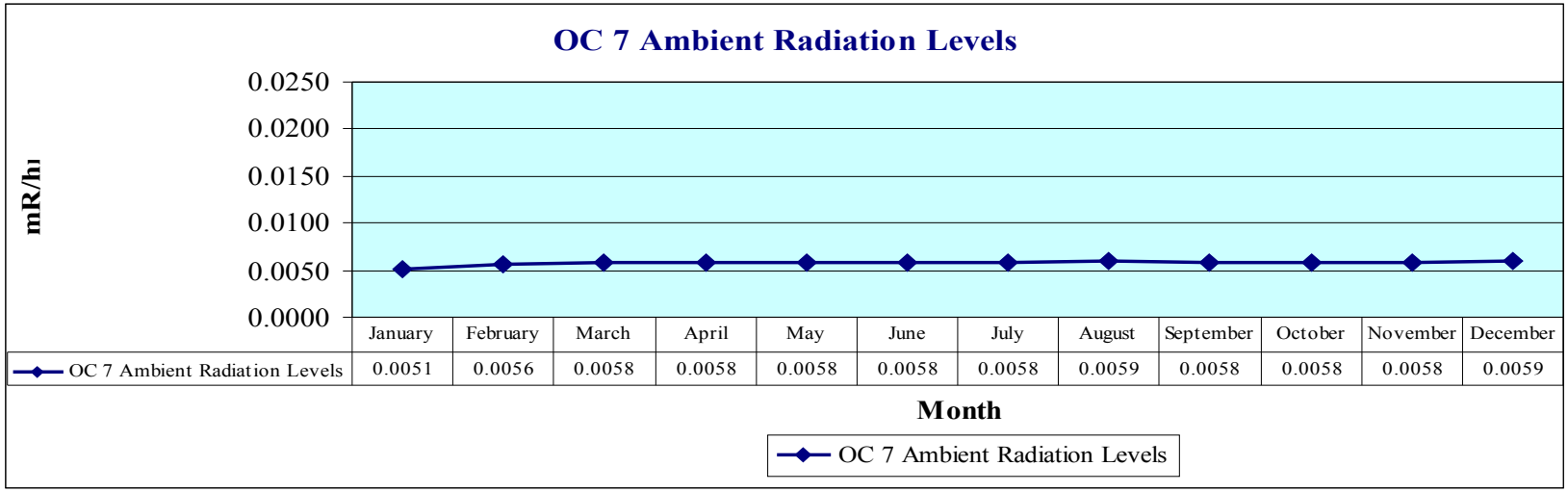
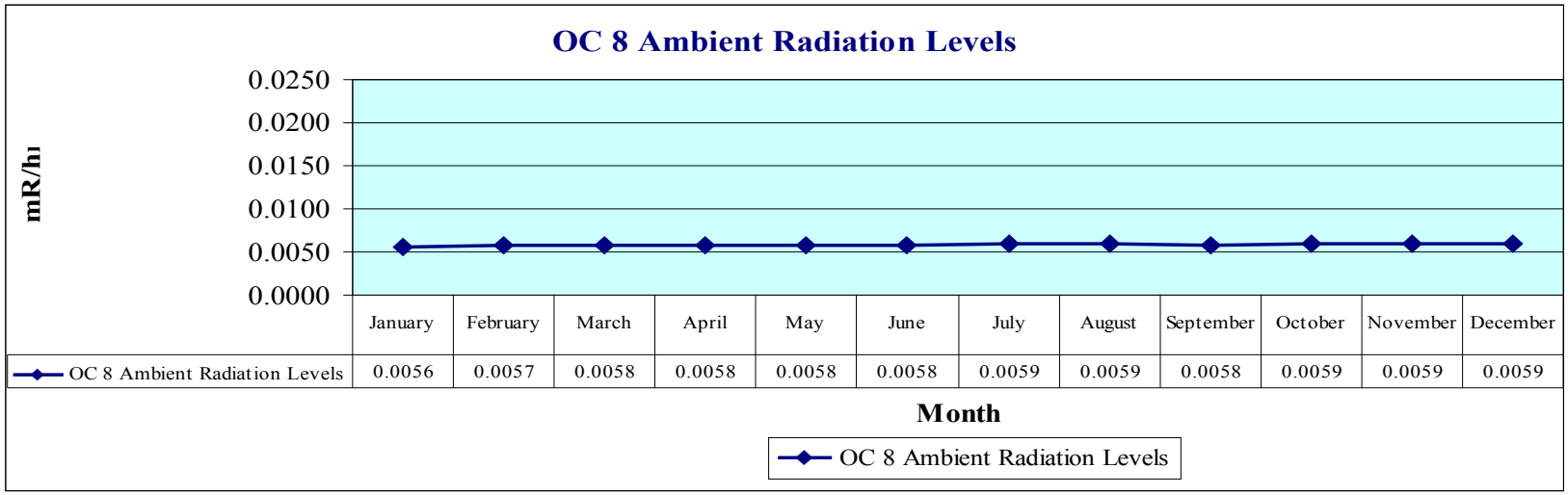


Table B-24 (continued)

Oyster Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data (continued)



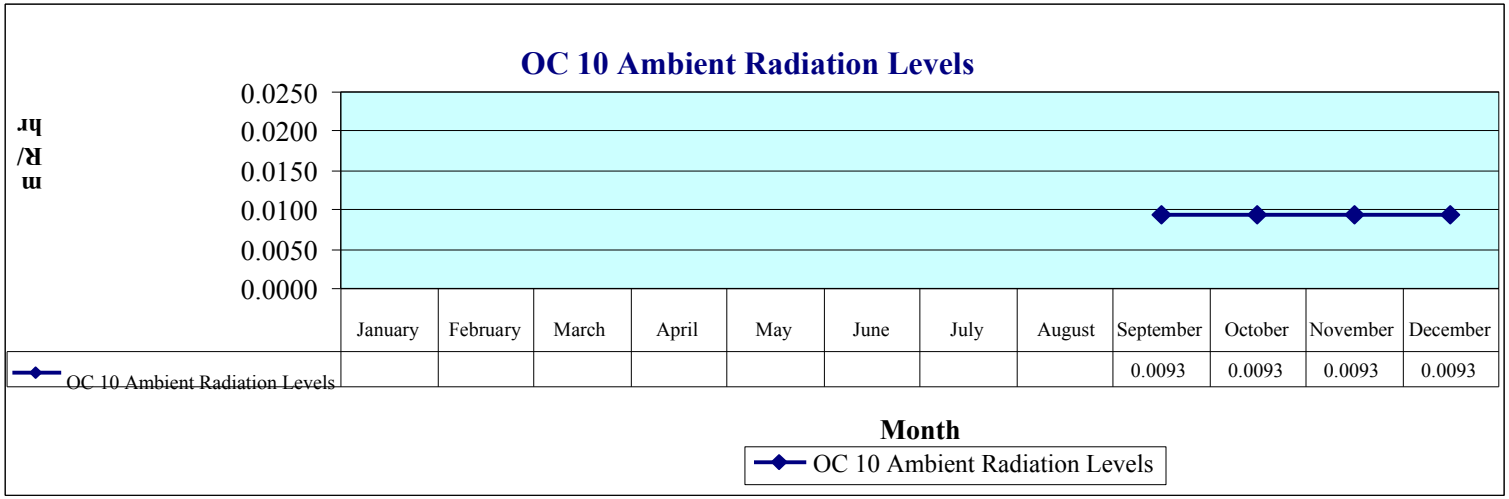
	January	February	March	April	May	June	July	August	September	October	November	December
OC 7 Ambient Radiation Levels	0.0051	0.0056	0.0058	0.0058	0.0058	0.0058	0.0058	0.0059	0.0058	0.0058	0.0058	0.0059



	January	February	March	April	May	June	July	August	September	October	November	December
OC 8 Ambient Radiation Levels	0.0056	0.0057	0.0058	0.0058	0.0058	0.0058	0.0059	0.0059	0.0058	0.0059	0.0059	0.0059

Table B-24 (continued)

Oyster Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data (continued)



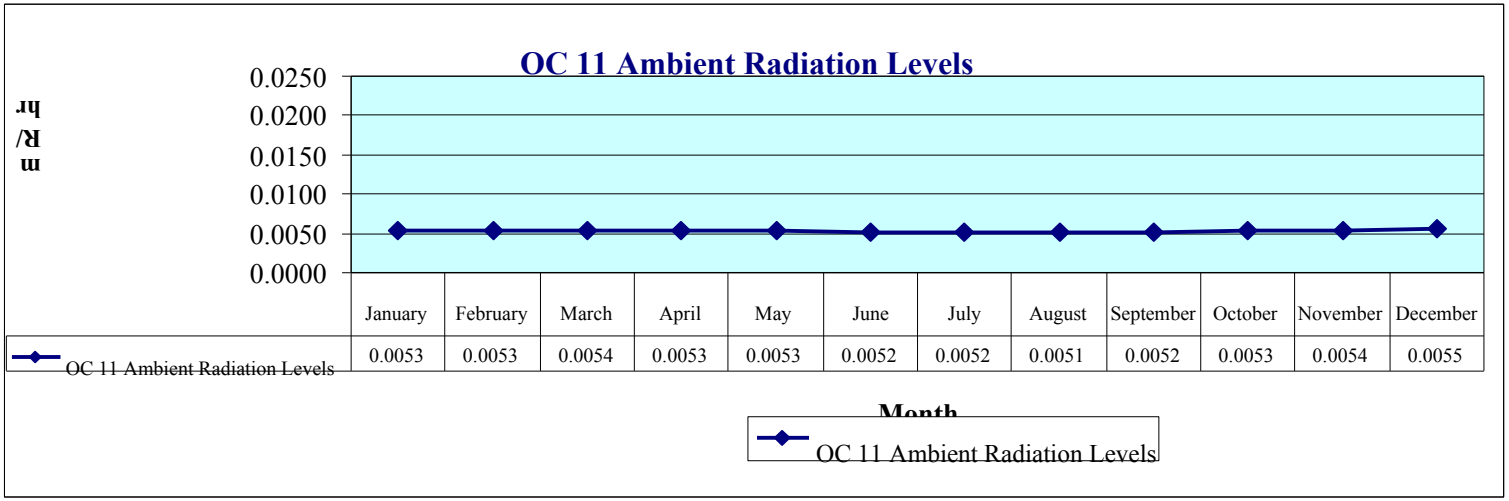
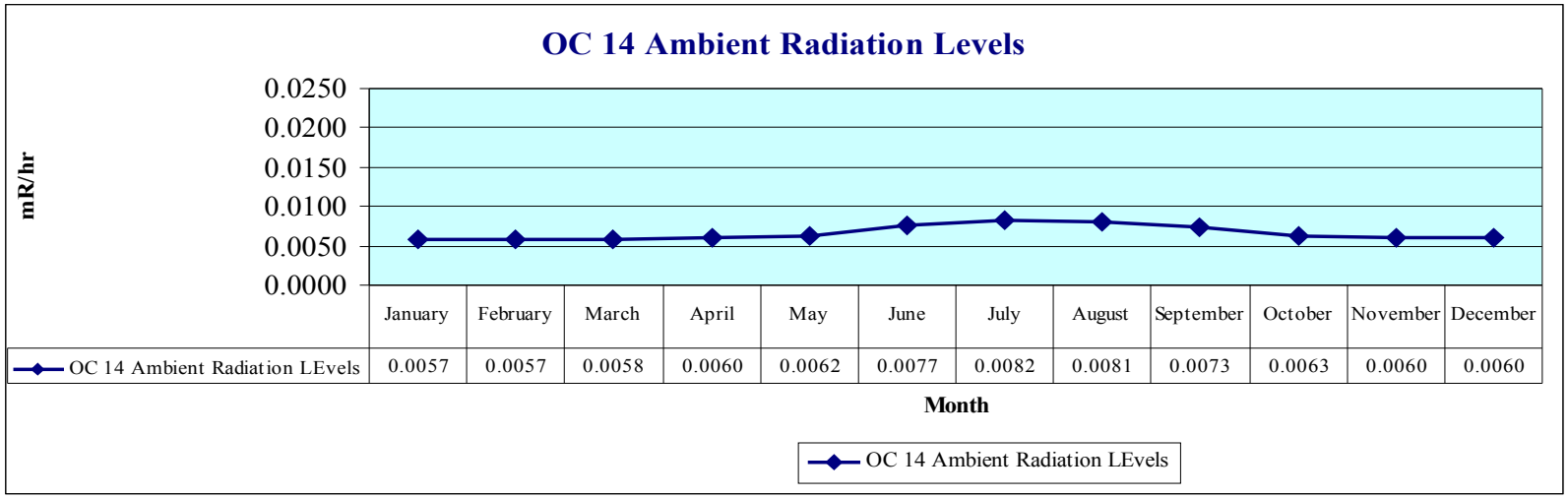


Table B-24 (continued)

Oyster Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data (continued)



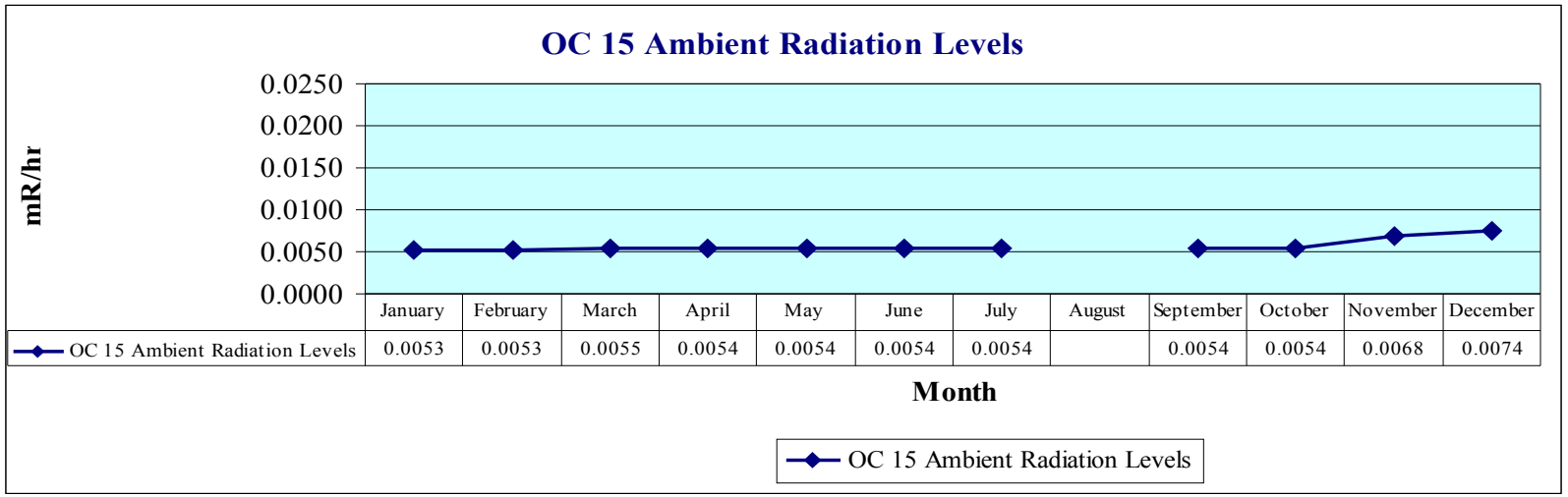
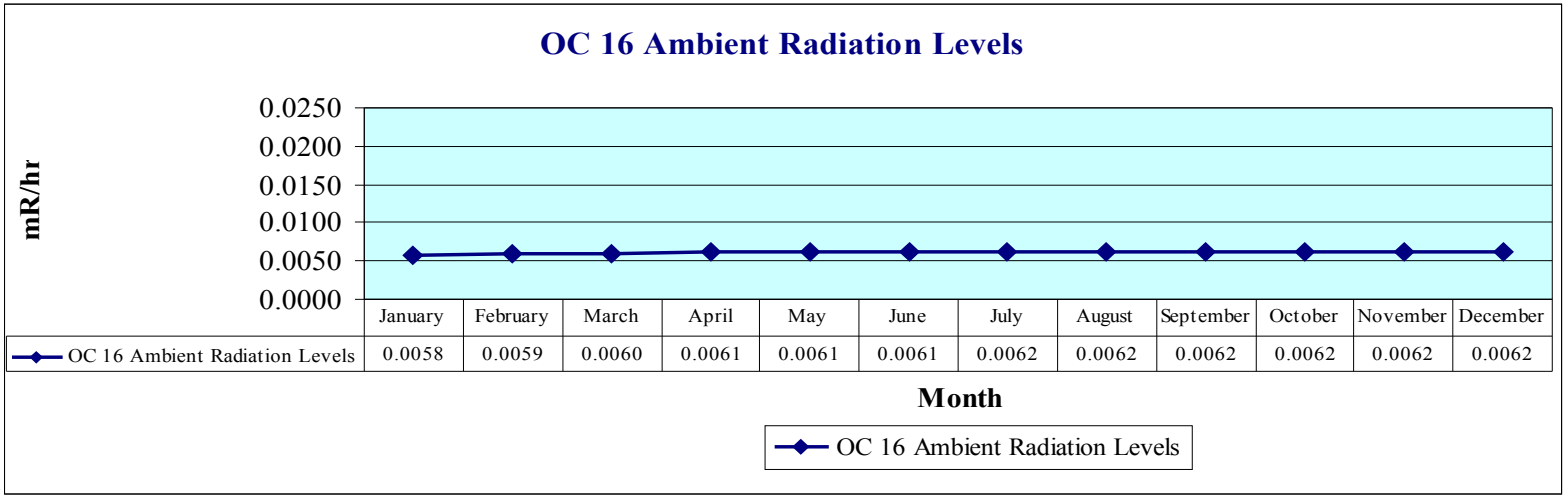


Table B-24 (continued)

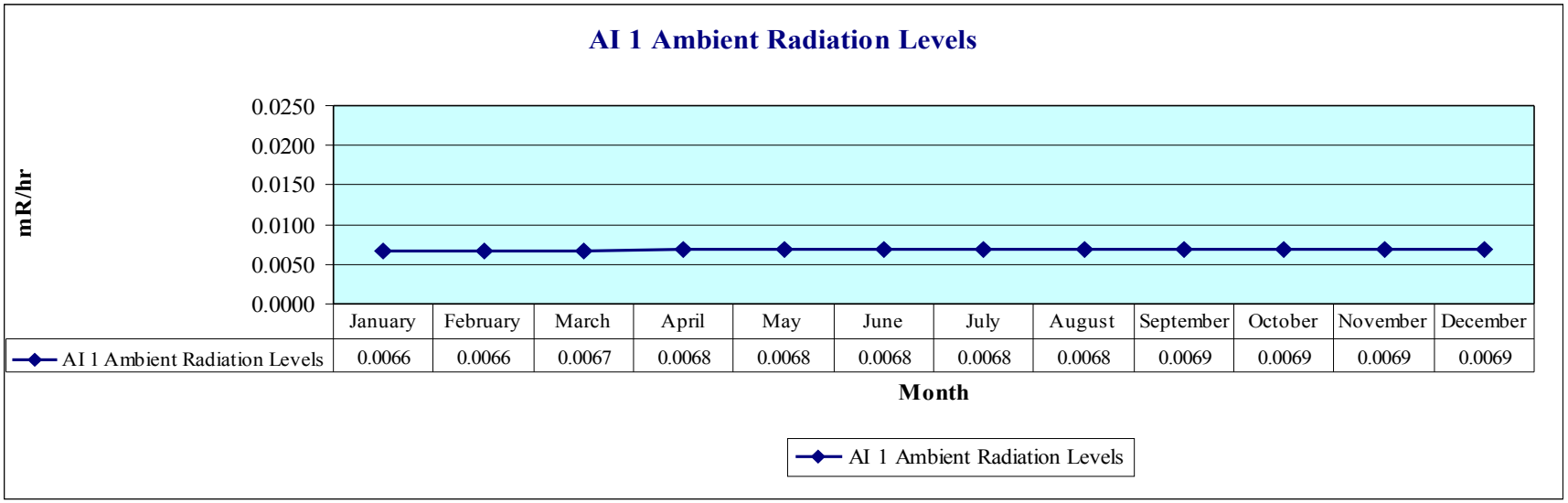
Oyster Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data (continued)



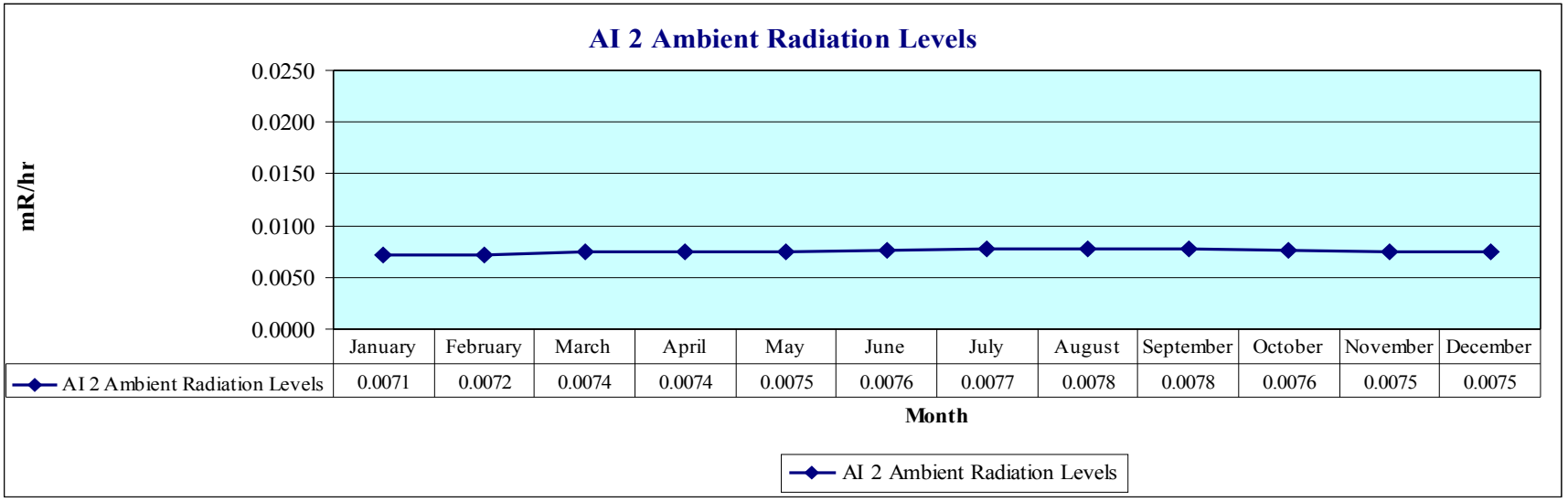
	January	February	March	April	May	June	July	August	September	October	November	December
OC 16 Ambient Radiation Levels	0.0058	0.0059	0.0060	0.0061	0.0061	0.0061	0.0062	0.0062	0.0062	0.0062	0.0062	0.0062

Table B-25

Salem / Hope Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data



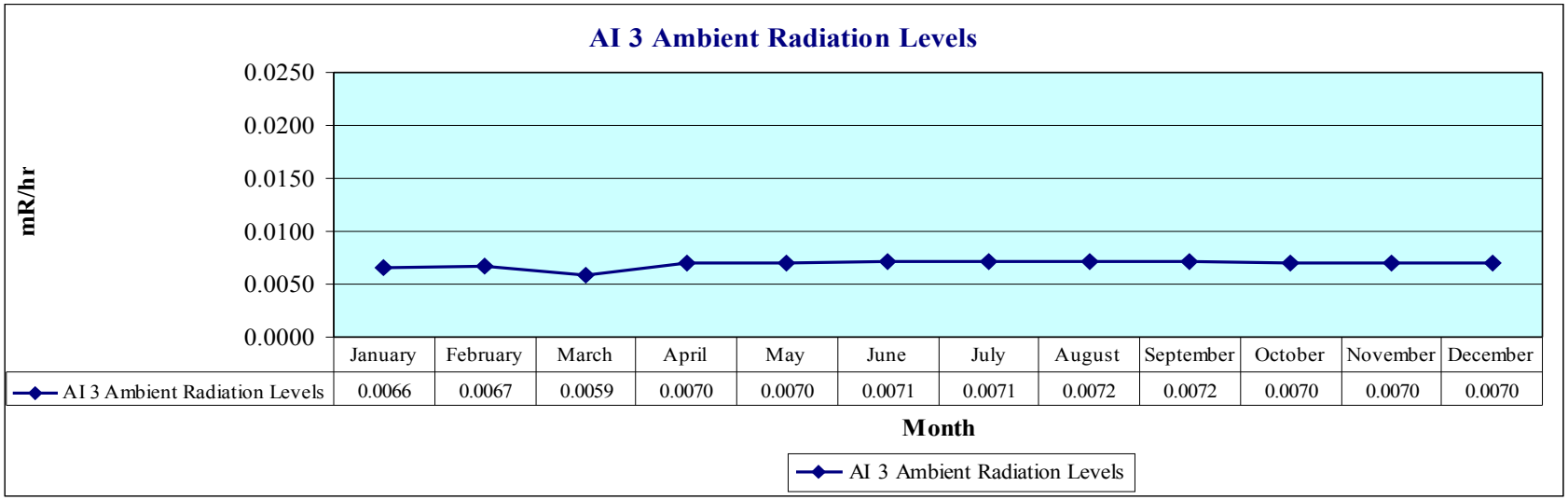
	January	February	March	April	May	June	July	August	September	October	November	December
AI 1 Ambient Radiation Levels	0.0066	0.0066	0.0067	0.0068	0.0068	0.0068	0.0068	0.0068	0.0069	0.0069	0.0069	0.0069



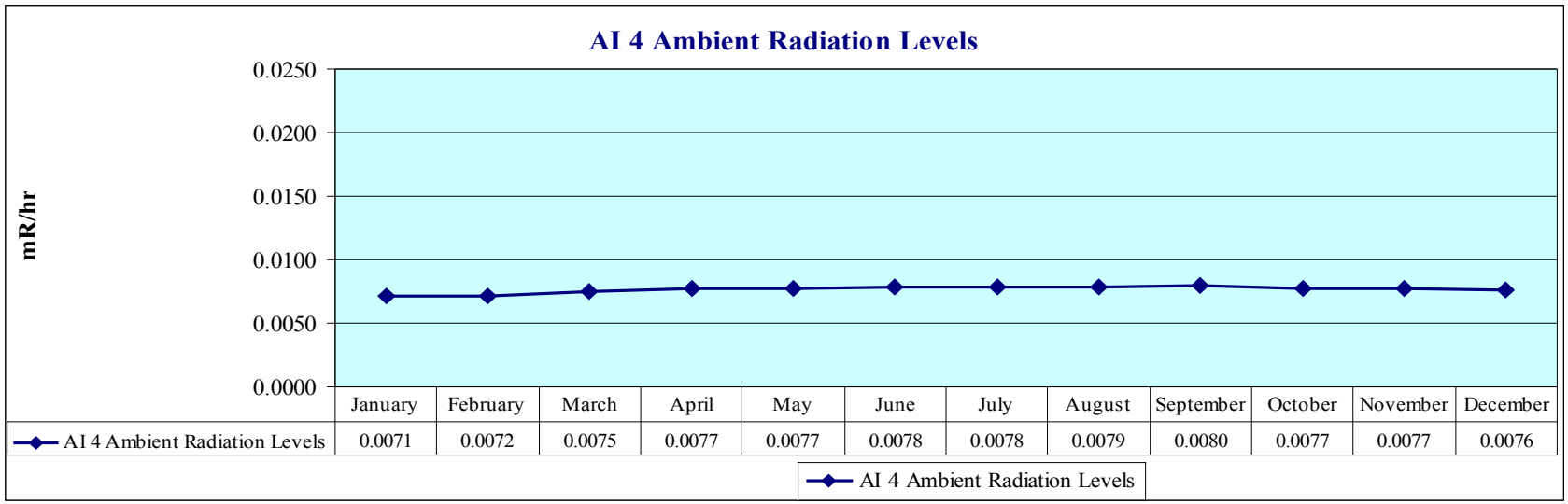
	January	February	March	April	May	June	July	August	September	October	November	December
AI 2 Ambient Radiation Levels	0.0071	0.0072	0.0074	0.0074	0.0075	0.0076	0.0077	0.0078	0.0078	0.0076	0.0075	0.0075

Table B-25 (continued)

Salem / Hope Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data (continued)



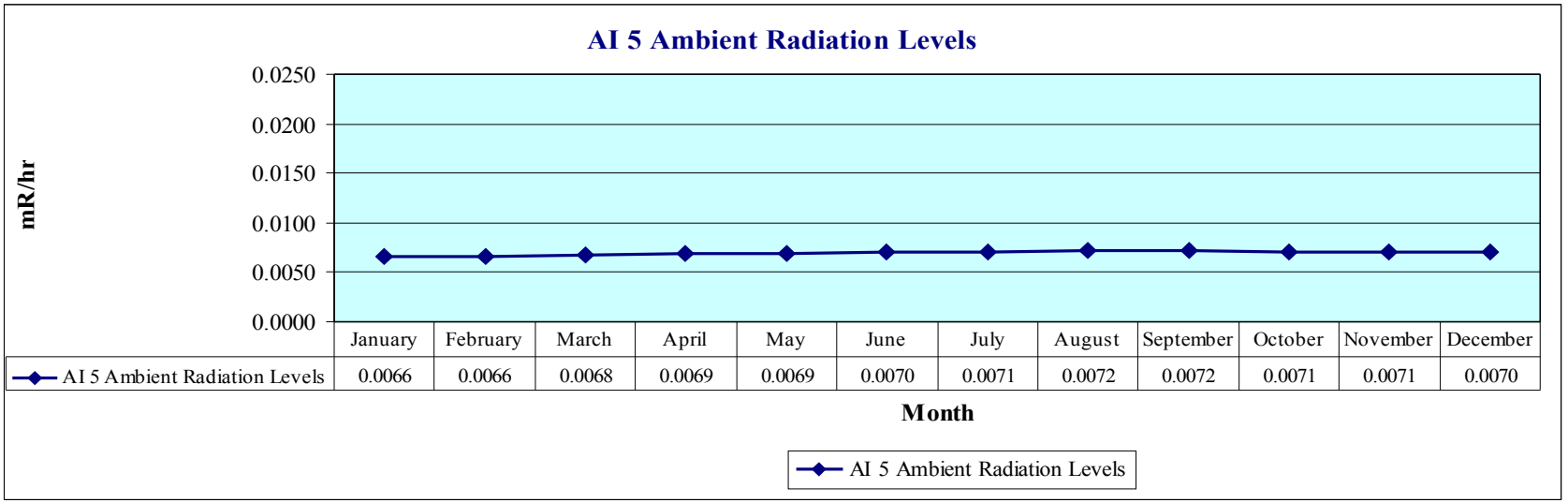
	January	February	March	April	May	June	July	August	September	October	November	December
AI 3 Ambient Radiation Levels	0.0066	0.0067	0.0059	0.0070	0.0070	0.0071	0.0071	0.0072	0.0072	0.0070	0.0070	0.0070



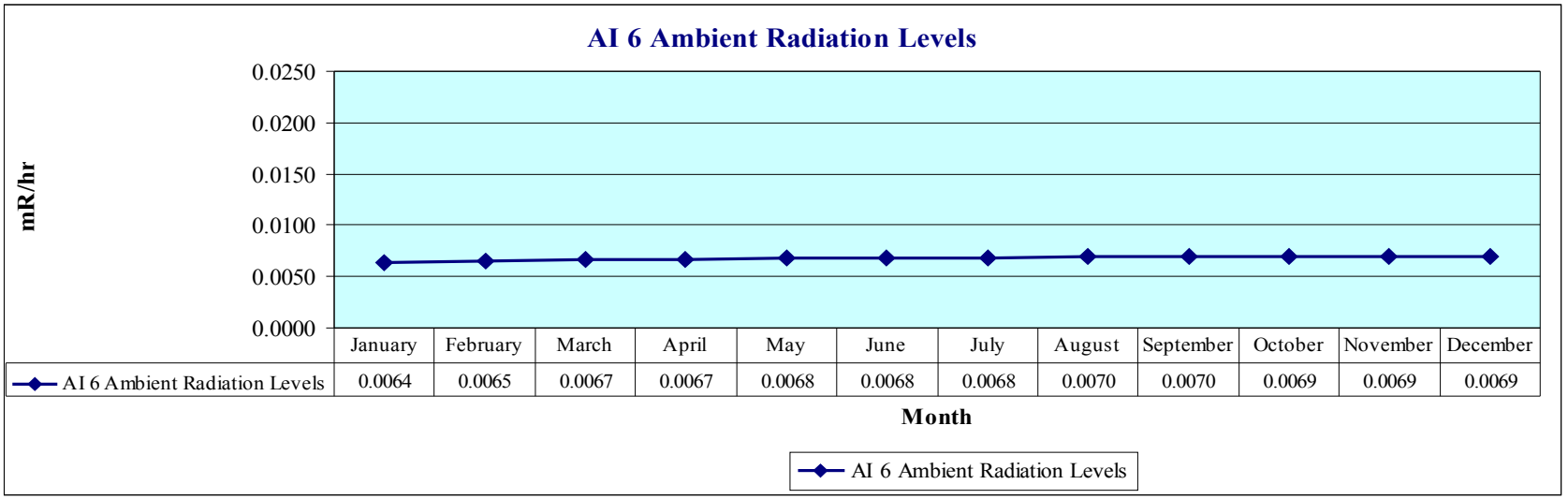
	January	February	March	April	May	June	July	August	September	October	November	December
AI 4 Ambient Radiation Levels	0.0071	0.0072	0.0075	0.0077	0.0077	0.0078	0.0078	0.0079	0.0080	0.0077	0.0077	0.0076

Table B-25 (continued)

Salem / Hope Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data (continued)



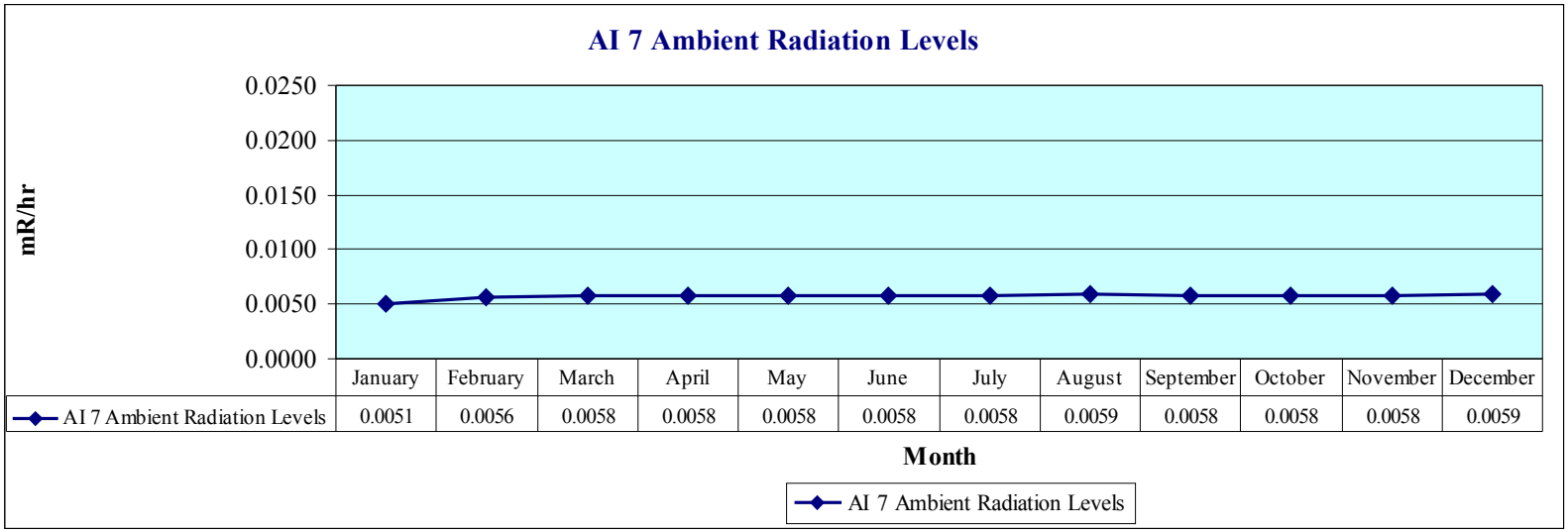
	January	February	March	April	May	June	July	August	September	October	November	December
AI 5 Ambient Radiation Levels	0.0066	0.0066	0.0068	0.0069	0.0069	0.0070	0.0071	0.0072	0.0072	0.0071	0.0071	0.0070



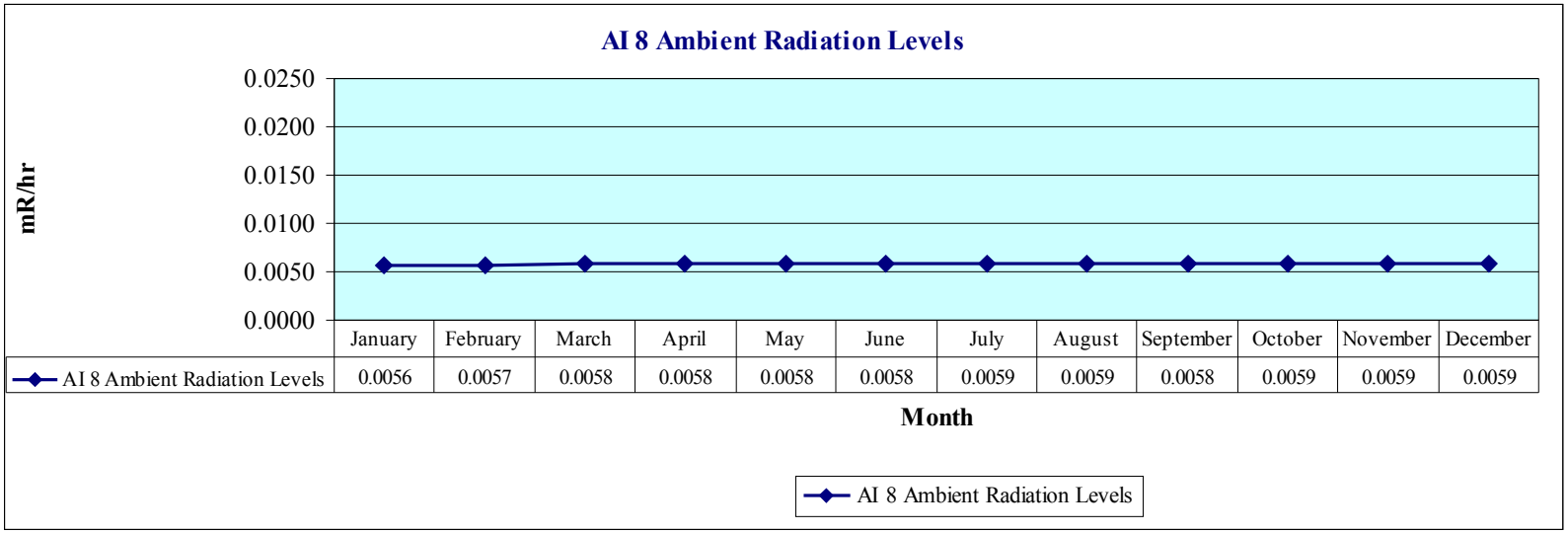
	January	February	March	April	May	June	July	August	September	October	November	December
AI 6 Ambient Radiation Levels	0.0064	0.0065	0.0067	0.0067	0.0068	0.0068	0.0068	0.0070	0.0070	0.0069	0.0069	0.0069

Table B-25 (continued)

Salem / Hope Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data (continued)



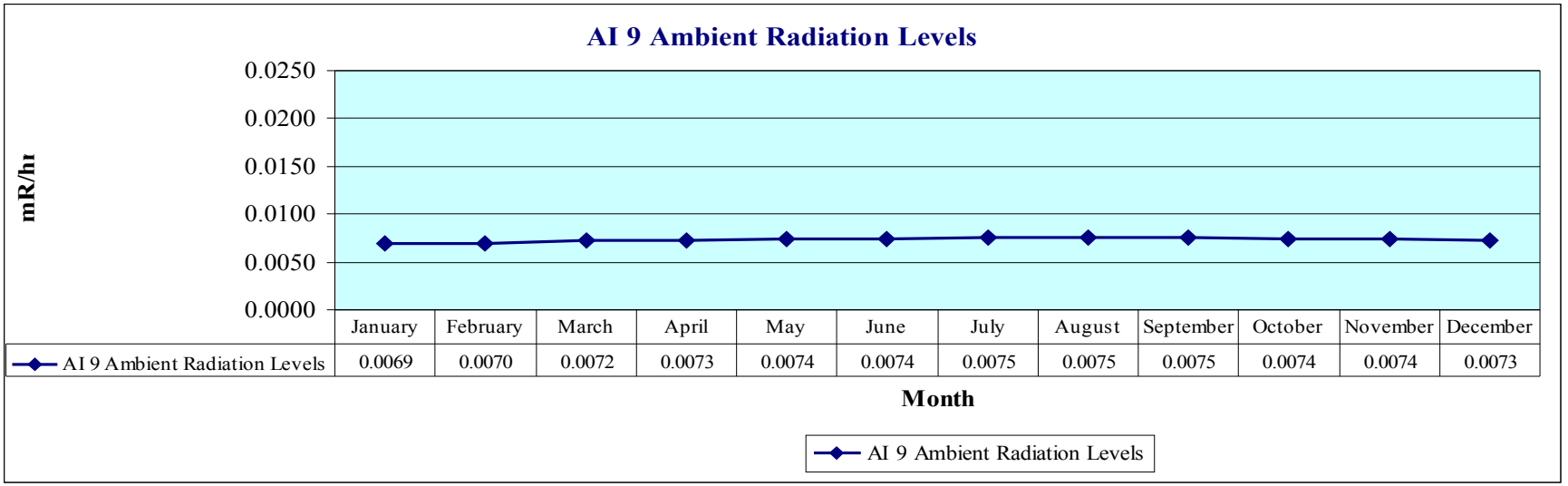
	January	February	March	April	May	June	July	August	September	October	November	December
AI 7 Ambient Radiation Levels	0.0051	0.0056	0.0058	0.0058	0.0058	0.0058	0.0058	0.0059	0.0058	0.0058	0.0058	0.0059



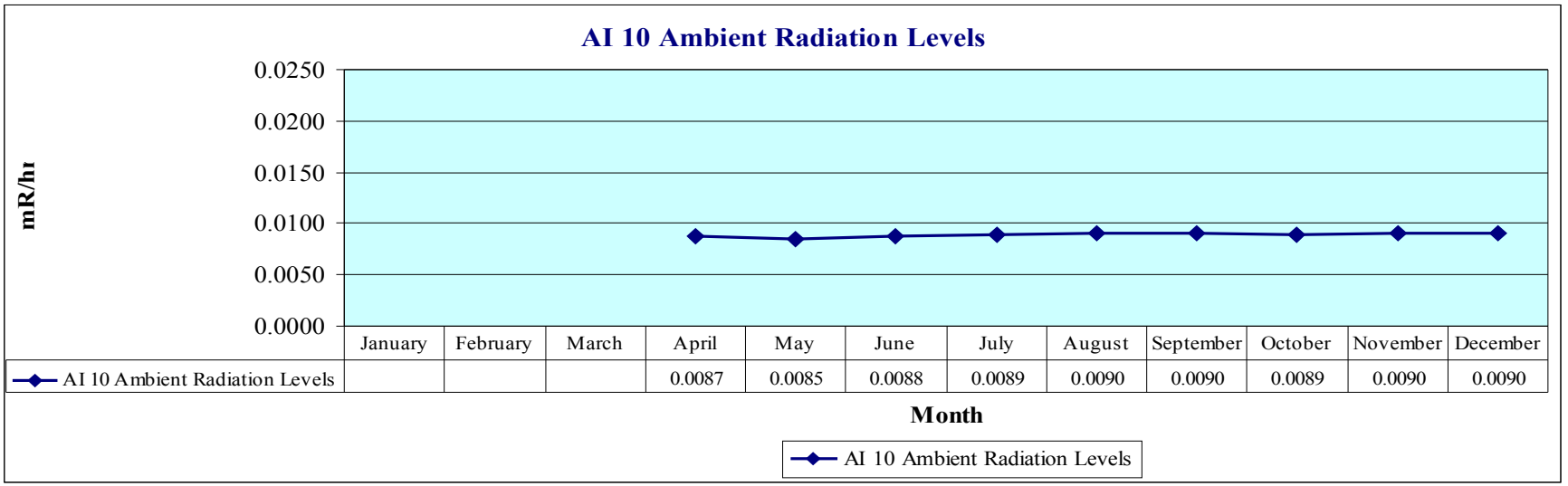
	January	February	March	April	May	June	July	August	September	October	November	December
AI 8 Ambient Radiation Levels	0.0056	0.0057	0.0058	0.0058	0.0058	0.0058	0.0059	0.0059	0.0058	0.0059	0.0059	0.0059

Table B-25 (continued)

Salem / Hope Creek – Continuous Radiological Environmental Surveillance Telemetry (CREST) Data (continued)



	January	February	March	April	May	June	July	August	September	October	November	December
AI 9 Ambient Radiation Levels	0.0069	0.0070	0.0072	0.0073	0.0074	0.0074	0.0075	0.0075	0.0075	0.0074	0.0074	0.0073



	January	February	March	April	May	June	July	August	September	October	November	December
AI 10 Ambient Radiation Levels				0.0087	0.0085	0.0088	0.0089	0.0090	0.0090	0.0089	0.0090	0.0090

Table C-1
NJDEP/BNE
Radiological Environmental Monitoring Program

Minimum Detectable Concentration Requirements For NJDEP/BNE Radiological Environmental Lab Services Contract						
NUCLIDE	AIR pCi/M^3	WATER* pCi/L	SOILS/ SEDIMENT pCi/Kg (dry)	MILK pCi/L	FISH/ INVERTIBRATE pCi/Kg (wet)	VEGETABLE pCi/Kg
Gross Beta	0.01 ***	4 *				
Tritium		1000 *				
Mn-54		15 ***			130 ***	
Fe-59		30 ***			260 ***	
Co-58		15 ***	30		130 ***	
Co-60		15 *	30		130 ***	
Mn-54		30 ***			260 ***	
Sr-89		10 *		1	1000	
Sr-90		2 *		1	1000	
Zr-95		10				
Nb-95		10				
I-131	0.07 ***	1 *	100	1 **	10	60 ***
Cs-134	0.01	10 *	150 ***	15 ***	130 ***	60 ***
Cs-137	0.01	18 ***	180 ***	18 ***	150 ***	80 ***
Ba-140		60 ***		15		
La-140		15 ***		15 ***		
Ra-226		0.5	500			
Ra-228		0.5				

* From USEPA Safe Drinking Water Regulation 141.25 c(1)&(2)

** Based on Radiochemical Analysis

*** Detection Capabilities for Environmental Sample Analysis, United States Nuclear Regulatory Commission Branch Technical Position, Revision 1, November 1979.

Table C-2
GLOSSARY OF TERMS

ADAMS:	Agency-wide Documents Access and Management System. The U.S.NRC's web-based access tool that enables an individual to search for NRC public documents. Access to ADAMS is through the NRC website at **http://www.nrc.gov/reading-rm/adams/web-based.html.**
Background Location:	Removed from the influence of a source. A background station is a sampling location that is away from the influence of a potential source (of man-made radioactivity in this case).
Background Radiation:	The amount of radiation to which a member of the population is exposed from natural sources, such as terrestrial radiation due to naturally occurring radionuclides in the soil, cosmic radiation originating in outer space, radioactive substances found in building materials, and naturally occurring radionuclides deposited in the human body.
Bottom Feeder:	A fish, such as a catfish, carp, or flounder, that exists on or near the bottom of a body of water. Shellfish are also bottom feeders.
Composite:	A collection of more than one sample of the same medium (e.g. milk, air particulate or water) such that multiple samples can be analyzed as a single sample.
Curie (Ci):	The quantity of any radionuclide in which the number of disintegrations per second is 37 billion. It is a measure of radioactivity.
Dose:	The mean energy imparted by ionizing radiation to an irradiated medium per unit mass. Dose is measured in rads.
Effluent:	Material that is released from a source. For the purpose of this report, radioactive effluent is the radioactivity released from each commercial nuclear power plant.
femtoCurie (fCi):	One millionth of a billionth of a curie (10E-15).

Table C-2 (continued)
GLOSSARY OF TERMS

Gamma Emitters:	Gamma emitting radionuclides are isotopes that emit gamma radiation. Examples of gamma emitting radionuclides are Cesium-137, Cesium-134 and Cobalt-60.
Gamma Ray:	Short-wavelength electromagnetic radiation of nuclear origin.
Gross Beta:	A measurement of all beta activity present, regardless of specific radionuclide source. Gross measurements are used as a method to screen samples for relative levels of radioactivity.
Isotopes:	Nuclides that have the same number of protons in their nuclei, and hence the same atomic number, but that differ in the number of neutrons, and therefore in mass number. The chemical properties of isotopes of a particular element are almost identical. An example of isotopes are Iodine-131 and Iodine-133.
MegaWatt Thermal:	Refers to thermal power produced (MWt). A nuclear power plant utilizes a reactor to generate heat (thermal output) which creates steam to drive a turbine to generate electricity.
MicroRem (μR):	A submultiple of a Rem equal to one one-hundred thousand of a Rem.
MilliRem (mR):	A submultiple of a Rem equal to one one-thousand of a Rem.
Milliroentgen (mR):	A submultiple of the roentgen equal to one one-thousand of a roentgen.
Minimum Detectable Concentration (MDC):	The Minimum Detectable Concentration (MDC) is the smallest concentration of radioactivity in a sample that can be detected with a 5% probability of erroneously detecting radioactivity, when in fact none was present (Type I error) and also, a 5% probability of not detecting radioactivity, when in fact it is present (Type II error). Often used interchangeably with Minimum Detectable Activity, since the difference between the two terms is only one of units conversion.

Table C-2 (continued)
GLOSSARY OF TERMS

NAREL:	National Air and Radiation Environmental Laboratory. Samples from the USEPA's RadNet program are analyzed at this facility. See **http://www.epa.gov/narel/**
NJDEP/BNE	New Jersey Department of Environmental Protection, Bureau of Nuclear Engineering. This group independently monitors radiation in the environment outside the site boundaries of New Jersey's nuclear power generating stations (Artificial Island and Oyster Creek).
Nuclide:	A species of atom characterized by the constitution of its nucleus, which is specified by its atomic mass and atomic number (Z). The atomic number is its number of protons while the atomic mass is its number of protons plus neutrons.
PicoCurie:	The measurement of radioactivity in the environment is expressed in picoCuries. A picocurie is one trillionth (10^{-12}) of a curie.
Predator:	An organism that lives by preying on other organisms.
Pressurized Ion Chamber:	An integrating instrumentthat measures the total dose over a given timeframe. It is referred to as a PIC.
Rad:	A unit of radiation absorbed dose.
Radioactivity:	The property of some nuclides of spontaneously emitting particles or radiation.
Radioisotope:	A radioactive atomic species of an element with the same atomic number usually identical chemical properties (eg., stable and the radioisotope [Tritium]).
Radionuclide:	A radioactive species of an atom characterized by the constitution of its nucleus.

Table C-2 (continued)
GLOSSARY OF TERMS

RadNet:	Formerly known as ERAMS, RadNet is a national network of monitoring stations that regularly collect air, precipitation, drinking water, and milk samples for analysis of radioactivity. RadNet also documents the status and trends of environmental radioactivity. These data are published by NAREL in a quarterly These data are published by NAREL in a quarterly report entitled *Environmental Radiation Data*. RadNet information can also be found be at: **http://www.epa.gov/narel/radnet/**.
Rem:	A unit of radiation dose equivalent. Different types of ionizing radiation produce varying amounts of injury based on how and where the energy is imparted to a system. To account for these differences, quality and modifying factors have been developed. The dose equivalent is designed to normalize all ionizing radiation to a common scale so that radiation protection standards can be developed.
Roentgen (R):	The special unit of radiation exposure to X or gamma radiation. One roentgen creates 2.58E-4 coulomb of electric charge per kilogram of air. The roentgen expresses the amount of energy imparted by X or gamma radiation in a given volume of air.