Perry Nuclear Power Plant
1995

Annual Environmental and Effluent Release Report

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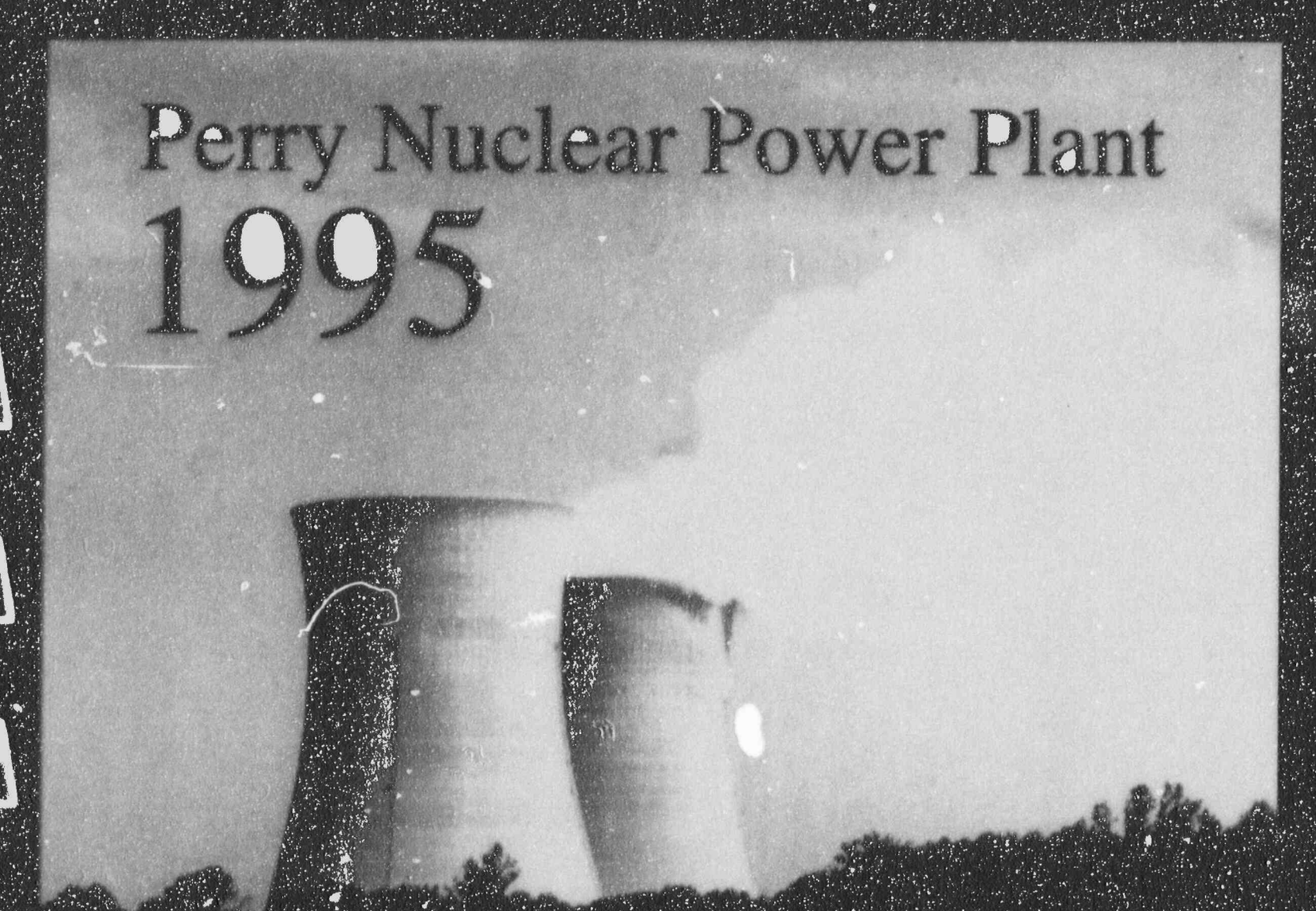

Annual Environmental and Effluent Release Report

ANNUAL ENVIRONMENTAL AND EFFLUENT RELEASE REPORT FOR PERRY NUCLEAR POWER PLANT

JANUARY 1, 1995 TO DECEMBER 31, 1995

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SUMMARY AND CONCLUSIONS

The Annual Environmental and Effluent Release Report details the results of environmental and effluent monitoring programs conducted at the Perry Nuclear Power Plant (PNPP) from January 1 through December 31, 1995. This report meets all of the requirements in PNPP Technical Specifications, Appendix B of the PNPP Operating License (the Environmental Protection Plan, or EPP), and Regulatory Guide 1.21. Report topics include Annual Effluent Releases, Radiological Environmental Monitoring, Land Use Census, Clam/Mussel Monitoring, Herbicide Use, and Special Reports.

On November 27, 1995, an amendment to the PNPP Technical Specifications became effective. The amendment moved the requirements that pertain to effluent releases and radiological environmental monitoring from the Technical Specifications into the PNPP Offsite Dose Calculation Manual (ODCM). The move did not change any of the requirements for the programs detailed here. Since the requirements for these programs were included in both the PNPP Technical Specifications and the ODCM during 1995, both are referenced throughout this report.

The results of the Environmental and Effluent Programs for 1995 indicate that the operation of the PNPP did not result in any significant environmental impact.

ANNUAL EFFLUENT RELEASES

During the normal operation of a nuclear power plant, small quantities of radioactivity are released to the environment in liquid and gaseous effluents. Radioactive materials are also released as solid waste. PNPP maintains a comprehensive program to control and monitor the release of all radioactive materials from the site. All releases are strictly regulated by the Nuclear Regulatory Commission (NRC).

The radioactivity released in the plant's liquid and gaseous effluents was well below applicable federal regulatory limits. The dose from plant effluents to the public was also below the applicable regulatory limits. The calculated hypothetical maximum individual dose potentially received by an individual resulting from PNPP liquid effluents was 0.004 mrem (0.12% of the applicable limit). The hypothetical maximum individual dose potentially received by an individual resulting from PNPP gaseous effluents was 2.00 mrad (20% of the applicable limit). The summation of the hypothetical maximum individual dose from effluents in 1995 is equivalent to less than one percent of the dose that an individual living in the PNPP area receives from all sources of radiation.

Shipments of solid waste consist of waste generated during water treatment, radioactive material generated during normal daily operations and maintenance, and irradiated components. PNPP complied with all regulations governing radioactive shipments in 1995, making 37 shipments of solid radioactive waste to a licensed burial site.

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

The Radiological Environmental Monitoring Program (REMP) was established in 1981 to monitor the radiological conditions in the environment around PNPP. The REMP is conducted in accordance with PNPP Technical Specifications and the ODCM . This program includes the collection and analysis of environmental samples and evaluation of results.

The REMP was established at PNPP six years before the plant became operational. This preoperational program was designed to provide data on background radiation and radioactivity

normally present in the area. PNPP has continued to monitor the environment during plant operation by collecting and analyzing samples of air, precipitation, milk, fish, produce, soil, grass, water and sediment as well as by measuring radiation directly.

Over 1300 radiological environmental samples were collected in 1995 and over 1600 analyses for radioactivity were performed. The results of the REMP indicate the adequacy of the control of the release of radioactivity in effluents from PNPP. These results also demonstrate that PNPP complies with all applicable federal regulations. Results are divided into four sections: atmospheric monitoring, terrestrial monitoring, aquatic monitoring and direct radiation monitoring.

- Samples of air and precipitation (rain and snow) are collected to monitor the radioactivity in the atmosphere. The 1995 results are similar to those observed in both preoperational and operational programs from prior years. Only background environmental radioactivity was detected and only at expected levels.

- Terrestrial monitoring includes analysis of milk, produce, vegetation, and soil samples. The results of the sample analyses indicate concentrations of radioactivity similar to that found in previous years. For example, the average concentration of cesium-137 in soil was 250.14 pCi/kg in 1995, which is at the low end of the range of 208.5 to 1104.05 pCi/kg observed during the past eleven years. Analyses of other terrestrial samples also detected concentrations of radioactivity similar to those observed in previous years, and indicate no build-up of radioactivity attributable to the operation of PNPP.

- Aquatic monitoring includes the collection and analysis of water, fish, and shoreline sediments. The 1995 analyses results for water and fish sample results showed normal background concentrations of radionuclides. The results of sediment sample analyses indicated concentrations of radioactivity similar to previous years. The average concentration of cesium-137 was 517.66 pCi/kg, which is well within the range of up to 864 pCi/kg established since 1981.

- Direct radiation measurements showed no change from previous years. Indicator locations averaged 54.84 mrem/year and control locations averaged 55.70 mrem/year. This shows that, in 1995, radiation in the area of PNPP was the same as radiation at locations greater than 10 miles away from the Plant.

Based on these results, the 1995 operation of PNPP resulted in no significant increase in the concentrations of radionuclides in the environment.

LAND USE CENSUS

In order to estimate radiation dose attributable to the operation of PNPP, the potential pathways through which public exposure can occur must be known. To identify these exposure pathways, an Annual Land Use Census is performed as part of the REMP. During the census, PNPP personnel travel every public road within a five mile radius of the plant to locate key radiological exposure pathways. These key pathways include the nearest resident, garden, and milk animal in each of the sixteen meteorological sectors. The information obtained from the census is entered into a computer program which is used to assess the hypothetical dose to members of the public.

CLAM/MUSSEL MONITORING

Clam and mussel shells can clog plant piping and components that use water from Lake Erie. For this reason, sampling for clams and mussels has been conducted in Lake Erie in the vicinity of PNPP since 1971, specifically for *Corbicula* (Asiatic clams) since their introduction into the Great Lakes in 1981, and for *Dreissena* (zebra mussels) since their discovery in Lake Erie 1989.

Since no *Corbicula* have ever been found at PNPP, routine *Corbicula* monitoring provides data to determine when and if this pest species will arrive in the vicinity of PNPP. The *Dreissena* program includes both monitoring and control and is directed at minimizing the mussel's impact on plant operation. As in past years, this program has successfully prevented *Dreissena* from causing any operational problems at PNPP in 1995.

HERBICIDE USE

The use of herbicides on the PNPP site is monitored. This ensures compliance with Ohio Environmental Protection Agency (OEPA) requirements and protects the site's natural areas. Based on the results of surveillance's of herbicide applications on site and weekly general site inspections, herbicide use has not had a negative impact on the environment around the plant.

SPECIAL REPORTS

Significant environmental events (for example, spills, releases), noncompliance with environmental regulations (for example, OEPA discharge limits), and changes in plant design or operation that affect the environment are reported to regulatory agencies as they occur. These special reports are also summarized annually in this report. Five special reports were submitted in 1995.

INTRODUCTION

RADIATION FUNDAMENTALS

Atoms are the basic building blocks of all matter. Simply described, atoms are made up of positively and negatively charged particles, and particles which are neutral. These particles are called protons, electrons, and neutrons, respectively. The relatively large protons and neutrons are packed together in the center of the atom called the nucleus. Orbiting around the nucleus are one or more smaller electrons: one electron for each proton in the nucleus. Due to their dissimilar charges, the protons and electrons have a strong attraction for each other, which helps hold the atom together.

Atoms with the same number of protons in their nuclei make up an element. The number of neutrons in the nuclei of an element may vary. Atoms with the same number of protons but different numbers of neutrons are called isotopes. All isotopes of the same element have the same chemical properties and many are stable or nonradioactive. An unstable or radioactive isotope of an element is called a radioisotope or radionuclide. Radionuclides contain an excess amount of energy in the nucleus, which is usually due to an excess number of neutrons.

Radioactive atoms attempt to reach a stable, nonradioactive state through a process known as radioactive decay. Radioactive decay is the release of energy from an atom's nucleus through the emission of radiation. Radionuclides vary greatly in the frequency with which their atoms release radiation. The length of time an atom remains radioactive is defined in terms of half-life. Half-life is the time required for a radioactive substance to lose half its activity through the process of radioactive decay. Half-lives vary from millionths of a second to millions of years. The typical half-life for radionuclides released from the plant is approximately five years.

RADIATION AND RADIOACTIVITY

Radioactive decay is a process in which the nucleus of an unstable atom becomes more stable by spontaneously emitting energy. Radiation refers to the energy that is released when decay within the nucleus occurs. This section includes a discussion on the three main forms of radiation produced by radioactive decay: alpha particles, beta particles, and gamma rays.

Alpha Particles

Alpha particles consist of two protons and two neutrons and have a positive charge. Because of their charge and large size, alpha particles do not travel very far when released (one to eight centimeters in air). They are unable to penetrate any solid material, such as paper or skin, to any significant depth. However, if alpha particles are released inside the body, they can damage the soft internal tissues because they deposit all their energy in a small area.

Beta Particles

Beta particles are essentially electrons and usually carry a negative electrical charge. They are much smaller than alpha particles and travel at nearly the speed of light, thus they can travel for longer distances than alpha particles. Beta particles have a similar ionizing effect as alpha particles, but since they are smaller, faster and have less charge, they cause less concentrated damage when interacting with tissue. External beta radiation affects primarily the skin. Because of their electrical charge, beta particles can be stopped by paper, plastic or thin metals.

Gamma Rays

Gamma rays are bundles of electromagnetic energy called photons which behave as though they were particles. They are similar to visible light, but of a much higher energy. Gamma rays can travel long distances in air and are often released during radioactive decay along with alpha and beta particles. Potassium-40 is an example of a naturally occurring radionuclide found in all humans that decays by emitting a gamma ray.

Interaction With Matter

When radiation interacts with other materials, it affects the atoms of those materials principally by knocking the negatively charged electrons out of orbit. This causes an atom to lose its electrical neutrality and become positively charged. An atom that is charged, either positively or negatively, is called an ion.

UNITS OF MEASURE

Some of the units of measure used in this report require explanation.

Activity

Activity is the number of atoms in a material that decay per unit of time. Each time an atom decays, radiation is emitted. The curie (Ci) is the unit used to describe the activity of a material and indicates the rate at which the atoms are decaying. One curie of activity indicates the decay of 37 billion atoms per second.

Smaller units of the curie are often used in this report. Two common units are the microcurie (μCi), one millionth of a curie, and the picocurie (pCi), one trillionth of a curie. The mass, or weight, of radioactive material which would result in one curie of activity depends on the disintegration rate. For example, one gram of radium-226 is one curie of activity, but it would require about 1.5 million grams of natural uranium to equal one curie since radium-226 decays more energetically than natural uranium.

Dose

Biological damage due to alpha, beta, and gamma radiation may result from the ionization caused by these radiations. Some types of radiation, especially alpha particles, which can cause dense local ionization, can result in much more biological damage for the same energy imparted as do gamma or X rays. Therefore, a quality factor must be applied to account for the different ionizing capabilities of various types of ionizing radiation. When the quality factor is multiplied by the absorbed dose, the result is the dose equivalent, which is an estimate of the possible biological damage resulting from exposure to any type of ionizing radiation. The dose equivalent is measured in rem (roentgen equivalent man). In terms of environmental radiation, the rem is a large unit. Therefore, a smaller unit, the millirem (mrem) is often used. One millirem is equal to 1/1000 of a rem.

LOWER LIMIT OF DETECTION

Sample results are often reported as below the lower limit of detection (LLD). The LLD is the smallest amount of radioactive material that will show a positive result for which there can be confidence that radioactivity is present. This statistical parameter is used as a measure of the sensitivity of a sample analysis. When a measurement is reported as less than the LLD, it means that

no radioactivity was detected and that had radioactivity been present at (or above) the stated LLD value, it statistically would have been detected. The NRC established values for the LLDs for environmental and effluent sample analysis.

BACKGROUND RADIATION

Background radiation includes the decay of radioactive elements in the earth's crust, a steady stream of high-energy particles from space called cosmic radiation, naturally occurring radioactive isotopes in the human body like potassium-40, decay of radioisotopes used in medical procedures, man-made phosphate fertilizers (phosphates and uranium are often found together in nature), fallout from nuclear weapons testing, and even household items like smoke detectors. In the United States, a person's average annual exposure from background radiation is 360 mrem, from sources shown in the Background Radiation Chart (Table 1) [*Source: National Council on Radiation Protection and Measurements*].

Table 1: Background Radiation Chart

Natural Sources		Man Made Sources	
Radon	55%	Medical/X-rays	11%
Cosmic	8%	Nuclear Medicine	4%
Terrestrial	8%	Consumer Products	3%
Internal	11%	Other (1)	<1%

(1) - Other includes 0.3% from occupational sources, <0.3% from fall out, <0.1% from the nuclear fuel cycle, and 0.1% from miscellaneous sources.

Many radionuclides are present in the environment due to sources such as cosmic radiation and fallout from nuclear weapons testing. These radionuclides are expected to be present in many of the environmental samples collected in the vicinity of PNPP. Some of the radionuclides normally present include:

- beryllium-7, present as a result of the interaction of cosmic radiation with the upper atmosphere.
- potassium-40, a naturally occurring radionuclide normally found in humans and throughout the environment, and
- fallout radionuclides from nuclear weapons testing, including tritium and cesium-137. These radionuclides may also be released in minute amounts from nuclear facilities.

Beryllium-7 and potassium-40 are especially common in REMP samples. Since they are naturally occurring and are expected to be present, positive results for these radionuclides are not discussed in the section on 1995 Sampling Program results. However, the data on these radionuclides are included in Appendix C: 1995 REMP Data.

ANNUAL EFFLUENT RELEASES

INTRODUCTION

The source of radioactive material in a nuclear power plant is fission product generation (for example, iodines, noble gases and particulates), or neutron activation of corrosion products and water (for example, cobalt and tritium, respectively). The majority of the fission products generated remain within the nuclear fuel and fuel cladding. The majority of the fission products which do escape from fuel cladding as well as the majority of the activated corrosion products are removed by plant processing equipment.

During the normal operation of a nuclear power plant, small amounts of these radioactive materials are released as liquids, gasses and solids. PNPP was designed and is operated in a manner which controls and monitors these effluent releases. Effluents are controlled to ensure radioactivity released to the environment is minimal and does not exceed regulatory limits. Effluent programs include the operation of monitoring systems, in-plant sampling and analysis, quality assurance, and detailed procedures covering all aspects of effluent monitoring.

The main objective of controlling releases is to ensure that doses are kept As Low As Reasonably Achievable (ALARA). The ALARA principle applies to reducing radiation dose both to the individuals working at PNPP and to the general public. "Reasonably achievable" means that exposure reduction is based on sound operating practices and economic decisions. By practicing ALARA, PNPP minimizes health risks and possible environmental impact, and ensures that doses are maintained well below regulatory limits.

The liquid and gaseous radioactive waste treatment systems at PNPP are designed to collect and process the wastes in order to remove most of the radioactivity. Monitoring systems are used to provide continuous indication of the radioactivity present and are sensitive enough to measure several orders of magnitude lower than the release limits. Instruments are equipped with alarms and indicators in the plant control room. The alarms are set to provide warnings to alert plant operators when radioactivity levels reach a small fraction of actual limits. In addition, waste streams are sampled and analyzed to identify and quantify radionuclides being released. Analysis results are used with flow measurements to calculate the composition and concentrations of radionuclides in effluents.

Gaseous effluent release data is coupled with on site meteorological data to calculate dose to the public. In areas surrounding the plant, devices maintained for the Radiological Environmental Monitoring Program constantly sample the air in the surrounding environment. Frequent samples of other environmental media are also taken to determine if any radioactive material deposition has occurred. This program is described in detail in the next section.

Generation of solid waste is carefully monitored to identify opportunities for minimization. Limiting the amount of material taken into the plant, sorting material as radioactive or nonradioactive, and shredding and compacting waste once it is identified all help to lower the volume of radioactive solid waste. Solid waste is shipped to a licensed burial site.

REGULATORY LIMITS

The Nuclear Regulatory Commission limits for liquid and gaseous effluents were incorporated into the PNPP Technical Specifications, and subsequently into the Off Site Dose Calculation Manual (ODCM). These limits prescribe the maximum doses and dose rates due to radioactive effluents resulting from operation of PNPP. The limits are defined in several ways to limit the overall impact on

persons living near the plant. The limits are described below. None of these limits were exceeded in 1995.

Gaseous Effluents

I. Dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the site boundary shall be limited to the following:

Noble gases:

Less than or equal to 500 mrem per year to the total body, and
Less than or equal to 3000 mrem per year to any organ

Iodine-131, iodine-133, tritium, and for all radionuclides in particulate form with half lives greater than eight days:

Less than or equal to 1500 mrem per year to any organ

II. Air dose due to noble gases to areas at and beyond the site boundary shall be limited to the following:

During any calendar quarter:

Less than or equal to 5 mrad for gamma radiation
Less than or equal to 10 mrad for beta radiation

During any calendar year:

Less than or equal to 10 mrad for gamma radiation
Less than or equal to 20 mrad for beta radiation

III. Dose to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives greater than eight days in gaseous effluents released to areas at and beyond the site boundary shall be limited to the following:

Less than or equal to 7.5 mrem to any organ per any calendar quarter
Less than or equal to 15 mrem to any organ per any calendar year.

The PNPP Technical Specifications/ODCM does not contain a concentration reference for gaseous effluents. For this reason, maximum permissible concentrations are not used to calculate maximum release rates for gaseous effluents.

Liquid Effluents

I. The concentration of radioactive material released in liquid effluents to unrestricted areas shall be limited to the concentrations specified in Title 10 of the Code of Federal Regulations (10CFR), Part 20 (Standards for Protection Against Radiation), Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases, as required by the PNPP Technical Specifications/ODCM. For dissolved or entrained noble gases, the concentration shall be limited to 2.0E-4 µCi/ml total activity. These values are the maximum permissible concentrations.

II. The dose or dose commitment to a member of the public from radioactive materials in liquid effluents released to unrestricted areas shall be limited to the following:

During any calendar quarter:

Less than or equal to 1.5 mrem to the total body
Less than or equal to 5 mrem to any organ

During any calendar year:

Less than or equal to 3 mrem to the total body
Less than or equal to 10 mrem to any organ

RELEASE SUMMARY

Effluents are sampled and analyzed to identify both the type and quantity of radionuclides present. This information is combined with effluent path flow measurements to determine the radioactive composition and concentration of effluents.

Liquid Effluents

The PNPP liquid radioactive waste system is designed to collect and treat all radioactive liquid waste produced in the plant. The treatment used for the liquid depends on its physical and chemical properties. It is designed to reduce the concentration of radioactive material in the liquid. Liquids are filtered to remove suspended solids, and demineralized to remove dissolved solids.

Liquid effluent releases may be required after collecting water from small leaks within the plant or to reduce the volume of stored water in plant systems. In both cases, the water is first processed through a liquid radioactive waste treatment system. Dose calculations are performed prior to discharge of this processed water to the lake to ensure regulatory compliance and that ALARA is maintained.

Error is inherent in any analytical process. Error may be due to differences in analysis results of split samples, or may be attributable to the precision limitations of instrumentation. An estimate of total error associated with different parameters is shown in Table 1.

Table 1: Error associated with liquid effluent processes

Parameter	% Error
Gamma analysis	10
Tritium analysis	8
Strontium 89/90 analysis	10
Iron-55 analysis	10
Gross alpha analysis	10
Dilution volume	31
Discharge volume	25
Liquid waste volume	1

Liquid effluents are released intermittently and are considered "batch" releases. Table 2 provides information on the number and duration of these releases for 1995.

Table 3 provides information on the nuclide composition for all liquid releases. If a radionuclide was not present at a level greater than the LLD, then the value is expressed as "less than (indicated by <), LLD". In all cases, LLDs met or were below the levels required by the Technical Specifications/ODCM.

Table 2: Liquid batch releases

Item	Value
Number of batch releases	97
Total time period for batch releases (minutes)	1.965E+4
Maximum time for a batch release (minutes)	434
Average time period for a batch release (minutes)	202.6
Minimum time for a batch release (minutes)	2
Average stream flow during periods of release of effluent into a flowing stream (liters/minute)	2.09E+5

Table 3: Summation of all liquid effluent releases

	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Est. Total Error, %
A. Fission and activation products						
1. Total releases (not including tritium, gases, alpha)	Ci	4.63E-3	4.53E-3	5.68E-3	1.50E-2	1.00E+1
2. Average diluted concentration during period	µCi/ml	9.31E-9	5.82E-9	3.36E-9	1.32E-8	
3. Percent of applicable limit	%	NA	NA	NA	NA	
"NA" - This item is Not Applicable. The Technical Specifications/ODCM do not have a limit for fission and activation products.						
B. Tritium						
1. Total release	Ci	1.55E+0	2.31E+0	3.03E+0	3.53E+0	1.00+E1
2. Average diluted concentration during period	µCi/ml	3.11E-6	2.97E-6	1.79E-6	3.10E-6	
3. Percent of applicable limit	%	0.104	0.099	0.0597	0.103	
C. Dissolved and entrained gases						
1. Total release	Ci	8.18E-4	3.49E-3	7.07E-3	6.86E-3	1.00E+1
2. Average diluted concentration during period	µCi/ml	1.65E-9	4.49E-9	4.18E-9	6.04E-9	
3. Percent of applicable limit	%	0.000823	0.00224	0.00209	0.00302	
D. Gross alpha radioactivity						
1. Total release	Ci	4.58E-5	<LLD	<LLD	<LLD	1.00E+1
E. Volume of waste released (prior to dilution)	liters	1.59E+6	2.30E+6	4.25E+6	3.05E+6	1.00E+0
F. Volume of dilution water used during period	liters	4.97E+8	7.78E+8	1.69E+9	1.14E+9	2.80E+1

The total number of curies of each nuclide present in liquid effluent releases for each quarter are shown in Table 4.

Table 4: Nuclide composition of liquid effluents

Nuclides Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4
tritium	Ci	1.55E+0	2.31E+0	3.03E+0	3.53E+0
chromium-51	Ci	8.49E-4	1.49E-4	9.79E-4	5.79E-3
manganese-54	Ci	1.82E-4	1.29E-4	8.97E-5	4.49E-4
iron-55	Ci	5.88E-4	3.06E-4	7.42E-4	7.34E-4
cobalt-58	Ci	<LLD	<LLD	<LLD	1.04E-4
cobalt-60	Ci	1.74E-3	2.04E-3	2.43E-3	2.22E-3
zinc-65	Ci	4.59E-4	1.00E-3	9.38E-4	4.33E-3
strontium-89	Ci	3.76E-5	4.72E-4	1.13E-4	1.39E-5
strontium-90	Ci	<LLD	1.85E-5	1.05E-6	<LLD
molybdenum-99	Ci	2.84E-4	<LLD	<LLD	<LLD
technetium-99m	Ci	1.05E-4	<LLD	<LLD	<LLD
iodine-131	Ci	9.65E-5	2.69E-5	<LLD	<LLD
iodine-133	Ci	5.64E-5	<LLD	<LLD	<LLD
xenon-133	Ci	7.04E-4	3.40E-3	6.75E-3	6.59E-3
xenon-133m	Ci	<LLD	<LLD	1.31E-4	1.03E-4
cesium-134	Ci	2.65E-5	1.08E-5	1.19E-5	<LLD
xenon-135	Ci	1.14E-4	8.71E-5	1.93E-4	1.75E-4
cesium-137	Ci	9.37E-5	7.46E-5	2.49E-4	<LLD
lanthanum-140	Ci	1.16E-4	2.69E-4	1.25E-4	1.25E-3
cerium-141	Ci	<LLD	2.93E-5	<LLD	7.38E-5
Total for period	Ci	1.55E+0	2.31E+0	3.03E+0	3.54E+0

Gaseous Effluents

Gaseous effluents are made up of noble gases, iodines and particulates. The noble gas releases are primarily a result of containment purge operations, small steam leaks and off gassing during plant start up and shut down operations. The iodine and particulate releases are primarily a result of small steam leaks. Gaseous effluents from PNPP exit the plant from one of four effluent vents. Each of the four effluent vents contains radiation detectors that continuously monitor the air to ensure that radioactivity release levels are well below regulatory limits. Samples are also collected and analyzed on a routine basis to ensure regulatory compliance and that ALARA is maintained. All gaseous effluent released from PNPP are considered continuous and at ground level.

A small amount of error is inherent in any analytical process. Error may be due to differences in analysis results of split samples, or may be attributable to the precision limitations of instrumentation. An estimate of total error associated with different parameters is shown in Table 5.

Table 5: Error associated with gaseous effluent processes

Parameter	% Error
Noble gas analysis	11
Particulate analysis	9
Iodine analysis	12
Tritium analysis	8
Strontium-89/90 analysis	10
Gross alpha analysis	10
Sample flow rate	4
Effluent flow rate	4

If a radionuclide was not present at a level greater than the LLD, then the value is expressed as "less than (indicated by <), LLD". In all cases, the LLDs met or were below the levels required by the Technical Specifications/ODCM.

Table 6: Summation of all gaseous effluent releases

	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Est. Total Error, %
A. Fission and activation gases						
1. Total release	Ci	8.01E+1	1.03E+2	1.42E+2	2.06E+2	1.00E+1
2. Average release rate for period	µCi/sec	1.03E+1	1.31E+1	1.79E+1	2.59E+1	
3. Percent of Technical Specification limit	%	NA	NA	NA	NA	

"NA" - This item is Not Applicable. The Technical Specifications/ODCM do not have a limit for fission and activation products.

B. Iodines						
1. Total Iodine-131	Ci	1.24E-2	7.49E-3	5.51E-3	1.87E-3	1.00E+1
2. Average release rate for period	µCi/sec	1.59E-3	9.52E-4	6.93E-4	2.36E-4	
3. Percent of Technical Specification limit	%	NA	NA	NA	NA	

"NA" - This item is Not Applicable. The Technical Specifications/ODCM do not have a limit for fission and activation products.

C. Particulates						
1. Particulates with half-lives >8 days	Ci	3.51E-3	1.61E-3	2.28E-4	2.98E-4	1.00E+1
2. Average release rate for period	µCi/sec	4.49E-4	2.07E-4	2.87E-5	3.75E-5	
3. Percent of Technical Specification limit	%	NA	NA	NA	NA	
4. Gross alpha radioactivity	Ci	5.78E-6	2.71E-5	2.77E-5	1.11E-6	

"NA" - This item is Not Applicable. The Technical Specifications/ODCM do not have a limit for fission and activation products.

D. Tritium						
1. Total release	Ci	<3.0E-10	4.52E-1	2.05E-1	<3.0E-10	1.00E+1
2. Average release rate for period	µCi/sec	0	5.75E-2	2.58E-2	0	
3. Percent of Technical Specification limit	%	NA	NA	NA	NA	

"NA" - This item is Not Applicable. The Technical Specifications/ODCM do not have a limit for fission and activation products.

Table 7: Nuclide composition of gaseous effluents - ground level release, continuous mode

Nuclides Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4
1. Fission gases					
tritium	Ci	<LLD	4.52E-1	2.05E-1	<LLD
krypton-85	Ci	<LLD	<LLD	<LLD	3.06E+0
krypton-85m	Ci	1.51E-2	2.92E-1	5.25E-1	1.58E-1
krypton-87	Ci	<LLD	3.92E-1	3.15E-1	3.98E-3
krypton-88	Ci	<LLD	3.64E-1	3.78E-1	4.76E-2
xenon-131m	Ci	<LLD	<LLD	<LLD	2.05E+0
xenon-133	Ci	6.87E+0	1.28E+1	4.22E+1	1.35E+2
xenon-133m	Ci	4.14E-2	3.43E-1	1.43E+0	1.86E+0
xenon-135	Ci	1.58E+1	2.68E+1	4.60E+1	2.18E+1
xenon-135m	Ci	5.52E+1	5.00E+1	4.65E+1	4.24E+1
xenon-137	Ci	<LLD	1.03E+0	8.08E-1	<LLD
xenon-138	Ci	2.16E+0	1.08E+1	3.78E+0	<LLD
Total for period	Ci	8.01E+1	1.03E+2	1.42E+2	2.06E+2
2. Iodines					
iodine-131	Ci	1.24E-2	7.49E-3	5.51E-3	1.87E-3
iodine-133	Ci	3.52E-2	1.37E-2	1.09E-2	2.56E-3
iodine-135	Ci	2.79E-2	1.02E-2	2.84E-3	1.42E-3
Total for period	Ci	7.55E-2	3.14E-2	1.93E-2	5.85E-3
3. Particulates					
manganese-56	Ci	2.03E-4	<LLD	<LLD	<LLD
cobalt-56	Ci	3.35E-4	2.28E-4	<LLD	<LLD
cobalt-60	Ci	<LLD	<LLD	<LLD	7.21E-7
rubidium-88	Ci	<LLD	4.57E-5	<LLD	3.34E-4
rubidium-89	Ci	7.01E-4	<LLD	3.83E-5	4.93E-4
strontium-89	Ci	7.91E-4	4.15E-4	1.69E-4	2.21E-4
strontium-90	Ci	2.48E-6	1.60E-6	6.88E-7	7.27E-7
strontium-91	Ci	3.50E-3	1.28E-3	1.44E-4	2.38E-4
strontium-92	Ci	1.23E-3	3.64E-4	<LLD	<LLD
molybdenum-99	Ci	3.41E-4	<LLD	4.4E-12	4.4E-12
technetium-99m	Ci	3.43E-5	<LLD	<LLD	<LLD
technetium-104	Ci	3.07E-6	<LLD	<LLD	<LLD
cesium-138	Ci	1.60E-2	9.14E-3	3.67E-3	4.03E-3
barium-139	Ci	2.35E-2	1.43E-2	4.69E-3	5.65E-3
barium-140	Ci	2.38E-3	9.67E-4	5.79E-5	7.57E-5
lanthanum-140	Ci	1.81E-3	7.04E-4	5.90E-5	7.16E-5
Total for Period	Ci	5.09E-2	2.74E-2	8.83E-3	1.11E-2

Solid Waste

Thirty seven shipments of radioactive waste were transported from PNPP for disposal in 1995. Shipments were delivered to the State of South Carolina Department of Health and Environmental Control disposal facility in Barnwell, South Carolina. In addition, PNPP waste was sent to the Barnwell disposal facility from Scientific Ecology Group in Oak Ridge, Tennessee, as partial shipments in conjunction with other utilities. The waste total in Table 8 below includes these shipments from Scientific Ecology Group. No irradiated fuel was transported from PNPP in 1995.

Table 8: Solid waste and irradiated fuel shipments

1. Solid waste shipped off site for burial or disposal

Type of Waste	Unit	Annual Value	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3	188.2	± 25
	Ci	532.0	
b. Dry compressible waste, contaminated equipment, etc.	m^3	32.5	± 25
	Ci	1.6	
c. Irradiated components, control rods, etc.	m^3	0	
	Ci	0	

2. Estimate of major nuclide composition (by type of waste)

Type of Waste	Radionuclide	%	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	Fe-55	39.9	
	Co-60	29.1	
	Zn-65	22.8	± 25
	Cs-137	3.3	
	Mn-54	1.5	
	Cs-134	1.1	
b. Dry compressible waste, contaminated equipment, etc.	Co-60	50.9	
	Fe-55	38.4	
	Zn-65	5.0	± 25
	Mn-54	1.4	
	Cs-137	1.0	
c. Irradiated components, control rods, etc.	None		

3. Solid waste disposition

Number of Shipments (1)	Mode of Transportation	Destination
37	Truck	Barnwell, South Carolina

(1) Additional shipments were made combined with waste from other utilities from Scientific Ecology Group in Oak Ridge, Tennessee.

4. Irradiated fuel shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
0		

METEOROLOGICAL DATA

The meteorological monitoring system at PNPP consists of a 60 meter tower equipped with two independent systems for measuring wind speed, wind direction, and temperature at both 10 meter and 60 meter heights. The tower also has instrumentation to measure dew point and barometric pressure. Data is logged from the tower instrumentation into the Meteorological Data Processing System. This system compiles the data and calculates a variety of atmospheric parameters, communicates with the Meteorological Information Dose Assessment System, and sends data over communication links to the plant control room.

All meteorological data is maintained at PNPP and is available upon request.

DOSE ASSESSMENT

The maximum concentration for any radioactive release is controlled by the limits set forth in the Code of Federal Regulations, Title 10 Part 20 (10CFR20). Compliance with these concentration limits is ensured by sampling, analyzing, processing, and monitoring the effluent stream. Dose limit compliance is verified through periodic dose assessment calculations. Some dose calculations are conservatively performed for a hypothetical individual who is assumed to reside on the site boundary at the highest potential dose location all year. This person, called the "maximum individual", would incur the maximum potential dose from direct exposure (air plus ground plus water), inhalation, and ingestion of water, milk, vegetation, and fish. Because no one actually meets these criteria, the actual dose received by a real member of the public is significantly less than what is calculated for this hypothetical individual.

Dose calculations for this maximum individual at the site boundary are performed for two cases. First, they are performed using data for a 360° radius around the plant site (land and water based meteorological sectors), even though some of this area is over Lake Erie, which has no permanent residents. The second calculations are performed considering only the areas around the plant that are not over Lake Erie (land based meteorological sectors), in which people reside. Tables 9 and 10 provide the calculated hypothetical maximum site boundary dose values to either the total body or worst case organ considering all meteorological sectors. Table 11 provides the calculated hypothetical maximum site boundary dose values considering only the land based sectors.

If any radionuclide was not present at a level greater than the LLD, it was not used in dose calculations.

Table 9: 1995 Site boundary dose to maximum individual considering all sectors

Effluent	Organ	Estimated dose (mrem)	Limit	% of limit
Liquid	Total body	3.59E-3	3.0E+0	0.12
Liquid	Liver	6.69E-3	1.0E+1	0.07
Noble gas - gamma	NA	2.00E+0 (mrad)	1.0E+1	20.0
Noble gas - beta	NA	1.23E+0 (mrad)	2.0E+1	6.2
Noble gas	Total body	1.09E+0	5.0E+0	22.0
Noble gas	Skin	2.07E+0	1.5E+1	14.0
Iodine & particulates	Thyroid	1.41E+0	1.5E+1	9.4

Table 10: 1995 Population dose considering all sectors

Effluent	Organ	Estimated Population Dose (person-rem)
Liquid	Total body	2.4E-1
Liquid	Thyroid	4.3E-2
Gaseous	Total body	5.1E-2
Gaseous	Thyroid	5.4E-1

Table 11: 1995 Site boundary dose to maximum individual considering sectors on land

Effluent	Organ	Estimated dose (mrem)	Limit	% of limit
Liquid	Total body	3.59E-3	3.0E+0	0.12
Liquid	Liver	6.69E-3	1.0E+1	0.07
Noble gas - gamma	NA	1.99E-1 (mrad)	1.0E+1	2.0
Noble gas - beta	NA	1.32E-1 (mrad)	2.0E+1	0.66
Noble gas	Total body	9.78E-2	5.0E+0	2.0
Noble gas	Skin	1.86E-1	1.5E+1	1.2
Iodine & particulates	Thyroid	2.33E-1	1.5E+1	1.6

Other dose calculations are performed for a hypothetical individual who is assumed to be onsite for some specified amount of time. This person would receive the maximum dose during the time spent on site. Because no one actually meets the criteria established for these conservative calculations, the actual dose received by a real member of the public is significantly less than what is calculated for this hypothetical individual. This dose is assessed relative to the offsite dose, and considers dilution, dispersion, and occupancy factors.

The highest hypothetical dose from liquid effluents to a member of the public onsite is to a person who is fishing on Lake Erie from the shore on PNPP property. The calculations assume that person spends 60 hours per year fishing, and the dilution factor is 10. Ratioing this exposure pathway to doses calculated for offsite locations yields the dose values shown in Table 12, below.

Table 12: Maximum onsite dose from liquid effluents

Quarter/Annual	Total Body Dose (mrem)	Organ Dose (mrem)
First Quarter	1.09E-4	1.24E-4
Second Quarter	1.18E-4	1.38E-4
Third Quarter	1.24E-4	1.45E-4
Fourth Quarter	1.26E-4	1.49E-4
Annual	4.71E-4	5.52E-4

Although several cases were evaluated to determine the highest hypothetical dose from gaseous effluents to members of the public on site (including traversing a public road within the site boundary, shoreline fishing, non-plant related training, car pooling, and job interviews), the onsite activity with the highest dose potential is also shoreline fishing (assuming 60 hours per year fishing). The calculations account for this and the difference between annual average dispersion values for the onsite point of concern, 6.6E-5 s/m3. The maximum onsite dose values generated are shown in Table 13.

Table 13: Maximum onsite dose from gaseous effluents

Quarter/Annual	Total Body Dose (mrem)	Organ Dose (mrem)
First Quarter	2.16E-2	9.74E-2
Second Quarter	4.09E-2	1.12E-1
Third Quarter	4.95E-2	1.50E-1
Fourth Quarter	1.96E-2	4.38E-2
Annual	1.18E-1	3.74E-1

Average total body dose to individual members of the public is determined by combining the dose from gaseous effluents to the population that lives within 50 miles of PNPP (2,420,000 people), with the dose from liquid effluents to the population that receives drinking water from intakes within 50 miles of PNPP (18,200,00 people). The results are shown in Table 14.

Table 14: Average individual total body dose (mrem)

Quarter/Annual	From Gaseous Effluents	From Liquid Effluents
First Quarter	3.80E-6	2.53E-5
Second Quarter	5.37E-6	2.31E-5
Third Quarter	8.26E-6	3.19E-5
Fourth Quarter	3.22E-6	5.33E-5
Annual	2.11E-5	1.32E-4

ABNORMAL RELEASES

There were no abnormal releases in 1995.

PROGRAM CHANGES AND NONCOMPLIANCES

Program Changes

Both the Process Control Program and the Offsite Dose Calculation Manual were revised in 1995. The revision incorporated information from the License Amendment Number 72 that moved environmental and effluent program requirements from the Technical Specifications to the Offsite Dose Calculation Manual.

Noncompliances

There were two incidents when liquid effluent monitoring instruments were inoperable for greater than the 30 day limit:

The radioactive waste high flow discharge header monitor was not operable for 40 days (4/28/95 to 6/6/95) due to the unavailability of repair parts.

The radioactive waste low flow discharge header was not operable for the last 37 days of 1995 (11/24/95 to 12/31/95). This monitor is not used. Removing it from operation is being considered in 1996.

Corrections to 1994 Data

Some data from the 1994 Annual Effluent Release Report was amended after the report was submitted. The corrected data is included in this report in Appendix A: Addendum To 1994 Effluent Release Report.

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

INTRODUCTION

The radiological environmental monitoring program (REMP) was established at PNPP for several reasons. First, it verifies the adequacy of plant design and operation to control radioactive materials and limit effluent releases. Second, it assesses the radiological impact, if any, that the plant has had on the surrounding environment. Third, it ensures compliance with regulatory guidelines. The REMP is conducted in accordance with the PNPP Operating License, Appendix A, Technical Specifications and the ODCM. REMP requirements were established by the Nuclear Regulatory Commission (NRC).

A wide variety of samples is collected as part of the PNPP REMP. The selection of sample types, sampling locations, and sample collection frequency are based on many things. Potential pathways for the transfer of radionuclides through the environment to humans, sample availability, local meteorology, population characteristics, land use and NRC requirements are all considered.

To ensure that the REMP data are meaningful and useful, detailed sampling methods and procedures are followed. This ensures that samples are collected in the same manner and from the same locations each time. All samples are packaged on site, then shipped to an independent vendor laboratory for analysis. The vendor laboratory analyzes the samples and reports results to the PNPP Environmental Unit staff, the Lake County General Health District, and the State of Ohio Department of Health.

The REMP began in 1981 with 24 direct radiation monitoring locations, four sediment locations, and two fish sampling locations. In 1982, collections of air, water, milk, food products, and feed/silage were added. Precipitation and soil were added in 1985. Although these last two media were not required by the NRC, they were incorporated into the program to establish baseline data. In 1993, feed/silage sampling was dropped from the program based on the past ten years of data. For the same reason, all strontium analysis was deleted from the program in 1994, and gross beta and tritium were deleted from precipitation analyses in 1995. Also in 1995, the frequency for collecting soil samples was changed from quarterly to biannually.

SAMPLING LOCATIONS

REMP samples are collected at numerous locations, both on site and up to 22 miles away from the plant. Sampling locations are divided into two general categories: indicator and control. Indicator locations are those which would be most likely to display effects caused by plant operation. They are relatively close to the plant. Control locations are those which are considered to be unaffected by plant operation. Typically, they are a greater distance from the plant, in the least prevalent wind directions. Data obtained from the indicator locations are compared with data from the control locations. This comparison allows naturally occurring background radiation to be taken into account when evaluating any radiological impact PNPP may have had on the environment. Table 1 and Figures 1, 2 and 3 identify the PNPP REMP sampling locations.

Many REMP samples are collected in addition to those required by the PNPP Technical Specification/ODCM. In some cases (precipitation and soil, for example), the sample type is not required to be collected at all. In other cases (air sampling and direct radiation monitoring, for example), the PNPP REMP includes more locations than are required. The Technical Specifications/ODCM requirements for each sample type are discussed in more detail below. Sample types and locations that are required by the Technical Specification/ODCM are shown in **BOLD** in Table 1.

Table 1: REMP sampling locations

#	Description	Miles	Direction	Media(1)
1	Haines Rd.	3.4	ENE	TLD, AIR
2	Site Boundary	0.7	E	TLD
3	Meteorological Tower	1.0	SE	TLD, AIR, PR, SOIL
4	Site Boundary	0.7	S	TLD, AIR, PR, SOIL
5	Quincy Substation	0.6	SW	TLD, AIR
6	Concord Service Center	11.0	SSW	TLD, AIR, PR, SOIL, VG
7	Site Boundary	0.6	NE	TLD, AIR, PR, SOIL, VG
8	Site Boundary	0.8	E	TLD
9	Site Boundary	0.7	ESE	TLD, SOIL
10	Parmly Rd.	0.8	SSE	TLD
11	Parmly Rd.	0.6	SSW	TLD
12	Site Boundary	0.6	WSW	TLD, PR, SOIL
13	Madison-on-the-Lake	4.7	ENE	TLD
14	Hubbard Rd.	4.9	E	TLD
15	Eagle Substation	5.1	ESE	TLD
16	Dayton Rd.	5.0	SE	TLD
17	Chadwick Rd.	5.2	SSE	TLD
18	Blair Rd.	5.0	S	TLD
19	Lane Rd.	5.3	SSW	TLD
20	Nursery Rd.	5.3	SW	TLD
21	Hardy Rd.	5.1	WSW	TLD
22	Main St.	6.9	SW	TLD
23	High St.	7.9	WSW	TLD
24	St. Clair Ave.	15.1	SW	TLD
25	Offshore - PNPP discharge	0.6	NNW	SEDIMENT, FISH
26	Offshore - Redbird	4.2	ENE	SEDIMENT
27	Offshore - Fairport Harbor	7.9	WSW	SEDIMENT
28	CEI Ashtabula Plant Intake	22.0	ENE	WATER
29	River Rd.	4.3	SSE	TLD
30	Lane Rd.	4.8	SSW	TLD
31	Wood and River Rd.	4.8	SE	TLD
32	Offshore - Mentor	15.8	WSW	SEDIMENT, FISH
33	River Rd.	4.5	S	TLD
34	PNPP Intake	0.7	NW	WATER
35	Site Boundary	0.6	E	TLD, AIR, PR, SOIL, VG
36	Lake County Water Plant	3.9	WSW	TLD, WATER
37	Gerlica Farm	1.5	ENE	FOOD PRODUCTS
41	Clark Rd.	1.1	SW	TLD
42	Parmly Rd.	0.8	S	TLD, VG
43	Parmly Rd.	1.0	SSE	TLD
45	Clark Rd.	0.9	SSW	TLD
51	Rettger Milk Farm	9.6	S	MILK
53	Neff Perkins	0.5	WSW	TLD
54	Hale Rd. School	4.6	SW	TLD
55	Center Rd.	2.5	S	TLD
56	Madison High School	4.0	ESE	TLD
58	Antioch Rd.	0.8	ENE	TLD
59	Lake Shoreline at Green Rd.	4.0	ENE	WATER

#	Description	Miles	Direction	Media(1)
60	Lake Shoreline at Perry Park	1.0	WSW	WATER
61	Keller Milk Farm	7.4	SE	MILK
62	**Shreve Farm**	**1.2**	**ENE**	**FOOD PRODUCTS**
63	Minor Stream Mouth	0.08	NNE	SEDIMENT
64	Northwest Drain Mouth	0.09	NW	SEDIMENT
65	Major Stream Mouth	0.18	W	SEDIMENT
70	**H&H Farm Stand**	**16.2**	**SSW**	**FOOD PRODUCTS**
71	Mosley Farm	7.9	SE	MILK
77	**Orosz Farm**	**1.2**	**E**	**FOOD PRODUCTS**

(1) AIR = Air Iodine and Particulate VG = Vegetation
PR = Precipitation TLD = Thermoluminescent Dosimeters

SAMPLE ANALYSIS

When environmental samples are analyzed for radioactivity, several types of measurements are performed to provide information about the types of radiation and radionuclides present. The major analyses that are performed are discussed below.

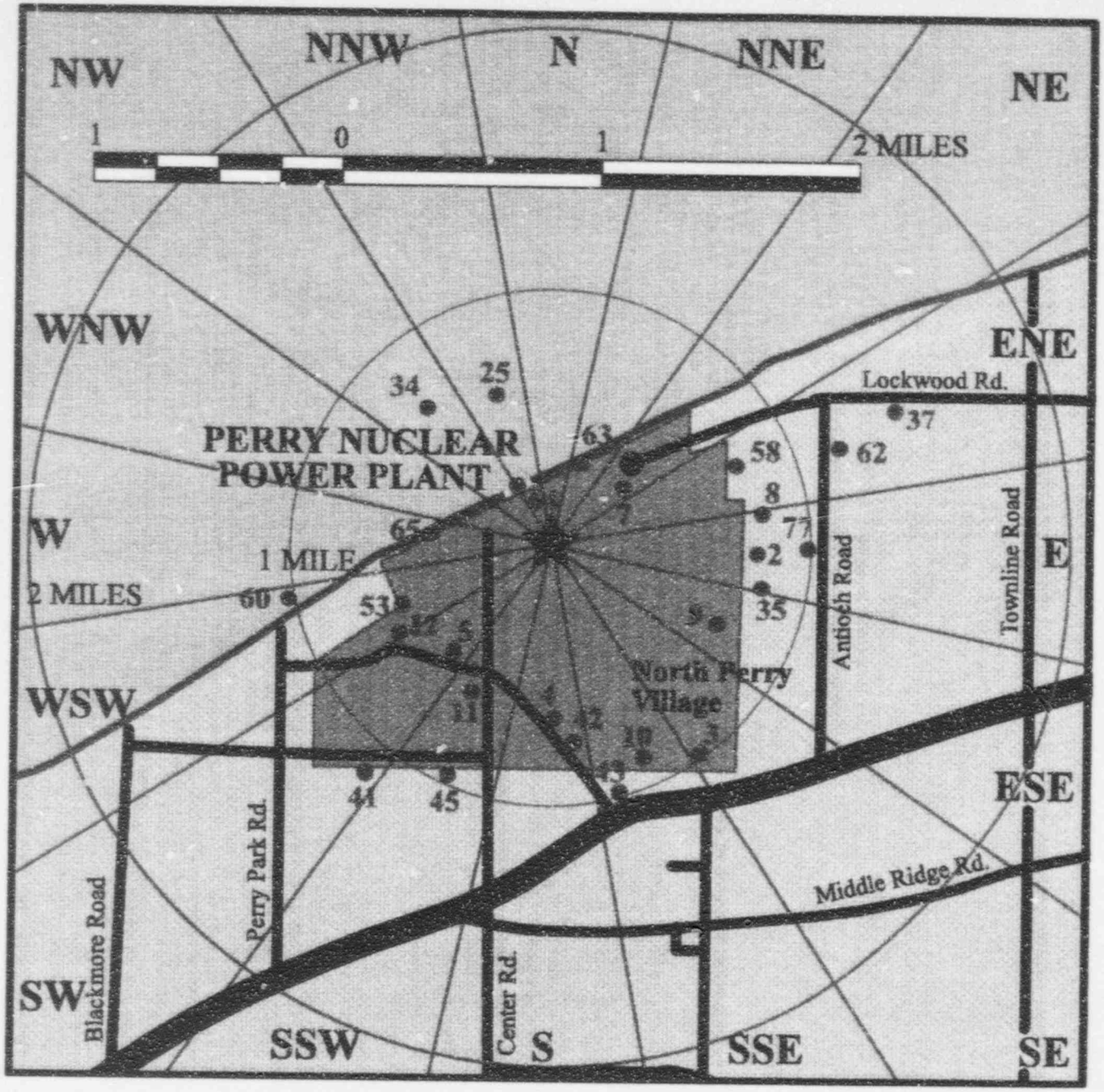
Gross beta analysis measures the total amount of beta emitting radioactivity present in a sample. Beta radiation may be released by many different radionuclides. Since beta decay results in a continuous energy spectrum rather than the discrete energy levels or "peaks" associated with gamma radiation, identification of specific beta emitting nuclides is much more difficult. Therefore, gross beta analysis only indicates whether the sample contains normal or abnormal concentrations of beta emitting radioactivity; it does not identify specific radionuclides. Gross beta analysis primarily acts as a tool to identify samples that may require further analysis.

Gamma spectral analysis provides more specific information than does gross beta analysis. Gamma spectral analysis identifies each radionuclide present in the sample that emits gamma radiation, and the amount of radioactivity associated with it. Each radionuclide has a very specific "fingerprint" that allows for accurate identification.

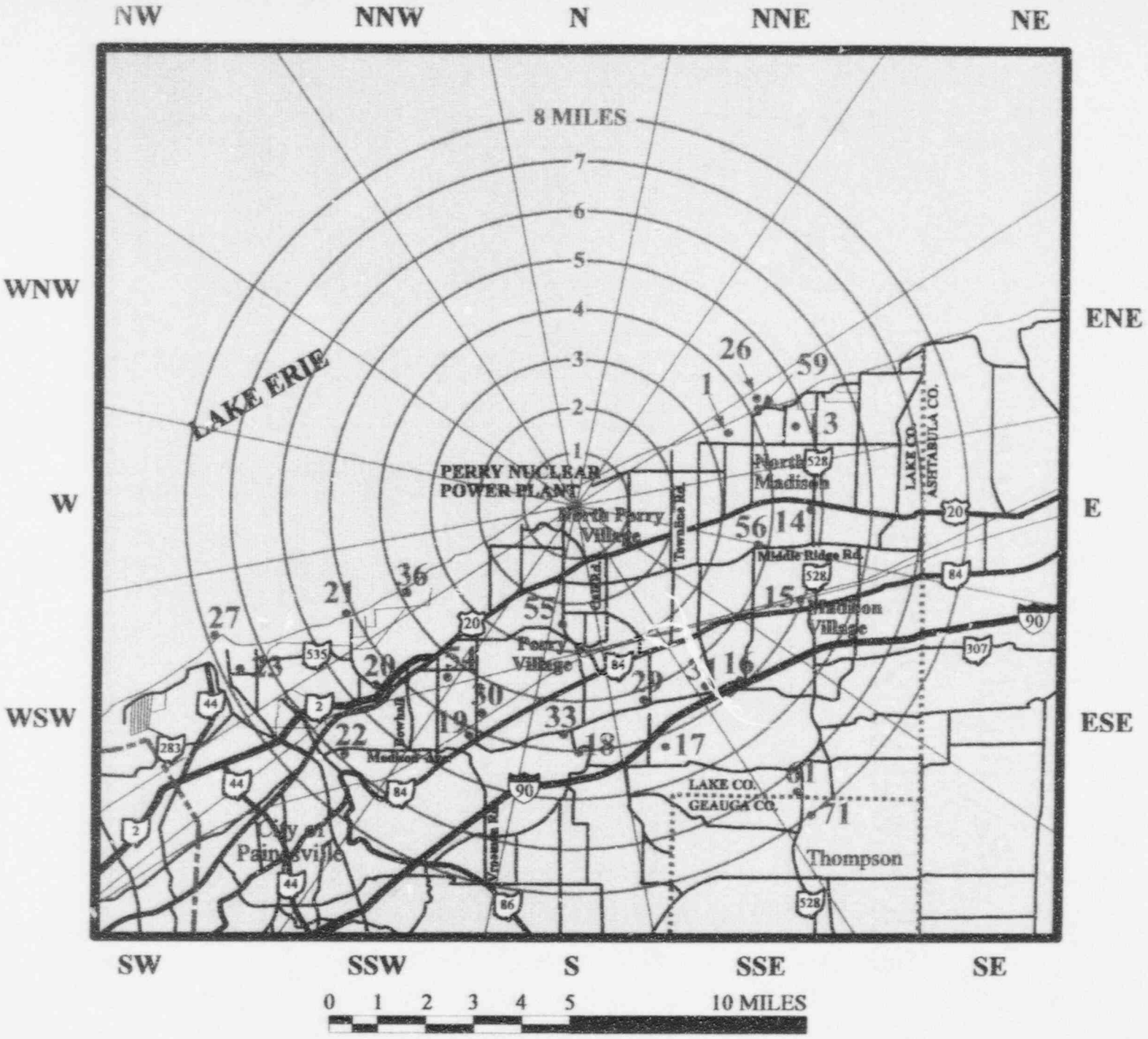
Iodine analysis measures the amount of radioactive iodine present in a sample. Some media (for example, air sample charcoal cartridges) are analyzed directly. With other media (for example, milk), iodine is extracted by chemical separation.

Tritium analysis measures the amount of the radionuclide tritium (H-3) present in a sample. Tritium is an isotope of hydrogen that emits low energy beta particles. Tritium occurs naturally and is also man-made.

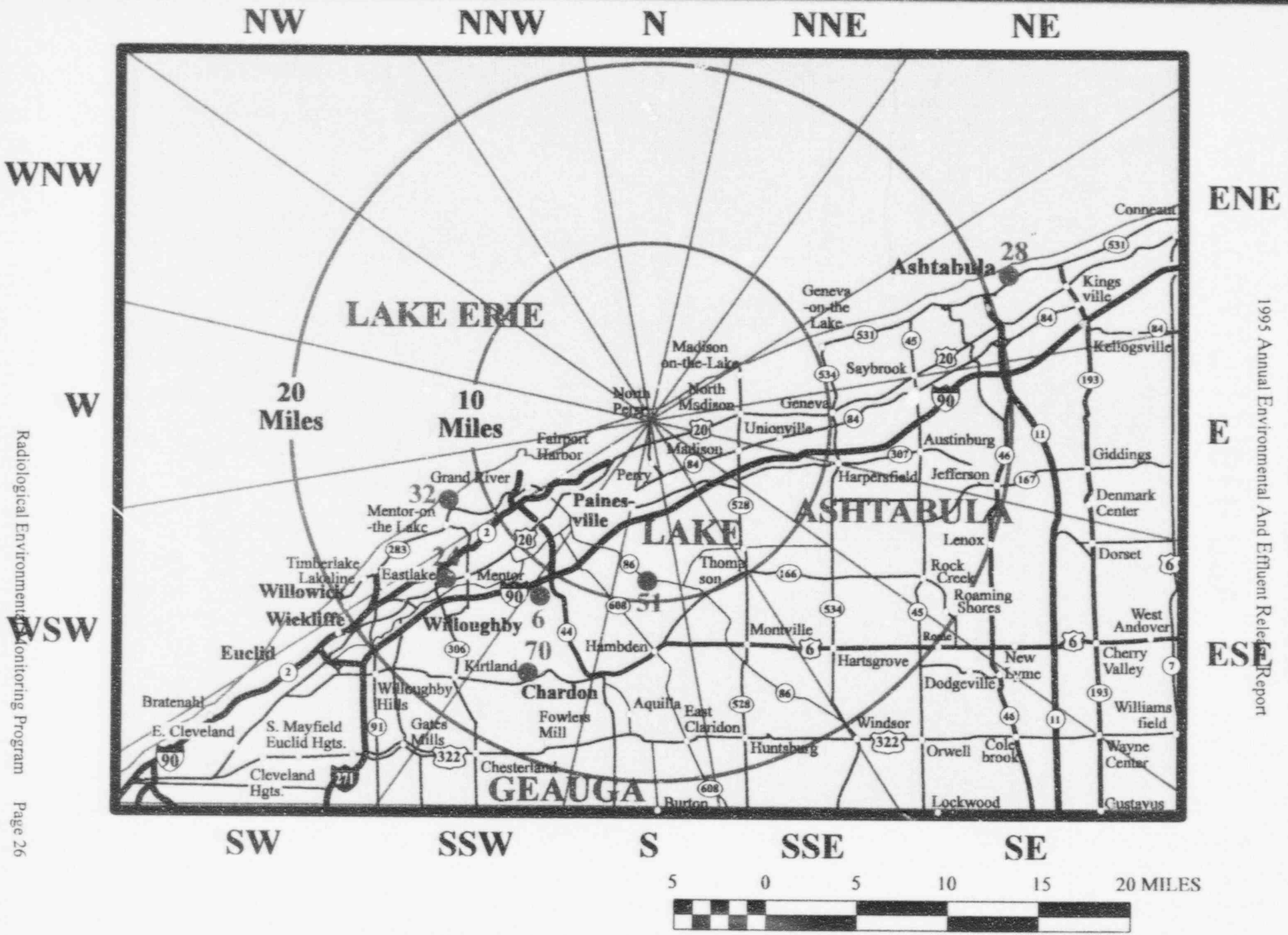
Gamma doses received by thermoluminescent dosimeters (TLD) while in the field are determined by a special laboratory procedure. Thermoluminescence is a process by which ionizing radiation interacts with the sensitive phosphor material in the TLD. Energy is trapped in the TLD material and can be stored for months or years. This provides an excellent method to measure the dose received over long periods of time. The amount of energy that was stored in the TLD as a result of interaction with radiation is released by a controlled heating process and measured in a calibrated reading system. As the TLD is heated, the phosphor releases the stored energy as light. The amount of light is directly proportional to the amount of radiation to which the TLD was exposed. The reading process also zeroes the TLD and prepares it for reuse.



REMP sampling locations within two miles of the plant site.



REMP sampling locations between two and eight miles from the plant site.



REMP sampling locations greater than eight miles from the plant site.

Table 2 provides a list of the analyses performed on environmental samples collected for the PNPP REMP in 1995.

Table 2: Analyses performed on REMP samples.

Sample Type	Frequency	Analyses Performed
Atmospheric Monitoring		
Airborne Particulates	Weekly	Gross Beta
	Quarterly	Gamma Spectral
Airborne Radioiodine	Weekly	Iodine-131
Precipitation	Monthly	Gamma Spectral
Terrestrial Monitoring		
Milk	Bi/Monthly	Gamma Spectral, Iodine-131
Food Products	Monthly	Gamma Spectral
Vegetation	Monthly	Gamma Spectral
Soil	Biannually	Gamma Spectral
Aquatic Monitoring		
Water	Monthly	Gross Beta, Gamma Spectral
	Quarterly	Tritium
Fish	Biannually	Gamma Spectral
Sediment	Biannually	Gamma Spectral
Direct Radiation Monitoring		
TLD	Quarterly	Gamma Dose
	Annually	Gamma Dose

Sample results are often reported as below the lower limit of detection (LLD). The LLD is the smallest amount of radioactive material that will show a positive result for which there can be confidence that radioactivity is present. This statistical parameter is used as a measure of the sensitivity of a sample analysis. When a measurement is reported as less than the LLD, it means that no radioactivity was detected and that had radioactivity been present at (or above) the stated LLD value, it statistically would have been detected. The NRC established values for the LLDs for REMP sample analysis. The vendor laboratory was able to comply with those values in 1995 with the exception of three precipitation samples. Two were from Location 3 during the months of February and July. The third was from location 35 during February. The LLDs were not met due to low sample volume (due to lack of precipitation).

1995 SAMPLING PROGRAM

The contribution of radionuclides to the environment resulting from the operation of PNPP is assessed by comparing results from the 1995 program with preoperational data (i.e., data from before 1986), operational data from previous years, and control location data. The results for each sample type are discussed below and compared to historical data to determine if there are any observable trends. All results are expressed as concentrations. Refer to Appendix B: 1995 REMP Data Summary and Appendix C: 1995 REMP Data, for detailed results. The NRC requires special reporting if sample analysis results exceed set limits. No values exceeded these reporting levels in 1995.

Program Changes

There were several changes to the program in 1995. These changes include the addition and deletion of sample locations as follows:

February After establishing permanent agreements with two produce growers close to the plant site in 1994, Location 39 was the last produce sampling location to be dropped from the program. No samples were collected there in 1994 or 1995.

March Location 47, Zoldak Milk Farm, dropped out of the milk sampling program.

Location 37, Gerlica Farm, was added to supplement the two primary food product sampling locations.

May Location 44 on Parmly Rd. was deleted as a grass sampling location. Construction in the vicinity eliminated the grassy area that had been sampled.

Location 42 on Parmly Rd., was added as a grass sampling location to replace the loss of Location 44.

Missed Samples

On occasion, samples cannot be collected. This can be due to a variety of events, including equipment malfunction, animal husbandry practices, lost shipments, or vandalism. Table 3 provides information on samples missed in 1995.

Table 3: Missed REMP samples, 1995

Media	Location	Date	Reason Missed
Air	6	Mar. 22 - 29	Sampler not turned on
Food Products	All	Apr. - Jul.	Vegetables not ready for harvest
Food Products	37	Aug.	Vegetables not ready for harvest
Food Products	37, 62	Oct.	Vegetables past harvest
Grass	All	Apr.	Insufficient growth to harvest
Grass	6	Sep. , Oct.	Insufficient growth to harvest
Lake Water	59, 60	Feb.	Lake shoreline covered with ice
Milk	61	Jan., Feb., Mar., Nov., Dec.	Drying period for goats (1)
Precipitation	6	Jun.	Insufficient rainfall
Precipitation	All	Aug.	Insufficient rainfall
TLD	58	2nd qtr.	Lost in the field (2)
TLD	42	3rd qtr.	Lost in the field (2)
TLD	55	4th qtr.	Lost in the field (2)
TLD	24, 42	Annual	Lost in the field (2)

(1) The drying period for goats is an annual occurrence. Goats, unlike cows, cannot produce milk all year.

(2) Missing TLDs can be the result of vandalism. At locations where vandalism has been identified as a recurring problem, the TLD is relocated. Loss of the TLDs listed above was unusual; they were not relocated as a result of this single event.

Events may also occur which prevent a sample from being collected in the normal way, or prevent a complete sample from being collected. The following is a discussion of these events for 1995.

Food In September, only one food product was collected from Locations 37 and 70; In October, only two were collected from Location 70. This was due primarily to differences in planting and harvest schedules among the three produce growers and for different crops.

Milk — During the first bimonthly collection in June, the farmer at location 51 did not provide a sample during the scheduled period of June 8 - 12. The sample was collected June 13. This was due to a scheduling problem with the farmer.

Air — During the week of July 26 - August 2, power to the air sampler at Location 3 was shut off for approximately one hour during repairs being made to a nearby traffic light.

During the week of August 9 - 16, Location 7 experienced power outages due to severe localized storms.

On October 25, a substation was taken off line, disrupting power for approximately two hours to Locations 1, 3,4,5 and 35.

Water — One of the weekly grab samples could not be collected from Location 59 in January due to ice on the shoreline.

In February, samplers at both Locations 34 and 36 had low sample volumes. No reason was discovered for this event.

March samples from Locations 59 and 60 consisted of one grab sample rather than four weekly grabs. This was due to ice on the shoreline.

In October, a grab sample was collected at water sample Location 28. The automatic sampler had malfunctioned. It was repaired and returned to service later that day.

In December, a partial grab sample was collected at water sample Location 36. The automatic sampler had malfunctioned during the month and did not obtain a sufficient volume. The balance of the volume was made up via a grab sample.

Also in December, two of the weekly grab samples from Locations 59 and 60 could not be collected due to ice on the shoreline.

Atmospheric Monitoring

AIR

Air sampling is conducted to detect any increase in the concentration of airborne radionuclides. Five locations (four indicator and one control), are required by the PNPP Technical Specifications/ODCM. Air sampling pumps are used to draw continuous samples at a rate of approximately one cubic foot per minute. The air is drawn through glass fiber filters, to collect particulates, and charcoal cartridges, to adsorb iodine. The samples are collected on a weekly basis, 52 weeks a year, from each of seven air sampling stations. Six of the locations are within four miles of the plant site; the seventh is used as a control location and is eleven miles from PNPP.

Air samples are analyzed weekly for gross beta, iodine, and by gamma spectral analysis (quarterly). A total of 370 of each type of air sample (particulate and iodine) was collected in 1995.

Gross beta activity was detected in all air samples and ranged up to 0.04 pCi/m3. The annual average concentration of gross beta at both indicator and control locations was 0.02 pCi/m3. Historically, the concentration of gross beta in air has been essentially identical at indicator and control locations, as shown in Figure 5.

Except for naturally occurring beryllium-7, no radionuclide was identified in the gamma spectral analysis above the LLD. Iodine-131 was not detected in any sample above the LLD of 0.05 pCi/m3.

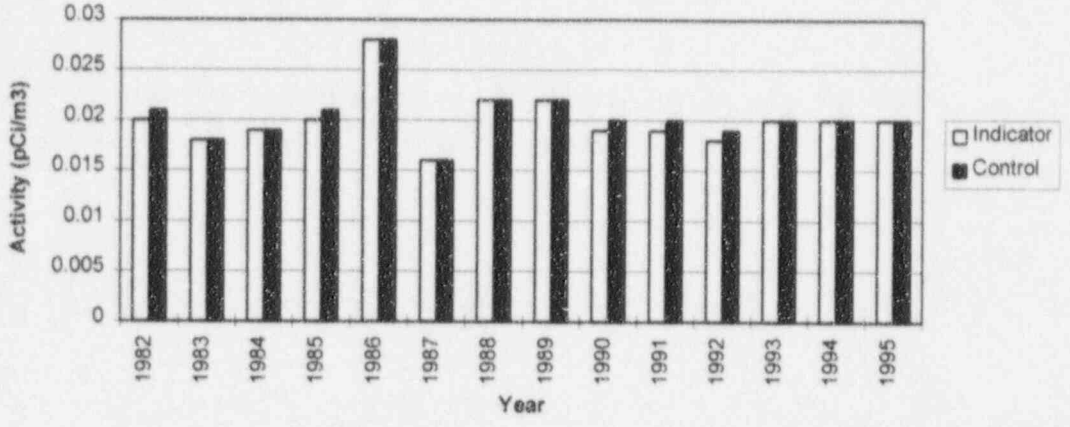


Figure 5: Annual average concentration of gross beta in air.

PRECIPITATION

Precipitation sample analysis allows us to detect radionuclides deposited from the atmosphere. Precipitation in the form of rain, snow, sleet or hail provides a way to wash airborne radionuclides from the atmosphere. Although not required by the PNPP Technical Specifications/ODCM, samples are collected from six locations using passive collection containers. Containers are removed monthly or when full, strained to remove debris, and shipped to the laboratory for analysis. There are five indicator locations within one mile of PNPP and one control location, which is located eleven miles from PNPP.

Precipitation samples are analyzed by gamma spectral analysis. A total of 65 precipitation samples were collected in 1995. The results of gamma spectral analysis were all below LLD.

Terrestrial Monitoring

Collecting and analyzing samples of milk, food products and vegetation provides data to assess the build-up of radionuclides that may be ingested by humans. The data from soil samples provides information on the deposition of radionuclides from the atmosphere. Neither vegetation nor soil samples are required by the PNPP Technical Specifications/ODCM.

MILK

Samples of milk are collected once each month from November through March, and twice each month from April through October. Sampling is increased during the summer because animals usually feed outside on pasture and not on stored feed. The PNPP REMP includes three milk locations (two within five miles of the plant, and one control). Since the milk sampling locations did not meet the requirements of the Technical Specifications/ODCM, food product sampling (discussed below) was performed. Milk was collected from the available locations even though they did not meet the Technical Specifications/ODCM requirements. If new locations that meet the Technical Specification/ODCM requirements are identified in the future, they will be added to the program.

Milk samples are analyzed for iodine and by gamma spectral analysis. A total of 52 milk samples were collected in 1995. Iodine was not detected above the LLD of 0.75 pCi/l in any of the samples. The concentrations of all radionuclides except naturally occurring potassium-40 were below LLDs in all samples collected. The results for potassium-40 were similar at indicator and control locations, as expected.

FOOD PRODUCTS

Food products can provide a direct pathway to humans by ingestion. They can absorb radionuclides from atmospheric deposition on soil or from irrigation water drawn from a lake or pond receiving airborne or liquid effluents. Also, radionuclides in the soil may be absorbed by the roots of the plants and become incorporated into the edible portions. Because there is not a sufficient number of milk sampling locations, the PNPP REMP is required to include two food product indicator locations and one control location. Food products are collected monthly during the growing season from three farms in the vicinity of PNPP. The control location for food products is 16.2 miles from PNPP.

A total of 22 food product samples were collected in 1995 and analyzed by gamma spectral analysis. Six food products were collected, including cabbage, broccoli, cauliflower, dill, beet greens and turnip greens. Beryllium-7 and potassium-40, naturally occurring radionuclides, were found in several samples, as expected. No other radionuclides were detected above the LLDs.

VEGETATION

Vegetation (grass) was collected monthly during the growing season from four locations (three indicator and one control) in 1995. Grass is clipped from open areas using standard lawn trimming equipment. The control location for vegetation is eleven miles away. A total of 22 grass samples were collected in 1995 and analyzed by gamma spectral analysis. Two naturally occurring radionuclides were detected: beryllium-7 and potassium-40. No other radionuclides were detected above the LLDs.

SOIL

Soil samples are collected biannually from seven locations (six locations and one control). The control location is eleven miles away. Only the top inch of soil is sampled in an effort to identify possible trends in the local environmental radionuclide concentrations.

Fourteen soil samples were collected in 1995 and analyzed by gamma spectral analysis. Two naturally occurring radionuclides, potassium-40 and radium-226 were detected in the samples, as expected. Cesium-137 activity was detected in all samples and ranged from 55.00 - 400.0 pCi/kg. The annual average concentration of cesium-137 was 259.00 pCi/kg at the indicator locations and 197.00 pCi/kg at the control location. For all sample sites, the annual average concentrations were similar to those measured in previous years (Figure 6). The downward trend apparent in the figure represents the decrease in cesium-137 deposition from atmospheric weapons testing in the 1960's and '70's.

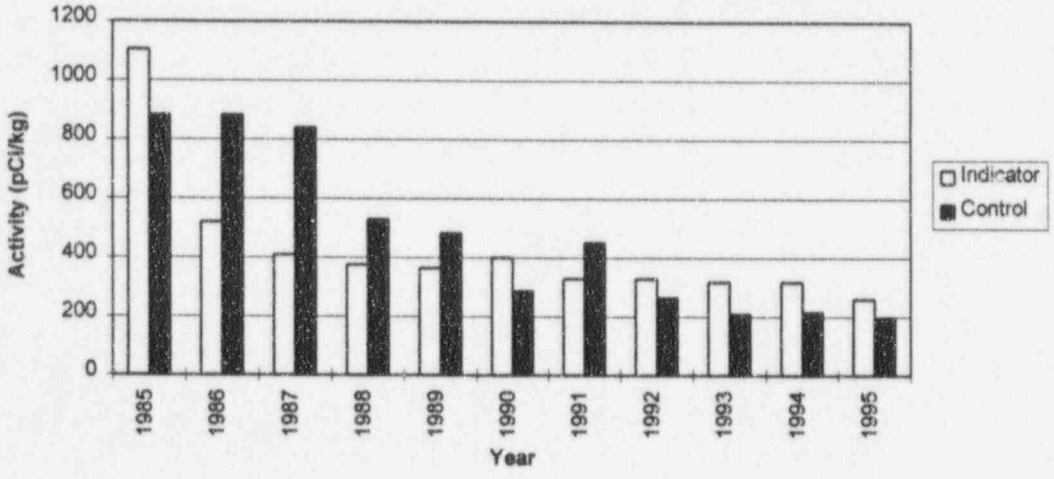


Figure 6: Annual average concentration of cesium-137 in soil

The difference between indicator and control location results is not surprising since the presence of radionuclides in soil is so dependent on site-specific factors such as soil type and drainage. These factors determine the ability of the soil to attract ions. For example, differences in soil types at the six indicator locations in 1995 resulted in cesium-137 concentrations ranging from 55.0 pCi/kg to 400.0 pCi/kg.

Aquatic Monitoring

Radionuclides may be present in Lake Erie from many sources (other than PNPP) including atmospheric deposition, run-off/soil erosion, and releases of radioactivity in liquid effluents from hospitals, universities or other industrial facilities. These sources provide two forms of potential radiation exposure, external and internal. External exposure can occur from contact with water or shoreline sediments. Internal exposure can occur from ingestion of radionuclides, either directly from drinking the water, or as a result of the transfer of radionuclides through the aquatic food chain to the eventual consumption of aquatic organisms, such as fish. To monitor these pathways, PNPP samples water, shoreline sediments, and fish.

WATER

Water is sampled from five locations along Lake Erie in the vicinity of the PNPP as required by the PNPP Technical Specifications/ODCM. Samples from three locations are collected using composite sample pumps. The pumps are designed to collect water at regular intervals and composite it in a sample container. The containers are removed monthly and the samples shipped to the laboratory for analysis. Samples from two locations are collected weekly and combined. Each month the combined sample is shipped for analysis.

Fifty-eight water samples were collected and analyzed for gross beta activity and by gamma spectral analysis in 1995. From these, monthly samples were composited into quarterly samples and analyzed for tritium. Gross beta activity was detected in all samples collected and ranged from 1.30 - 3.60 pCi/l. The annual average concentration of gross beta was 2.32 pCi/l at the indicator locations and 2.18 pCi/l at the control location. For all sample locations, the annual average concentrations were similar to those measured in previous years (Figure 7).

The significant difference between pre-1988 data and post-1988 data has been attributed to a change in vendor laboratories in 1987/1988. A comprehensive explanation is provided in the 1988 Annual Environmental Operating Report.

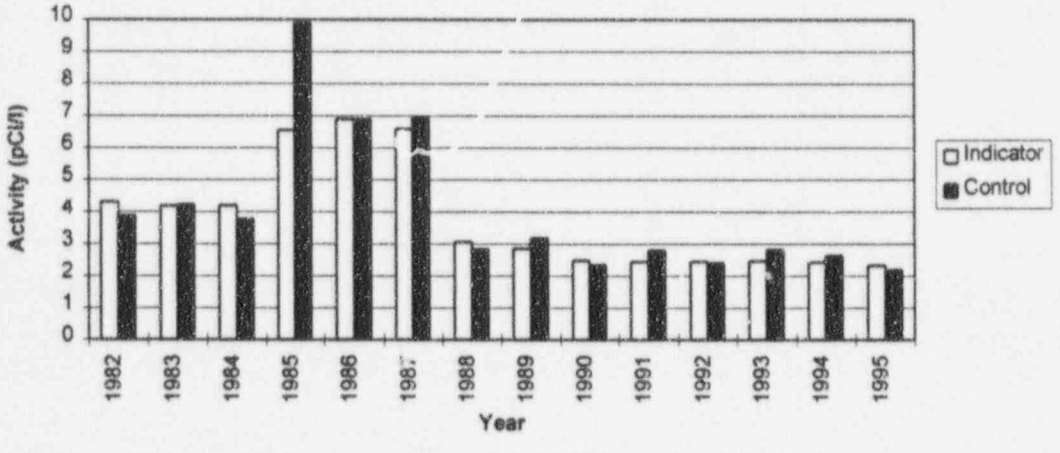


Figure 7: Annual average concentration of gross beta in water

No radionuclides were detected by gamma spectral analysis above the LLD. Tritium was detected in ten of 20 samples and ranged from 155.00 - 263.00 pCi/l. The annual average concentration of tritium was 201.25 pCi/l at the indicator locations and 227.00 pCi/l at the control location. These results are well within the range of those measured in previous years which have ranged from below the lower limit of detection to 2,200 pCi/l.

SEDIMENT

Sampling lake bottom sediments can provide an indication of the accumulation of undissolved radionuclides which may lead to internal exposure to humans through the ingestion of fish, through resuspension into drinking water, or as an external radiation source from shoreline exposure to fisherman and swimmers. Although only one location is required by the PNPP Technical Specification/ODCM, sediment is sampled twice each year from seven locations, two of which are also fish sampling locations. Sediment samples from offshore are collected using a hand dredge. Near shore samples are collected using a scoop. Fourteen sediment samples were collected in 1995 and analyzed by gamma spectrometry. The predominant radionuclide detected by gamma spectral analysis was potassium-40, which is naturally occurring. Potassium-40 has been detected in all samples since the program began in 1981. Cesium-137 was detected in eight samples and ranged from 211.5 - 1,354.9 pCi/kg. The annual average concentration was 405.37 pCi/kg at the indicator locations and 854.55 pCi/kg at the control location. These are within the range of concentrations measured in previous years (Figure 8).

The changes in cesium-137 concentration from year to year may be related to the movement of sediment on the lake bottom. Wave action and currents can cause significant sediment movement between sample collections. For this reason, it is unlikely the same bed of sediment is sampled at each collection. This would contribute to inconsistent data, as Figure 8 demonstrates.

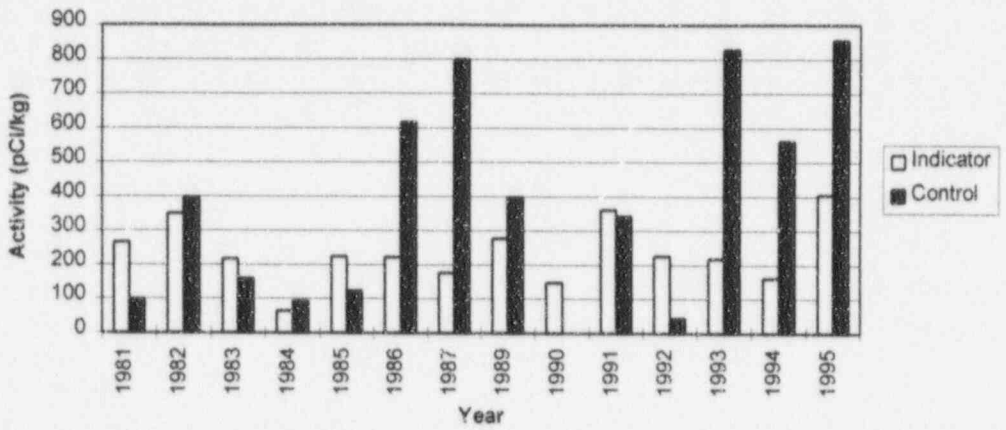


Figure 8: Annual average concentration of cesium-137 in sediment

FISH

Fish are analyzed primarily to quantify the dietary radionuclide intake by humans, and secondarily to serve as indicators of radioactivity in the aquatic ecosystem. Fish are collected from two locations, twice each year as required by the Technical Specifications/ODCM. Important sport and commercial species are targeted, and only the fillets are sent to the laboratory for analysis. A scientific collecting permit is obtained annually from the Ohio Department of Natural Resources for fish sampling.

Twenty-five fish samples were collected in 1995 and analyzed by gamma spectral analysis. Twelve species of fish were represented, including walleye, drum, smallmouth bass, carp, white sucker, white perch, yellow perch, redhorse sucker, white bass, lake trout, steelhead, and rockbass. As expected,

naturally occurring potassium-40 was found in all samples. Cesium-137 was detected in one fish (a walleye from Location 25). No other radionuclides were detected above the LLD.

Direct Radiation Monitoring

THERMOLUMINESCENT DOSIMETERS

Environmental radiation is measured directly at thirty-nine locations around the PNPP site (the REMP is required to include 28 locations, two of which are control locations). The locations are positioned in two rings around the plant as well as at the site boundary. The inner ring is within a one mile radius of the plant site; the outer ring is four to five miles from the plant. Control locations are over ten miles from the plant in the two least prevalent wind directions. Each location is equipped with three thermoluminescent dosimeters (TLDs). Two are changed quarterly and one is changed annually.

A total of 346 TLDs were collected and analyzed in 1995. This includes 309 collected on a quarterly basis, and 37 collected annually. In 1995, the annual average dose for all indicator locations was 54.84 mR, and 55.70 mR for all control locations. The TLD results are higher prior to 1988 due to a change in vendor laboratory services. A comprehensive explanation of the difference is provided in the 1988 Annual Environmental Operating Report.

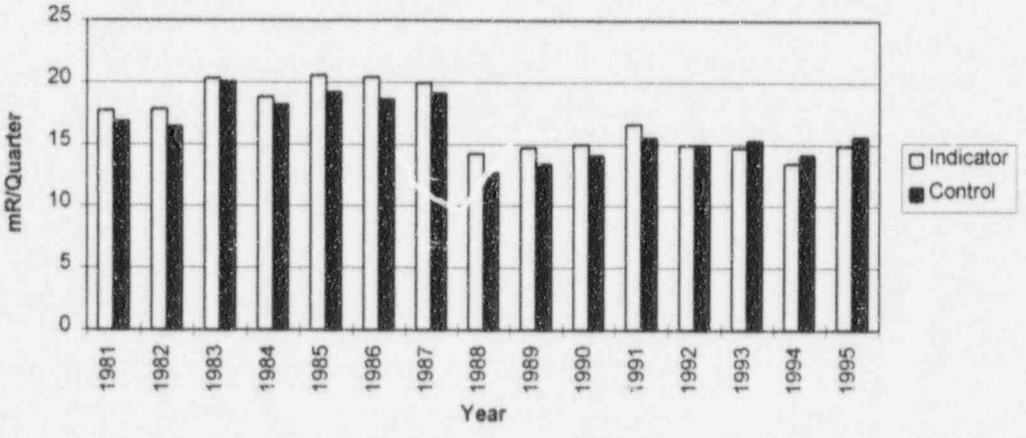


Figure 9: Average dose per quarter

INTERLABORATORY COMPARISON PROGRAM

The purpose of the Interlaboratory Cross-Check comparison program is to provide an independent check on the vendor laboratory's analytical procedures. Samples with a known concentration of specific radionuclides are provided to the vendor laboratory. The vendor laboratory measures and reports the concentration of specified radionuclides. The known values (EPA values) are then compared to the vendor results. Results consistently outside established acceptance criteria indicate a need to check instruments or procedures.

In 1995, the vendor laboratory analyzed 26 samples of water for this program. All results were within the acceptable range. The results of this program are shown in Table 4. Results are expressed in pCi/l.

In addition to their participation in the EPA Interlaboratory Comparison Program, the vendor laboratory periodically conducts an internal cross-check program for dosimeters. No dosimeters were submitted for cross-check in 1995.

The vendor laboratory routinely monitors the quality of their analyses by analyzing "spiked" samples (samples with a specific quantity of radioactive material present in them. The quantity is not known by the sample analyst). Table 5 shows the results of this program for 1995. Two samples were outside the acceptable range; they are shown in **bold**. All results are expressed in pCi/l except air filter results, which are in pCi/filter.

Table 4: 1995 EPA Cross-Check Intercomparison Program results.

Date	Sample Type	Analysis	Vendor Result	EPA Value	Acceptable Range
Jan.	Water	Sr-89	17.7 ± 1.5	20.0 ± 5.0	11.3 - 28.7
		Sr-90	13.7 ± 0.6	15.0 ± 5.0	6.3 - 23.7
		Gross Alpha	4.3 ± 0.6	5.0 ± 5.0	0.0 - 13.7
		Gross Beta	4.7 ± 0.6	5.0 ± 5.0	0.0 - 13.7
Feb.	Water	I-131	99.0 ± 4.4	100.0 ± 10.0	82.7 - 117.3
		Ra-226	19.2 ± 0.4	19.1 ± 2.9	14.1 - 24.1
		Ra-228	19.2 ± 2.0	20.0 ± 5.0	11.3 - 28.7
		Uranium	24.9 ± 0.2	25.5 ± 3.0	20.3 - 30.7
Mar.	Water	H-3	7460.0 + 87.2	7435.0 + 744.0	6,144.2 - 8725.8
		Pu-239	11.0 ± 0.6	11.1 ± 1.1	9.2 - 13.0
Apr.	Water	Gross Alpha	41.7 ± 0.6	47.5 ± 11.9	26.9 - 68.1
		Ra-226	13.4 ± 0.5	14.9 ± 2.2	11.1 - 18.7
		Ra-228	13.1 ± 2.4	15.8 ± 4.0	8.9 - 22.7
		Uranium	9.5 ± 0.6	10.0 ± 3.0	4.8 - 15.2
		Co-60	29.0 ± 1.7	29.0 ± 5.0	20.3 - 37.7
		Cs-134	17.3 ± 1.2	20.0 ± 5.0	11.3 - 28.7
		Cs-137	11.0 ± 1.0	11.0 ± 5.0	2.3 - 19.7
		Gross Beta	74.8 ± 3.2	86.6 ± 10.0	69.3 - 103.9
		Sr-89	17.0 ± 0.0	20.0 ± 5.0	11.3 - 28.7
		Sr-90	12.7 ± 1.2	15.0 ± 5.0	6.3 - 23.7
Jun.	Water	Ra-226	14.7 ± 0.3	14.8 ± 2.2	11.0 - 18.6
		Ra-228	11.9 ± 0.6	15.0 ± 3.8	8.4 - 21.6
		Uranium	13.9 ± 0.3	15.2 ± 3.0	10.0 - 20.4
Jul.	Water	Gross Alpha	16.4 ± 2.4	27.5 ± 6.9	15.5 - 39.5
		Gross Beta	16.8 ± 1.0	19.4 ± 5.0	10.7 - 28.1
Aug.	Water	H-3	4773.7 ± 49.9	4872.0 ± 487.0	4027.1 - 5716.9

CONCLUSION

No unusual radionuclide concentrations or exposure levels were detected during 1995. Atmospheric monitoring results were consistent with past results. The prevalent radionuclide in air was beryllium 7 which is naturally occurring. Naturally occurring potassium-40 was detected in all terrestrial samples, as expected. Cesium-137 was detected in soil and is the result of fallout from weapons testing. The concentrations were similar to those measured in previous years and are not related to plant operation.

There was no significant change in radionuclide concentrations at indicator locations for aquatic samples in 1995. Cesium-137 was detected in sediment. Results were within the range of past data.

Finally, direct radiation measurements are consistent with past data.

Table 5: 1995 Vendor "spiked" sample results

Date	Sample	Analysis	Result	Known Value	Acceptable Range
Jan.	Milk	Cs-137	51.2 ± 7.5	49.4	39.4 - 59.4
		Sr-89	19.4 ± 3.4	23.1	13.1 - 33.1
		Sr-90	26.2 ± 1.3	28.1	18.1 - 38.1
		I-131	80.3 ± 1.4	86.0	68.8 - 103.2
		I-131	84.8 ± 10.4	86.0	51.6 - 96.0
	Air Filter	Cs-137	2.2 ± 0.0	1.9	1.2 - 2.7
		I-131	2.2 ± 0.0	1.9	1.2 - 2.7
		Gross Beta	7.5 ± 0.0	8.1	0.0 - 18.1
	Water	H-3	40929.9 ± 5594.5	40871.0	32696.8 - 49045.2
		Co-60	250.5 ± 14.1	247.5	222.8 - 272.3
		Cs-134	290.5 ± 14.4	321.3	289.2 - 353.4
		Cs-137	387.7 ± 21.2	394.3	354.9 - 433.7
	Charcoal Canister	I-131	2.9 ± 0.1	2.5	1.5 - 3.4
Feb.	Vegetation	I-131	1.9 ± 0.1	1.9	1.1 - 2.6
	Water	Ra-226	6.9 ± 0.1	6.9	4.8 - 9.0
Mar.	**Water**	**Sr-89**	**0.9 ± 3.9**	**42.7**	**32.7 - 52.7 (1)**
	Water	**Sr-90**	**31.4 ± 1.8**	**39.1**	**31.3 - 46.9 (2)**
	Water	Gross Alpha	88.5 ± 3.7	82.9	41.5 - 124.4
	Water	Gross Beta	83.0 ± 2.3	87.2	77.2 - 97.2
Apr.	Air Filter	Gross Beta	7.5 ± 0.0	8.1	0.0 - 18.1
		Cs-137	2.3 ± 2.1	1.9	1.2 - 2.7
	Water	H-3	9656.2 ± 291.8	9333.0	7466.4 - 11199.6
		Co-60	23.8 ± 2.4	24.8	14.8 - 34.8
		Cs-134	29.3 ± 2.3	30.8	20.8 - 40.8
		Cs-137	42.3 ± 3.9	40.9	30.9 - 50.9
		Gross Alpha	88.0 ± 3.8	82.9	41.5 - 124.4
		Gross Beta	79.6 + 2.3	87.2	77.2 - 97.2
	Milk	Cs-134	37.0 ± 1.8	40.7	30.7 + 50.7
		Cs-137	62.4 ± 3.1	54.5	44.5 - 64.5
		Sr-89	32.6 ± 3.3	36.5	26.5 - 46.5
		Sr-90	25.6 ± 1.6	24.9	14.9 - 34.9
May	Water	Fe-55	2033.7 ± 500.2	2274.0	1819.2 - 2728.8
		Gross Alpha	17.3 ± 1.4	20.7	10.4 - 31.1
		Gross Beta	21.2 ± 1.0	21.8	11.8 - 31.8
		Sr-89	18.7 ± 2.4	21.2	11.2 - 31.2
		Sr-90	21.2 ± 1.1	23.2	13.2 - 33.2
	Fish	Cs-134	0.1 ± 0.0	0.1	0.1 - 0.2
		Cs-137	0.2 ± 0.0	0.2	0.1 - 0.2
	Soil	Cs-134	0.3 ± 0.0	0.3	0.2 - 0.4
		Cs-137	0.5 ± 0.0	0.5	0.3 - 0.7
Jun.	Water	I-131	78.8 ± 2.3	85.5	68.4 - 102.6
		I-131	48.2 ± 1.9	46.8	34.8 - 58.8
		I-131	34.9 ± 0.5	39.5	27.5 - 51.5
	Charcoal Canister	I-131	2.2 ± 0.1	2.3	1.4 - 3.3
	Vegetation	I-131	0.6 ± 0.0	0.5	0.3 - 0.8
	Milk	I-131	38.5 ± 0.5	39.6	27.6 - 51.6
Jul.	Vegetation	I-131	1.1 ± 0.0	1.0	0.6 - 1.4
	Milk	Cs-134	31.5 ± 2.5	34.4	24.4 - 44.4

Date	Sample	Analysis	Result	Known Value	Acceptable Range
		Cs-137	50.2 ± 4.0	43.4	33.4 - 53.4
		I-131	44.7 ± 5.4	45.6	27.4 - 55.6
		Sr-90	28.0 ± 1.4	27.9	17.9 - 37.9
	Air Filter	Gross Beta	7.3 ± 0.0	8.1	0.0 - 18.1
		Cs-137	2.3 ± 0.0	1.9	1.2 - 2.7
	Water	H-3	25806.9 ± 447.7	26669.0	21335.2 - 32002.8
		Fe-55	2.3 ± 0.4	2.1	0.0 - 22.1
Sep.	Water	Sr-89	34.6 ± 4.9	39.0	29.0 - 49.0
		Sr-90	20.3 ± 1.3	20.0	10.0 - 30.0
Oct.	Charcoal Canister	I-131	0.8 ± 0.0	0.8	0.5 - 1.1
	Fish	Co-60	0.7 ± 0.0	0.8	0.5 - 1.1
		Cs-134	0.5 ± 0.0	0.6	0.3 - 0.8
		Cs-137	0.9 ± 0.1	0.9	0.5 - 1.2
Nov.	Air Filter	Gross Beta	7.3 ± 0.0	8.0	0.0 - 18.0
	Water	H-3	27963.4 ± 445.5	29315.0	23452.0 - 35178.0
		Gross Alpha	75.3 ± 3.2	82.8	41.4 - 124.2
		Gross Beta	86.9 ± 2.5	86.3	76.3 - 96.3

(1) (2) The raw data was reviewed and found to be free of errors. The sample was repeated with similar results. An investigation was conducted to determine the cause of this deviation. No apparent cause was found for this discrepancy. It was determined the "spiked" sample was prepared improperly. Another "spiked" sample was prepared and analyzed. No further action is planned.

LAND USE CENSUS

INTRODUCTION

Each year a land use census is conducted to identify the locations of the nearest milk animal, garden (of greater than 500 square feet), and residence in each of the meteorological sectors that is over land. The Land Use Census is required by the PNPP Off Site Dose Calculation Manual, Section 3/4.12.2. The information gathered during the Land Use Census is used for off-site dose assessment and to update sampling locations for the Radiological Environmental Monitoring Program.

The Land Use Census is conducted by traveling all roads within a five-mile radius of the plant site, and recording and mapping the location of the nearest resident, milk animal, and vegetable garden in each of the meteorological sectors that is over land. The 1995 Census was conducted August 17 - 23.

The information has been tabulated below; garden, residence and milk animal locations are plotted on the map in Figure 1. Note that the W, WNW, NNW, NW N, and NNE sectors extend over Lake Erie and therefore were not included in the survey.

DISCUSSION AND RESULTS

In general, the predominant land use within the census area continues to be rural/agricultural.

There were no changes in nearest residences within five miles of the plant in 1995. Table 1 lists the nearest residence by sector. A milk animal (cow) was identified during the 1995 census. The owners of the animal did not choose to participate in the 1995 sampling program. Information on the milk animal is shown in Table 2. There was one change to nearest gardens recorded during the 1995 census. Table 3 lists the nearest gardens that occupy at least 500 square feet.

There was one milk animal (goat) identified during the 1994 census. The goat died prior to participating in the milk sampling program. For this reason, the location was not added to the REMP.

Table 1: Nearest residence by sector

Sector	Location Address	Miles from PNPP	X/Q Value (Sec/m3)	Map Locator #
NE	4385 Lockwood	0.8	2.17E-6	1
ENE	4502 Lockwood	1.0	1.13E-6	2
E	2684 Antioch	1.1	6.77E-7	3
ESE	2774 Antioch	1.2	4.44E-7	4
SE	4495 N. Ridge	1.2	3.89E-7	5
SSE	3119 Parmly	0.9	1.89E-6	6
S	3121 Center	0.9	2.25E-6	7
SSW	3850 Clark	0.9	1.11E-6	8
SW	3440 Clark	1.2	4.98E-7	9
WSW	2815 Perry Park	1.0	1.72E-6	10

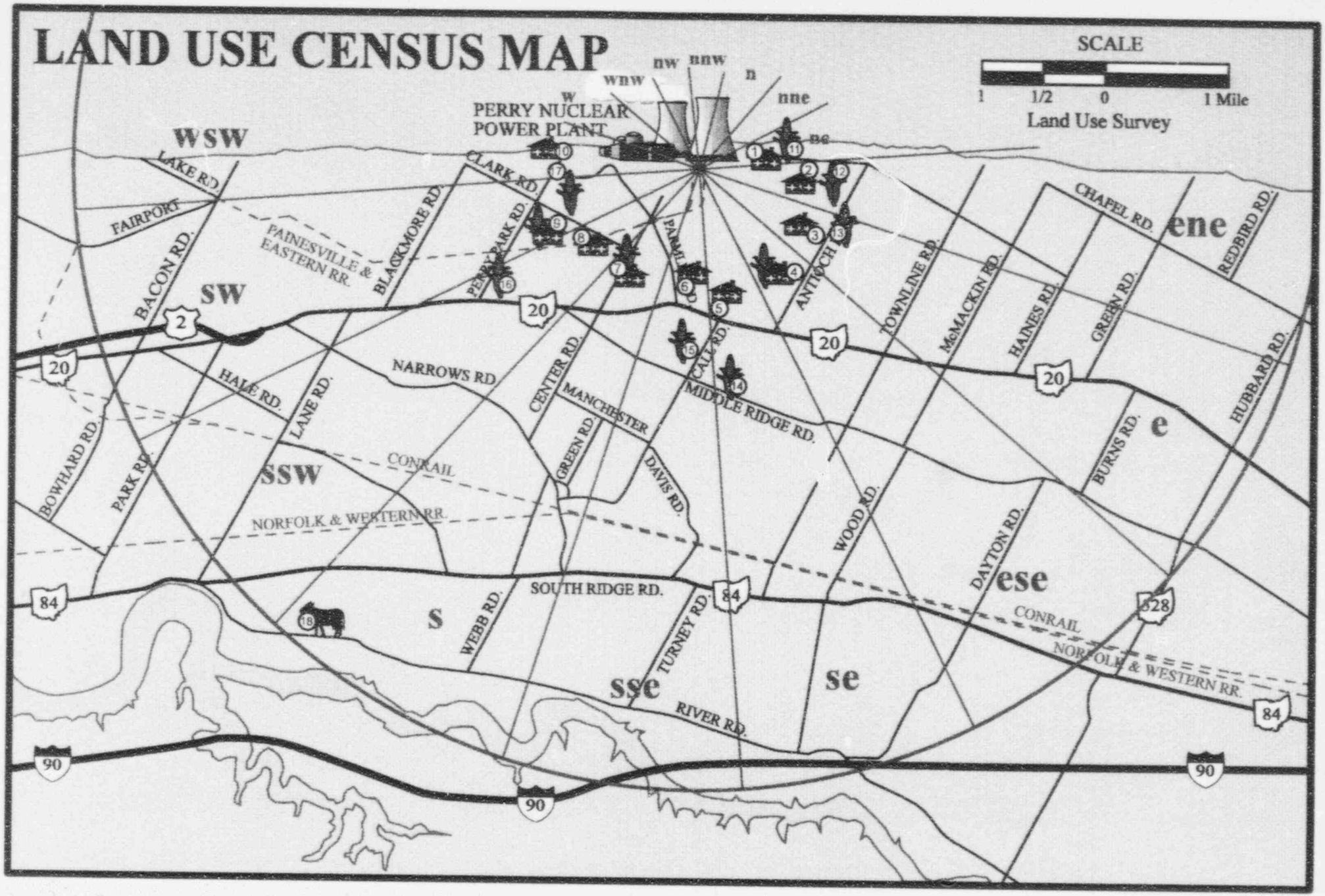
Table 2: Milk animal

Sector	Location Address	Miles from PNPP	Map Locator #
S	3588 River	4.8	18

Table 3: Nearest garden by sector

Sector	Location Address	Miles from PNPP	D/Q Value per m2	Map Locator #
NE	4398 Lockwood	0.8	1.09E-8	11
ENE	4650 Lockwood	1.2	4.11E-9	12
E	2740 Antioch	1.2	4.56E-9	13
ESE	2774 Antioch	1.2	3.41E-9	4
SE	4679 Middle Ridge	1.9	1.31E-9	14
SSE*	3288 Call	1.4	2.30E-9	15
S	3121 Center	0.9	1.31E-8	7
SSW	3515 N. Ridge	1.7	1.19E-9	16
SW	3440 Clark	1.2	2.24E-9	9
WSW	2975 Perry Park	1.2	2.31E-9	17

* - *Indicates a new location for 1995.*



Land Use Census Map

CLAM/MUSSEL MONITORING

INTRODUCTION

Sampling for benthic macroinvertebrates (clams and mussels) has been conducted in Lake Erie in the vicinity of the Perry Nuclear Power Plant (PNPP) since 1971. The clam/mussel program currently focuses on two species: *Corbicula fluminea* (Asiatic clam) and *Dreissena polymorpha* (zebra mussel).

CORBICULA PROGRAM

Monitoring specifically for *Corbicula* was initiated in response to an NRC bulletin and concerns of the Atomic Safety and Licensing Board. The current monitoring is part of the Environmental Protection Plan (Operating License Appendix B). The program consists of periodic sampling of areas at both the PNPP and Eastlake Power Plants. Its purpose is to detect *Corbicula*, should it appear in the study area.

No *Corbicula* have ever been found in any sample collected from PNPP or from Lake Erie in the vicinity of PNPP. Two *Corbicula* were found in a sample collected from the Eastlake plant in June, 1987. No *Corbicula* have been found in any other sample collected since that time. A more detailed program history can be found in the 1986 and 1987 PNPP Annual Environmental Operating Reports.

Monitoring

Samples were collected quarterly in 1995 from the service water and emergency service water pump houses at PNPP, and semiannually from Lake Erie in the vicinity of the Eastlake Power Plant. Sample collection dates are listed in Table 1.

Table 1: 1995 Corbicula sampling dates and locations

Date	Sample Location
1/23	Service Water (SW) and Emergency Service Water (ESW) Forebays and trash baskets
4/7	SW and ESW Forebays and trash baskets
6/19	Lake Erie in the vicinity of the Eastlake Plant
7/13	SW and ESW Forebays and trash baskets
9/5	Lake Erie in the vicinity of the Eastlake Plant
10/27	SW and ESW Forebays and trash baskets
	Weekly Inspections of PNPP property shoreline, weather permitting

All samples were collected by Ponar hand dredge, hand scoop, or scraper. They were examined for bivalve shells and fragments, which were then identified to the lowest possible species.

In addition to sample collections, plant components that use raw water are inspected whenever opened for maintenance or repair. Also, active communications were maintained with other agencies involved in benthic macroinvertebrate monitoring on Lake Erie. Several publications developed and distributed specifically for the purpose of providing information on bivalves are used as resources.

Results

No *Corbicula* were found in any sample collected during the 1995 monitoring program. All bivalves collected are listed in Table 2.

Table 2: Bivalves collected during the 1995 *Corbicula* monitoring program

Species/Location	PNPP	Eastlake
Dreissena polymorpha	X	X
Dreissena bugensis	X	X
Physa sp.	X	X
Pisidium sp.	X	X
Pisidium adamsi	X	
Pisidium casertanum	X	
Pisidium compressum	X	
Pisidium ferrugineum	X	
Pisidium lilljeborgi	X	
Pleuroceridae	X	
Sphaeridae	X	
Sphaerium corneum	X	
Sphaerium striatinum	X	
Sphaerium transversum	X	
Valvatidae	X	X

Conclusions

The collection in June 1987 was the only indication of *Corbicula* in the vicinity of PNPP. However, it has not been demonstrated that the presence of these clams is creating any operational problems at the Eastlake Power Plant or at PNPP.

DREISSENA PROGRAM

Zebra mussels were first discovered at PNPP in September 1988. The initial collection of 19 mussels was made as part of the *Corbicula* monitoring program. The *Dreissena* program began in 1989 with monitoring and testing. The current control program was designed and implemented in 1990.

Monitoring

In addition to visually inspecting plant raw water systems when they are opened for maintenance or repair, monitoring methods include the use of commercial divers, artificial substrates, sidestream monitors, and plankton nets.

Commercial divers monitor mussel infestation when they are inspecting forebays, basins, and the intake and discharge structures. They have also been used to take underwater videotapes of the water basins and intake tunnel. Artificial substrates include concrete blocks suspended by rope into the plant service water basin. The substrate is removed weekly for inspection for settlement.

Sidestream monitors are flow-through containers that receive water diverted from plant systems. PNPP used them in three in-plant locations during the mussel season, May through October. They are fitted with slides and inspected weekly for veliger settlement. A plankton net is used to obtain weekly samples of incoming service water that are subsequently examined for veligers.

Treatment

Chemicals used for mussel control in 1995 included chlorine and a commercial molluscicide. The system provides chlorine to plant service water, emergency service water, and circulating water

systems. Sodium sulfite is added to plant discharge water to dechlorinate it before discharge to Lake Erie.

The use of commercial molluscicides requires approval of the Ohio Environmental Protection Agency (OEPA). The chemical selected for use at Perry Nuclear Power Plant in 1995 was didecyl dimethyl ammonium chloride. One treatment was applied near the end of the settlement period. The active ingredients were detoxified by adsorption onto bentonite clay prior to discharge into Lake Erie.

Results

The effectiveness of the intermittent chlorination treatment has been determined in several ways. First, visual inspections of raw water system components are conducted when systems are open during maintenance or repair. In addition, settlement monitors were inspected weekly for new settlement. No live settlement has been found in any plant component to date.

The effectiveness of the application of the commercial molluscicide was measured by observing mortality of mussels placed in a flow-through container placed in plant service water and subjected to the chemical treatment. Mortality observed in the flow-through container was 100%. To date, PNPP has had no problems related to zebra mussels.

Conclusions

Perry Nuclear Power Plant has taken the approach that the best method for avoiding problems with zebra mussels is preventive treatment of plant water systems. The current program of monitoring and chemical treatments will be continued to minimize the possibility that PNPP will experience future problems due to zebra mussels.

HERBICIDE USAGE

Herbicides are used sparingly on the PNPP site. An application must be made to the PNPP Environmental Programs Unit prior to spraying to ensure that only approved chemicals are used, and only in approved areas.

Table 1 provides a compilation of herbicide usage at the PNPP for 1995. All usage was in compliance with Ohio Environmental Protection Agency regulations. No adverse environmental impacts as a result of this usage were noted during weekly site environmental inspections. Surflan AS and Round Up were used in equal portions to make up the total quantity except where noted.

Table 1: Herbicide usage

Date Applied	Location	Acres	Gallons
6/22/95	Misc. Gravel areas	0.5	1.0
7/ 5/95	E-filed and outer perimeter	3.86	7.45
9/26/95	Parking area	3.0	6.0

SPECIAL REPORTS

NONCOMPLIANCES

NPDES Permit Noncompliances

The National Pollutant Discharge Elimination System, or NPDES permit, is issued by the Ohio Environmental Protection Agency (OEPA). It establishes monitoring requirements and limits for discharges from the plant. It also specifies the locations from which the plant is allowed to discharge. There were two notification made to the OEPA in 1995.

On February 9, 1995, the two hour time limit for discharge of total residual chlorine was exceeded by fifteen minutes. This incident was reported to the OEPA on February 10, 1995 and was followed with a confirmation letter on February 13, 1995 (PY-CEI/OEPA-0214L).

On March 23, 1995, the two hour time limit for discharge of total residual chlorine was exceeded by 21.47 hours. This incident was reported to the OEPA on March 23, 1995 and was following with a confirmation letter on March 27, 1995 (PY-CEI/OEPA-0128L).

EPP Noncompliances

The Environmental Protection Plan, or EPP, is a part of the PNPP Operating License. It requires non radiological environmental monitoring programs and reporting. Two were EPP noncompliances identified in 1995.

During a self-assessment of EPP programs, it was discovered that changes to the plant NPDES Permit had not been reported to the NRC within 30 days following the date the changes were approved. All permit changes not previously submitted were sent to the NRC (PY-CEI/NRR-1906L).

During the same self-assessment, it was discovered that sets of color transparencies of aerial remote sensing photomissions had not been submitted to the NRC. All color transparencies were submitted to the NRC (PY-CEI/NRR-1907L).

UNREVIEWED ENVIRONMENTAL QUESTIONS

All proposed changes in plant design or operation, as well as tests or experiments conducted during 1995 were reviewed for potential environmental impact in accordance with the EPP and administrative quality assurance procedures. The reviews ensured that no changes were performed which could cause an adverse environmental impact. Therefore, there were no potentially significant unreviewed environmental questions in 1995.

NONROUTINE REPORTS

There was one nonroutine report in 1995.

On December 31, 995, approximately 10 - 15 gallons of trichloroethylene leaked from a pressurized system into a plant building. Although approximately five gallons were recovered, the remaining volume volatized. This incident was reported to the OEPA on December 31, 1995 and was followed with a written confirmation letter on January 10, 1996 (PY-CEI/OEPA-0238L).

APPENDIX A: ADDENDUM TO 1994 EFFLUENT RELEASE REPORT

Solid Waste

Sixteen shipments of radioactive waste were transported from PNPP for disposal in 1994 to the State of South Carolina Department of Health and Environmental Control disposal facility in Barnwell, South Carolina. No waste was shipped for burial from 6/30/94 through 12/31/94. No irradiated fuel was transported from PNPP in 1994. Table 1 provides information on total volume, waste streams and radioactivity.

Table 1: Solid waste and irradiated fuel shipments

1. Solid waste shipped off site for burial or disposal

Type of Waste	Unit	Annual Value	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3	50.5	± 25
	Ci	341.0	
b. Dry compressible waste, contaminated equipment, etc.	m^3	132.9	± 25
	Ci	150.9	
c. Irradiated components, control rods, etc.	m^3	0	
	Ci	0	

2. Estimate of major nuclide composition (by type of waste)

Type of Waste	Radionuclide	%	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	Fe-55	22.6	
	Co-60	11.7	
	Zn-65	52.4	± 25
	Cr-51	8.6	
	Mn-54	1.9	
	C0-58	1.4	
b. Dry compressible waste, contaminated equipment, etc.	Co-60	23.8	
	Fe-55	66.1	
	Mn-54	3.3	± 25
	Zn-65	6.4	
c. Irradiated components, control rods, etc.	None		

3. Solid waste disposition

Number of Shipments (1)	Mode of Transportation	Destination
16	Truck	Barnwell, South Carolina

(1) Additional shipments were made combined with waste from other utilities from Scientific Ecology Group in Oak Ridge, Tennessee.

4. Irradiated fuel shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
0		

Liquid Effluent Releases

Tables 2- -4 provide information on the nuclide composition and annual site boundary dose for all liquid releases in 1994. If a radionuclide was not present at a level greater than the LLD, then the value is expressed as "less than (indicated by <), LLD". In all cases, LLDs met or were below the levels required by the Technical Specifications/ODCM.

Table 2: Summation of all releases

	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Est. Total Error, %
A. Fission and activation products						
1. Total releases (not including tritium, gases, alpha)	Ci	4.78E-2	2.62E-2	1.70E-2	8.72E-3	1.00E+1
2. Average diluted concentration during period	µCi/ml	3.01E-8	8.07E-8	1.17E-8	8.07E-9	
3. Percent of applicable limit	%	NA	NA	NA	NA	
"NA" - This item is Not Applicable. The Technical Specifications/ODCM do not have a limit for fission and activation products.						
B. Tritium						
1. Total release	Ci	3.54E+0	1.52E+0	2.34E+0	1.88E+0	1.00+E1
2. Average diluted concentration during period	µCi/ml	2.23E-6	4.70E-6	1.60E-6	1.74E-6	
3. Percent of applicable limit	%	0.074	0.157	0.054	0.058	
C. Dissolved and entrained gases						
1. Total release	Ci	5.09E-3	0	4.89E-3	1.16E-2	1.00E+1
2. Average diluted concentration during period	µCi/ml	3.20E-9	0	3.36E-9	1.07E-8	
3. Percent of applicable limit	%	0.002	0	0.002	0.005	
D. Gross alpha radioactivity						
1. Total release	Ci	<LLD	<LLD	4.44E-5	<LLD	1.00E+1
E. Volume of waste released (prior to dilution)	liters	4.34E+6	4.01E+6	5.43E+6	2.79E+6	1.00E+1
F. Volume of dilution water used during period	liters	1.59E+9	3.25E+8	1.46E+9	1.08E+9	1.00E+1

Table 3: Nuclide composition of liquid effluents

Nuclides Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4
tritium	Ci	3.54E+0	1.52E+0	2.34E+0	1.88E+0
chromium-51	Ci	7.62E-3	3.58E-5	6.62E-5	2.44E-4
manganese-54	Ci	1.65E-3	1.65E-3	9.69E-4	5.04E-4
iron-55	Ci	5.64E-3	3.05E-3	2.31E-3	2.67E-4
manganese-56	Ci	<LLD	<LLD	<LLD	5.55E-5
cobalt-58	Ci	2.76E-4	1.27E-5	<LLD	<LLD
iron-59	Ci	3.39E-5	<LLD	<LLD	<LLD
cobalt-60	Ci	9.84E-3	1.14E-2	7.26E-3	3.75E-3
zinc-65	Ci	1.84E-2	9.60E-3	5.06E-3	1.69E-3
strontium-89	Ci	6.90E-5	4.89E-5	2.99E-5	2.85E-5
strontium-90	Ci	5.47E-6	<LLD	<LLD	<LLD
yttrium-93	Ci	<LLD	<LLD	2.63E-5	<LLD
zirconium-95	Ci	1.18E-4	<LLD	<LLD	<LLD
niobium-95	Ci	1.76E-4	<LLD	<LLD	<LLD
technetium-99m	Ci	1.62E-4	<LLD	6.54E-6	5.31E-5
technetium-101	Ci	2.52E-5	<LLD	<LLD	<LLD
ruthenium-103	Ci	1.33E-3	<LLD	<LLD	<LLD
silver-110m	Ci	2.74E-4	8.45E-5	<LLD	<LLD
antimony-124	Ci	<LLD	<LLD	<LLD	6.18E-6
antimony-125	Ci	<LLD	<LLD	1.17E-4	2.93E-4
iodine-131	Ci	6.26E-5	<LLD	4.73E-4	3.92E-4
iodine-133	Ci	1.55E-05	<LLD	1.30E-4	3.57E-5
xenon-133	Ci	3.25E-3	<LLD	4.36E-3	1.00E-2
xenon-133m	Ci	<LLD	<LLD	1.07E-4	1.65E-4
iodine-134	Ci	<LLD	<LLD	<LLD	9.32E-5
cesium-134	Ci	4.75E-5	5.84E-5	7.74E-5	4.70E-5
xenon-135	Ci	1.84E-3	<LLD	4.28E-4	1.37E-3
cesium-137	Ci	7.66E-5	1.89E-4	2.71E-4	1.55E-4
cesium-138	Ci	<LLD	<LLD	7.16E-5	4.31E-5
barium-139	Ci	<LLD	<LLD	<LLD	4.08E-5
lanthanum-140	Ci	1.61E-3	<LLD	1.16E-4	9.97E-4
cerium-141	Ci	2.75E-4	4.24E-5	<LLD	2.94E-5
cerium-144	Ci	7.69E-5	<LLD	<LLD	<LLD
neptunium-239	Ci	1.78E-5	<LLD	<LLD	<LLD
Total for period	Ci	3.60E+0	1.55E+0	2.35E+0	1.90E+0

Table 4: Annual site boundary dose to maximum individual considering all sectors

Effluent	Organ	Estimated dose (mrem)	Limit	% of limit
Liquid	Total body	3.20E-2	3.0E+0	1.1
Liquid	Liver	6.48E-2	1.0E+1	0.7

APPENDIX B: 1995 REMP DATA SUMMARY

P24001

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Air - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean Dist. Direct	Location with Highest Annual Mean Mean (1) (Range)	All Control Locations Mean (1) (Range)
APTG PCI/CU.M.	BE-7 28	NA	0.07 (0028/0028) 0.05-0.11	0.07 (0024/0024) 0.05-0.11	35 0.6 E	0.08 (0004/0004) 0.05-0.11	0.07 (0004/0004) 0.05-0.09
	CO-58 28	NA	LLD	-	-	-	-
	CO-60 28	NA	LLD	-	-	-	-
	CS-134 28	.037	LLD	-	-	-	-
	CS-137 28	.045	LLD	-	-	-	-

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

P24001 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY PAGE: 001

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Air - Gross beta

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean Dist. Direct	Location with Highest Annual Mean Mean (1) (Range)	All Control Locations Mean (1) (Range)
APTB PCI/CU.M.	G-BETA 370	.0075	0.02 (0370/0370) 0.01-0.04	0.02 (0318/0318) 0.01-0.04	4 0.7 S	0.02 (0053/0053) 0.01-0.04	0.02 (0052/0052) 0.01-0.03

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

P24001

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Air - Iodine

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
AI PCI/CU.M.	I-131 370	.05	LLD	-	-	-	-

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Precipitation - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
PRC PCI/L	BA-140 65	45	LLD	-	-	-	-
	CO-58 65	11	LLD	-	-	-	-
	CO-60 65	11	LLD	-	-	-	-
	CS-134 65	11	LLD	-	-	-	-
	CS-137 65	13	LLD	-	-	-	-
	FE-59 65	22	LLD	-	-	-	-
	LA-140 65	11	LLD	-	-	-	-

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Precipitation - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
PRG PCI/L	MN-54 65	11	LLD	-	-	-	-
	NB-95 65	11	LLD	-	-	-	-
	ZN-65 65	22	LLD	-	-	-	-
	ZR-95 65	22	LLD	-	-	-	-

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

P24001

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Milk - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean: Dist. Direct	Location with Highest Annual Mean: Mean (1) (Range)	All Control Locations Mean (1) (Range)
MLKG PCI/L	BA-140 52	45	LLD	-	-	-	-
	CS-134 52	11	LLD	-	-	-	-
	CS-137 52	13	LLD	-	-	-	-
	K-40 52	NA	1502.69 (0052/0052) 950.00-2080.00	1520.30 (0033/0033) 950.00-2080.00	61 7.4 SE	1814.29 (0014/0014) 1380.00-2080.00	1472.11 (0019/0019) 1240.00-1670.00
	LA-140 52	13	LLD	-	-	-	-

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Milk - Iodine

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
MLKI PCI/L	I-131 52	.75	LLD	-	-	-	-

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Food Products - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean Dist. Direct	Location with Highest Annual Mean Mean (1) (Range)	All Control Locations Mean (1) (Range)
FP PCI/KG(WET)	BE-7 22	NA	387.20 (0005/0022) 176.00-650.00	387.20 (0005/0016) 176.00-650.00	77 1.2 E	387.20 (0005/0009) 176.00-650.00	0.00 (0000/0006) 0.00-0.00
	CO-58 22	NA	LLD	-	-	-	-
	CO-60 22	NA	LLD	-	-	-	-
	CS-134 22	45	LLD	-	-	-	-
	CS-137 22	60	LLD	-	-	-	-
	I-131 22	65	LLD	-	-	-	-
	K-40 22	NA	4453.91 (0022/0022) 1786.00-8918.00	4884.06 (0016/0018) 2310.00-8918.00	62 1.2 E	5101.00 (0006/0006) 2702.00-8918.00	3306.83 (0006/0006) 1786.00-5136.00

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Grass - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean: Dist Direct	Location with Highest Annual Mean: Mean (1) (Range)	All Control Locations Mean (1) (Range)
FP PCI/KG(WET)	BE-7 22	NA	2694.41 (0022/0022) 590.00-5477.00	2729.50 (0018/0018) 590.00-5477.00	7 0.6 NE	3417.17 (0006/0006) 1013.00-4966.00	2536.50 (0004/0004) 1835.00-3193.00
	CO-58 22	NA	LLD	-	-	-	-
	CO-60 22	NA	LLD	-	-	-	-
	CS-134 22	45	LLD	-	-	-	-
	CS-137 22	60	LLD	-	-	-	-
	I-131 22	45	LLD	-	-	-	-
	K-40 22	NA	6174.86 (0022/0022) 2626.00-11604.00	5784.17 (0018/0018) 2626.00-11092.00	6 11.0 SSW	7933.00 (0004/0004) 5281.00-11604.00	7933.00 (0004/0004) 5281.00-11604.00

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Soil - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean: Dist. Direct	Location with Highest Annual Mean: Mean (1) (Range)	All Control Locations Mean (1) (Range)
SOIL PCI/KG(DRY)	CO-58 14	300	LLD	-	-	-	-
	CO-60 14	40	LLD	-	-	-	-
	CS-134 14	60	LLD	-	-	-	-
	CS-137 14	80	250.14 (0014/0014) 55.00-400.00	259.00 (0012/0012) 55.00-400.00	7 0.6 NE	359.50 (0002/0002) 319.00-400.00	197.00 (0002/0002) 190.00-204.00
	K-40 14	NA	12519.86 (0014/0014) 9914.00-17391.00	11960.83 (0012/0012) 9914.00-17254.00	6 11.0 SSW	15874.00 (0002/0002) 14357.00-17391.00	15874.00 (0002/0002) 14357.00-17391.00
	RA-226 14	NA	1453.50 (0014/0014) 993.00-2331.00	1356.08 (0012/0012) 993.00-1956.00	6 11.0 SSW	2038.00 (0002/0002) 1745.00-2331.00	2038.00 (0002/0002) 1745.00-2331.00

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Water - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean: Dist. Direct	Location with Highest Annual Mean: Mean (1) (Range)	All Control Locations Mean (1) (Range)
WTRG PCI/L	BA-140 58	45	LLD	-	-	-	-
	CO-58 58	11	LLD	-	-	-	-
	CO-60 58	11	LLD	-	-	-	-
	CS-134 58	11	LLD	-	-	-	-
	CS-137 58	13	LLD	-	-	-	-
	FE-59 58	22	LLD	-	-	-	-
	LA-140 58	11	LLD	-	-	-	-

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Water - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean Dist. Direct	Location with Highest Annual Mean Mean (1) (Range)	All Control Locations Mean (1) (Range)
WTRG PCI/L	MN-54 58	11	LLD	-	-	-	-
	NB-95 58	11	LLD	-	-	-	-
	ZN-65 58	22	LLD	-	-	-	-
	ZR-95 58	22	LLD	-	-	-	-

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Water - Gross beta

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean: Dist. Direct	Location with Highest Annual Mean: Mean (1) (Range)	All Control Locations Mean (1) (Range)
WTRB PCI/L	G-BETA 58	3	2.29 (0058/0058) 1.30-3.60	2.32 (0046/0046) 1.50-3.60	60 1.0 WSW	2.57 (0011/0011) 1.70-3.60	2.18 (0012/0012) 1.30-2.90

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

P24001

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Water - Tritium

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean: Dist. Direct	Location with Highest Annual Mean: Mean (1) (Range)	All Control Locations Mean (1) (Range)
TRITIUM PCI/L	H3 20	1500	206.40 (0010/0020) 155.00-263.00	201.25 (0008/0016) 155.00-262.00	28 22.0 ENE	227.00 (0002/0004) 191.00-263.00	227.00 (0002/0004) 191.00-263.00

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Fish - Gamma spec

Medium and Measurement	Type and Tot. (a) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean: Dist. Direct	Location with Highest Annual Mean: Mean (1) (Range)	All Control Locations Mean (1) (Range)
FSH PCI/KG(WET)	CO-58 25	97	LLD	-	-	-	-
	CO-60 25	97	LLD	-	-	-	-
	CS-134 25	97	LLD	-	-	-	-
	CS-137 25	112	28.90 (0001/0025) 28.90-28.90	28.90 (0001/0015) 28.90-28.90	25 0.6 NNW	28.90 (0001/0015) 28.90-28.90	0.00 (0000/0010) 0.00-0.00
	FE-59 25	195	LLD	-	-	-	-
	K-40 25	NA	2382.16 (0025/0025) 1588.00-3611.00	2363.40 (0015/0015) 1588.00-3252.00	32 15.8 WSW	2410.30 (0010/0010) 1708.00-3611.00	2410.30 (0010/0010) 1708.00-3611.00
	MN-54 25	97	LLD	-	-	-	-

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Fish - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
FSH PCI/KG(WET)	ZN-65 25	195	LLD	-	-	-	-

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

P24001

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

Sediment - Gamma spec

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean Dist. Direct	Location with Highest Annual Mean Mean (1) (Range)	All Control Locations Mean (1) (Range)
SED PCI/KG(DRY)	CO-58 14	50	LLD	-	-	-	-
	CO-60 14	40	LLD	-	-	-	-
	CS-134 14	112	LLD	-	-	-	-
	CS-137 14	135	517.66 (0008/0014) 211.50-1354.90	405.37 (0006/0012) 211.50-714.30	32 15.8 WSW	854.55 (0002/0002) 354.20-1354.90	854.55 (0002/0002) 354.20-1354.90
	K-40 14	NA	15543.93 (0014/0014) 9352.00-27933.00	14610.00 (0012/0012) 9352.00-22837.00	32 15.8 WSW	21147.50 (0002/0002) 14362.00-27933.00	21147.50 (0002/0002) 14362.00-27933.00

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

TLD - Quarterly

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean Dist. Direct	Location with Highest Annual Mean Mean (1) (Range)	All Control Locations Mean (1) (Range)
TLD MR/91 DAYS	DIRECT 154	NA	14.89 (0154/0154) 10.60-24.10	14.85 (0146/0146) 10.60-24.10	18 5.0 S	23.02 (0004/0004) 21.30-24.10	15.59 (0008/0008) 13.90-17.10

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

P24001

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

TLD - Quarterly

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean: Dist. Direct	Location with Highest Annual Mean: Mean (1) (Range)	All Control Locations Mean (1) (Range)
TLD MR/91 DAYS	DIRECT 155	NA	14.34 (0155/0155) 10.80-23.50	14.29 (0147/0147) 10.80-23.50	18 5.0 S	22.02 (0004/0004) 19.60-23.50	15.34 (0008/0008) 14.50-16.30

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

P24001 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY PAGE: 001

Name of Facility: PERRY NUCLEAR POWER PLANT Docket no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9500

TLD - Annual

Medium and Measurement	Type and Tot. (n) Analysis Performed	Lower Limit (LLD)	All Locations (Indicator & Control) Mean (1) (Range)	All Indicator Locations Mean (1) (Range)	Location with Highest Annual Mean: Dist. Direct	Location with Highest Annual Mean: Mean (1) (Range)	All Control Locations Mean (1) (Range)
TLD MR/365 DAYS	DIRECT 37	NA	54.87 (0037/0037) 43.50-85.30	54.84 (0036/0036) 43.50-85.30	18 5.0 S	85.30 (0001/0001) 85.30-85.30	55.70 (0001/0001) 55.70-55.70

1 - The ratio of positive results to the number of samples analyzed for the parameter of interest.
LLD - Lower Limit of Detection.

APPENDIX C: 1995 REMP DATA

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

PAGE: 001
DATE: 14-FEB-96

GAMMA SPEC REPORT OF APTG
SAMPLE FREQUENCY IS: QUARTERLY
RESULTS IN PCI/CU.M. +/- 2 SIGMA

Air - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BE-7	CO-58	CO-60	CS-134	CS-137
01	AIR	941228/950329	.073+/-.016	LLD	LLD	LLD	LLD
01	AIR	950329/950628	.076+/-.016	LLD	LLD	LLD	LLD
01	AIR	950628/950927	.066+/-.019	LLD	LLD	LLD	LLD
01	AIR	950927/960103	.063+/-.015	LLD	LLD	LLD	LLD
03	AIR	941228/950329	.070+/-.019	LLD	LLD	LLD	LLD
03	AIR	950329/950628	.083+/-.016	LLD	LLD	LLD	LLD
03	AIR	950628/950927	.071+/-.015	LLD	LLD	LLD	LLD
03	AIR	950927/960103	.055+/-.012	LLD	LLD	LLD	LLD
04	AIR	941228/950329	.081+/-.017	LLD	LLD	LLD	LLD
04	AIR	950329/950628	.086+/-.021	LLD	LLD	LLD	LLD
04	AIR	950628/950927	.074+/-.014	LLD	LLD	LLD	LLD
04	AIR	950927/960103	.060+/-.010	LLD	LLD	LLD	LLD
05	AIR	941228/950329	.089+/-.023	LLD	LLD	LLD	LLD
05	AIR	950329/950628	.076+/-.015	LLD	LLD	LLD	LLD
05	AIR	950628/950927	.069+/-.016	LLD	LLD	LLD	LLD
05	AIR	950927/960103	.058+/-.015	LLD	LLD	LLD	LLD
06	AIR	941228/950329	.087+/-.019	LLD	LLD	LLD	LLD
06	AIR	950329/950628	.085+/-.013	LLD	LLD	LLD	LLD
06	AIR	950628/950927	.072+/-.015	LLD	LLD	LLD	LLD
06	AIR	950927/960103	.054+/-.016	LLD	LLD	LLD	LLD
07	AIR	941228/950329	.066+/-.014	LLD	LLD	LLD	LLD
07	AIR	950329/950628	.077+/-.018	LLD	LLD	LLD	LLD
07	AIR	950628/950927	.071+/-.018	LLD	LLD	LLD	LLD
07	AIR	950927/960103	.053+/-.010	LLD	LLD	LLD	LLD
35	AIR	941228/950329	.086+/-.019	LLD	LLD	LLD	LLD
35	AIR	950329/950628	.071+/-.012	LLD	LLD	LLD	LLD
35	AIR	950628/950927	.106+/-.018	LLD	LLD	LLD	LLD
35	AIR	950927/960103	.053+/-.009	LLD	LLD	LLD	LLD

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

PAGE: 001
DATE: 14-FEB-96

G-BETA AIR REPORT
SAMPLE FREQUENCY IS: WEEKLY
RESULTS IN PCI/CU.M. +/- 2 SIGMA

Air - Gross beta

COLLECTION PERIOD		STATION LOCATIONS			
		01	03	04	05
JAN	941228 TO 950104	.019+/-.004	.018+/-.004	.017+/-.004	.018+/-.004
	950104 TO 950111	.023+/-.004	.026+/-.004	.027+/-.004	.026+/-.004
	950111 TO 950118	.015+/-.004	.018+/-.004	.020+/-.004	.018+/-.004
	950118 TO 950125	.007+/-.004	.011+/-.004	.012+/-.004	.011+/-.004
FEB	950125 TO 950201	.018+/-.004	.019+/-.004	.018+/-.004	.017+/-.004
	950201 TO 950208	.020+/-.004	.021+/-.004	.023+/-.004	.023+/-.004
	950208 TO 950215	.020+/-.004	.024+/-.005	.021+/-.004	.024+/-.004
	950215 TO 950222	.022+/-.004	.024+/-.004	.025+/-.004	.020+/-.004
MAR	950222 TO 950301	.012+/-.004	.013+/-.004	.015+/-.004	.016+/-.004
	950301 TO 950308	.011+/-.004	.017+/-.004	.019+/-.004	.015+/-.004
	950308 TO 950315	.020+/-.004	.021+/-.004	.028+/-.005	.023+/-.004
	950315 TO 950322	.025+/-.004	.021+/-.004	.024+/-.004	.025+/-.004
	950322 TO 950329	.010+/-.004	.013+/-.004	.009+/-.004	.013+/-.004
APR	950329 TO 950405	.017+/-.004	.018+/-.004	.019+/-.004	.017+/-.004
	950405 TO 950412	.021+/-.005	.018+/-.005	.021+/-.005	.017+/-.004
	950412 TO 950419	.013+/-.004	.015+/-.003	.016+/-.004	.013+/-.004
	950419 TO 950426	.008+/-.003	.010+/-.003	.008+/-.003	.011+/-.004
MAY	950426 TO 950503	.009+/-.003	.008+/-.003	.010+/-.003	.008+/-.003
	950503 TO 950510	.015+/-.003	.012+/-.003	.016+/-.003	.013+/-.003
	950510 TO 950517	.021+/-.003	.020+/-.002	.022+/-.003	.023+/-.003
	950517 TO 950524	.018+/-.003	.016+/-.002	.017+/-.003	.019+/-.003
	950524 TO 950531	.010+/-.003	.008+/-.002	.009+/-.003	.011+/-.003
JUN	950531 TO 950607	.013+/-.003	.014+/-.003	.012+/-.003	.015+/-.004
	950607 TO 950614	.010+/-.003	.011+/-.003	.008+/-.003	.011+/-.003
	950614 TO 950621	.022+/-.004	.022+/-.003	.021+/-.004	.018+/-.004
	950621 TO 950628	.010+/-.003	.011+/-.003	.010+/-.003	.011+/-.003
JUL	950628 TO 950705	.008+/-.003	.013+/-.003	.011+/-.004	.011+/-.004
	950705 TO 950712	.013+/-.004	.014+/-.003	.017+/-.004	.018+/-.004
	950712 TO 950719	.024+/-.004	.026+/-.003	.027+/-.004	.029+/-.004
	950719 TO 950726	.017+/-.004	.020+/-.003	.022+/-.004	.019+/-.004
AUG	950726 TO 950802	.022+/-.004	.022+/-.003	.023+/-.004	.024+/-.004
	950802 TO 950809	.014+/-.004	.014+/-.003	.013+/-.004	.012+/-.004
	950809 TO 950816	.023+/-.004	.024+/-.003	.025+/-.004	.020+/-.004
	950816 TO 950823	.020+/-.004	.019+/-.003	.019+/-.004	.022+/-.004
	950823 TO 950830	.017+/-.003	.013+/-.003	.016+/-.003	.016+/-.003
SEP	950830 TO 950906	.022+/-.004	.022+/-.003	.025+/-.004	.021+/-.004
	950906 TO 950913	.020+/-.004	.018+/-.003	.018+/-.004	.019+/-.004
	950913 TO 950920	.017+/-.004	.015+/-.003	.018+/-.004	.018+/-.004

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

G-BETA AIR REPORT
SAMPLE FREQUENCY IS: WEEKLY
RESULTS IN PCI/CU.M. +/- 2 SIGMA

Air - Gross beta

COLLECTION PERIOD		STATION LOCATIONS			
		01	03	04	05
	950920 TO 950927	.017+/-.004	.019+/-.003	.020+/-.004	.019+/-.004
OCT	950927 TO 951004	.034+/-.004	.035+/-.004	.037+/-.004	.037+/-.005
	951004 TO 951011	.014+/-.004	.013+/-.003	.011+/-.004	.013+/-.004
	951011 TO 951018	.023+/-.004	.027+/-.004	.028+/-.004	.028+/-.004
	951018 TO 951025	.022+/-.004	.018+/-.004	.022+/-.004	.023+/-.004
NOV	951025 TO 951101	.020+/-.004	.019+/-.004	.022+/-.004	.019+/-.003
	951101 TO 951108	.020+/-.004	.023+/-.004	.020+/-.004	.018+/-.004
	951108 TO 951115	.017+/-.004	.017+/-.004	.018+/-.004	.020+/-.004
	951115 TO 951122	.017+/-.004	.021+/-.004	.018+/-.004	.018+/-.004
	951122 TO 951129	.023+/-.004	.021+/-.004	.020+/-.004	.025+/-.004
DEC	951129 TO 951206	.023+/-.004	.028+/-.004	.024+/-.004	.026+/-.004
	951206 TO 951213	.023+/-.004	.022+/-.004	.021+/-.004	.024+/-.004
	951213 TO 951220	.025+/-.004	.028+/-.005	.028+/-.004	.023+/-.004
	951220 TO 951227	.013+/-.004	.017+/-.004	.014+/-.004	.015+/-.004
JAN	951227 TO 960103	.027+/-.004	.029+/-.004	.022+/-.004	.026+/-.004

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

G-BETA AIR REPORT
SAMPLE FREQUENCY IS: WEEKLY
RESULTS IN PCI/CU.M. +/- 2 SIGMA

Air - Gross beta

COLLECTION PERIOD		STATION LOCATIONS		
		06	07	35
JAN	941228 TO 950104	.019+/-.004	.017+/-.004	.019+/-.004
	950104 TO 950111	.029+/-.004	.026+/-.004	.026+/-.004
	950111 TO 950118	.017+/-.004	.017+/-.004	.016+/-.004
	950118 TO 950125	.010+/-.003	.010+/-.004	.011+/-.004
FEB	950125 TO 950201	.019+/-.004	.017+/-.004	.017+/-.004
	950201 TO 950208	.020+/-.004	.019+/-.004	.018+/-.004
	950208 TO 950215	.024+/-.004	.021+/-.004	.023+/-.004
	950215 TO 950222	.026+/-.004	.021+/-.004	.024+/-.004
MAR	950222 TO 950301	.014+/-.004	.016+/-.004	.012+/-.004
	950301 TO 950308	.016+/-.004	.015+/-.004	.015+/-.004
	950308 TO 950315	.022+/-.004	.021+/-.004	.022+/-.004
	950315 TO 950322	.021+/-.004	.020+/-.004	.020+/-.004
	950322 TO 950329		.012+/-.004	.012+/-.004
APR	950329 TO 950405	.016+/-.004	.018+/-.004	.017+/-.004
	950405 TO 950412	.019+/-.004	.014+/-.004	.017+/-.005
	950412 TO 950419	.016+/-.004	.017+/-.004	.017+/-.004
	950419 TO 950426	.008+/-.003	.012+/-.003	.008+/-.003
MAY	950426 TO 950503	.010+/-.003	.010+/-.003	.009+/-.003
	950503 TO 950510	.014+/-.003	.013+/-.003	.015+/-.003
	950510 TO 950517	.022+/-.003	.022+/-.003	.023+/-.003
	950517 TO 950524	.017+/-.003	.015+/-.003	.017+/-.003
	950524 TO 950531	.010+/-.003	.010+/-.003	.010+/-.003
JUN	950531 TO 950607	.012+/-.003	.013+/-.003	.014+/-.003
	950607 TO 950614	.011+/-.003	.011+/-.003	.013+/-.003
	950614 TO 950621	.024+/-.003	.019+/-.003	.023+/-.003
	950621 TO 950628	.013+/-.003	.010+/-.003	.012+/-.003
JUL	950628 TO 950705	.011+/-.003	.013+/-.003	.011+/-.003
	950705 TO 950712	.014+/-.003	.014+/-.003	.014+/-.003
	950712 TO 950719	.027+/-.004	.025+/-.004	.026+/-.004
	950719 TO 950726	.023+/-.004	.020+/-.004	.019+/-.003
AUG	950726 TO 950802	.023+/-.004	.020+/-.004	.022+/-.003
	950802 TO 950809	.011+/-.003	.012+/-.003	.014+/-.003
	950809 TO 950816	.022+/-.004	.021+/-.004	.021+/-.004
	950816 TO 950823	.019+/-.004	.019+/-.004	.020+/-.003
	950823 TO 950830	.017+/-.003	.018+/-.003	.016+/-.003
SEP	950830 TO 950906	.020+/-.004	.020+/-.004	.021+/-.004
	950906 TO 950913	.019+/-.004	.018+/-.004	.020+/-.004
	950913 TO 950920	.015+/-.003	.015+/-.003	.017+/-.003

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

G-BETA AIR REPORT
SAMPLE FREQUENCY IS: WEEKLY
RESULTS IN PCI/CU.M. +/- 2 SIGMA

Air - Gross beta

COLLECTION PERIOD		STATION LOCATIONS		
		06	07	35
	950920 TO 950927	.017+/-.003	.016+/-.003	.014+/-.003
OCT	950927 TO 951004	.032+/-.004	.036+/-.004	.036+/-.004
	951004 TO 951011	.012+/-.003	.012+/-.004	.014+/-.004
	951011 TO 951018	.027+/-.004	.029+/-.004	.026+/-.004
	951018 TO 951025	.021+/-.004	.020+/-.004	.020+/-.004
NOV	951025 TO 951101	.020+/-.003	.014+/-.003	.019+/-.004
	951101 TO 951108	.021+/-.004	.018+/-.004	.019+/-.004
	951108 TO 951115	.017+/-.003	.017+/-.003	.017+/-.004
	951115 TO 951122	.017+/-.004	.016+/-.004	.017+/-.004
	951122 TO 951129	.023+/-.004	.024+/-.004	.022+/-.004
DEC	951129 TO 951206	.026+/-.004	.025+/-.004	.025+/-.004
	951206 TO 951213	.021+/-.004	.019+/-.004	.023+/-.004
	951213 TO 951220	.027+/-.004	.025+/-.004	.026+/-.005
	951220 TO 951227	.014+/-.004	.011+/-.004	.014+/-.004
JAN	951227 TO 960103	.024+/-.004	.026+/-.004	.023+/-.004

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

PAGE: 001
DATE: 14-FEB-96

I-131 AIR REPORT
SAMPLE FREQUENCY IS: WEEKLY
RESULTS IN PCI/CU.M. +/- 2 SIGMA

Air - Iodine

COLLECTION PERIOD		STATION LOCATIONS			
		01	03	04	05
JAN	941228 TO 950104	LLD	LLD	LLD	LLD
	950104 TO 950111	LLD	LLD	LLD	LLD
	950111 TO 950118	LLD	LLD	LLD	LLD
	950118 TO 950125	LLD	LLD	LLD	LLD
FEB	950125 TO 950201	LLD	LLD	LLD	LLD
	950201 TO 950208	LLD	LLD	LLD	LLD
	950208 TO 950215	LLD	LLD	LLD	LLD
	950215 TO 950222	LLD	LLD	LLD	LLD
MAR	950222 TO 950301	LLD	LLD	LLD	LLD
	950301 TO 950308	LLD	LLD	LLD	LLD
	950308 TO 950315	LLD	LLD	LLD	LLD
	950315 TO 950322	LLD	LLD	LLD	LLD
	950322 TO 950329	LLD	LLD	LLD	LLD
APR	950329 TO 950405	LLD	LLD	LLD	LLD
	950405 TO 950412	LLD	LLD	LLD	LLD
	950412 TO 950419	LLD	LLD	LLD	LLD
	950419 TO 950426	LLD	LLD	LLD	LLD
MAY	950426 TO 950503	LLD	LLD	LLD	LLD
	950503 TO 950510	LLD	LLD	LLD	LLD
	950510 TO 950517	LLD	LLD	LLD	LLD
	950517 TO 950524	LLD	LLD	LLD	LLD
	950524 TO 950531	LLD	LLD	LLD	LLD
JUN	950531 TO 950607	LLD	LLD	LLD	LLD
	950607 TO 950614	LLD	LLD	LLD	LLD
	950614 TO 950621	LLD	LLD	LLD	LLD
	950621 TO 950628	LLD	LLD	LLD	LLD
JUL	950628 TO 950705	LLD	LLD	LLD	LLD
	950705 TO 950712	LLD	LLD	LLD	LLD
	950712 TO 950719	LLD	LLD	LLD	LLD
	950719 TO 950726	LLD	LLD	LLD	LLD
AUG	950726 TO 950802	LLD	LLD	LLD	LLD
	950802 TO 950809	LLD	LLD	LLD	LLD
	950809 TO 950816	LLD	LLD	LLD	LLD
	950816 TO 950823	LLD	LLD	LLD	LLD
	950823 TO 950830	LLD	LLD	LLD	LLD
SEP	950830 TO 950906	LLD	LLD	LLD	LLD
	950906 TO 950913	LLD	LLD	LLD	LLD
	950913 TO 950920	LLD	LLD	LLD	LLD

I-131 AIR REPORT
SAMPLE FREQUENCY IS: WEEKLY
RESULTS IN PCI/CU.M. +/- 2 SIGMA

Air - Iodine

COLLECTION PERIOD		STATION LOCATIONS			
		01	03	04	05
	950920 TO 950927	LLD	LLD	LLD	LLD
OCT	950927 TO 951004	LLD	LLD	LLD	LLD
	951004 TO 951011	LLD	LLD	LLD	LLD
	951011 TO 951018	LLD	LLD	LLD	LLD
	951018 TO 951025	LLD	LLD	LLD	LLD
NOV	951025 TO 951101	LLD	LLD	LLD	LLD
	951101 TO 951108	LLD	LLD	LLD	LLD
	951108 TO 951115	LLD	LLD	LLD	LLD
	951115 TO 951122	LLD	LLD	LLD	LLD
	951122 TO 951129	LLD	LLD	LLD	LLD
DEC	951129 TO 951206	LLD	LLD	LLD	LLD
	951206 TO 951213	LLD	LLD	LLD	LLD
	951213 TO 951220	LLD	LLD	LLD	LLD
	951220 TO 951227	LLD	LLD	LLD	LLD
JAN	951227 TO 960103	LLD	LLD	LLD	LLD

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

I-131 AIR REPORT
SAMPLE FREQUENCY IS: WEEKLY
RESULTS IN PCI/CU.M. +/- 2 SIGMA

Air - Iodine

COLLECTION PERIOD		STATION LOCATIONS		
		06	07	35
JAN	941228 TO 950104	LLD	LLD	LLD
	950104 TO 950111	LLD	LLD	LLD
	950111 TO 950118	LLD	LLD	LLD
	950118 TO 950125	LLD	LLD	LLD
FEB	950125 TO 950201	LLD	LLD	LLD
	950201 TO 950208	LLD	LLD	LLD
	950208 TO 350215	LLD	LLD	LLD
	950215 TO 950222	LLD	LLD	LLD
MAR	950222 TO 950301	LLD	LLD	LLD
	950301 TO 950308	LLD	LLD	LLD
	950308 TO 950315	LLD	LLD	LLD
	950315 TO 950322	LLD	LLD	LLD
	950322 TO 950329		LLD	LLD
APR	950329 TO 950405	LLD	LLD	LLD
	950405 TO 950412	LLD	LLD	LLD
	950412 TO 950419	LLD	LLD	LLD
	950419 TO 950426	LLD	LLD	LLD
MAY	950426 TO 950503	LLD	LLD	LLD
	950503 TO 950510	LLD	LLD	LLD
	950510 TO 950517	LLD	LLD	LLD
	950517 TO 950524	LLD	LLD	LLD
	950524 TO 950531	LLD	LLD	LLD
JUN	950531 TO 950607	LLD	LLD	LLD
	950607 TO 950614	LLD	LLD	LLD
	950614 TO 950621	LLD	LLD	LLD
	950621 TO 950628	LLD	LLD	LLD
JUL	950628 TO 950705	LLD	LLD	LLD
	950705 TO 950712	LLD	LLD	LLD
	950712 TO 950719	LLD	LLD	LLD
	950719 TO 950726	LLD	LLD	LLD
AUG	950726 TO 950802	LLD	LLD	LLD
	950802 TO 950809	LLD	LLD	LLD
	950809 TO 950816	LLD	LLD	LLD
	950816 TO 950823	LLD	LLD	LLD
	950823 TO 950830	LLD	LLD	LLD
SEP	950830 TO 950906	LLD	LLD	LLD
	950906 TO 950913	LLD	LLD	LLD
	950913 TO 950920	LLD	LLD	LLD

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

I-131 AIR REPORT
SAMPLE FREQUENCY IS: WEEKLY
RESULTS IN PCI/CU.M. +/- 2 SIGMA

Air - Iodine

COLLECTION PERIOD		STATION LOCATIONS		
		06	07	35
	950920 TO 950927	LLD	LLD	LLD
OCT	950927 TO 951004	LLD	LLD	LLD
	951004 TO 951011	LLD	LLD	LLD
	951011 TO 951018	LLD	LLD	LLD
	951018 TO 951025	LLD	LLD	LLD
NOV	951025 TO 951101	LLD	LLD	LLD
	951101 TO 951108	LLD	LLD	LLD
	951108 TO 951115	LLD	LLD	LLD
	951115 TO 951122	LLD	LLD	LLD
	951122 TO 951129	LLD	LLD	LLD
DEC	951129 TO 951206	LLD	LLD	LLD
	951206 TO 951213	LLD	LLD	LLD
	951213 TO 951220	LLD	LLD	LLD
	951220 TO 951227	LLD	LLD	LLD
JAN	951227 TO 960103	LLD	LLD	LLD

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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DATE: 14-FEB-96

GAMMA SPEC REPORT OF PRG
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Precipitation - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140 FE-59 ZR-95	CO-58 LA-140	CO-60 MN-54	CS-134 NB-95	CS-137 ZN-65
03	PR	941228/950125	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
03	PR	950125/950222	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
03	PR	950222/950329	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
03	PR	950329/950426	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
03	PR	950426/950531	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
03	PR	950531/950628	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
03	PR	950628/950726	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
03	PR	950830/950927	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
03	PR	950927/951025	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
03	PR	951025/951129	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
03	PR	951129/951227	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
04	PR	941228/950125	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
04	PR	950125/950222	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
04	PR	950222/950329	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
04	PR	950329/950426	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

GAMMA SPEC REPORT OF PRG
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Precipitation - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140 PE-59 ZR-95	CO-58 LA-140	CO-60 MN-54	CS-134 NB-95	CS-137 ZN-65
04	PR	950426/950531	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
04	PR	950531/950628	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
04	PR	950628/950726	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
04	PR	950830/950927	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
04	PR	950927/951025	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
04	PR	951025/951129	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
04	PR	951129/951227	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
06	PR	941228/950125	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
06	PR	950125/950222	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
06	PR	950222/950329	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
06	PR	950329/950426	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
06	PR	950426/950531	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
06	PR	950628/950726	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
06	PR	950830/950927	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
06	PR	950927/951025	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				

GAMMA SPEC REPORT OF PRG
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Precipitation - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140 FE-59 ZR-95	CO-58 LA-140	CO-60 MN-54	CS-134 NB-95	CS-137 ZN-65
06	PR	951025/951129	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
06	PR	951129/951227	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	941228/950125	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	950125/950222	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	950222/950329	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	950329/950426	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	950426/950531	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	950531/950628	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	950628/950726	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	950830/950927	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	950927/951025	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	951025/951129	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
07	PR	951129/951227	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
12	PR	941228/950125	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
12	PR	950125/950222	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				

GAMMA SPEC REPORT OF PRG
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Precipitation - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140 FE-59 ZR-95	CO-58 LA-140	CO-60 MN-54	CS-134 NB-95	CS-137 ZN-65
12	PR	950222/950329	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
12	PR	950329/950426	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
12	PR	950426/950531	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
12	PR	950531/950628	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
12	PR	950628/950726	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
12	PR	950830/950927	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
12	PR	950927/951025	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
12	PR	951025/951129	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
12	PR	951129/951227	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
35	PR	941228/950125	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
35	PR	950125/950222	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
35	PR	950222/950329	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
35	PR	950329/950426	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
35	PR	950426/950531	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
35	PR	950531/950628	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				

GAMMA SPEC REPORT OF PRG
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Precipitation - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140 FE-59 ZR-95	CO-58 LA-140	CO-60 MN-54	CS-134 NB-95	CS-137 ZN-65
35	PR	950628/950726	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
35	PR	950830/950927	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
35	PR	950927/951025	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
35	PR	951025/951129	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
35	PR	951129/951227	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

PAGE: 001
DATE: 14-FEB-96

GAMMA SPEC REPORT OF MLKG
SAMPLE FREQUENCY IS: BI-MONTHLY/MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Milk - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140	CS-134	CS-137	K-40	LA-140
51	MILK	950106/950109	LLD	LLD	LLD	1340.0+/-170.0	LLD
51	MILK	950203/950206	LLD	LLD	LLD	1420.0+/-100.0	LLD
51	MILK	950303/950306	LLD	LLD	LLD	1350.0+/-100.0	LLD
51	MILK	950407/950410	LLD	LLD	LLD	1600.0+/-170.0	LLD
51	MILK	950421/950424	LLD	LLD	LLD	1490.0+/-150.0	LLD
51	MILK	950505/950508	LLD	LLD	LLD	1410.0+/-170.0	LLD
51	MILK	950519/950522	LLD	LLD	LLD	1450.0+/-150.0	LLD
51	MILK	950608/950613	LLD	LLD	LLD	1500.0+/-170.0	LLD
51	MILK	950623/950626	LLD	LLD	LLD	1620.0+/-170.0	LLD
51	MILK	950707/950710	LLD	LLD	LLD	1630.0+/-170.0	LLD
51	MILK	950721/950724	LLD	LLD	LLD	1540.0+/-170.0	LLD
51	MILK	950804/950807	LLD	LLD	LLD	1520.0+/-170.0	LLD
51	MILK	950818/950821	LLD	LLD	LLD	1490.0+/-130.0	LLD
51	MILK	950908/950911	LLD	LLD	LLD	1420.0+/-100.0	LLD
51	MILK	950922/950925	LLD	LLD	LLD	1240.0+/-110.0	LLD
51	MILK	951006/951009	LLD	LLD	LLD	1440.0+/-120.0	LLD
51	MILK	951020/951023	LLD	LLD	LLD	1670.0+/-120.0	LLD
51	MILK	951110/951113	LLD	LLD	LLD	1460.0+/-80.0	LLD
51	MILK	951208/951211	LLD	LLD	LLD	1380.0+/-120.0	LLD
61	MILK	950407/950410	LLD	LLD	LLD	1650.0+/-110.0	LLD
61	MILK	950421/950424	LLD	LLD	LLD	1920.0+/-130.0	LLD
61	MILK	950505/950508	LLD	LLD	LLD	1870.0+/-70.0	LLD
61	MILK	950519/950522	LLD	LLD	LLD	1700.0+/-220.0	LLD
61	MILK	950608/950612	LLD	LLD	LLD	1990.0+/-180.0	LLD
61	MILK	950623/950626	LLD	LLD	LLD	1750.0+/-130.0	LLD
61	MILK	950707/950710	LLD	LLD	LLD	1880.0+/-210.0	LLD
61	MILK	950721/950724	LLD	LLD	LLD	2080.0+/-200.0	LLD
61	MILK	950804/950807	LLD	LLD	LLD	1860.0+/-180.0	LLD
61	MILK	950818/950821	LLD	LLD	LLD	1910.0+/-180.0	LLD
61	MILK	950908/950911	LLD	LLD	LLD	1780.0+/-140.0	LLD
61	MILK	950922/950925	LLD	LLD	LLD	1380.0+/-120.0	LLD
61	MILK	951006/951009	LLD	LLD	LLD	1790.0+/-120.0	LLD
61	MILK	951020/951023	LLD	LLD	LLD	1840.0+/-210.0	LLD
71	MILK	950106/950109	LLD	LLD	LLD	1190.0+/-120.0	LLD
71	MILK	950203/950206	LLD	LLD	LLD	1300.0+/-140.0	LLD
71	MILK	950303/950306	LLD	LLD	LLD	1410.0+/-110.0	LLD
71	MILK	950407/950410	LLD	LLD	LLD	1310.0+/-140.0	LLD
71	MILK	950421/950424	LLD	LLD	LLD	1290.0+/-100.0	LLD
71	MILK	950505/950508	LLD	LLD	LLD	1400.0+/-170.0	LLD
71	MILK	950519/950522	LLD	LLD	LLD	1270.0+/-130.0	LLD
71	MILK	950608/950612	LLD	LLD	LLD	1380.0+/-140.0	LLD
71	MILK	950623/950626	LLD	LLD	LLD	1440.0+/-180.0	LLD
71	MILK	950707/950710	LLD	LLD	LLD	1300.0+/-150.0	LLD
71	MILK	950721/950724	LLD	LLD	LLD	1280.0+/-150.0	LLD

GAMMA SPEC REPORT OF MLKG
SAMPLE FREQUENCY IS: BI-MONTHLY/MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Milk - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140	CS-134	CS-137	K-40	LA-140
71	MILK	950804/950807	LLD	LLD	LLD	950.0+/-120.0	LLD
71	MILK	950818/950821	LLD	LLD	LLD	1260.0+/-140.0	LLD
71	MILK	950908/950911	LLD	LLD	LLD	1390.0+/-150.0	LLD
71	MILK	950922/950925	LLD	LLD	LLD	1060.0+/-140.0	LLD
71	MILK	951006/951009	LLD	LLD	LLD	1130.0+/-160.0	LLD
71	MILK	951020/951023	LLD	LLD	LLD	1640.0+/-170.0	LLD
71	MILK	951110/951113	LLD	LLD	LLD	1380.0+/-140.0	LLD
71	MILK	951208/951211	LLD	LLD	LLD	1390.0+/-160.0	LLD

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
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I-131 MILK REPORT
SAMPLE FREQUENCY IS: BI-MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Milk - Iodine

COLLECTION PERIOD		STATION LOCATIONS		
		51	61	71
JAN	950106 TO 950109	LLD		LLD
FEB	950203 TO 950206	LLD		LLD
MAR	950303 TO 950306	LLD		LLD
APR	950407 TO 950410	LLD	LLD	LLD
	950421 TO 950424	LLD	LLD	LLD
MAY	950505 TO 950508	LLD	LLD	LLD
	950519 TO 950522	LLD	LLD	LLD
JUN	950608 TO 950612		LLD	LLD
	950608 TO 950613	LLD		
	950623 TO 950626	LLD	LLD	LLD
JUL	950707 TO 950710	LLD	LLD	LLD
	950721 TO 950724	LLD	LLD	LLD
AUG	950804 TO 950807	LLD	LLD	LLD
	950818 TO 950821	LLD	LLD	LLD
SEP	950908 TO 950911	LLD	LLD	LLD
	950922 TO 950925	LLD	LLD	LLD
OCT	951006 TO 951009	LLD	LLD	LLD
	951020 TO 951023	LLD	LLD	LLD
NOV	951110 TO 951113	LLD		LLD
DEC	951208 TO 951211	LLD		LLD

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
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GAMMA SPEC REPORT OF FP
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/KG(WET) +/- 2 SIGMA

Food Products - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BE-7 / I-131	CO-58 / K-40	CO-60	CS-134	CS-137
37	CABBAGE	950912/950912	LLD LLD	LLD 2310.0+/-324.0	LLD	LLD	LLD
62	CABBAGE	950808/950808	LLD LLD	LLD 2702.0+/-327.0	LLD	LLD	LLD
62	BROCCOLI	950808/950808	LLD LLD	LLD 4281.0+/-365.0	LLD	LLD	LLD
62	BEET GREENS	950808/950808	LLD LLD	LLD 7166.0+/-496.0	LLD	LLD	LLD
62	BROCCOLI	950912/950912	LLD LLD	LLD 4128.0+/-389.0	LLD	LLD	LLD
62	CABBAGE	950912/950912	LLD LLD	LLD 3411.0+/-363.0	LLD	LLD	LLD
62	BEET GREENS	950912/950912	LLD LLD	LLD 8918.0+/-370.0	LLD	LLD	LLD
70	BROCCOLI	950808/950808	LLD LLD	LLD 4095.0+/-454.0	LLD	LLD	LLD
70	CAULIFLOWER	950808/950808	LLD LLD	LLD 2720.0+/-352.0	LLD	LLD	LLD
70	CABBAGE	950808/950808	LLD LLD	LLD 1786.0+/-223.0	LLD	LLD	LLD
70	CABBAGE	950912/950912	LLD LLD	LLD 2734.0+/-336.0	LLD	LLD	LLD
70	CABBAGE	951017/951017	LLD LLD	LLD 3370.0+/-459.0	LLD	LLD	LLD
70	BROCCOLI	951017/951017	LLD LLD	LLD 5136.0+/-650.0	LLD	LLD	LLD
77	DILL	950808/950808	LLD LLD	LLD 5690.0+/-362.0	LLD	LLD	LLD
77	BEET GREENS	950808/950808	LLD LLD	LLD 4085.0+/-394.0	LLD	LLD	LLD
77	TURNIP GREENS	950808/950808	LLD LLD	LLD 3158.0+/-323.0	LLD	LLD	LLD
77	BEET GREENS	950912/950912	LLD LLD	LLD 8202.0+/-593.0	LLD	LLD	LLD
77	TURNIP GREENS	950912/950912	176.0+/-92.0 LLD	LLD 4665.0+/-615.0	LLD	LLD	LLD
77	DILL	950912/950912	453.0+/-209.0 LLD	LLD 4703.0+/-487.0	LLD	LLD	LLD
77	DILL	951017/951017	650.0+/-150.0 LLD	LLD 5380.0+/-441.0	LLD	LLD	LLD
77	BEET GREENS	951017/951017	308.0+/-144.0 LLD	LLD 5412.0+/-474.0	LLD	LLD	LLD
77	TURNIP GREENS	951017/951017	349.0+/-142.0 LLD	LLD 3934.0+/-295.0	LLD	LLD	LLD

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GAMMA SPEC REPORT OF FP
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/KG(WET) +/- 2 SIGMA

Grass - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BE-7 I-131	CO-58 K-40	CO-60	CS-134	CS-137
06	GRASS	950516/950516	3193.0+/-346.0 LLD	LLD 9143.0+/-582.0	LLD	LLD	LLD
06	GRASS	950613/950613	2012.0+/-338.0 LLD	LLD 11604.0+/-738.0	LLD	LLD	LLD
06	GRASS	950718/950718	1835.0+/-162.0 LLD	LLD 5281.0+/-295.0	LLD	LLD	LLD
06	GRASS	950815/950815	3106.0+/-284.0 LLD	LLD 5704.0+/-486.0	LLD	LLD	LLD
07	GRASS	950516/950516	4966.0+/-317.0 LLD	LLD 6360.0+/-462.0	LLD	LLD	LLD
07	GRASS	950613/950613	1013.0+/-240.0 LLD	LLD 7758.0+/-615.0	LLD	LLD	LLD
07	GRASS	950718/950718	4178.0+/-451.0 LLD	LLD 6213.0+/-708.0	LLD	LLD	LLD
07	GRASS	950815/950815	2211.0+/-275.0 LLD	LLD 5049.0+/-467.0	LLD	LLD	LLD
07	GRASS	950912/950912	4689.0+/-334.0 LLD	LLD 7331.0+/-504.0	LLD	LLD	LLD
07	GRASS	951017/951017	3446.0+/-360.0 LLD	LLD 3349.0+/-474.0	LLD	LLD	LLD
35	GRASS	950516/950516	5477.0+/-427.0 LLD	LLD 4706.0+/-625.0	LLD	LLD	LLD
35	GRASS	950613/950613	1572.0+/-409.0 LLD	LLD 7684.0+/-776.0	LLD	LLD	LLD
35	GRASS	950718/950718	1760.0+/-280.0 LLD	LLD 5792.0+/-510.0	LLD	LLD	LLD
35	GRASS	950815/950815	1697.0+/-289.0 LLD	LLD 5201.0+/-609.0	LLD	LLD	LLD
35	GRASS	950912/950912	1371.0+/-259.0 LLD	LLD 7211.0+/-628.0	LLD	LLD	LLD
35	GRASS	951017/951017	5220.0+/-427.0 LLD	LLD 3285.0+/-405.0	LLD	LLD	LLD
42	GRASS	950516/950516	590.0+/-130.0 LLD	LLD 5380.0+/-340.0	LLD	LLD	LLD
42	GRASS	950613/950613	3105.0+/-563.0 LLD	LLD 11092.0+/-1060.	LLD	LLD	LLD
42	GRASS	950718/950718	2964.0+/-324.0 LLD	LLD 4957.0+/-537.0	LLD	LLD	LLD
42	GRASS	950815/950815	1902.0+/-231.0 LLD	LLD 4194.0+/-449.0	LLD	LLD	LLD
42	GRASS	950912/950912	881.0+/-342.0 LLD	LLD 5927.0+/-590.0	LLD	LLD	LLD
42	GRASS	951017/951017	2089.0+/-276.0 LLD	LLD 2626.0+/-382.0	LLD	LLD	LLD

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GAMMA SPEC REPORT OF SOIL
SAMPLE FREQUENCY IS: SEM-ANNUAL
RESULTS IN PCI/KG(DRY) +/- 2 SIGMA

Soil - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	CO-58 RA-226	CO-60	CS-134	CS-137	K-40
03	SOIL	950314/950314	LLD 1608.0+/-241.0	LLD	LLD	253.0+/-24.0	11490.0+/-372.0
03	SOIL	950908/950908	LLD 1956.0+/-396.0	LLD	LLD	349.0+/-49.0	13716.0+/-838.0
04	SOIL	950314/950314	LLD 1748.0+/-300.0	LLD	LLD	105.0+/-26.0	17254.0+/-134.0
04	SOIL	950908/950908	LLD 1188.0+/-377.0	LLD	LLD	55.0+/-28.0	12211.0+/-613.0
06	SOIL	950314/950314	LLD 2331.0+/-334.0	LLD	LLD	204.0+/-46.0	17391.0+/-669.0
06	SOIL	950908/950908	LLD 1745.0+/-299.0	LLD	LLD	190.0+/-25.0	14357.0+/-533.0
07	SOIL	950314/950314	LLD 1632.0+/-370.0	LLD	LLD	400.0+/-44.0	12552.0+/-625.0
07	SOIL	950908/950908	LLD 1352.0+/-188.0	LLD	LLD	319.0+/-16.0	11831.0+/-323.0
09	SOIL	950314/950314	LLD 1186.0+/-296.0	LLD	LLD	346.0+/-33.0	11065.0+/-562.0
09	SOIL	950908/950908	LLD 1054.0+/-224.0	LLD	LLD	312.0+/-21.0	10398.0+/-428.0
12	SOIL	950314/950314	LLD 1417.0+/-320.0	LLD	LLD	298.0+/-27.0	11671.0+/-452.0
12	SOIL	950908/950908	LLD 993.0+/-328.0	LLD	LLD	310.0+/-32.0	10152.0+/-539.0
35	SOIL	950314/950314	LLD 1108.0+/-281.0	LLD	LLD	181.0+/-23.0	11276.0+/-494.0
35	SOIL	950908/950908	LLD 1031.0+/-281.0	LLD	LLD	180.0+/-26.0	9914.0+/-517.0

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GAMMA SPEC REPORT OF WTRC
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Water - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140 FE-59 ZR-95	CO-58 LA-140	CO-60 MN-54	CS-134 NB-95	CS-137 ZN-65
28	WATER	941229/950126	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	950126/950223	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	950223/950330	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	950330/950427	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	950427/950525	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	950525/950629	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	950629/950727	LLD	LLD	ILD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	950727/950831	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	950831/950928	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	951026/951026	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	951026/951130	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
28	WATER	951130/951228	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	941229/950126	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	950126/950223	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	950223/950330	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				

GAMMA SPEC REPORT OF WTRG
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Water - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140 FE-59 ZR-95	CO-58 LA-140	CO-60 MN-54	CS-134 NB-95	CS-137 ZN-65
34	WATER	950330/950427	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	950427/950525	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	950525/950629	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	950629/950727	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	950727/950831	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	950831/950928	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	950928/951026	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	951026/951130	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
34	WATER	951130/951228	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	941229/950126	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	950126/950223	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	950223/950330	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	950330/950427	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	950427/950525	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	950525/950629	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				

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GAMMA SPEC REPORT OF WTRG
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Water - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140 FE-59 ZR-95	CO-58 LA-140	CO-60 MN-54	CS-134 NB-95	CS-137 ZN-65
36	WATER	950629/950727	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	950727/950831	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	950831/950928	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	950928/951026	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	951026/951130	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
36	WATER	951130/951228	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
59	WATER	941229/950119	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
59	WATER	950330/950330	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
59	WATER	950330/950427	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
59	WATER	950427/950525	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
59	WATER	950525/950629	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
59	WATER	950629/950727	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
59	WATER	950727/950831	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
59	WATER	950831/950928	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
59	WATER	950928/951026	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				

GAMMA SPEC REPORT OF WTRG
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Water - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140 FE-59 ZR-95	CO-58 LA-140	CO-60 MN-54	CS-134 NB-95	CS-137 ZN-65
59	WATER	951026/951130	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
59	WATER	951130/951207	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	941229/950119	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	950330/950330	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	950330/950427	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	950427/950525	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	950525/950629	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	950629/950727	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	950727/950831	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	950831/950928	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	950928/951026	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	951026/951130	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				
60	WATER	951130/951207	LLD	LLD	LLD	LLD	LLD
			LLD	LLD	LLD	LLD	LLD
			LLD				

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G-BETA WATER REPORT
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

Water - Gross beta

COLLECTION PERIOD		STATION LOCATIONS				
		28	34	36	59	60
JAN	941229 TO 950119					
	941229 TO 950126	1.30+/-.70	1.80+/-.70	2.00+/-.70	2.10+/-.70	2.20+/-.50
FEB	950126 TO 950223	2.10+/-.60	2.20+/-.60	2.40+/-.60		
MAR	950223 TO 950330	1.40+/-.50	1.90+/-.50	2.20+/-.60		
	950330 TO 950330				2.90+/-.60	2.30+/-.60
APR	950330 TO 950427	2.60+/-.60	2.10+/-.60	2.40+/-.60	2.60+/-.60	2.70+/-.60
MAY	950427 TO 950525	2.40+/-.70	2.50+/-.70	2.60+/-.60	2.10+/-.60	2.50+/-.80
JUN	950525 TO 950629	2.90+/-.60	2.70+/-.60	2.40+/-.60	2.80+/-.60	3.30+/-.60
JUL	950629 TO 950727	2.60+/-.60	2.20+/-.50	2.40+/-.60	2.10+/-.60	2.30+/-.60
AUG	950727 TO 950831	2.10+/-.50	1.60+/-.50	1.80+/-.50	1.50+/-.50	1.70+/-.50
SEP	950831 TO 950928	2.00+/-.60	1.90+/-.60	2.50+/-.60	2.20+/-.60	2.20+/-.60
OCT	950928 TO 951026		2.00+/-.60	1.90+/-.60	2.10+/-.60	2.40+/-.60
	951026 TO 951026	2.10+/-.60				
NOV	951026 TO 951130	2.60+/-.60	2.60+/-.60	2.30+/-.60	2.90+/-.60	3.10+/-.60
DEC	951130 TO 951207				2.70+/-.60	3.60+/-.70
	951130 TO 951228	2.10+/-.60	2.10+/-.60	1.90+/-.60		

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

H3 WATER REPORT
SAMPLE FREQUENCY IS: QUARTERLY
RESULTS IN PCI/L +/- 2 SIGMA

Water - Tritium

COLLECTION PERIOD		STATION LOCATIONS				
		28	34	36	59	60
MAR	941229 TO 950330	LLD	LLD	262.00+/-98.00	LLD	LLD
JUN	950330 TO 950629	LLD	LLD	LLD	226.00+/-90.00	LLD
SEP	950629 TO 950928	263.00+/-87.00	195.00+/-84.00	LLD	204.00+/-85.00	155.00+/-82.00
DEC	950928 TO 951207				194.00+/-84.00	LLD
	950928 TO 951228	191.00+/-83.00	210.00+/-84.00	164.00+/-82.00		

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

GAMMA SPEC REPORT OF FSH
SAMPLE FREQUENCY IS: SEM-ANNUAL
RESULTS IN PCI/KG(WET) +/- 2 SIGMA

Fish - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	CO-58 K-40	CO-60 MN-54	CS-134 ZN-65	CS-137	FE-59
25	WHITE PERCH	950522/950523	LLD	LLD	LLD	LLD	LLD
			2373.0+/-348.0	LLD	LLD		
25	WALLEYE	950522/950523	LLD	LLD	LLD	28.9+/-15.7	LLD
			3252.0+/-309.0	LLD	LLD		
25	ROCK BASS	950522/950523	LLD	LLD	LLD	LLD	LLD
			2371.0+/-305.0	LLD	LLD		
25	WHITE SUCKER	950522/950523	LLD	LLD	LLD	LLD	LLD
			1769.0+/-413.0	LLD	LLD		
25	SMALL MOUTH BASS	950522/950523	LLD	LLD	LLD	LLD	LLD
			2479.0+/-282.0	LLD	LLD		
25	REDHORSE SUCKER	950522/950523	LLD	LLD	LLD	LLD	LLD
			3148.0+/-435.0	LLD	LLD		
25	CARP	951010/951011	LLD	LLD	LLD	LLD	LLD
			1588.0+/-224.0	LLD	LLD		
25	WHITE SUCKER	951010/951011	LLD	LLD	LLD	LLD	LLD
			2074.0+/-402.0	LLD	LLD		
25	SMALLMOUTH BASS	951010/951011	LLD	LLD	LLD	LLD	LLD
			2443.0+/-303.0	LLD	LLD		
25	ROCK BASS	951010/951011	LLD	LLD	LLD	LLD	LLD
			2449.0+/-595.0	LLD	LLD		
25	WALLEYE	951010/951011	LLD	LLD	LLD	LLD	LLD
			2606.0+/-377.0	LLD	LLD		
25	REDHORSE SUCKER	951010/951011	LLD	LLD	LLD	LLD	LLD
			2317.0+/-359.0	LLD	LLD		
25	LAKE TROUT	951010/951011	LLD	LLD	LLD	LLD	LLD
			1769.0+/-324.0	LLD	LLD		
25	WHITE BASS	951010/951011	LLD	LLD	LLD	LLD	LLD
			2437.0+/-288.0	LLD	LLD		
25	STEELHEAD TROUT	951010/951011	LLD	LLD	LLD	LLD	LLD
			2376.0+/-265.0	LLD	LLD		
32	YELLOW PERCH	950522/950523	LLD	LLD	LLD	LLD	LLD
			1708.0+/-343.0	LLD	LLD		
32	WALLEYE	950522/950523	LLD	LLD	LLD	LLD	LLD
			3611.0+/-434.0	LLD	LLD		
32	WHITE SUCKER	950522/950523	LLD	LLD	LLD	LLD	LLD
			2587.0+/-433.0	LLD	LLD		
32	DRUM	950522/950523	LLD	LLD	LLD	LLD	LLD
			2552.0+/-258.0	LLD	LLD		
32	CARP	950522/950523	LLD	LLD	LLD	LLD	LLD
			2310.0+/-323.0	LLD	LLD		
32	WHITE PERCH	950522/950523	LLD	LLD	LLD	LLD	LLD
			2130.0+/-263.0	LLD	LLD		
32	REDHORSE SUCKER	951010/951011	LLD	LLD	LLD	LLD	LLD
			1712.0+/-332.0	LLD	LLD		
32	WALLEYE	951010/951011	LLD	LLD	LLD	LLD	LLD
			2426.0+/-13.0	LLD	LLD		

GAMMA SPEC REPORT OF FSH
SAMPLE FREQUENCY IS: SEM-ANNUAL
RESULTS IN PCI/KG(WET) +/- 2 SIGMA

Fish - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	CO-58 K-40	CO-60 MN-54	CS-134 ZN-65	CS-137	FE-59
32	WHITE SUCKER	951010/951011	LLD 2150.0+/-451.0	LLD LLD	LLD LLD	LLD	LLD
32	YELLOW PERCH	951010/951011	LLD 2917.0+/-602.0	LLD LLD	LLD LLD	LLD	LLD

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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GAMMA SPEC REPORT OF SED
SAMPLE FREQUENCY IS: SEM-ANNUAL
RESULTS IN PCI/KG(DRY) +/- 2 SIGMA

Sediment - Gamma spec

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	CO-58	CO-60	CS-134	CS-137	K-40
25	SEDIMENT	950522/950522	LLD	LLD	LLD	589.8+/-24.7	21163.0+/-480.0
25	SEDIMENT	951010/951010	LLD	LLD	LLD	436.9+/-23.7	16765.0+/-434.0
26	SEDIMENT	950522/950522	LLD	LLD	LLD	714.3+/-38.1	22837.0+/-704.0
26	SEDIMENT	951010/951010	LLD	LLD	LLD	211.5+/-19.5	16272.0+/-421.0
27	SEDIMENT	950522/950522	LLD	LLD	LLD	267.5+/-19.9	16491.0+/-485.0
27	SEDIMENT	951010/951010	LLD	LLD	LLD	212.2+/-16.2	15694.0+/-400.0
32	SEDIMENT	950522/950522	LLD	LLD	LLD	354.2+/-21.1	14362.0+/-444.0
32	SEDIMENT	951010/951010	LLD	LLD	LLD	1354.9+/-40.1	27933.0+/-543.0
63	SEDIMENT	950526/950526	LLD	LLD	LLD	LLD	10931.0+/-606.0
63	SEDIMENT	951012/951012	LLD	LLD	LLD	LLD	10117.0+/-308.0
64	SEDIMENT	950526/950526	LLD	LLD	LLD	LLD	10423.0+/-485.0
64	SEDIMENT	951012/951012	LLD	LLD	LLD	LLD	9352.0+/-235.0
65	SEDIMENT	950526/950526	LLD	LLD	LLD	LLD	15476.0+/-517.0
65	SEDIMENT	951012/951012	LLD	LLD	LLD	LLD	9799.0+/-465.0

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: QUARTERLY
RESULTS IN 91 DAYS +/- 2 SIGMA

TLD - Quarterly

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
01	TLD	950106/950404	10.80+/-.40
01	TLD	950404/950706	13.10+/-.20
01	TLD	950706/951003	11.60+/-.20
01	TLD	951003/960105	14.10+/-.30
02	TLD	950106/950404	11.10+/-.20
02	TLD	950404/950706	12.40+/-.20
02	TLD	950706/951003	12.00+/-.30
02	TLD	951003/960105	13.00+/-.20
03	TLD	950106/950404	13.10+/-.30
03	TLD	950404/950706	15.10+/-.40
03	TLD	950706/951003	14.20+/-.20
03	TLD	951003/960105	15.60+/-.50
04	TLD	950106/950404	14.10+/-.20
04	TLD	950404/950706	13.90+/-.20
04	TLD	950706/951003	14.60+/-.20
04	TLD	951003/960105	14.40+/-.20
05	TLD	950106/950404	14.20+/-.20
05	TLD	950404/950706	12.50+/-.20
05	TLD	950706/951003	14.60+/-.20
05	TLD	951003/960105	14.90+/-.30
06	TLD	950106/950404	15.70+/-.40
06	TLD	950404/950706	14.50+/-.20
06	TLD	950706/951003	16.00+/-.30
06	TLD	951003/960108	15.00+/-.20
07	TLD	950106/950404	14.10+/-.20
07	TLD	950404/950706	13.30+/-.20
07	TLD	950706/951003	15.40+/-.40
07	TLD	951003/960105	14.00+/-.30
08	TLD	950106/950404	12.20+/-.30
08	TLD	950404/950706	11.70+/-.20
08	TLD	950706/951003	13.40+/-.20
08	TLD	951003/960105	12.40+/-.20
09	TLD	950106/950404	11.10+/-.30
09	TLD	950404/950706	11.80+/-.20
09	TLD	950706/951003	13.40+/-.20
09	TLD	951003/960105	12.90+/-.20
10	TLD	950106/950404	12.80+/-.40

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: QUARTERLY
RESULTS IN 91 DAYS +/- 2 SIGMA

TLD - Quarterly

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
10	TLD	950404/950706	15.40+/-.30
10	TLD	950706/951003	14.80+/-.30
10	TLD	951003/960105	15.80+/-.30
11	TLD	950106/950404	14.00+/-.20
11	TLD	950404/950706	12.50+/-.20
11	TLD	950706/951003	15.00+/-.30
11	TLD	951003/960105	13.30+/-.20
12	TLD	950106/950404	13.00+/-.40
12	TLD	950404/950706	14.10+/-.20
12	TLD	950706/951003	14.80+/-.30
12	TLD	951003/960105	15.10+/-.20
13	TLD	950106/950404	10.90+/-.30
13	TLD	950404/950706	12.90+/-.30
13	TLD	950706/951003	12.00+/-.20
13	TLD	951003/960105	13.80+/-.20
14	TLD	950106/950404	11.10+/-.30
14	TLD	950404/950706	12.90+/-.20
14	TLD	950706/951003	11.80+/-.30
14	TLD	951003/960105	13.60+/-.20
15	TLD	950106/950404	11.50+/-.40
15	TLD	950404/950706	11.70+/-.20
15	TLD	950706/951003	12.10+/-.30
15	TLD	951003/960105	13.00+/-.20
16	TLD	950106/950404	14.80+/-.20
16	TLD	950404/950706	18.80+/-.30
16	TLD	950706/951003	16.50+/-.30
16	TLD	951003/960105	19.70+/-.40
17	TLD	950106/950404	14.40+/-.30
17	TLD	950404/950706	16.70+/-.20
17	TLD	950706/951003	16.80+/-.20
17	TLD	951003/960105	17.00+/-.20
18	TLD	950106/950404	21.90+/-.40
18	TLD	950404/950706	23.10+/-1.20
18	TLD	950706/951003	23.50+/-.30
18	TLD	951003/960105	19.60+/-.40
19	TLD	950106/950404	14.20+/-.30
19	TLD	950404/950706	15.00+/-.40

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: QUARTERLY
RESULTS IN 91 DAYS +/- 2 SIGMA

TLD - Quarterly

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
19	TLD	950706/951003	15.20+/-.30
19	TLD	951003/960105	15.20+/-.30
20	TLD	950106/950404	14.80+/-.30
20	TLD	950404/950706	16.70+/-.20
20	TLD	950706/951003	15.80+/-.30
20	TLD	951003/960105	17.30+/-.20
21	TLD	950106/950404	17.30+/-.60
21	TLD	950404/950706	16.80+/-.20
21	TLD	950706/951003	18.50+/-.20
21	TLD	951003/960107	17.50+/-.20
22	TLD	950106/950404	14.40+/-.30
22	TLD	950404/950706	12.90+/-.20
22	TLD	950706/951003	15.70+/-.30
22	TLD	951003/960105	13.70+/-.20
23	TLD	950106/950404	16.60+/-.30
23	TLD	950404/950706	14.70+/-.20
23	TLD	950706/951003	17.90+/-.20
23	TLD	951003/960107	15.40+/-.20
24	TLD	950106/950404	15.30+/-.30
24	TLD	950404/950706	14.50+/-.20
24	TLD	950706/951003	16.30+/-.20
24	TLD	951003/960106	15.40+/-.50
29	TLD	950106/950404	16.10+/-.30
29	TLD	950404/950706	15.60+/-.20
29	TLD	950706/951003	17.10+/-.30
29	TLD	951003/960105	17.20+/-.20
30	TLD	950106/950404	12.50+/-.40
30	TLD	950404/950706	12.60+/-.30
30	TLD	950706/951003	14.30+/-.30
30	TLD	951003/960105	13.40+/-.20
31	TLD	950106/950404	15.10+/-.30
31	TLD	950404/950706	14.60+/-.20
31	TLD	950706/951003	16.50+/-.30
31	TLD	951003/960105	15.20+/-.20
33	TLD	950106/950404	14.90+/-.30
33	TLD	950404/950706	16.10+/-.20
33	TLD	950706/951003	16.60+/-.50

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: QUARTERLY
RESULTS IN 91 DAYS +/- 2 SIGMA

TLD - Quarterly

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
33	TLD	951003/960105	16.60+/-.20
35	TLD	950106/950404	11.90+/-.30
35	TLD	950404/950706	12.90+/-.20
35	TLD	950706/951003	12.50+/-.20
35	TLD	951003/960105	13.50+/-.20
36	TLD	950106/950404	16.10+/-.40
36	TLD	950404/950706	18.40+/-.20
36	TLD	950706/951003	17.40+/-.20
36	TLD	951003/960107	19.60+/-.30
41	TLD	950106/950404	12.60+/-.40
41	TLD	950404/950706	14.20+/-.20
41	TLD	950706/951003	14.60+/-.30
41	TLD	951003/960105	13.10+/-.20
42	TLD	950106/950404	11.70+/-.30
42	TLD	950404/950706	13.00+/-.20
42	TLD	951003/960105	13.50+/-.20
43	TLD	950106/950404	11.80+/-.30
43	TLD	950404/950706	11.20+/-.20
43	TLD	950706/951003	12.20+/-.30
43	TLD	951003/960105	12.70+/-.20
45	TLD	950106/950404	11.20+/-.30
45	TLD	950404/950706	13.20+/-.30
45	TLD	950706/951003	12.00+/-.20
45	TLD	951003/960105	13.70+/-.20
53	TLD	950106/950404	12.30+/-.30
53	TLD	950404/950706	13.10+/-.20
53	TLD	950706/951003	14.20+/-.20
53	TLD	951003/960105	13.80+/-.20
54	TLD	950106/950404	12.30+/-.30
54	TLD	950404/950706	13.90+/-.30
54	TLD	950706/951003	12.10+/-.30
54	TLD	951003/960105	14.50+/-.30
55	TLD	950106/950404	12.50+/-.30
55	TLD	950404/950706	14.40+/-.30
55	TLD	950706/951003	12.40+/-.30
55	TLD	951003/960109	14.70+/-.20
56	TLD	950106/950404	12.80+/-.20

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: QUARTERLY
RESULTS IN 91 DAYS +/- 2 SIGMA

TLD - Quarterly

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
56	TLD	950404/950706	11.30+/-.20
56	TLD	950706/951003	12.50+/-.20
56	TLD	951003/960105	11.90+/-.20
58	TLD	950106/950404	13.00+/-.20
58	TLD	950404/950706	13.10+/-.30
58	TLD	950706/951003	13.40+/-.20
58	TLD	951003/960105	13.40+/-.30

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
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GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: QUARTERLY2
RESULTS IN MR/91 DAYS +/- 2 SIGMA

TLD - Quarterly

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
01	TLB	950106/950404	10.60+/-.30
01	TLB	950404/950706	13.70+/-.20
01	TLB	950706/951003	12.50+/-.40
01	TLB	951003/960105	13.60+/-.20
02	TLB	950106/950404	11.60+/-.30
02	TLB	950404/950706	13.10+/-.20
02	TLB	950706/951003	12.70+/-.20
02	TLB	951003/960105	13.20+/-.20
03	TLB	950106/950404	12.80+/-.30
03	TLB	950404/950706	13.70+/-.40
03	TLB	950706/951003	14.90+/-.20
03	TLB	951003/960105	14.10+/-.20
04	TLB	950106/950404	13.70+/-.20
04	TLB	950404/950706	14.40+/-.20
04	TLB	950706/951003	15.20+/-.30
04	TLB	951003/960105	15.20+/-.20
05	TLB	950106/950404	12.70+/-.20
05	TLB	950404/950706	13.30+/-.20
05	TLB	950706/951003	14.70+/-.30
05	TLB	951003/960105	14.40+/-.20
06	TLB	950106/950404	14.50+/-.20
06	TLB	950404/950706	16.10+/-.20
06	TLB	950706/951003	17.10+/-.30
06	TLB	951003/960108	16.10+/-.30
07	TLB	950106/950404	14.60+/-.40
07	TLB	950404/950706	14.40+/-.20
07	TLB	950706/951003	17.10+/-.30
07	TLB	951003/960105	14.60+/-.30
08	TLB	950106/950404	11.10+/-.40
08	TLB	950404/950706	11.90+/-.30
08	TLB	950706/951003	13.10+/-.20
08	TLB	951003/960105	11.90+/-.20
09	TLB	950106/950404	11.20+/-.30
09	TLB	950404/950706	12.60+/-.20
09	TLB	950706/951003	13.70+/-.20
09	TLB	951003/960105	13.00+/-.20
10	TLB	950106/950404	15.50+/-.20

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: QUARTERLY2
RESULTS IN MR/91 DAYS +/- 2 SIGMA

TLD - Quarterly

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
10	TLB	950404/950706	16.10+/-.20
10	TLB	950706/951003	18.30+/-.20
10	TLB	951003/960105	16.90+/-.20
11	TLB	950106/950404	14.40+/-.30
11	TLB	950404/950706	13.20+/-.20
11	TLB	950706/951003	16.90+/-.30
11	TLB	951003/960105	13.60+/-.20
12	TLB	950106/950404	13.90+/-.20
12	TLB	950404/950706	14.50+/-.30
12	TLB	950706/951003	16.70+/-.40
12	TLB	951003/960105	16.10+/-.30
13	TLB	950106/950404	13.80+/-.20
13	TLB	950404/950706	13.60+/-.20
13	TLB	950706/951003	15.50+/-.30
13	TLB	951003/960105	14.10+/-.20
14	TLB	950106/950404	14.00+/-.30
14	TLB	950404/950706	13.80+/-.30
14	TLB	950706/951003	15.40+/-.30
14	TLB	951003/960105	13.70+/-.20
15	TLB	950106/950404	12.70+/-.70
15	TLB	950404/950706	12.50+/-.20
15	TLB	950706/951003	14.60+/-.30
15	TLB	951003/960105	13.50+/-.20
16	TLB	950106/950404	17.10+/-.30
16	TLB	950404/950706	18.10+/-.30
16	TLB	950706/951003	20.30+/-.30
16	TLB	951003/960105	18.10+/-.20
17	TLB	950106/950404	16.60+/-.20
17	TLB	950404/950706	17.30+/-.20
17	TLB	950706/951003	19.20+/-.30
17	TLB	951003/960105	17.20+/-.20
18	TLB	950106/950404	21.30+/-.30
18	TLB	950404/950706	23.60+/-.70
18	TLB	950706/951003	24.10+/-.30
18	TLB	951003/960105	23.10+/-.20
19	TLB	950106/950404	13.70+/-.30
19	TLB	950404/950706	15.60+/-.50

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: QUARTERLY2
RESULTS IN MR/91 DAYS +/- 2 SIGMA

TLD - Quarterly

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
19	TLB	950706/951003	15.50+/-.40
19	TLB	951003/960105	15.70+/-.30
20	TLB	950106/950404	13.60+/-.20
20	TLB	950404/950706	14.80+/-.40
20	TLB	950706/951003	15.70+/-.20
20	TLB	951003/960105	14.90+/-.20
21	TLB	950106/950404	15.50+/-.40
21	TLB	950404/950706	17.50+/-.20
21	TLB	950706/951003	18.30+/-.20
21	TLB	951003/960107	17.30+/-.20
22	TLB	950106/950404	13.70+/-.20
22	TLB	950404/950706	14.00+/-.20
22	TLB	950706/951003	16.30+/-.20
22	TLB	951003/960105	14.40+/-.30
23	TLB	950106/950404	16.30+/-.30
23	TLB	950404/950706	15.60+/-.50
23	TLB	950706/951003	19.30+/-.20
23	TLB	951003/960107	16.00+/-.40
24	TLB	950106/950404	13.90+/-.20
24	TLB	950404/950706	15.10+/-.30
24	TLB	950706/951003	16.20+/-.30
24	TLB	951003/960106	15.70+/-.40
29	TLB	950106/950404	16.10+/-.20
29	TLB	950404/950706	17.30+/-.20
29	TLB	950706/951003	18.80+/-.20
29	TLB	951003/960105	18.00+/-.20
30	TLB	950106/950404	12.40+/-.30
30	TLB	950404/950706	13.50+/-.30
30	TLB	950706/951003	14.60+/-.20
30	TLB	951003/960105	13.40+/-.20
31	TLB	950106/950404	13.70+/-.20
31	TLB	950404/950706	15.30+/-.30
31	TLB	950706/951003	16.60+/-.30
31	TLB	951003/960105	15.90+/-.30
33	TLB	950106/950404	14.60+/-.30
33	TLB	950404/950706	16.80+/-.20
33	TLB	950706/951003	17.00+/-.40

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: QUARTERLY2
RESULTS IN MR/91 DAYS +/- 2 SIGMA

TLD - Quarterly

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
33	TLB	951003/960105	16.80+/-.20
35	TLB	950106/950404	12.10+/-.30
35	TLB	950404/950706	13.00+/-.20
35	TLB	950706/951003	12.90+/-.30
35	TLB	951003/960105	13.30+/-.20
36	TLB	950106/950404	16.50+/-.50
36	TLB	950404/950706	19.10+/-.30
36	TLB	950706/951003	19.30+/-.30
36	TLB	951003/960107	18.80+/-.30
41	TLB	950106/950404	12.80+/-.30
41	TLB	950404/950706	13.20+/-.20
41	TLB	950706/951003	14.90+/-.30
41	TLB	951003/960105	13.70+/-.20
42	TLB	950106/950404	11.70+/-.40
42	TLB	950404/950706	13.60+/-.20
42	TLB	950706/951003	14.50+/-.20
42	TLB	951003/960105	13.60+/-.20
43	TLB	950106/950404	12.60+/-.30
43	TLB	950404/950706	13.20+/-.20
43	TLB	950706/951003	14.40+/-.20
43	TLB	951003/960105	13.20+/-.20
45	TLB	950106/950404	12.50+/-.50
45	TLB	950404/950706	13.50+/-.20
45	TLB	950706/951003	14.80+/-.30
45	TLB	951003/960105	13.90+/-.20
53	TLB	950106/950404	12.60+/-.30
53	TLB	950404/950706	14.80+/-.20
53	TLB	950706/951003	15.50+/-.40
53	TLB	951003/960105	15.80+/-.30
54	TLB	950106/950404	11.10+/-.20
54	TLB	950404/950706	14.50+/-.20
54	TLB	950706/951003	12.60+/-.20
54	TLB	951003/960105	14.80+/-.20
55	TLB	950106/950404	13.80+/-.30
55	TLB	950404/950706	15.70+/-.40
55	TLB	950706/951003	14.90+/-.30
56	TLB	950106/950404	12.20+/-.40

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: QUARTERLY2
RESULTS IN MR/91 DAYS +/- 2 SIGMA

TLD - Quarterly

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
56	TLB	950404/950706	12.00+/-.30
56	TLB	950706/951003	14.00+/-.30
56	TLB	951003/960105	11.90+/-.20
58	TLB	950106/950404	12.10+/-.40
58	TLB	950706/951003	13.80+/-.20
58	TLB	951003/960105	12.00+/-.30

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: ANNUAL
RESULTS IN MR/365 DAYS +/- 2 SIGMA

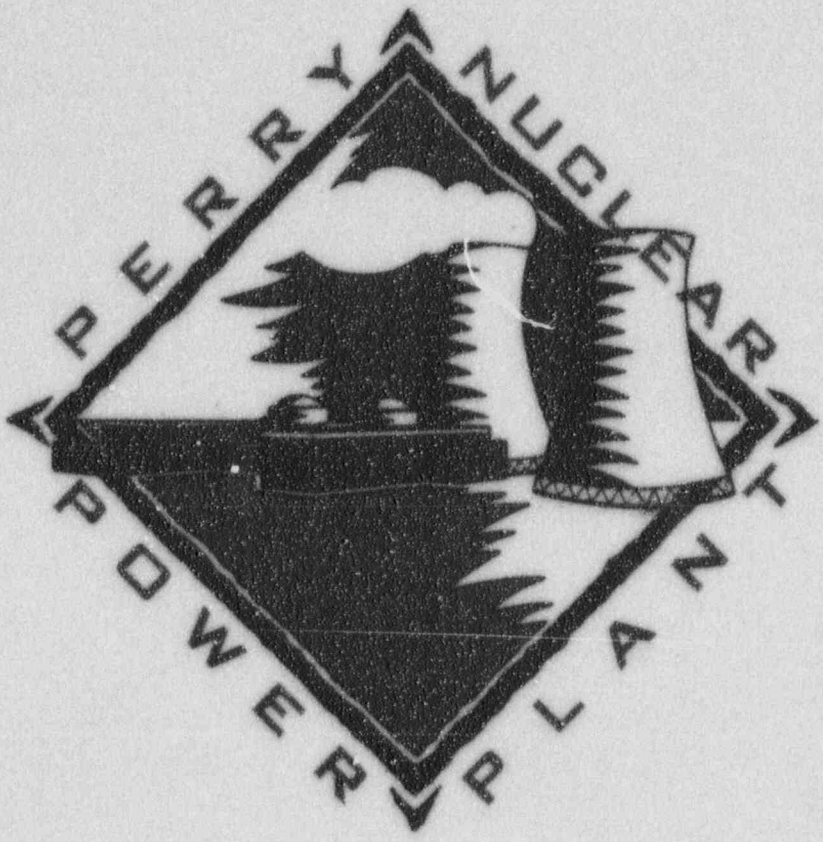
TLD - Annual

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
01	TLA	950106/960105	48.00+/-.60
02	TLA	950106/960105	46.90+/-.60
03	TLA	950106/960105	50.60+/-.60
04	TLA	950106/960105	52.10+/-.60
05	TLA	950106/960105	46.00+/-.60
06	TLA	950106/960108	55.70+/-.90
07	TLA	950106/960105	56.40+/-.80
08	TLA	950106/960105	43.50+/-.80
09	TLA	950106/960105	45.10+/-.60
10	TLA	950106/960105	60.20+/-.80
11	TLA	950106/960105	48.40+/-.90
12	TLA	950106/960105	53.50+/-1.10
13	TLA	950106/960105	51.70+/-.80
14	TLA	950106/960105	49.50+/-.70
15	TLA	950106/960105	47.60+/-1.00
16	TLA	950106/960105	74.50+/-1.30
17	TLA	950106/960105	64.70+/-.80
18	TLA	950106/960105	85.30+/-.80
19	TLA	950106/960105	56.70+/-.70
20	TLA	950106/960105	55.40+/-.70
21	TLA	950106/960107	66.90+/-.70
22	TLA	950106/960105	55.90+/-.80
23	TLA	950106/960107	58.10+/-.60
29	TLA	950106/960105	59.00+/-.60

GAMMA SPEC REPORT OF TLD
SAMPLE FREQUENCY IS: ANNUAL
RESULTS IN MR/365 DAYS +/- 2 SIGMA

TLD - Annual

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
30	TLA	950106/960105	48.00+/-.80
31	TLA	950106/960105	56.30+/-.60
33	TLA	950106/960105	63.90+/-.70
35	TLA	950106/960105	49.00+/-1.00
36	TLA	950106/960107	69.00+/-.60
41	TLA	950106/960105	46.00+/-.60
43	TLA	950106/960105	50.50+/-.60
45	TLA	950106/960105	49.00+/-.60
53	TLA	950106/960105	53.60+/-.60
54	TLA	950106/960105	55.90+/-.80
55	TLA	950106/960109	58.60+/-.60
56	TLA	950106/960105	51.00+/-.60
58	TLA	950106/960105	47.60+/-1.00



FOR MORE INFORMATION, WRITE OR CALL:

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