

Perry Nuclear Power Plant

1994

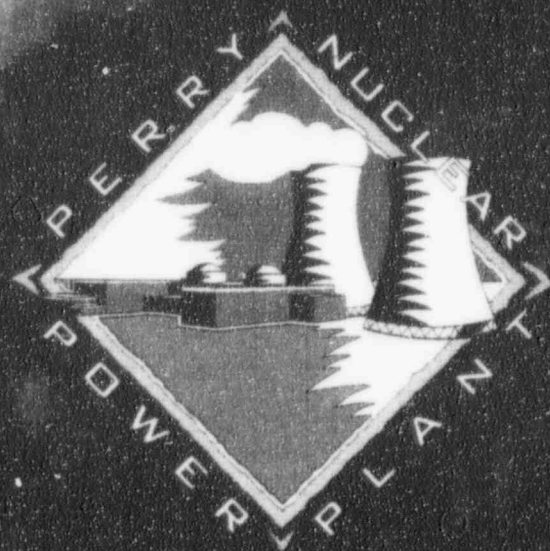
Annual Radiological Environmental Operating Report



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ANNUAL ENVIRONMENTAL OPERATING REPORT FOR PERRY NUCLEAR POWER PLANT

January 1, 1994 to December 31, 1994

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SUMMARY AND CONCLUSIONS

The Annual Environmental Operating Report details the results of Environmental Monitoring Programs conducted at the Perry Nuclear Power Plant (PNPP) from January 1 through December 31, 1994. This report meets all of the requirements in PNPP Technical Specification 6.9.1.6 and Appendix B of the PNPP Operating License (the Environmental Protection Plan, or EPP). Report topics include Effluents, Radiological Environmental Monitoring, Land Use Census, Clam/Mussel Monitoring, Aerial Remote Sensing, Herbicide Use, and Special Reports.

The results of the Environmental Monitoring Programs for 1994 indicate that the operation of the PNPP did not result in any significant environmental impact.

EFFLUENTS

During the normal operation of a nuclear power plant, small quantities of radioactivity are released to the environment in liquid and gaseous effluents. Effluent releases are strictly regulated by the Nuclear Regulatory Commission (NRC). All radioactivity released in the plant's effluents was well below applicable federal regulatory limits. The estimated dose from plant effluents to the public was also well below all applicable regulatory limits. The calculated hypothetical maximum individual dose potentially received by an individual resulting from PNPP liquid effluents was 0.101 mrem or 3.4% of the applicable limit. The hypothetical maximum individual dose potentially received by an individual resulting from PNPP gaseous effluents was 2.77 mrad or 73% below the applicable limit. The summation of the hypothetical maximum individual dose from effluents in 1994 is equivalent to less than one percent of the dose that an individual living in the PNPP area receives from all sources of radiation.

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 Specification 3.4.12. 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.

Radiation levels and radioactivity are monitored within a 22 mile radius around PNPP. REMP samples are collected from both indicator and control locations. Indicator locations are those which would be most likely to display effects caused by plant operation. They are relatively close to the plant, in the predominant wind directions (from the west and south). Control locations are those which should normally be unaffected by plant operation. Typically, they are at a greater distance from the plant, in the least prevalent wind directions (from the north and east). Data obtained from the indicator locations are compared with data from the control locations and with the concentrations present in the environment before PNPP became operational. This comparison allows naturally occurring background radiation to be taken into account when evaluating any radiological impact PNPP may have had on the environment.

Over 1300 radiological environmental samples were collected in 1994 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.

- o Samples of air and precipitation (rain and snow) are collected to monitor the radioactivity in the atmosphere. The 1994 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.
- o 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 302.64 pCi/kg in 1994, 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.
- o Aquatic monitoring includes the collection and analysis of water, fish, and shoreline sediments. The 1994 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 251 pCi/kg, which is well within the range of up to 864 pCi/kg established since 1981.
- o Direct radiation measurements averaged 51 mrem/year at indicator locations and 51 mrem/year at control locations, well within the range of previous years results. This shows that, in 1994, 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 1994 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 1994.

AERIAL REMOTE SENSING

Aerial remote sensing is a way of monitoring the plant area environment by examining detailed photographs taken from an airplane. It is used to help determine the impact, if any, of the deposition of drift from the cooling tower plume. The drift has the potential to carry and deposit salts which may harm vegetation. This program has been conducted regularly since 1987; no impact has been observed to date. This is the last year the program is required to be conducted. Since no impact has been noted since the program began, it is being discontinued following the 1994 results.

HERBICIDE USE

Because the PNPP site has several special habitat areas, the use of herbicides is closely monitored. This ensures compliance with Ohio Environmental Protection Agency requirements and protects the site's natural areas. Based on the results of surveillances of herbicide applications on site, herbicide has not had a negative impact on the environment around the plant.

SPECIAL REPORTS

Significant environmental events, noncompliance with environmental regulations, 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. Since PNPP complied with all environmental regulations, and made no changes to the plant that affected the environment, no special reports were required in 1994.

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 in air and can penetrate into solid materials more readily 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. For example, X-rays are a type of high-energy electromagnetic radiation. Gamma rays are generally more energetic than X-rays. They 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. Anything that creates an ion is said to be ionizing.

UNITS OF MEASURE

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

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, as the Background Radiation Chart (Figure 1) shows.

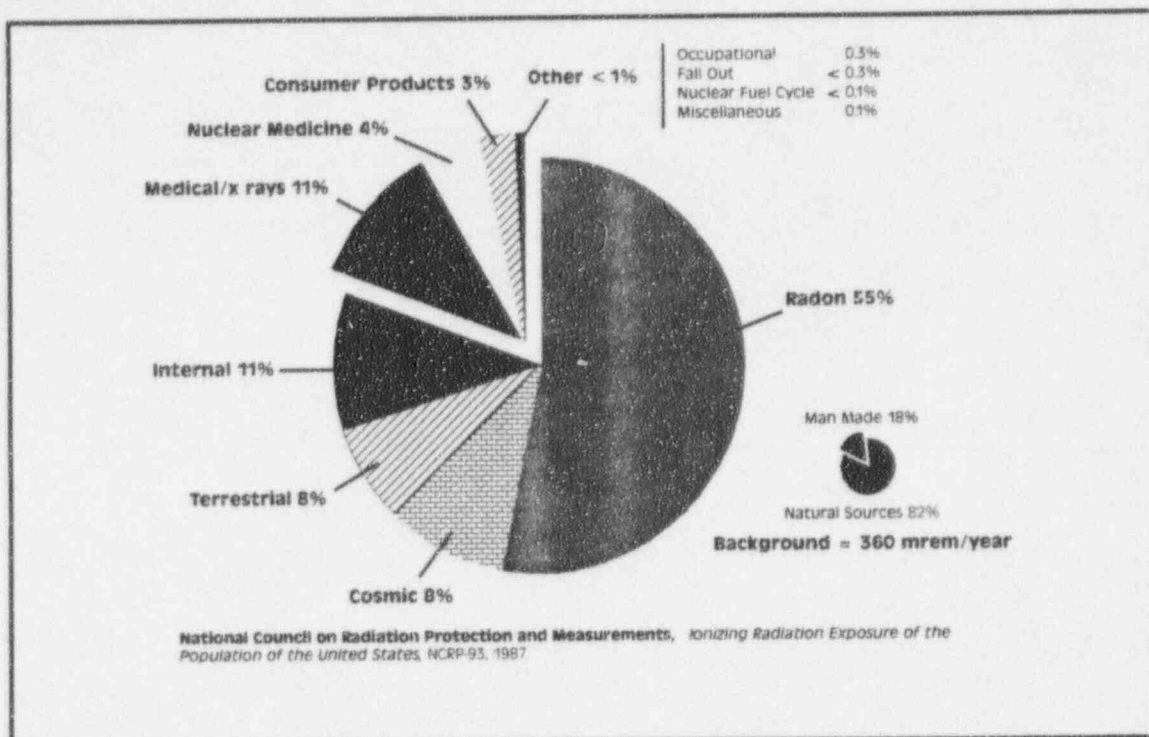


Figure 1: Background Radiation Chart

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:

- o *beryllium-7*, present as a result of the interaction of cosmic radiation with the upper atmosphere.
- o *potassium-40*, a naturally occurring radionuclide normally found in humans and throughout the environment, and
- o *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 1994 Sampling Program results. However, the data on these radionuclides are included in Appendix B: 1994 REMP Data.

EFFLUENTS

PROTECTION STANDARDS AND LIMITS

The National Council on Radiation Protection and Measurement has established guidelines governing the release of radioactivity in liquid and gaseous plant effluents. These guidelines are based on protecting the general public from exposure to harmful amounts of radioactivity. The Code of Federal Regulations, Title 10 Part 50, Appendix I (10CFR50, App. I) codifies these guidelines as design criteria. The NRC subsequently incorporated these design criteria into the PNPP Technical Specifications which are part of the license authorizing PNPP operation. Table 1 presents these limits.

Table 1: Dose limits to a member of the public

<i>Source</i>	<i>Body/organ</i>	<i>Dose Limits</i>
Liquid effluents	whole body	3 mrem/year
	organ	10 mrem/year
Gaseous effluents		
noble gases - gamma		10 mrad/year
noble gases - beta		20 mrad/year
dose from iodine-131, tritium, and particulates with half-lives greater than eight days	whole body	15 mrem/year

The EPA has also established limits for exposure to radiation. These limits are also incorporated into PNPP Technical Specifications and require that dose shall not exceed 25 mrem/year whole body, 75 mrem/year to the thyroid, or 25 mrem/year to any other organ.

EFFLUENT PROCESSES

During the normal operation of a nuclear power plant, small amounts of radioactive material are released. These effluents are strictly 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 and environmental sampling and analysis, quality assurance for effluent and environmental programs, and detailed procedures covering all aspects of effluent and environmental monitoring.

The main objective in the control of the release or exposure to radiation 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 economic decisions and operating practices. By practicing ALARA, PNPP minimizes health risks and possible environmental impact, and ensures that doses are maintained well below regulatory limits.

The radioactive waste treatment systems at PNPP are designed to collect and process the liquid and gaseous 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 at a small fraction of actual limits.

Waste streams are sampled and analyzed to identify and quantify radionuclides being released. A meteorological tower is located in the southeast corner of the plant site. Coupled with gaseous effluent release data, the meteorological data is used 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.

RADIOACTIVE RELEASE REGULATIONS

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 maintained through periodic dose assessment calculations. The required dose calculations are conservatively performed for the "Maximum Individual." This individual is assumed to reside on the site boundary at the highest potential dose location all year, and incurs 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 for the "maximum individual," the actual dose received by a real member of the public is significantly less than what is calculated for the "maximum individual".

SOURCES OF RADIOACTIVE RELEASES

The sources of radioactive material from a nuclear power plant result from 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.

Liquid effluent releases may be required following the collection of water from small leaks within the plant or the reduction of stored water volumes from plant systems. In both cases, the water is first processed through liquid radioactive waste treatment systems to reduce the concentration of radioactive material. Dose calculations are then performed to ensure regulatory compliance and that ALARA is maintained, prior to discharge of this processed water to the lake.

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 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.

The hypothetical maximum doses potentially received by an individual as a result of PNPP effluents is shown in Table 2 below. The summation of the liquid and gaseous hypotheti-

cal maximum individual whole body doses in 1994 was equivalent to less than one percent of the dose that an average individual receives from all sources of background radiation of approximately 360 mrem (see Figure 1).

Table 2: Hypothetical maximum individual doses

	<i>1994 Dose</i>	<i>Dose Limit</i>	<i>% of Limit</i>
Liquid Effluents			
Whole body	0.101 mrem	3.00 mrem	3.37%
Organ	0.605 mrem	10.0 mrem	6.05%
Gaseous Effluents			
Iodine/particulates	0.519 mrem	15.0 mrem	3.46%
Noble gas - gamma	2.77 mrad	10.0 mrad	27.4%
Noble gas - beta	2.16 mrad	20.0 mrad	17.7%

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. The Environmental Technical Specifications, or 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 Nuclear Regulatory Commission 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 started. The program was augmented in 1985 to include precipitation and soil. Although these last three media were not required by the NRC, they were incorporated into the program to expand its scope and provide additional data useful for analyzing environmental impacts of plant operation. In 1993, feed/silage sampling was dropped from the program based on the past ten years of data. Also based on having established a large baseline of data during the last ten years, all strontium analysis was deleted from the program in 1994.

SAMPLING LOCATIONS

REMP samples are collected at numerous locations, both onsite 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, in the predominant wind directions. 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 2, 3 and 4 identify the PNPP REMP sampling locations.

Many REMP samples are collected in addition to those required by the PNPP Operating License. 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

Operating License requirements for each sample type are discussed in more detail below. Sample types and locations that are required by the Operating License 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 St 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 at PNPP Discharge	0.6	NNW	SEDIMENT, FISH
26	Offshore of Redbird	4.2	ENE	SEDIMENT
27	Offshore of 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 of 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
41	Clark Rd	1.1	SW	TLD
42	Parmly Rd	0.8	S	TLD
43	Parmly Rd	1.0	SSE	TLD
44	Parmly Rd	1.0	SSE	VG
45	Clark Rd	0.9	SSW	TLD
47	Zoldak milk farm	6.5	E	MILK
51	Rettger milk farm	9.6	S	MILK
53	Neff Perkins Company	0.5	WSW	TLD

54	Hale Rd School	4.6
55	Center Rd	2.5
56	Madison High School	4.0
58	Antioch Rd	0.8
59	Lake shoreline at Green Rd	4.0
60	Lake shoreline at Perry Park	1.0
61	Keller milk farm	7.4
62	Shreve farm	1.2
63	Minor stream mouth	0.08
64	Northwest Drain mouth	0.09
65	Major Stream mouth	0.18
70	H&H Farm Stand	16.2
71	Mosley Farm	7.9
77	Orosz Farm	1.2

SW	TLD
S	TLD
ESE	TLD
ENE	TLD
ENE	WATER
WSW	WATER
SE	MILK
ENE	FOOD PRODUCTS
NNE	SEDIMENT
NW	SEDIMENT
W	SEDIMENT
SSW	FOOD PRODUCTS
SE	MILK
E	FOOD PRODUCTS

(1) AIR = Air Iodine and Particulate
PR = Precipitation

VG = Vegetation
TLD = Thermoluminescent Dosimeters

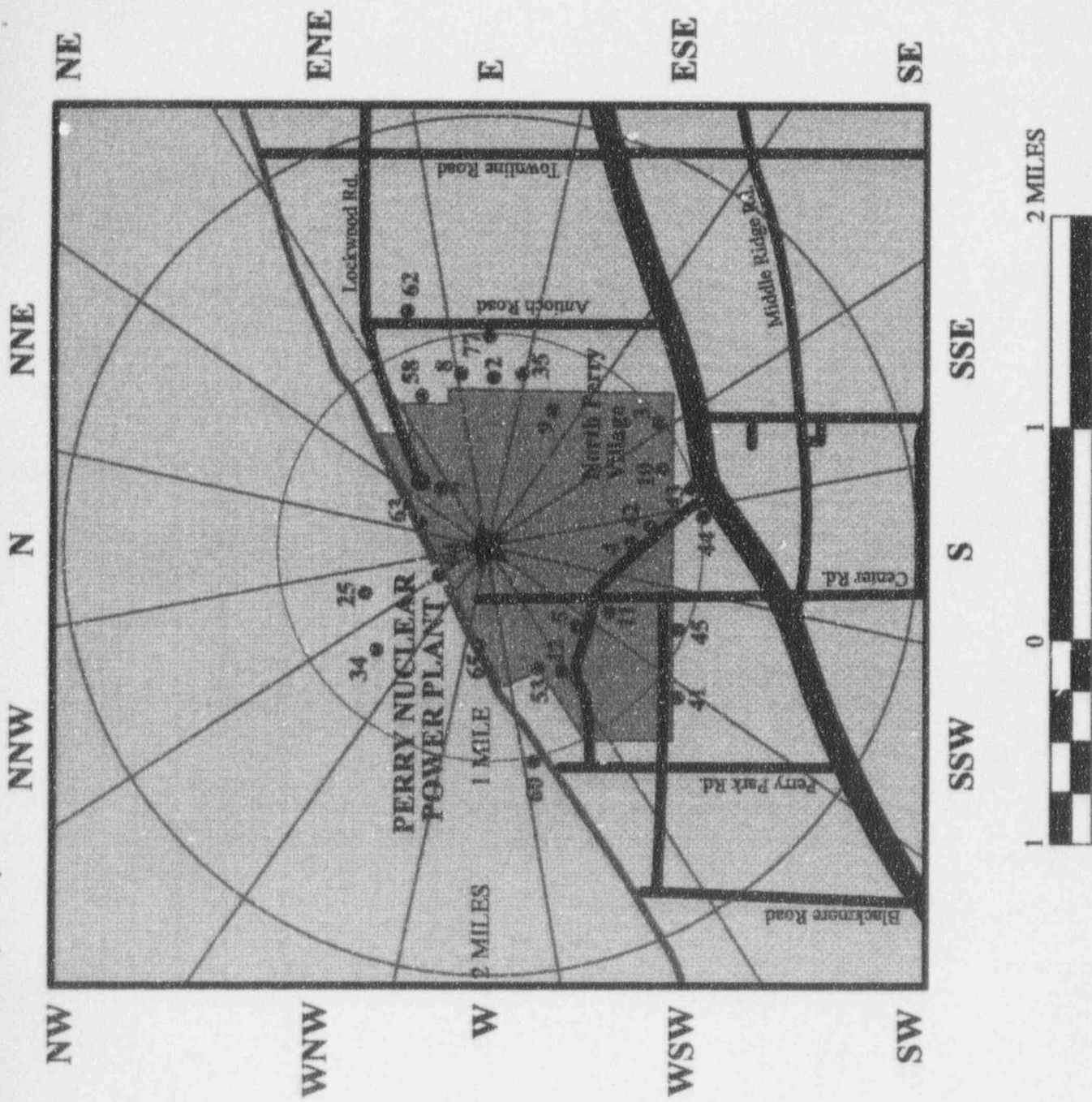


Figure 2: REMP sampling locations within two miles of the plant site.

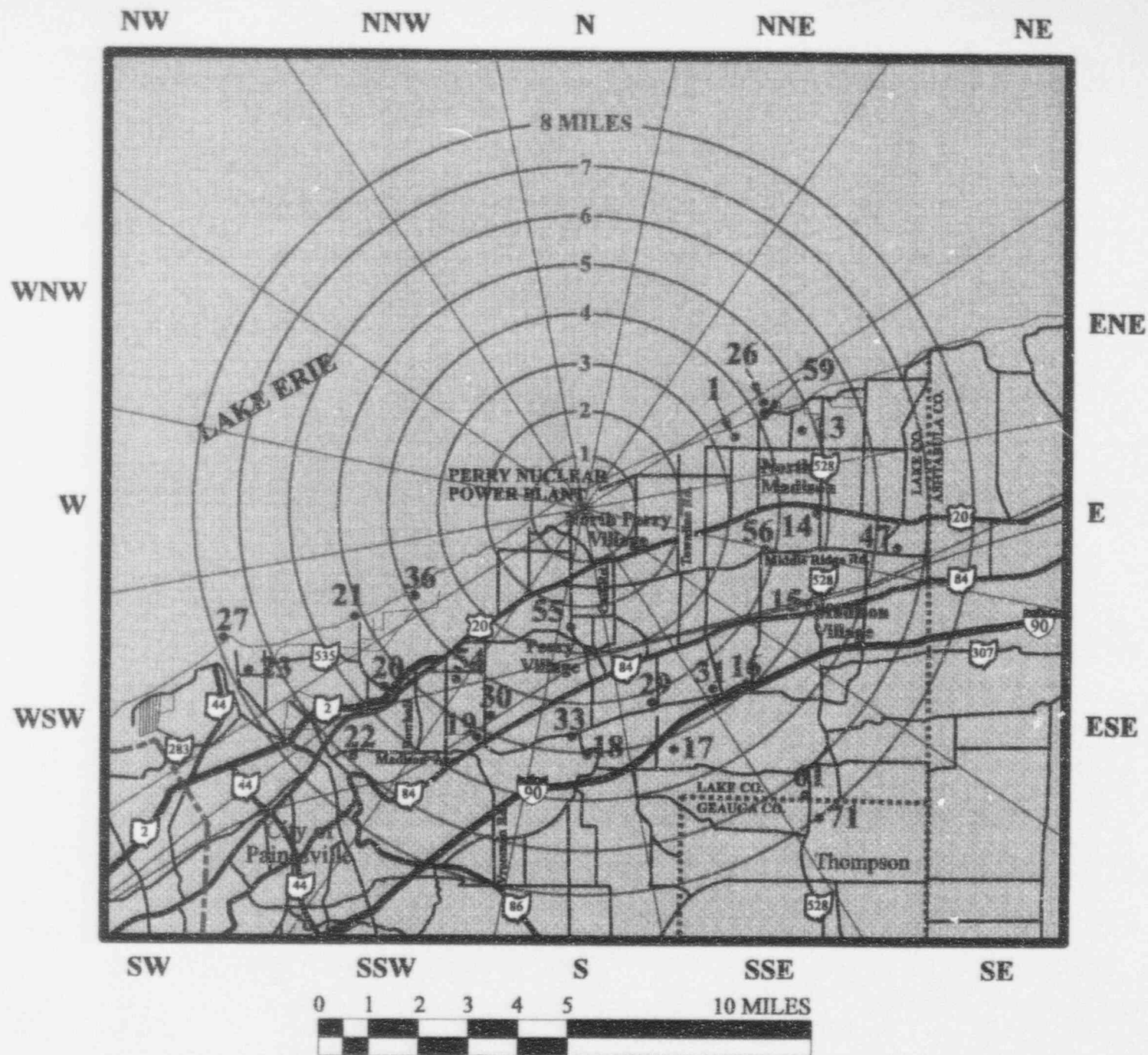


Figure 3: REMP sampling locations between two and eight miles from the plant site.

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 each. No two radionuclides emit the same energy gamma rays. Therefore, 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. In 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.

Table 2 provides a list of the analyses performed on environmental samples collected for the PNPP REMP in 1994.

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, as part of the PNPP Operating License, has established values for the LLDs for REMP sample analysis. The vendor laboratory was able to comply with those values in

1994 with the exception of one iodine analysis for an air sample from Location 5 on March 3. The LLD was exceeded (0.319 pCi/m³ vs. 0.050 pCi/m³) due to a low sample volume. The low volume was due to the sampler head being mispositioned on the air sampler (see "Missed Samples", below). The NRC requires special reporting if sample analysis results exceed set limits. No values exceeded these reporting levels in 1994.

Table 2: Analyses performed on REMP samples.

<i>Sample type</i>	<i>Frequency</i>	<i>Analyses Performed</i>
Atmospheric Monitoring		
Airborne Particulates	Weekly	Gross Beta
	Quarterly	Gamma Spectral
Airborne Radiiodine	Weekly	Iodine-131
Precipitation	Monthly	Gross Beta, Gamma Spectral, Tritium
Terrestrial Monitoring		
Milk	Bi/Monthly	Gamma Spectral, Iodine-131
Food Products	Monthly	Gamma Spectral
Vegetation	Monthly	Gamma Spectral
Soil	Quarterly	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

1994 SAMPLING PROGRAM

The contribution of radionuclides to the environment resulting from the operation of PNPP is assessed by comparing results from the 1994 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, 1994 Radiological Environmental Monitoring Program Data, for detailed results.

Program Changes

There were several changes to the program in 1994. These changes include the addition and deletion of sample locations as follows:

- January* During an audit by PNPP Quality Assurance it was noted that the TLDs in the southeast and south sectors were positioned slightly outside the five mile limit required by the Technical Specifications. Two TLD locations, #31 and #33 were added to the program to fulfill the requirement.
- February* The sediment sampling location in the minor stream lower pool (#76) was deleted from the program. Samples from this location have been used to document and track very slight contamination found in the stream bed (see 1992 Annual Environmental Operating Report for information). Sampling and tracking this area has become part of documentation kept in accordance with 10CFR50.75(g), the decommissioning rule.
- June* Seven produce sampling locations were dropped from the program as a result of establishing permanent agreements with two farms closest to the plant site, and one farm serving as a control location.

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 a list of missed samples, the sample location, and the reason the sample was missed.

Table 3: Missed REMP samples, 1994

<i>Media</i>	<i>Loca.</i>	<i>Date</i>	<i>Reason Missed</i>
Food Products	62,70,77	Apr, May, Jun	Vegetables not ready for harvest
Food Products	62	Jul	Vegetables not ready for harvest
Food Products	70	Oct	Vegetables past harvest
Milk	47	1994	Not participating in 1994
Milk	61	Jan, Feb, Mar, Dec	Drying period for goats(1)
Lake water	59,60	Jan, Feb, Mar	Lake covered with ice
TLD	22	2nd Qtr.	Location vandalized(2)
TLD	41	4th Qtr.	Lost in field(2)
Grass	44	1994	Area recovering from construction
Grass	6,7,35	Apr	Insufficient growth to harvest

(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.

In addition to the missed samples listed in the table, grass samples are collected only during the growing season and therefore are not collected between October 30 and April 1. A major construction project at location #44 prevented any sample collection there in 1994. This project was a continuation of work that began in 1993. If the completed project results in permanent loss of the grassy area, the location will be dropped from the program in 1995, and suitable replacement sites evaluated.

Efforts to collect food product samples are conducted during the growing season, April 1 to October 30. Samples were available only during the months of July through October. This year, agreements with the two local produce growers nearest the plant in areas of high predicted deposition were established in order to facilitate consistent sample collection. An agreement was also established with a control location. The PNPP Operating License requires collection of three types of food products from each of two indicator locations and similar food products from a control location. Due to different planting schedules, weather, and harvesting schedules, these requirements were met only during the peak of the harvest season in September.

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 1994.

AIR

- On March 3, the air sampler at Location 5 was replaced, but the sample head was not positioned properly on the unit. This resulted in a low sample volume (1064 cubic feet vs. approximately 10,000 cubic feet in a normal sample), which in turn resulted in the vendor radiological laboratory not being able to achieve the LLD for the radioiodine adsorption canister.
- On August 31, air samples from Locations 6 and 7 had lower than normal gas meter and timer readings (approximately eight and three hours lower than normal, respectively). This may have been caused by a short power outage related to severe weather on August 28.
- On October 12, Location 1 was found vandalized with the power breaker in the OFF position. This resulted in a low air volume sampled (5308 cubic feet).
- On November 30, the timer reading for the sample from Location 7 was two hours lower than normal. This may have been a result of a power outage.

WATER

- In January, a grab sample was taken at Location 28 due to a sampler malfunction. The sampler was replaced with a new unit. September through December, grab samples were collected at Location 28 in lieu of a composite sample. This sampler is located in the intake at the Ashtabula CEI plant; it was disconnected during this time due to construction.
- A grab sample was collected at Location 36 in January and February. In both cases, the sampler intake was clogged with debris which prevented the pump from drawing sufficient volume for a sample. In each case, the intake was cleaned and the sampler returned to service.

TLD

- The annual TLD at location 22 was noted to be missing at the time of the second to third quarter changeout (7/7/94). It was replaced on 7/12 and remained in place for the rest of the year. Both quarterly TLDs were missing at this time also, as noted in Table 3.
- Both quarterly TLDs at location 42 were vandalized during the third quarter. They were replaced on 8/24 and remained for the rest of the quarter.

FOOD PRODUCTS

- In July, only two food products were collected from Location 70; In August and October, only two were collected from Location 62. This was due primarily to differences in planting and harvest schedules among the three produce growers and for different crops.

MILK

- In September, milk from location 61 was collected 10/24 to 10/27 rather than 10/21 to 10/24. This was due to a scheduling problem with the farmer.

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 Operating License. Air sampling pumps are used to draw continuous samples at a rate of approximately one cubic foot per minute, which is roughly the same rate as human respiration. 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 364 of each type of air sample (particulate and iodine) was collected in 1994.

Gross beta activity was detected in all but one air sample 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.

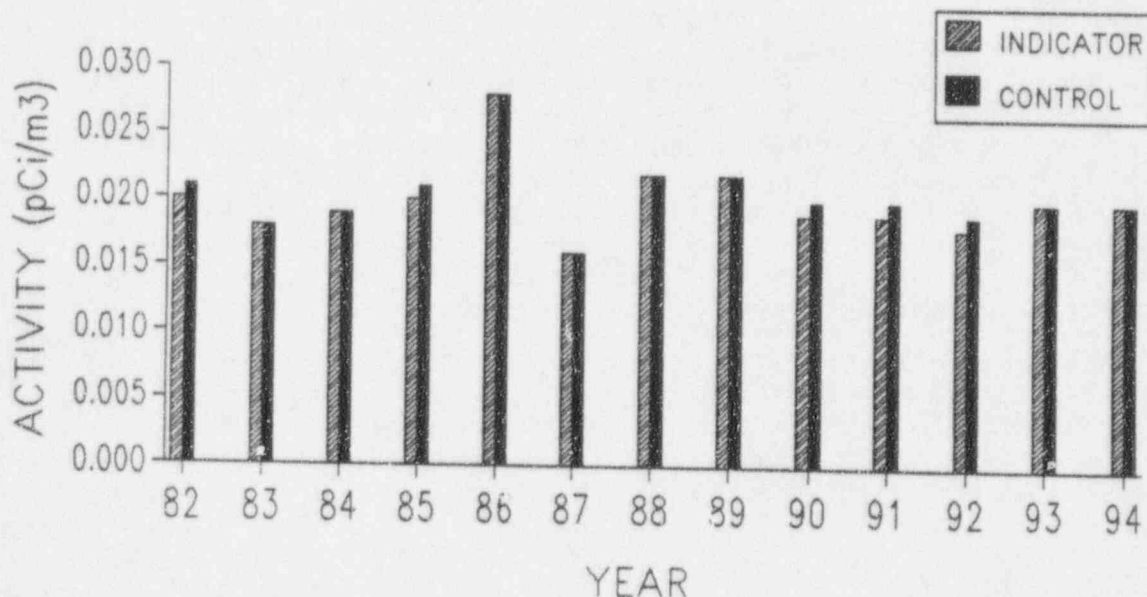


Figure 5: Annual average concentration of gross beta in air.

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.

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 Operating License, 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 for tritium, gross beta, and by gamma spectral analysis. A total of 72 precipitation samples were collected in 1994. Tritium was not detected above the LLD of 1500 pCi/l in any of the samples. The results of gamma spectral analysis were all below LLD as well.

Gross beta activity was detected in all samples and ranged from 1.40 pCi/l to 16.30 pCi/l. The annual average concentration of gross beta was 4.76 pCi/l at the indicator locations and 4.79 pCi/l at the control locations. The annual average concentration was within or below the range of previous years (from 2.71 pCi/l to 11.79 pCi/l).

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 Operating License.

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 four milk locations (three within eight kilometers of the plant, and one control); if no milk locations are within this distance, food product sampling must be performed. Since there were no milk producing animals within the required distance, food product sampling (discussed below) was performed. Milk was collected from the available locations even though they did not meet the Operating License requirements. If new locations that meet the Operating License 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 50 milk samples were collected in 1994. 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 from airborne sources or 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 two farms in the vicinity of PNPP. The control location for food products is 16.2 miles from PNPP.

A total of 27 food product samples were collected in 1994 and analyzed by gamma spectral analysis. Seven food products were collected, including several varieties of cabbage, broccoli, cauliflower, dill, lettuce, 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 three locations (two indicator and one control) in 1994. Grass is clipped from open areas using standard lawn trimming equipment. The control location for vegetation is eleven miles away. A total of eighteen grass samples were collected in 1994 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 semiannually 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 1994 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 66.00 - 628.00 pCi/kg. The annual average concentration of cesium-137 was 317.00 pCi/kg at the indicator locations and 216.50 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.

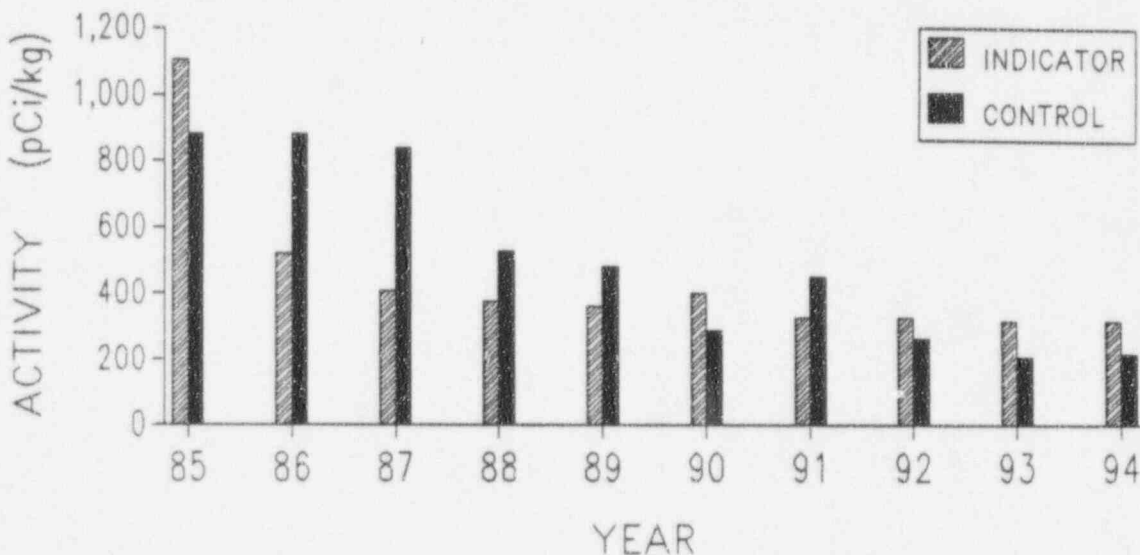


Figure 6: Annual average concentration of cesium-137 in soil

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 resulted in cesium-137 concentrations ranging from 66.0 pCi/kg to 628.0 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 Operating License. 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-four water samples were collected and analyzed for gross beta activity and by gamma spectral analysis in 1994. 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 - 4.80 pCi/l. The annual average concentration of gross beta was 2.42 pCi/l at the indicator locations and 2.63 pCi/l at the control location. For all sample locations, the annual average concentrations were similar to those measured in previous years (Figure 7).

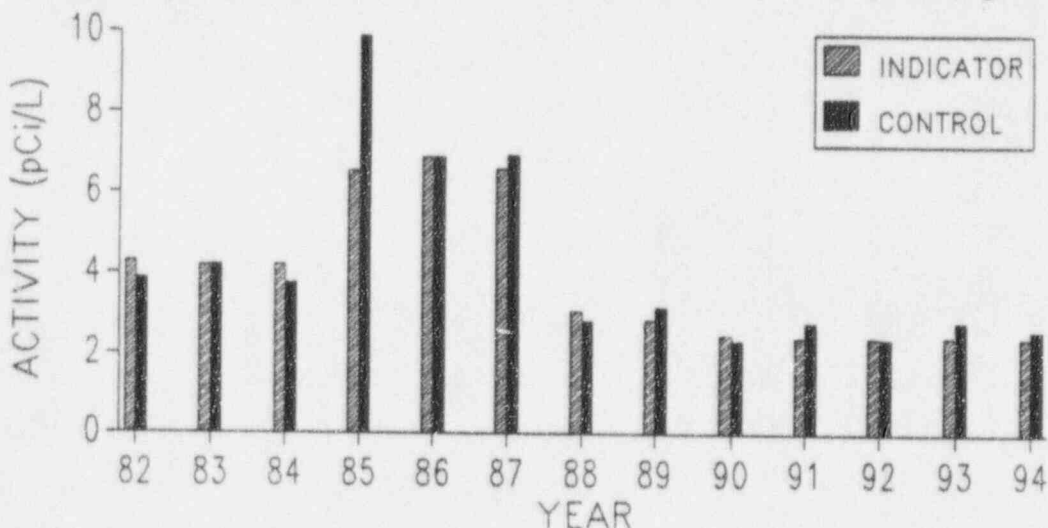


Figure 7: Annual average concentration of gross beta in water

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.

No radionuclides were detected by gamma spectral analysis above the LLD. Tritium was detected in ten samples and ranged from 173 to 282 pCi/l. The annual average concentration of tritium was 226 pCi/l at the indicator locations and 173 pCi/kg 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 Operating License, 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 1994 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 43 - 478 pCi/kg. The annual average concentration was 243 pCi/kg at the indicator locations and 276 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.

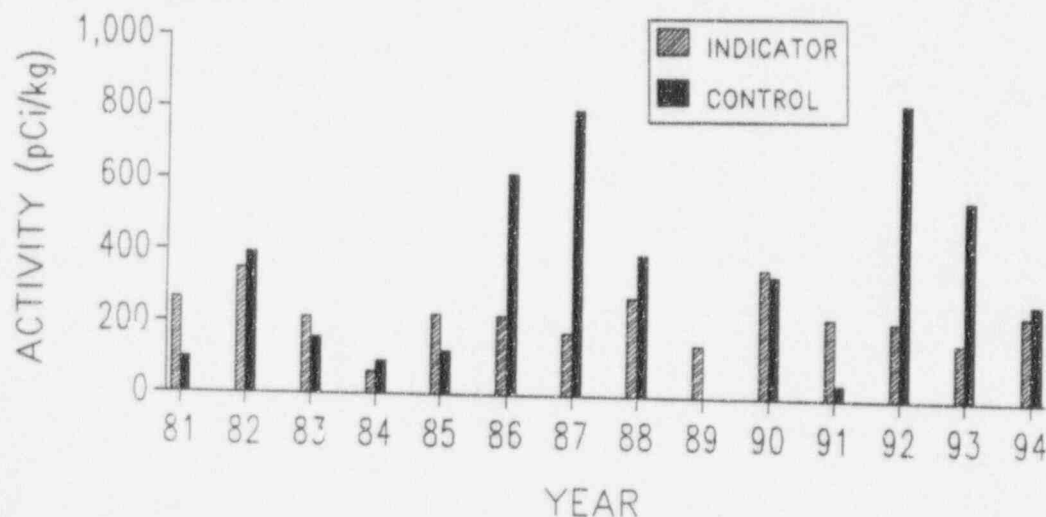


Figure 8: Annual average concentration of cesium-137 in sediment

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 Operating License. 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 1994 and analyzed by gamma spectral analysis. Nine species of fish were represented, including walleye, drum, smallmouth bass, carp, white sucker, white perch, yellow perch, redhorse sucker, and rockbass. As expected, naturally occurring potassium-40 was found in all samples. 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 348 TLDs were collected and analyzed in 1994. This includes 309 collected on a quarterly basis, and 39 collected annually. In 1994, the annual average dose for all indicator locations was 51.05 mR, and for all control locations was 50.85 mR. Figure 9 shows historical TLD data.

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.

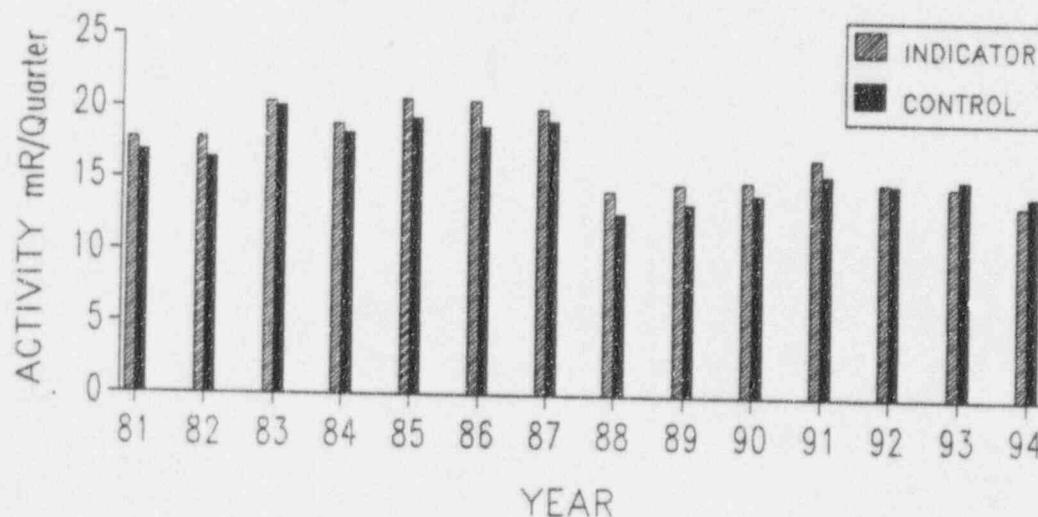


Figure 9: Average dose per quarter

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 1994, the vendor laboratory analyzed 42 samples of air filters or water for this program. One result was outside the acceptable range (see (1), below). The results of this program are shown in Table 4. Results are expressed in pCi/l for liquid samples, pCi/filter for filter samples, and mg/l for potassium results. Results shown in **BOLD** were outside the control limits and are discussed in the footnotes below.

In addition to their participation in the EPA Interlaboratory Comparison Program, the vendor laboratory conducts an internal crosscheck program for dosimeters. Table 5 shows the results of this program.

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 6 shows the results of this program for 1994.

Table 4: 1994 EPA Cross-Check Intercomparison Program results.

Date	Sample Type	Analysis	Vendor Result	EPA Value	Acceptable Range
Jan.	Water	Sr-89	20.0	20.0	16.3 - 33.7
		Sr-90	14.0	15.0	6.3 - 23.7
		Gross alpha	20.3	15.0	6.3 - 23.7
		Gross beta	55.3	62.0	44.7 - 79.3
Feb.	Water	I-131	110.0	119.0	98.2 - 139.8
		Ra-226	19.4	19.9	14.7 - 25.1
		Ra-228	15.0	14.7	8.3 - 21.1
		Uranium	9.7	10.0	4.9 - 15.3
Mar.	Water	H-3	4843.3	4936.0	4078.9 - 5793.1
		Pu-239	28.2	27.6	22.7 - 32.5
Apr.	Water	Gross alpha	73.3	86.0	47.8 - 124.2
		Ra-226	16.9	20.0	14.8 - 25.2
		Ra-228	19.7	20.1	11.4 - 28.8
		Uranium	25.1	25.0	19.8 - 30.2
		Co-60	20.3	20.0	11.3 - 28.7
		Cs-134	32.3	34.0	25.3 - 42.7
		Cs-137	31.3	29.0	20.3 - 37.7
		Gross beta	101.0	117.0	85.8 - 148.2
		Sr-89	15.0	20.0	11.3 - 28.7
		Sr-90	14.3	14.0	5.3 - 22.7
		Ra-226	15.0	15.0	11.0 - 19.0
		Ra-228	14.8	15.4	8.6 - 22.2
Jun.	Water	Uranium	45.7	52.6	43.4 - 61.8
		Ba-133	87.3	98.0	80.7 - 115.3
		Co-60	48.7	50.0	41.3 - 58.7
		Cs-134	35.0	40.0	31.3 - 48.7
		Cs-137	51.3	49.0	40.3 - 57.7
		Ru-106	184.7	252.0	208.6 - 295.4(1)
		Zn-65	135.3	134.0	11.4 - 156.6
		Gross alpha	19.3	32.0	18.1 - 45.9
		Gross beta	12.7	10.0	1.3 - 18.7
		Sr-89	26.0	30.0	21.3 - 38.7
		Sr-90	18.7	20.0	11.3 - 28.7
Aug.	Water	H-3	10186.7	9951.0	8224.7 - 11677.3
	Air Filter	Cs-137	14.0	15.0	6.3 - 23.7
		Gross alpha	29.3	35.0	19.4 - 50.6
		Gross beta	56.0	56.0	38.7 - 73.3
		Sr-90	18.0	20.0	11.3 - 28.8
Sep.	Water	Ra-226	10.1	10.0	7.4 - 12.6
		Ra-228	9.8	10.2	5.6 - 14.7
		Uranium	31.9	35.0	29.8 - 40.2
Oct.	Water	I-131	81.3	79.0	65.1 - 92.9

(1) - The vendor radiological laboratory received a letter from the EPA with this result. The EPA letter stated, "The Radiation Quality Assurance Program has been experiencing problems with Ruthenium-106 currently used in the Performance Evaluation (PE) Studies and in the Standards Distribution Program. If these problems can be satisfactorily resolved, this analyte will once again be placed into this PE Study. If the

problems cannot be resolved, the Ruthenium-106 will be replaced. Formal written notice will be given to all participants in the gamma water PE Study before the Ruthenium-106 is reintroduced or replaced. At that time, new calibration standards will be available to all participants in the Gamma Water PE Study." The vendor radiological laboratory will continue to monitor this situation, but plans to take no additional action.

Table 5: 1994 Vendor internal crosscheck program for dosimeters

Date	Sample Type	Vendor Result	Known Value
Nov.	LiF-100 Chips	15.6	14.9
		30.2	29.8
		59.2	59.7
	CaSo4:Dy Cards	14.9	14.9
		30.8	29.8
		58.9	59.7
		15.4	14.9
		31.4	29.8
		60.1	59.7

Table 6: 1994 Vendor laboratory "spiked" sample results

Date	Sample	Analysis Type	Result	Known Value	Acceptable Range
Jan.	Water	Ce-144	2593.1	2692.5	1615.5 - 2961.8
		Ce-144	1705.1	1749.8	1049.9 - 1924.8
		Ce-144	55.4	49.0	29.4 - 59.0
		Gross alpha	34.4	41.7	20.9 - 62.6
		Gross beta	33.6	30.2	20.2 - 40.2
		Gross alpha	66.8	83.4	41.7 - 125.1
		Gross beta	63.8	60.4	50.4 - 70.4
		H-3	17080.0	17163.0	13730.4 - 20595.6
	Milk	Co-60	1514.0	1545.0	1390.5 - 1699.5
		Cs-134	433.7	479.0	431.1 - 526.9
		Cs-137	742.7	732.0	658.8 - 805.2
		Cs-134	328.3	338.0	304.2 - 371.8
		Cs-137	1019.6	1114.4	1003.0 - 1225.8
		Cs-134	27.2	31.7	21.7 - 41.7
		Cs-137	34.6	34.8	24.8 - 44.8
		Sr-89	28.2	35.0	25.9 - 45.0
		Sr-90	41.2	40.7	32.6 - 48.8
		Sr-89	9.5	11.9	1.9 - 21.9
		Sr-90	19.4	20.1	10.1 - 30.1
	Air filter	Gross beta	4.8	4.2	0.0 - 14.2
		Cs-137	1.4	1.3	1.2 - 1.4
Feb.	Charcoal	I-131	1449.9	1452.8	1162.2 - 1743.4
	Water	I-131	76.4	90.9	72.6 - 109.0
			90.2	90.8	54.5 - 100.8
	Milk	I-131	40.4	43.6	31.6 - 55.6
			41.8	43.6	26.2 - 53.6
Mar.	Sediment	H-3	97.2	105.4	0.0 - 630.0

<i>Date</i>	<i>Sample</i>	<i>Analysis Type</i>	<i>Result</i>	<i>Known Value</i>	<i>Acceptable Range</i>
	Water	Sr-89	25.5	26.4	16.4 - 36.4
		Sr-90	16.2	18.8	8.8 - 28.8
Apr.	Water	H-3	9847.8	9855.0	7884.0 - 11826.0
		Co-60	21.6	22.6	12.6 - 32.6
		Cs-134	33.3	33.6	23.6 - 43.6
		Cs-137	37.6	36.3	26.3 - 46.3
		Gross alpha	44.8	41.6	20.8 - 62.4
		Gross beta	24.1	25.4	15.4 - 35.4
	Milk	Cs-134	52.0	50.6	40.6 - 60.6
		Cs-137	61.6	54.5	44.5 - 64.5
	Air filter	Cs-137	1.3	1.3	1.2 - 1.4
May	Water	Fe-55	56.7	58.5	38.5 - 78.5
	Fish	Cs-137	6.9	6.8	0.0 - 16.8
	Sediment	Cs-137	6.2	6.0	0.0 - 16.0
Jun.	Water	I-131	46.0	51.8	39.8 - 63.8
			50.9	51.8	31.1 - 61.8
		Gross alpha	20.8	23.4	11.7 - 35.1
		Gross beta	29.5	31.8	21.8 - 41.8
	Milk	I-131	51.7	51.8	39.8 - 63.8
			51.3	51.8	31.1 - 61.8
	Vegetation	I-131	0.9	1.0	0.6 - 1.1
	Charcoal	I-131	1.9	1.8	0.0 - 13.8
Jul.	Water	H-3	24504.6	25019.0	20015.2 - 30022.8
	Milk	Sr-89	16.4	22.5	12.5 - 32.5
		Sr-90	25.3	25.4	15.4 - 35.4
	Water	Cs-137	240.8	221.5	199.4 - 243.7
	Air filter	Gross beta	7.9	8.3	0.0 - 18.3
		Cs-137	1.3	1.3	1.2 - 1.4
	Fish	Cs-137	8.3	8.5	0.0 - 18.5
Oct.	Water	I-131	77.4	79.9	63.9 - 95.9
			85.5	79.9	47.9 - 89.9
			92.5	95.8	76.6 - 115.0
			98.2	95.8	57.5 - 105.8
	Milk	Cs-134	35.0	36.4	26.4 - 46.4
		Cs-137	46.1	44.1	34.1 - 54.1
		I-131	65.2	63.7	51.1 - 76.7
			68.4	63.9	38.3 - 73.9
	Vegetation	I-131	1.7	1.6	0.0 - 13.6
	Sediment	Cs-134	0.3	0.3	0.2 - 0.5
	Fish	Cs-137	11.6	12.1	2.1 - 22.1
Nov.	Water	Ni-63	1851.6	1931.0	1158.6 - 2703.4
		Tc-99	63.2	66.0	46.2 - 85.7
		H-3	24099.2	24260.0	19408.0 - 29112.0

Excluding one parameter which the OEPA has subsequently withdrawn, the vendor laboratory has successfully completed their quality control samples. This is a continuation of excellent programs during the past two years.

CONCLUSION

No unusual radionuclide concentrations or exposure levels were detected during 1994. 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 1994. Cesium-137 was detected in sediment. Results were within the range of past data.

Finally, direct radiation measurements are consistent with past data.

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 ft²), and residence in each of the meteorological sectors. The Land Use Census is required by the PNPP Technical Specifications, 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 around the plant that are over land. The 1994 Census was conducted on July 14, 15 and 18. The location of the nearest residences, vegetable gardens (larger than 500 square feet), and milk producing animals were recorded. Produce growers, and recreational areas were also recorded.

A survey update was also completed this year. It included identification of all public drinking water facilities, fish harvest and population within 50 miles of the plant.

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 survey area continues to be rural/agricultural.

There were no changes in nearest residences within five miles of the plant. Table 1 lists the nearest residence by sector. The residence with the highest X/Q (highest dispersion factor and therefore highest possible calculated dose) is located at 3121 Center Road, in the south sector, approximately 0.9 miles from the plant. This is the same residence identified in the 1993 Land Use Survey.

Table 1: Nearest residence by sector

Sector	Location Address	Miles from PNPP	X/Q Value (Sec/m ³)	Map Locator
NE	4385 Lockwood Rd	0.8	2.17E-6	1
ENE	4602 Lockwood Rd	1.0	1.13E-6	2
E	2684 Antioch Rd	1.1	6.77E-7	3
ESE	2774 Antioch Rd	1.2	4.44E-7	4
SE	4495 N. Ridge Rd	1.2	3.89E-7	5
SSE	3119 Parmly Rd	0.9	1.89E-6	6
S	3121 Center Rd	0.9	2.25E-6	7
SSW	3850 Clark Rd	0.9	1.11E-6	8
SW	3440 Clark Rd	1.2	4.98E-7	9
WSW	2815 Perry Park	1.0	1.72E-6	10

The following changes in nearest gardens were recorded in the 1994 census:

- o ENE Sector - A new garden was identified at 4650 Lockwood Road.
- o E Sector - A new garden was identified at 2740 Antioch Road.
- o SE Sector - A new garden was identified at 4679 Middle Ridge Road.
- o SSW Sector - A new garden was identified at 3515 North Ridge Road.
- o WSW Sector - A new garden was identified at 2975 Perry Park Road.

Table 2 lists the nearest gardens that occupy at least 500 square feet. The location with the highest D/Q (highest calculated deposition) value was 3121 Center Road in the south sector. This is the same garden identified in the 1993 Land Use Survey.

Table 2: Nearest garden by sector

<i>Sector</i>	<i>Location Address</i>	<i>Miles from PNPP</i>	<i>D/Q Value per m²</i>	<i>Map Locator</i>
NE	4398 Lockwood Rd	0.8	1.09E-8	11
ENE*	4650 Lockwood Rd	1.2	4.11E-9	12
E*	2740 Antioch Rd	1.2	4.56E-9	13
ESE	2774 Antioch Rd	1.2	3.41E-9	4
SE*	4679 Middle Ridge Rd	1.9	1.31E-9	14
SSE	3119 Parmly Rd	0.9	1.23E-8	6
S	3121 Center Rd	0.9	1.31E-8	7
SSW*	3515 N. Ridge Rd	1.7	1.19E-9	15
SW	3440 Clark Rd	1.2	2.24E-9	9
WSW*	2975 Perry Park Rd	1.2	2.31E-9	16

* Indicates a new location for 1994

A milk animal (goat) was recorded during the 1994 census. There had been no milk animals within a five mile radius of the plant since 1991. At the time of the survey the goat was not being milked and would not be milked in 1994. For this reason, the location was not added to the REMP.

Table 3: Milk Animal

<i>Sector</i>	<i>Location Address</i>	<i>Miles from PNPP</i>	<i>D/Q Value per m²</i>	<i>Map Locator</i>
E	2874 Burns	4.1	4.81E-10	17

Produce growers are listed in Table 4; recreational areas are listed in Table 5. Survey update information on public drinking water facilities is included in Table 6. Fish harvest and population are discussed below.

Table 4: Produce growers within the vicinity of PNPP

<i>Sector</i>	<i>Name and Address of Facility</i>	<i>Miles from PNPP</i>	<i>D/Q</i>
ENE	Shreve Farm, 2431 Antioch Rd	1.2	4.1E-09
ENE	Gerlica Farm, 4860 Lockwood Rd	1.5	2.8E-09
ENE	Rainbow Farms, Townline Rd	1.9	1.9E-09
ENE	Ruland Farm, 2210 Haines Rd	2.0	1.7E-09
ENE	Twins Creek Farm, 2299 Haines Rd	3.2	7.4E-10
E	Orosz Farm, 2674 Antioch Rd	1.2	4.6E-09
E	Sabo Farm, 5674 N. Ridge Rd	2.9	8.9E-10
E	Resident, 6325 Middle Ridge Rd	3.9	5.3E-10
E	Woodworth Farm, Middle Ridge Rd	4.6	3.9E-10
E	Wayman Farm, Hubbard Rd	4.8	3.6E-10
E	Hub Ridge Market, Rt. 528	4.8	3.6E-10
ESE	Secor Nursery, N. Ridge Rd	1.8	1.7E-09
ESE	Resident, 5674 Middle Ridge Rd	3.2	5.6E-10
ESE	Resident, 5936 Middle Ridge Rd	3.3	5.3E-10
ESE	Resident, 6030 Middle Ridge Rd	3.9	3.9E-10
ESE	Hart's Acres, Rt 528	5.0	2.5E-10
SE*	Resident, 3815 Townline Rd	3.0	5.9E-10
SSE	Peg's Produce, Rt 84	3.2	3.7E-10
S	Resident, 4030 Middle Ridge Rd	1.5	2.4E-09
S	Brookside Farm, Middle Ridge Rd	1.7	2.0E-09
SSW	Golding Farm, North Ridge Rd	1.7	1.2E-09
SSW	Champion Nursery, North Ridge Rd	1.8	1.1E-09
SW	Golding Farm, Perry Park Rd	1.5	1.5E-09
SW	West Orchard & Fruit Market Perry Park/Clark Rds	1.6	1.4E-09
SW	Resident, 3191 N. Ridge Rd	2.4	6.7E-10
SW	West Orchard & Fruit Market, N. Ridge Rd	2.7	5.5E-10
SW	Garden Center, North Ridge Rd	3.6	3.3E-10
SW*	Sycamore Row Farm, 252 Hale Rd	4.2	2.5E-10
SW*	Resident, 2503 Hale Rd.	4.2	2.5E-10

* Indicates a new location for 1994.

Table 5: Recreational areas

<i>Sector</i>	<i>Name and Address of Facility</i>	<i>Miles from PNPP</i>
NE	North Perry Pk, Lockwood Rd	0.7
ENE	N. Townline Pk, Townline Rd	2.3
ENE	Lake Metro Pk, Lockwood Rd	1.7
ENE	Chapel Cove Pk, Chapel Rd	3.2
ENE	Tuttle Pk, Tuttle Park Rd	3.7
ENE	Madison C.C., Chapel/Green Rd	4.0
S	Lake County YMCA Outdoor Center, 4540 River Rd	4.6
SW	Fairway Pines Golf Course, Corner of Blase Nemeth and Bacon Rd	4.8
WSW	Perry Township Pk, Perry Park Rd	1.1
WSW	Camp Roosevelt, Perry Park Rd	1.4

Based on 1990 census data, the population within 50 miles of the plant is 3,464,671. Information on fish harvest was obtained from the Ohio Department of Natural Resources and includes both sport and commercial data. The annual sport harvest of major fish species for the last five years is shown in Table 6. Annual commercial harvest of major fish species for the last five years is shown in Table 7. Public drinking water facilities within 50 miles of the plant are shown in Table 8.

Table 6: Annual sport fish harvest (in thousands of pounds of fish)

<i>Species</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>
Walleye	10,372	6,831	5,170	5,997	7,428
Yellow perch	2,473	551	933	722	876
White bass	217	69	64	31	85
Smallmouth bass	43	54	66	66	77
Freshwater drum	60	63	133	63	54
Channel catfish	12	56	30	63	54
White perch	148	188	175	93	36

Table 7: Annual commercial fish harvest (in thousands of pounds of fish)

<i>Species</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>
Yellow perch	1,700	1,591	684	372	344
White bass	549	392	445	382	225
Freshwater drum	485	640	505	604	774
Channel catfish	342	365	376	333	326
White perch	521	796	1,007	848	338
Suckers	39	41	41	55	53
Carp	895	1,190	1,063	1,824	1,176

Table 8: Public drinking water facilities

<i>County</i>	<i>Facility name</i>	<i>Water source</i>
Ashtabula	Andover Village	Well
	Orwell Village	Well
	Roaming Shore Village	Roaming Rock Lake
	Rock Creek Village	Grand River
	City of Conneaut	Lake Erie
	Camplands Water Company	Well
Cuyahoga	Ohio American Water Service	Lake Erie
	City of Berea	Rocky River
	City of Cleveland	Lake Erie
	Chagrin Falls Village	Well
Geauga	Burton Village	Well
	Chardon Village	Bass Lake
	Middlefield Village	Well
Lake	Fairport Harbor Village	Lake Erie
	Lake Co. East & West Water Dist.	Lake Erie
	Ohio Water Service	Lake Erie
	City of Painesville	Lake Erie
	Milton Township	Well
Mahoning Portage	Mantua Village	Well
	Windham Village	Well
	City of Kent	Well
	City of Ravenna	Lake Hodgson
	Fairlane Water Company	Well
	Citizens Utility	Well
	Lakemore Village	Well
Summit	City of Akron	Lake Rockwell
	City of Cuyahoga Falls	Well
	Hudson Village	Well
	Copley Square Water Company	Well
	City of Barberton	Wolf Creek Reservoir
	Peninsula Water & Sewer	Well
	Shepard Hills Water Company	Well
	West Farmington Village	Grand River
	City of Courtland	Well
	City of Hubbard	Well
Trumbull	City of Newton Falls	Mahoning River
	City of Warren	Mosquito Reservoir
	Shenango/Masury Water Company	Shenango River
Mercer (PA)	Shanango Valley Water Company	Shenango River
	Sharpsville Boro Water Company	Shenango River
	Reynolds Water Company	Big Run River
	Greenville Municipal Water	Shenango River
Crawford (PA)	Tuttle Point Pymatuning	Pymatuning Reservoir
	Cambridge Springs Borough	French Creek
Erie (PA)	Erie Bureau of Water	Lake Erie

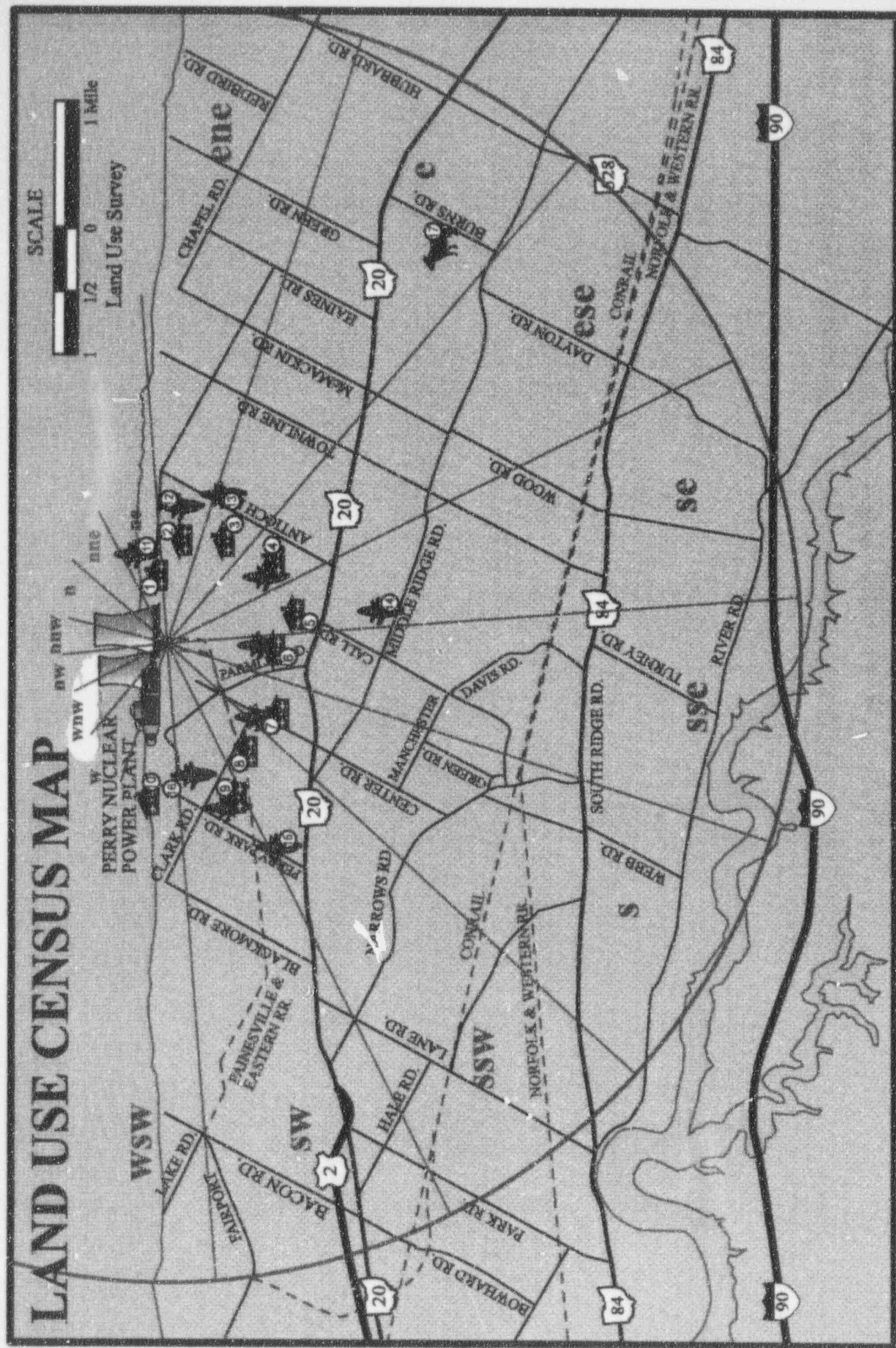


Figure 1: 1994 Land Use Census Map

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

The initial monitoring program specifically for *Corbicula* was developed by NUS Corporation for PNPP in response to an NRC bulletin and concerns of the Atomic Safety and Licensing Board. The current monitoring program was developed in conjunction with Aquatic Systems Corporation and incorporated into the Environmental Protection Plan (Operating License Appendix B) in July, 1988 by License Amendment 15. 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 1994 from in-plant locations at PNPP shown in Figure 1, and semiannually from the vicinity of the Eastlake Power Plant at locations shown in Figure 2. Sample collection dates are listed in Table 1.

Table 1: 1994 *Corbicula* sampling dates and locations

Date	Sample Location
1/13	Service water (SW) and Emergency Service Water (ESW) forebays and trash baskets
4/ 6	SW and ESW forebays and trash baskets
4/13	Cooling tower basin
6/ 9	Lake Erie in the vicinity of the Eastlake Plant
7/22	SW and ESW forebays and trash baskets
9/12	Lake Erie in the vicinity of the Eastlake Plant
10/14	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 1994 monitoring program. All bivalves collected are listed in Table 2.

Table 2: Bivalves collected during the 1994 *Corbicula* monitoring program

	PNPP	EASTLAKE
<i>Dreissena polymorpha</i>	x	x
<i>Dreissena bugensis</i>	x	x
<i>Pisidium caeseratinum</i>	x	x
<i>Pisidium compressum</i>		x
<i>Pisidium lilljeborgi</i>	x	
<i>Pisidium ferrugineum</i>	x	
<i>Pisidium amnicum</i>		x
<i>Pisidium sp.</i>	x	x
<i>Sphaerium striatinum</i>	x	
<i>Sphaerium transversum</i>	x	x
<i>Sphaerium corneum</i>	x	
<i>Sphaerium sp.</i>	x	x
<i>Unionidae</i>		x
<i>Anodonta sp.</i>	x	

Conclusions

The collection in June 1987 was the first indication that *Corbicula* are slowly spreading into the central basin of Lake Erie. 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 two 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.

Results of the veliger monitoring program for 1994 are shown in Table 3. Samples were collected from the service water basin using vertical tows with an 80 micron mesh plankton net.

Treatment

Chemicals used for mussel control in 1994 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.

Table 3: Results of the 1994 Perry Nuclear Power Plant veliger sampling program.

<i>Date</i>	<i>#/liter</i>	<i>Lake Temp (F)</i>
5/31	0.0	59
6/7	0.0	62
6/14	0.0	63
6/21	< 1.0	64
6/28	< 1.0	66
7/5	34.7	66
7/23	8.2	74
7/19	4.2	72
7/26	12.9	75
8/2	2.9	75
8/9	2.4	72
8/16	< 1.0	70
8/24	2.6	71
8/30	2.6	72
9.6	1.3	71
9/13	0.0	69
9/20	0.0	69

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 1994 was didecyl dimethyl ammonium chloride. A treatment was applied on Sept. 22, 1994 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, eleven visual inspections of raw water system components were conducted in 1994. In addition, settlement monitors were inspected weekly for new settlement. No live settlement has been found in any plant component or in the settlement monitors to date.

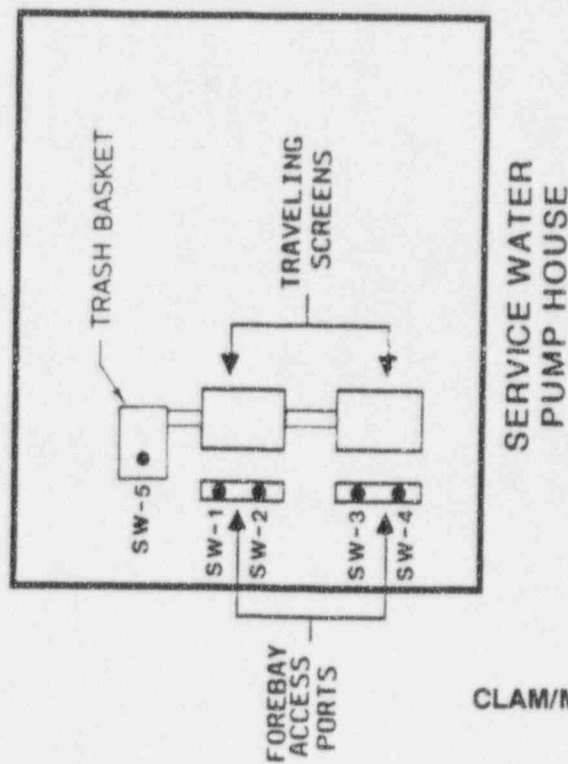
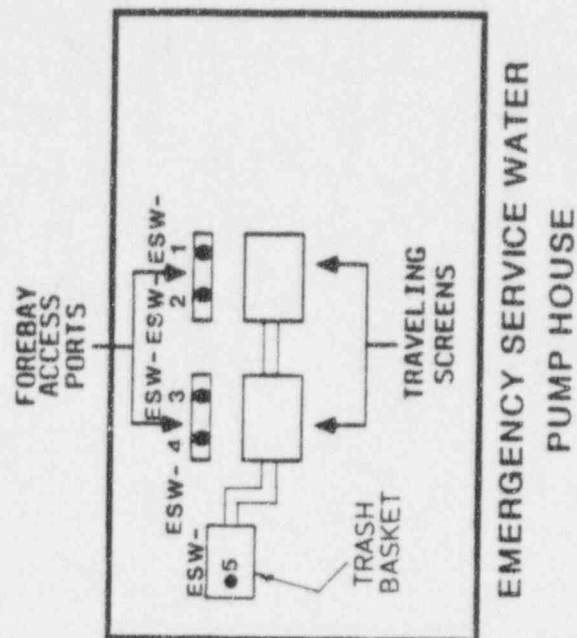
The effectiveness of the application of the commercial molluscicide was measured by observing mortality of mussels placed in a flow-through container placed in plant service water and subjected to the chemical treatment. Mortality observed in the flow-through container was 100%. To date, PNPP has had 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.



LAKE ERIE



● — Sample Location

Figure 1 : PNPP In-plant sampling locations.

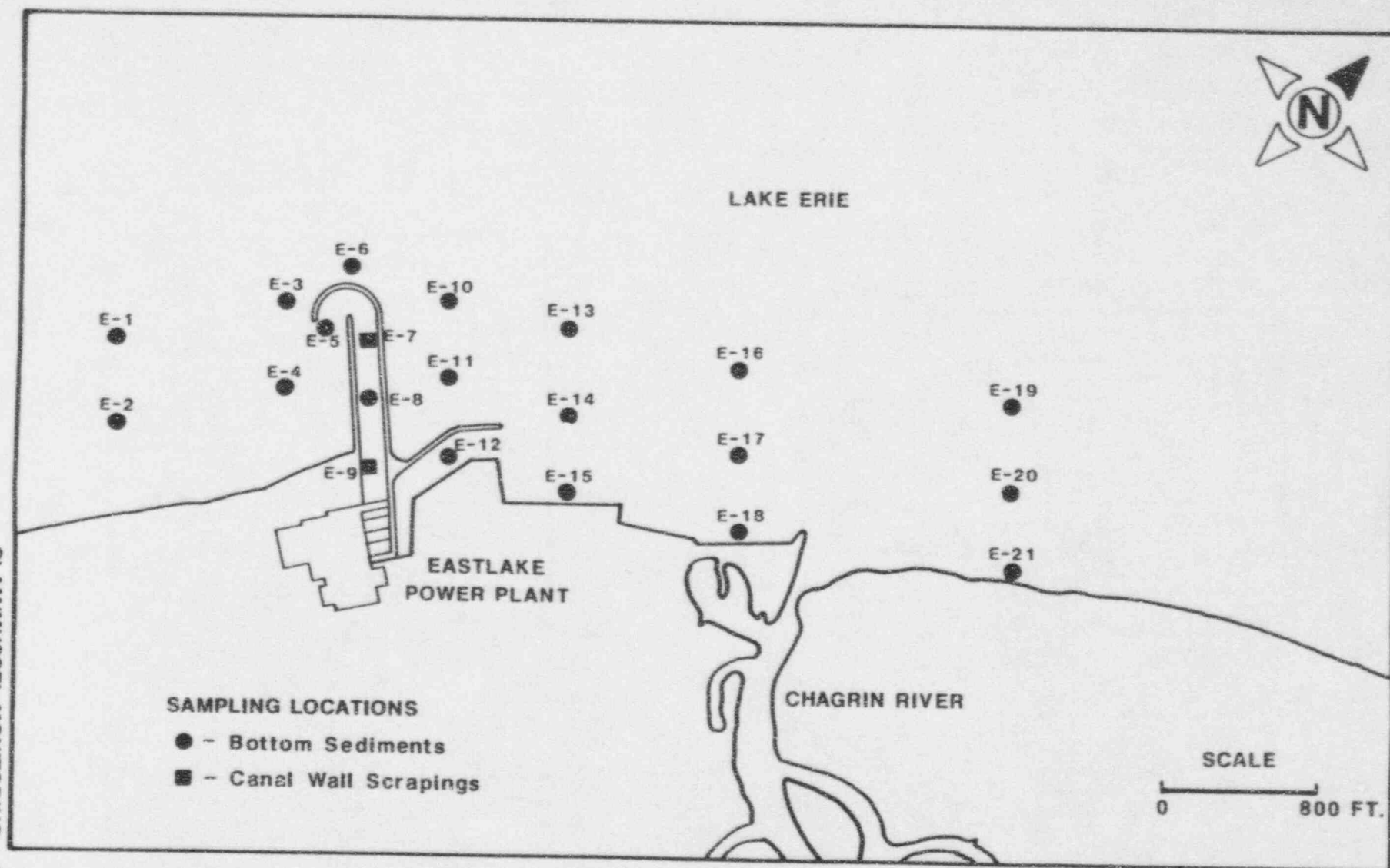


Figure 2: Lake Erie sampling locations in the vicinity of the Eastlake Plant.

AERIAL REMOTE SENSING

INTRODUCTION

Aerial remote sensing is a method of monitoring the plant area environment by examining photographs taken from an airplane. It is used in the vicinity of PNPP to monitor for vegetative stress. Vegetative stress is any disturbance of the normal growth cycle of vegetation which results in changes in appearance. It can be caused by a variety of both natural and man-made factors including insect pests, disease agents, drought, pollution, mechanical damage, or salt deposition.

Salt deposited from the cooling tower plume would be the most likely cause of vegetative stress attributable to PNPP. Solids (salts) dissolved in the lake water used in the cooling tower may be contained in the droplets that make up the plume. As the droplets settle to the ground, the salts may accumulate either in soils or directly on foliage. Stress can then result from 1) the direct toxic effects of the salt, 2) a decrease in the availability of soil moisture to the plant, or 3) the alteration of the mineral balance in the plant tissues.

Aerial remote sensing has been conducted at PNPP regularly as a requirement of the Environmental Protection Plan (Appendix B of the Operating License). It was first conducted in 1987 and followed in 1988, 1990, 1992 and the final year of the study, 1994.

PROGRAM

In order to determine whether the operation of the PNPP cooling tower has impacted the surrounding vegetation, the site and vicinity within one kilometer of the cooling towers in all directions were aerially photographed to detect and assess the significance of damage (or lack of damage). The photography was done by aerial overflight on August 23, 1994 (details are listed in Table 1, flight lines are shown in Figure 1).

Table 1: Details of the 1994 photo:mission

<i>Item</i>	<i>Data</i>
Date	August 23, 1994
Time	1135 to 1220 Eastern Daylight Savings Time
Film type	Aerochrome infrared
Weather	Clear with a few scattered clouds
Altitude	3625 ft. to 3700 ft. above ground level
Camera/lens model	Jena MRB 15/2323
Camera focal length	152.026 mm
Shutter Speed	1/400 second
Aperture	f 4.5
Scale	1 in. = 500 ft.

Low altitude color infrared photography is used in order to allow potentially stressed vegetation to be identified. Healthy green plant tissue is a strong absorber of visible light. It appears as red on the infrared film. Stressed areas can be identified by observing different hues on the photographs as well as noting changes in patterns or textural characteristics.

Once developed, photographs were inspected to check for quality of color and resolution, and to identify those areas where the need for more detailed inspection was necessary. They were also compared to previous years' studies to determine whether there were any significant changes.

Areas identified for further inspection were located on maps and compared to previous data and walked down in the field and inspected if necessary.

RESULTS

There has been no adverse environmental impact from the operation of the PNPP cooling tower.

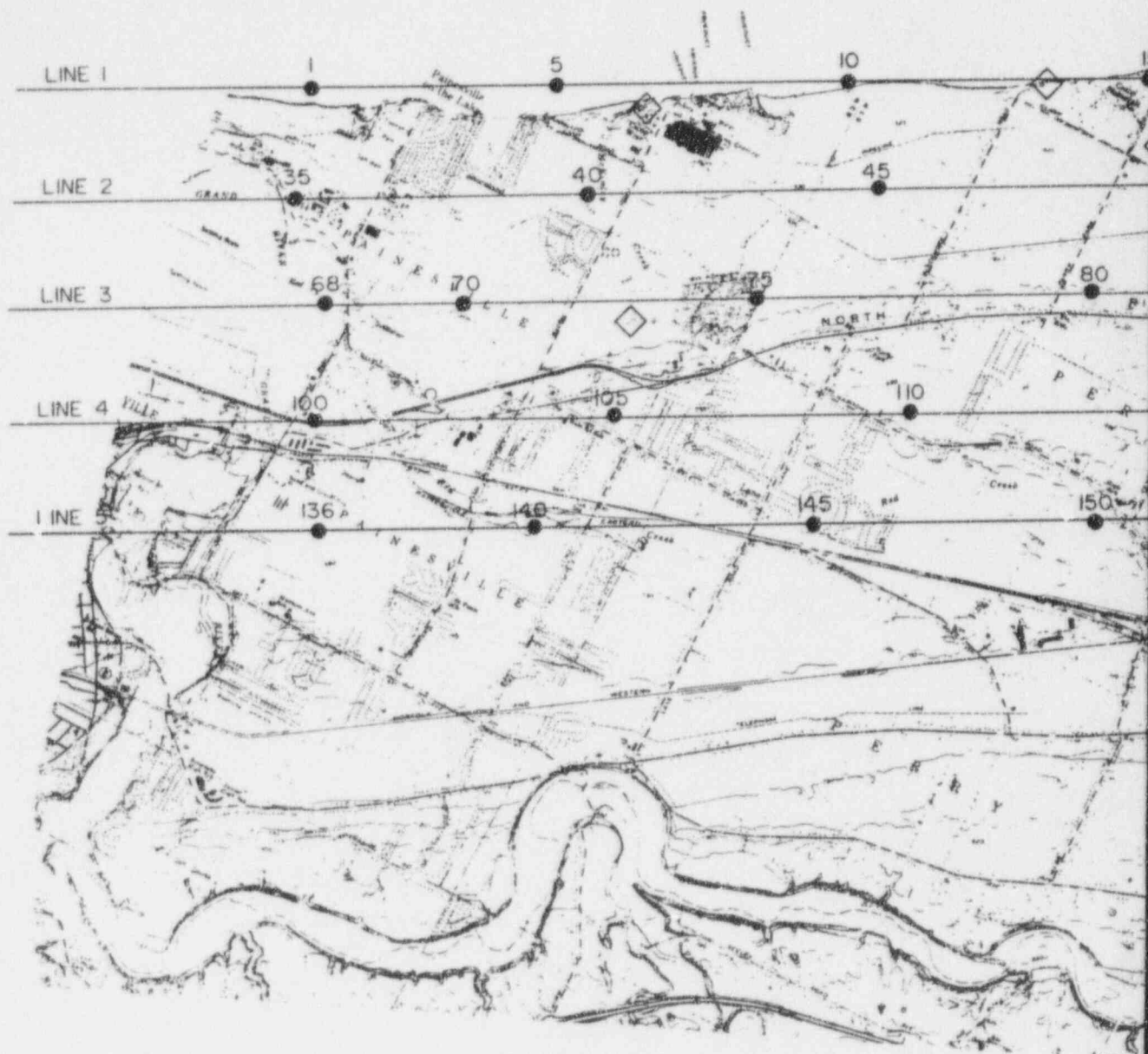
Ten areas were identified as showing variations in spectral signatures (see Figure 1). One of these locations occurred within the area predicted to receive maximum deposition. All areas exhibiting potential stress were ground truthed and compared to 1992 photos.

The variations in spectral signature in the ten areas identified in the 1994 study were attributable to a variety of factors:

- stress due to wind damage and root exposure in trees along the lake shore and ravines
- variations in species composition in the arboreal canopy (different species reflect light differently, which results in different shades on the infrared film)
- arboreal mortality due to over maturity

ANALYSIS OF IMPACT

Historically, the vegetative stress that has been observed in the vicinity of PNPP has been attributable to factors unrelated to operation of the cooling tower. This remains true for 1994.



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PROJECT

PERRY NUCLEAR PLANT

CAMERA USED NO.	700A WRR 15/2323
FLYING HEIGHT	3000 FT.
PHOTOGRAPHIC SCALE	1"=500'
DATE OF PHOTOGRAPHY	8-23-54
FOCAL LENGTH	152.022 MM
PHOTO INDEX SCALE	1"=2000'

95 04180420-01

HERBICIDE USAGE

Because the PNPP site is home to several special habitat areas, like that for the spotted turtle, herbicides are used sparingly on site. An application must be made to the PNPP Environmental Monitoring Element 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 1994. 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

<i>Date Applied</i>	<i>Location</i>	<i>Total Acres</i>	<i>Gallons</i>
5/20	E-field and outer perimeter (1)	3.86	3.9
6/ 3	E-field and outer perimeter	3.86	7.7
6/4,8,17	Unit 1 graveled areas	5.30	10.6
6/2,22	Unit 2 graveled areas	20.60	41.2
8/18	Landscaped yard areas(2)	2.00	5.0

(1) - Surflan only

(2) - Round-up only

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 no NPDES noncompliances in 1994.

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. There were no EPP noncompliances identified in 1994.

UNREVIEWED ENVIRONMENTAL QUESTIONS

All proposed changes in plant design or operation, as well as tests or experiments conducted during 1994 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 1994.

NONROUTINE REPORTS

There were no nonroutine reports in 1994.

**APPENDIX A: 1994 RADIOLOGICAL
ENVIRONMENTAL MONITORING PROGRAM
DATA SUMMARY**

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

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

Location of Facility : Lake County Ohio Reporting period : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
APTB PCI/CU.M.	G-BETA 364	.0075	0.02 (0363/0364) 0.00-0.04	0.02 (0311/0312) 0.00-0.04	5 0.6 SW	0.02 (0051/0052) 0.00-0.03	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.

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 : 9400

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-131 364	.05	LLD	-	-	-	-

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 : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
APTG PCI/CU.M.	BE-7 28	NA	0.07 (0028/0028) 0.05-0.10	0.07 (0024/0024) 0.05-0.10	4 0.7 S	0.08 (0004/0004) 0.07-0.09	0.07 (0004/0004) 0.06-0.08
	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.

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

Reporting period : 9400

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)	
TRITIUM PCI/L	H3 72	1500	LLD	-	-	-	-

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 : 9400

PRECIPITATION 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		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
PRB PCI/L	G-BETA 72	3	4.77 (0072/0072) 1.40-16.30	4.76 (0060/0050) 1.40-16.30	3 1.0 SE	6.97 (0012/0012) 2.10-16.30	4.79 (0012/0012) 1.40-9.20

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. : 50-440/53-441

Location of Facility : Lake County Ohio Reporting period : 9400

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	BA-140 72	45	LLD	-	-	-	-
	CO-58 72	11	LLD	-	-	-	-
	CO-60 72	11	LLD	-	-	-	-
	CS-134 72	11	LLD	-	-	-	-
	CS-137 72	13	LLD	-	-	-	-
	FE-59 72	22	LLD	-	-	-	-
	LA-140 72	11	LLD	-	-	-	-

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 : 9400

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 72	11	LLD	-	-	-	-
	NB-95 72	11	LLD	-	-	-	-
	ZN-65 72	22	LLD	-	-	-	-
	ZR-95 72	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

Reporting period : 9400

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

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 : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
MLKG PCI/L	BA-140 50	45	LLD	-	-	-	-
	CS-134 50	11	LLD	-	-	-	-
	CS-137 50	13	LLD	-	-	-	-
	K-40 50	NA	1509.60 (0050/0050) 1200.00-1950.00	1528.75 (0032/0032) 1200.00-1950.00	61 7.4 SE	1819.29 (0014/0014) 1450.00-1950.00	1476.11 (0018/0018) 1320.00-1820.00
	LA-140 50	11	LLD	-	-	-	-

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 : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
FP PCI/KG(WET)	BE-7 27	NA	354.88 (0008/0027) 177.00-602.00	402.50 (0006/0019) 177.00-602.00	77 1.2 E	402.50 (0006/0012) 177.00-602.00	212.00 (0002/0008) 200.00-224.00
	CO-58 27	NA	LLD	-	-	-	-
	CO-60 27	NA	LLD	-	-	-	-
	CS-134 27	45	LLD	-	-	-	-
	CS-137 27	60	LLD	-	-	-	-
	I-131 27	45	LLD	-	-	-	-
	K-40 27	NA	4292.15 (0027/0027) 1828.00-7820.00	4693.16 (0019/0019) 1828.00-7820.00	77 1.2 E	5214.00 (0012/0012) 3789.00-7820.00	3339.75 (0008/0008) 1984.00-6172.00

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 : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
FP PCI/KG(WET)	BE-7 18	NA	3397.11 (0018/0018) 617.00-9074.00	3276.25 (0012/0012) 1015.00-6674.00	6 11.0 SSW	3638.83 (0006/0006) 617.00-9074.00	3638.83 (0006/0006) 617.00-9074.00
	CO-58 18	NA	LLD	-	-	-	-
	CO-60 18	NA	LLD	-	-	-	-
	CS-134 18	45	LLD	-	-	-	-
	CS-137 18	60	LLD	-	-	-	-
	I-131 18	45	LLD	-	-	-	-
	K-40 18	NA	5451.94 (0018/0018) 3674.00-7192.00	5387.25 (0012/0012) 3674.00-6786.00	6 11.0 SSW	5581.33 (0006/0006) 4267.00-7192.00	5581.33 (0006/0006) 4267.00-7192.00

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 : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	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	302.64 (0014/0014) 66.00-628.00	317.00 (0012/0012) 66.00-628.00	12 0.6 WSW	544.50 (0002/0002) 461.00-628.00	216.50 (0002/0002) 215.00-218.00
	K-40 14	NA	12578.43 (0014/0014) 10614.00-15324.00	12143.83 (0012/0012) 10614.00-13851.00	6 11.0 SSW	15186.00 (0002/0002) 15048.00-15324.00	15186.00 (0002/0002) 15048.00-15324.00
	RA-226 14	NA	1519.07 (0014/0014) 1157.00-2269.00	1404.83 (0012/0012) 1157.00-1638.00	6 11.0 SSW	2204.50 (0002/0002) 2140.00-2269.00	2204.50 (0002/0002) 2140.00-2269.00

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 : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
WTRB PCI/L	G-BETA 54	3	2.47 (0054/0054) 1.30-4.80	2.42 (0042/0042) 1.30-3.80	60 1.0 WSW	2.68 (0009/0009) 1.60-3.80	2.63 (0012/0012) 1.90-4.80

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 : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
WTRG PCI/L	BA-140 54	45	LLD	-	-	-	-
	CO-58 54	11	LLD	-	-	-	-
	CO-60 54	11	LLD	-	-	-	-
	CS-134 54	11	LLD	-	-	-	-
	CS-137 54	13	LLD	-	-	-	-
	FE-59 54	22	LLD	-	-	-	-
	LA-140 54	11	LLD	-	-	-	-

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 : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
WTRG PCI/L	MN-54 54	11	LLD	-	-	-	-
	NB-95 54	11	LLD	-	-	-	-
	ZN-65 54	22	LLD	-	-	-	-
	ZR-95 54	22	LLD	-	-	-	-

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 : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	Mean (1) (Range)	
TRITIUM PCI/L	H3 18	1500	230.00 (0010/0018) 173.00-282.00	236.33 (0009/0014) 204.00-282.00	36 3.9 WSW	255.50 (0002/0004) 229.00-282.00	173.00 (0001/0004) 173.00-173.00

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

PAGE: 001

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

Location of Facility : Lake County Ohio

Reporting period : 9400

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		All Control Locations Mean (1) (Range)
					Dist. Direct	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	251.38 (0008/0014) 43.00-478.00	243.17 (0006/0012) 43.00-478.00	26 4.2 ENE	369.50 (0002/0002) 261.00-478.00	276.00 (0002/0002) 223.00-329.00
	K-40 14	NA	14322.50 (0014/0014) 7590.00-22335.00	14201.33 (0012/0012) 7590.00-22335.00	26 4.2 ENE	20365.50 (0002/0002) 18396.00-22335.00	15049.50 (0002/0002) 12865.00-17234.00

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 : 9400

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)	CO-58 25	97	LLD	-	-	-	-
	CO-60 25	97	LLD	-	-	-	-
	CS-134 25	97	LLD	-	-	-	-
	CS-137 25	112	LLD	-	-	-	-
	FE-59 25	195	LLD	-	-	-	-
	X-40 25	NA	2232.28 (0025/0025) 1328.00-3370.00	2219.08 (0013/0013) 1426.00-3077.00	32 15.8 WSW	2246.58 (0012/0012) 1328.00-3370.00	2246.58 (0012/0012) 1328.00-3370.00
	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

Reporting period : 9400

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.

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 : 9490

TLD							
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)	
TLD HR/91 DAYS	DIRECT 155	NA	13.49 (0155/0155) 8.70-24.20	13.46 (0147/0147) 8.70-24.20	18 5.0 S	21.33 (0004/0004) 18.10-24.20	14.16 (0008/0008) 11.70-17.70

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 : 9400

TLD							
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)	
TLD MR/91 DAYS	DIRECT 154	NA	14.23 (0154/0154) 9.60-23.70	14.20 (0146/0146) 9.60-23.70	18 5.0 S	21.98 (0004/0004) 19.50-23.70	14.76 (0008/0008) 12.50-17.00

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 Net no. : 50-440/50-441

Location of Facility : Lake County Ohio Reporting period : 9400

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)	
TLD MR/365 DAYS	DIRECT 39	NA	51.04 (0039/0039) 23.40-79.10	51.05 (0037/0037) 23.40-79.10	18 5.0 S	79.10 (0001/0001) 79.10-79.10	50.85 (0002/0002) 49.40-52.30

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

**APPENDIX B: 1994 RADIOLOGICAL
ENVIRONMENTAL MONITORING PROGRAM
DATA**

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

CROSS BETA AIR

COLLECTION PERIOD

STATION LOCATIONS

		01	03	04	05
JAN	931229 TO 940105	.021+/- .005	.024+/- .005	.021+/- .005	.024+/- .005
	940105 TO 940112	.024+/- .005	.024+/- .005	.023+/- .005	.030+/- .005
	940112 TO 940119	.025+/- .005	.025+/- .005	.026+/- .005	.028+/- .006
	940119 TO 940126	.029+/- .005	.031+/- .006	.035+/- .006	.033+/- .006
	940126 TO 940202	.020+/- .005	.022+/- .005	.021+/- .005	.021+/- .005
FEB	940202 TO 940209	.030+/- .005	.025+/- .005	.024+/- .005	.023+/- .006
	940209 TO 940216	.028+/- .005	.024+/- .005	.026+/- .005	.023+/- .006
	940216 TO 940223	.023+/- .005	.025+/- .005	.024+/- .005	.025+/- .006
	940223 TO 940302	.024+/- .005	.026+/- .005	.024+/- .005	.023+/- .006
	940302 TO 940309	.020+/- .005	.024+/- .005	.024+/- .005	LT .052
MAR	940309 TO 940316	.021+/- .005	.021+/- .005	.025+/- .005	.022+/- .004
	940316 TO 940323	.016+/- .005	.017+/- .005	.017+/- .005	.018+/- .004
	940323 TO 940330	.012+/- .005	.009+/- .005	.015+/- .005	.012+/- .004
	940330 TO 940406	.014+/- .005	.015+/- .004	.020+/- .005	.015+/- .003
	940406 TO 940413	.014+/- .004	.014+/- .004	.016+/- .004	.017+/- .003
APR	940413 TO 940420	.014+/- .003	.013+/- .004	.012+/- .003	.011+/- .003
	940420 TO 940427	.020+/- .003	.017+/- .004	.018+/- .003	.019+/- .004
	940427 TO 940504	.008+/- .003	.008+/- .003	.008+/- .003	.005+/- .003
	940504 TO 940511	.015+/- .003	.014+/- .003	.015+/- .003	.015+/- .003
	940511 TO 940518	.009+/- .003	.010+/- .003	.010+/- .003	.003+/- .003
MAY	940518 TO 940525	.008+/- .003	.008+/- .003	.007+/- .003	.010+/- .003
	940525 TO 940601	.016+/- .003	.017+/- .003	.015+/- .003	.016+/- .003
	940601 TO 940608	.012+/- .003	.010+/- .003	.012+/- .003	.010+/- .003
	940608 TO 940615	.014+/- .003	.016+/- .003	.014+/- .003	.016+/- .003
	940615 TO 940622	.022+/- .003	.022+/- .004	.025+/- .004	.021+/- .004
JUN	940622 TO 940629	.011+/- .003	.009+/- .003	.010+/- .003	.010+/- .003
	940629 TO 940706	.014+/- .003	.012+/- .003	.011+/- .003	.012+/- .003
	940706 TO 940713	.012+/- .003	.012+/- .003	.012+/- .003	.012+/- .003
	940713 TO 940720	.016+/- .003	.017+/- .004	.020+/- .004	.020+/- .004
	940720 TO 940727	.019+/- .003	.017+/- .003	.016+/- .003	.017+/- .003
JUL	940727 TO 940803	.016+/- .003	.019+/- .002	.020+/- .004	.019+/- .004
	940803 TO 940810	.013+/- .003	.014+/- .003	.015+/- .003	.014+/- .003
	940810 TO 940817	.014+/- .003	.017+/- .003	.014+/- .003	.019+/- .003
	940817 TO 940824	.018+/- .003	.025+/- .004	.019+/- .003	.020+/- .003
	940824 TO 940831	.028+/- .004	.026+/- .004	.027+/- .004	.029+/- .004
SEP	940831 TO 940907	.011+/- .003	.012+/- .003	.009+/- .003	.009+/- .003
	940907 TO 940914	.021+/- .003	.022+/- .004	.023+/- .004	.023+/- .004

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

GROSS BETA AIR

COLLECTION PERIOD

STATION LOCATIONS

	01	03	04	05
940914 TO 940921	.024+/- .006	.037+/- .004	.025+/- .004	.027+/- .004
940921 TO 940928	.015+/- .003	.015+/- .003	.016+/- .004	.017+/- .004
OCT				
940928 TO 941005	.009+/- .003	.011+/- .004	.011+/- .004	.010+/- .003
941005 TO 941012	.019+/- .006	.018+/- .004	.020+/- .004	.019+/- .004
941012 TO 941019	.023+/- .004	.022+/- .004	.021+/- .004	.022+/- .004
941019 TO 941026	.016+/- .004	.017+/- .004	.017+/- .004	.016+/- .004
NOV				
941026 TO 941102	.025+/- .004	.027+/- .004	.023+/- .004	.026+/- .004
941102 TO 941109	.020+/- .004	.021+/- .004	.020+/- .004	.020+/- .004
941109 TO 941116	.024+/- .004	.027+/- .004	.025+/- .004	.023+/- .004
941116 TO 941123	.020+/- .004	.020+/- .004	.018+/- .004	.020+/- .004
941123 TO 941130	.017+/- .004	.020+/- .004	.019+/- .004	.019+/- .004
DEC				
941130 TO 941207	.028+/- .004	.030+/- .004	.027+/- .004	.025+/- .004
941207 TO 941214	.014+/- .004	.016+/- .004	.016+/- .004	.015+/- .004
941214 TO 941221	.027+/- .004	.026+/- .004	.029+/- .004	.026+/- .004
941221 TO 941228	.028+/- .004	.029+/- .004	.030+/- .004	.027+/- .004

JAN	931229 TO 940105	-021+/--.005	-020+/--.005	-024+/--.005	940105 TO 940112	-026+/--.005	-023+/--.005	-025+/--.005	940112 TO 940119	-028+/--.005	-026+/--.005	-028+/--.005	940119 TO 940126	-032+/--.005	-034+/--.005	-032+/--.005	940126 TO 940202	-020+/--.004	-024+/--.005	-026+/--.005	940202 TO 940209	-023+/--.005	-021+/--.005	-025+/--.005	940209 TO 940216	-027+/--.005	-025+/--.003	-028+/--.005	940216 TO 940223	-024+/--.005	-025+/--.005	-023+/--.005	MAR	940223 TO 940302	-024+/--.005	-024+/--.005	-024+/--.005	940302 TO 940309	-020+/--.005	-023+/--.005	-024+/--.005	940309 TO 940316	-021+/--.005	-022+/--.005	-024+/--.005	940316 TO 940323	-019+/--.005	-016+/--.005	-017+/--.005	940323 TO 940330	-012+/--.005	-011+/--.005	-014+/--.005	APR	940330 TO 940406	-017+/--.004	-018+/--.004	-018+/--.004	940406 TO 940413	-014+/--.004	-016+/--.004	-016+/--.004	940413 TO 940420	-012+/--.003	-012+/--.004	-011+/--.003	940420 TO 940427	-017+/--.003	-016+/--.003	-017+/--.003	MAY	940427 TO 940504	-008+/--.003	-010+/--.003	-008+/--.003	940504 TO 940511	-005+/--.003	-012+/--.003	-013+/--.003	940511 TO 940518	-007+/--.003	-010+/--.003	-010+/--.003	940518 TO 940525	-008+/--.003	-008+/--.003	-007+/--.003	JUN	940525 TO 940601	-014+/--.003	-015+/--.003	-016+/--.003	940601 TO 940608	-009+/--.003	-011+/--.003	-010+/--.003	940608 TO 940615	-016+/--.003	-013+/--.003	-017+/--.003	940615 TO 940622	-023+/--.003	-020+/--.003	-029+/--.003	940622 TO 940629	-012+/--.003	-011+/--.003	-011+/--.003	JUL	940629 TO 940706	-012+/--.003	-013+/--.003	-011+/--.003	940706 TO 940713	-010+/--.003	-012+/--.003	-013+/--.003	940713 TO 940720	-019+/--.003	-019+/--.003	-019+/--.003	940720 TO 940727	-018+/--.003	-018+/--.003	-018+/--.003	AUG	940727 TO 940803	-020+/--.003	-018+/--.003	-019+/--.003	940803 TO 940810	-014+/--.003	-014+/--.003	-014+/--.003	940810 TO 940817	-016+/--.003	-015+/--.003	-015+/--.003	940817 TO 940824	-022+/--.003	-019+/--.003	-018+/--.003	940824 TO 940831	-030+/--.004	-030+/--.004	-029+/--.004	SEP	940831 TO 940907	-009+/--.003	-009+/--.003	-012+/--.003	940907 TO 940914	-022+/--.004	-021+/--.004	-023+/--.004	940914 TO 940921	-025+/--.004	-019+/--.004	-024+/--.004
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CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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

GROSS BETA AIR

COLLECTION PERIOD		STATION LOCATIONS		
		06	07	35
	940921 TO 940928	.016+/- .003	.018+/- .004	.017+/- .004
OCT	940928 TO 941005	.011+/- .003	.008+/- .003	.009+/- .003
	941005 TO 941012	.019+/- .003	.016+/- .003	.019+/- .003
	941012 TO 941019	.022+/- .003	.022+/- .004	.020+/- .003
	941019 TO 941026	.019+/- .004	.016+/- .004	.019+/- .004
NOV	941026 TO 941102	.021+/- .003	.023+/- .004	.023+/- .004
	941102 TO 941109	.020+/- .004	.019+/- .004	.020+/- .004
	941109 TO 941116	.025+/- .003	.022+/- .004	.024+/- .004
	941116 TO 941123	.018+/- .003	.020+/- .004	.021+/- .004
	941123 TO 941130	.016+/- .004	.020+/- .004	.022+/- .004
DEC	941130 TO 941207	.029+/- .004	.027+/- .004	.013+/- .003
	941207 TO 941214	.014+/- .004	.016+/- .004	.016+/- .004
	941214 TO 941221	.025+/- .004	.025+/- .004	.024+/- .004
	941221 TO 941228	.031+/- .004	.025+/- .004	.029+/- .004

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

AIR IODINE

STATION	SAMPLE	COLLECTION	I-131
LOCATION	TYPE	DATE	
01	AIR	931229/940105	LT .018
01	AIR	940105/940112	LT .017
01	AIR	940112/940119	LT .018
01	AIR	940119/940126	LT .030
01	AIR	940126/940202	LT .024
01	AIR	940202/940209	LT .031
01	AIR	940209/940216	LT .024
01	AIR	940216/940223	LT .017
01	AIR	940223/940302	LT .025
01	AIR	940302/940309	LT .027
01	AIR	940309/940316	LT .013
01	AIR	940316/940323	LT .014
01	AIR	940323/940330	LT .019
01	AIR	940330/940406	LT .019
01	AIR	940406/940413	LT .022
01	AIR	940413/940420	LT .016
01	AIR	940420/940427	LT .016
01	AIR	940427/940504	LT .019
01	AIR	940504/940511	LT .018
01	AIR	940511/940518	LT .015
01	AIR	940518/940525	LT .019
01	AIR	940525/940601	LT .024
01	AIR	940601/940608	LT .011
01	AIR	940608/940615	LT .012
01	AIR	940615/940622	LT .015
01	AIR	940622/940629	LT .014
01	AIR	940629/940706	LT .007
01	AIR	940706/940713	LT .012
01	AIR	940713/940720	LT .015
01	AIR	940720/940727	LT .011
01	AIR	940727/940803	LT .019
01	AIR	940803/940810	LT .014
01	AIR	940810/940817	LT .008
01	AIR	940817/940824	LT .013
01	AIR	940824/940831	LT .021
01	AIR	940831/940907	LT .019
01	AIR	940907/940914	LT .018
01	AIR	940914/940921	LT .013
01	AIR	940921/940928	LT .009
01	AIR	940928/941005	LT .013
01	AIR	941005/941012	LT .026
01	AIR	941012/941019	LT .006
01	AIR	941019/941026	LT .014
01	AIR	941026/941102	LT .010
01	AIR	941102/941109	LT .011
01	AIR	941109/941116	LT .022

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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

AIR IODINE

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	I-131
01	AIR	941116/941123	LT .019
01	AIR	941123/941130	LT .010
01	AIR	941130/941207	LT .006
01	AIR	941207/941214	LT .009
01	AIR	941214/941221	LT .021
01	AIR	941221/941228	LT .022
03	AIR	931229/940105	LT .018
03	AIR	940105/940112	LT .016
03	AIR	940112/940119	LT .018
03	AIR	940119/940126	LT .028
03	AIR	940126/940202	LT .023
03	AIR	940202/940209	LT .030
03	AIR	940209/940216	LT .023
03	AIR	940216/940223	LT .017
03	AIR	940223/940302	LT .024
03	AIR	940302/940309	LT .027
03	AIR	940309/940316	LT .013
03	AIR	940316/940323	LT .015
03	AIR	940323/940330	LT .020
03	AIR	940330/940406	LT .020
03	AIR	940406/940413	LT .023
03	AIR	940413/940420	LT .015
03	AIR	940420/940427	LT .013
03	AIR	940427/940504	LT .016
03	AIR	940504/940511	LT .015
03	AIR	940511/940518	LT .013
03	AIR	940518/940525	LT .016
03	AIR	940525/940601	LT .020
03	AIR	940601/940608	LT .010
03	AIR	940608/940615	LT .010
03	AIR	940615/940622	LT .013
03	AIR	940622/940629	LT .013
03	AIR	940629/940706	LT .008
03	AIR	940706/940713	LT .014
03	AIR	940713/940720	LT .017
03	AIR	940720/940727	LT .013
03	AIR	940727/940803	LT .021
03	AIR	940803/940810	LT .012
03	AIR	940810/940817	LT .007
03	AIR	940817/940824	LT .011
03	AIR	940824/940831	LT .018
03	AIR	940831/940907	LT .016
03	AIR	940907/940914	LT .016
03	AIR	940914/940921	LT .012
03	AIR	940921/940928	LT .017

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

AIR IODINE

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	I-131
03	AIR	940928/941005	LT .011
03	AIR	941005/941012	LT .014
03	AIR	941012/941019	LT .006
03	AIR	941019/941026	LT .014
03	AIR	941026/941102	LT .009
03	AIR	941102/941109	LT .011
03	AIR	941109/941116	LT .021
03	AIR	941116/941123	LT .018
03	AIR	941123/941130	LT .009
03	AIR	941130/941207	LT .006
03	AIR	941207/941214	LT .009
03	AIR	941214/941221	LT .021
03	AIR	941221/941228	LT .022
04	AIR	931229/940105	LT .018
04	AIR	940105/940112	LT .016
04	AIR	940112/940119	LT .017
04	AIR	940119/940126	LT .029
04	AIR	940126/940202	LT .024
04	AIR	940202/940209	LT .032
04	AIR	940209/940216	LT .024
04	AIR	940216/940223	LT .017
04	AIR	940223/940302	LT .025
04	AIR	940302/940309	LT .028
04	AIR	940309/940316	LT .013
04	AIR	940316/940323	LT .014
04	AIR	940323/940330	LT .020
04	AIR	940330/940406	LT .020
04	AIR	940406/940413	LT .023
04	AIR	940413/940420	LT .015
04	AIR	940420/940427	LT .016
04	AIR	940427/940504	LT .017
04	AIR	940504/940511	LT .016
04	AIR	940511/940518	LT .014
04	AIR	940518/940525	LT .017
04	AIR	940525/940601	LT .022
04	AIR	940601/940608	LT .010
04	AIR	940608/940615	LT .010
04	AIR	940615/940622	LT .013
04	AIR	940622/940629	LT .013
04	AIR	940629/940706	LT .008
04	AIR	940706/940713	LT .014
04	AIR	940713/940720	LT .016
04	AIR	940720/940727	LT .013
04	AIR	940727/940803	LT .021
04	AIR	940803/940810	LT .012

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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

AIR IODINE

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	I-131
04	AIR	940810/940817	LT .007
04	AIR	940817/940824	LT .011
04	AIR	940824/940831	LT .018
04	AIR	940831/940907	LT .016
04	AIR	940907/940914	LT .016
04	AIR	940914/940921	LT .012
04	AIR	940921/940928	LT .014
04	AIR	940928/941005	LT .011
04	AIR	941005/941012	LT .014
04	AIR	941012/941019	LT .006
04	AIR	941019/941026	LT .014
04	AIR	941026/941102	LT .009
04	AIR	941102/941109	LT .011
04	AIR	941109/941116	LT .021
04	AIR	941116/941123	LT .018
04	AIR	941123/941130	LT .009
04	AIR	941130/941207	LT .006
04	AIR	941207/941214	LT .009
04	AIR	941214/941221	LT .021
04	AIR	941221/941228	LT .022
05	AIR	931229/940105	LT .017
05	AIR	940105/940112	LT .015
05	AIR	940112/940119	LT .016
05	AIR	940119/940126	LT .026
05	AIR	940126/940202	LT .021
05	AIR	940202/940209	LT .027
05	AIR	940209/940216	LT .020
05	AIR	940216/940223	LT .014
05	AIR	940223/940302	LT .021
05	AIR	940302/940303	LT .319
05	AIR	940309/940316	LT .018
05	AIR	940316/940323	LT .020
05	AIR	940323/940330	LT .028
05	AIR	940330/940406	LT .028
05	AIR	940406/940413	LT .032
05	AIR	940413/940420	LT .016
05	AIR	940420/940427	LT .014
05	AIR	940427/940504	LT .017
05	AIR	940504/940511	LT .016
05	AIR	940511/940518	LT .014
05	AIR	940518/940525	LT .017
05	AIR	940525/940601	LT .021
05	AIR	940601/940608	LT .010
05	AIR	940608/940615	LT .010
05	AIR	940615/940622	LT .013

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

AIR IODINE

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	I-131
05	AIR	940622/940629	LT .012
05	AIR	940629/940706	LT .008
05	AIR	940706/940713	LT .014
05	AIR	940713/940720	LT .017
05	AIR	940720/940727	LT .013
05	AIR	940727/940803	LT .021
05	AIR	940803/940810	LT .012
05	AIR	940810/940817	LT .007
05	AIR	940817/940824	LT .011
05	AIR	940824/940831	LT .019
05	AIR	940831/940907	LT .016
05	AIR	940907/940914	LT .016
05	AIR	940914/940921	LT .012
05	AIR	940921/940928	LT .015
05	AIR	940928/941005	LT .012
05	AIR	941005/941012	LT .015
05	AIR	941012/941019	LT .006
05	AIR	941019/941026	LT .013
05	AIR	941026/941102	LT .009
05	AIR	941102/941109	LT .011
05	AIR	941109/941116	LT .021
05	AIR	941116/941123	LT .018
05	AIR	941123/941130	LT .010
05	AIR	941130/941207	LT .006
05	AIR	941207/941214	LT .010
05	AIR	941214/941221	LT .022
05	AIR	941221/941228	LT .023
06	AIR	931229/940105	LT .018
06	AIR	940105/940112	LT .018
06	AIR	940112/940119	LT .019
06	AIR	940119/940126	LT .033
06	AIR	940126/940202	LT .026
06	AIR	940202/940209	LT .034
06	AIR	940209/940216	LT .026
06	AIR	940216/940223	LT .019
06	AIR	940223/940302	LT .028
06	AIR	940302/940309	LT .031
06	AIR	940309/940316	LT .015
06	AIR	940316/940323	LT .017
06	AIR	940323/940330	LT .022
06	AIR	940330/940406	LT .022
06	AIR	940406/940413	LT .028
06	AIR	940413/940420	LT .017
06	AIR	940420/940427	LT .015
06	AIR	940427/940504	LT .018

CLEVELAND ELECTRIC ILLUMINATING CO. - PHPP.
REMP TRACKING SYSTEM

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

AIR IODINE

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	I-131
06	AIR	940504/940511	LT .017
06	AIR	940511/940518	LT .015
06	AIR	940518/940525	LT .018
06	AIR	940525/940601	LT .023
06	AIR	940601/940608	LT .010
06	AIR	940608/940615	LT .011
06	AIR	940615/940622	LT .014
06	AIR	940622/940629	LT .014
06	AIR	940629/940706	LT .008
06	AIR	940706/940713	LT .013
06	AIR	940713/940720	LT .015
06	AIR	940720/940727	LT .012
06	AIR	940727/940803	LT .020
06	AIR	940803/940810	LT .013
06	AIR	940810/940817	LT .008
06	AIR	940817/940824	LT .012
06	AIR	940824/940831	LT .019
06	AIR	940831/940907	LT .018
06	AIR	940907/940914	LT .017
06	AIR	940914/940921	LT .013
06	AIR	940921/940928	LT .016
06	AIR	940928/941005	LT .012
06	AIR	941005/941012	LT .016
06	AIR	941012/941019	LT .006
06	AIR	941019/941026	LT .015
06	AIR	941026/941102	LT .011
06	AIR	941102/941109	LT .012
06	AIR	941109/941116	LT .023
06	AIR	941116/941123	LT .020
06	AIR	941123/941130	LT .010
06	AIR	941130/941207	LT .006
06	AIR	941207/941214	LT .010
06	AIR	941214/941221	LT .023
06	AIR	941221/941228	LT .025
07	AIR	931229/940105	LT .019
07	AIR	940105/940112	LT .017
07	AIR	940112/940119	LT .019
07	AIR	940119/940126	LT .031
07	AIR	940126/940202	LT .026
07	AIR	940202/940209	LT .033
07	AIR	940209/940216	LT .025
07	AIR	940216/940223	LT .018
07	AIR	940223/940302	LT .027
07	AIR	940302/940309	LT .029
07	AIR	940309/940316	LT .014

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

AIR IODINE

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	I-131
07	AIR	940316/940323	LT .016
07	AIR	940323/940330	LT .021
07	AIR	940330/940406	LT .021
07	AIR	940406/940413	LT .025
07	AIR	940413/940420	LT .016
07	AIR	940420/940427	LT .014
07	AIR	940427/940504	LT .018
07	AIR	940504/940511	LT .017
07	AIR	940511/940518	LT .014
07	AIR	940518/940525	LT .017
07	AIR	940525/940601	LT .022
07	AIR	940601/940608	LT .010
07	AIR	940608/940615	LT .011
07	AIR	940615/940622	LT .014
07	AIR	940622/940629	LT .013
07	AIR	940629/940706	LT .008
07	AIR	940706/940713	LT .014
07	AIR	940713/940720	LT .016
07	AIR	940720/940727	LT .012
07	AIR	940727/940803	LT .021
07	AIR	940803/940810	LT .012
07	AIR	940810/940817	LT .007
07	AIR	940817/940824	LT .012
07	AIR	940824/940831	LT .018
07	AIR	940831/940907	LT .017
07	AIR	940907/940914	LT .016
07	AIR	940914/940921	LT .012
07	AIR	940921/940928	LT .015
07	AIR	940928/941005	LT .012
07	AIR	941005/941012	LT .015
07	AIR	941012/941019	LT .006
07	AIR	941019/941026	LT .014
07	AIR	941026/941102	LT .010
07	AIR	941102/941109	LT .011
07	AIR	941109/941116	LT .021
07	AIR	941116/941123	LT .018
07	AIR	941123/941130	LT .009
07	AIR	941130/941207	LT .006
07	AIR	941207/941214	LT .009
07	AIR	941214/941221	LT .021
07	AIR	941221/941228	LT .022
35	AIR	931229/940105	LT .017
35	AIR	940105/940112	LT .016
35	AIR	940112/940119	LT .016
35	AIR	940119/940126	LT .013

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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

AIR IODINE

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	X-131
35	AIR	940126/940202	LT .016
35	AIR	940202/940209	LT .032
35	AIR	940209/940216	LT .028
35	AIR	940216/940223	LT .022
35	AIR	940223/940302	LT .016
35	AIR	940302/940309	LT .031
35	AIR	940309/940316	LT .021
35	AIR	940316/940323	LT .027
35	AIR	940323/940330	LT .017
35	AIR	940330/940406	LT .021
35	AIR	940406/940413	LT .019
35	AIR	940413/940420	LT .018
35	AIR	940420/940427	LT .023
35	AIR	940427/940504	LT .020
35	AIR	940504/940511	LT .012
35	AIR	940511/940518	LT .009
35	AIR	940518/940525	LT .016
35	AIR	940525/940601	LT .009
35	AIR	940601/940608	LT .014
35	AIR	940608/940615	LT .007
35	AIR	940615/940622	LT .010
35	AIR	940622/940629	LT .015
35	AIR	940629/940706	LT .006
35	AIR	940706/940713	LT .016
35	AIR	940713/940720	LT .013
35	AIR	940720/940727	LT .014
35	AIR	940727/940803	LT .024
35	AIR	940803/940810	LT .014
35	AIR	940810/940817	LT .021
35	AIR	940817/940824	LT .012
35	AIR	940824/940831	LT .014
35	AIR	940831/940907	LT .009
35	AIR	940907/940914	LT .013
35	AIR	940914/940921	LT .012
35	AIR	940921/940928	LT .010
35	AIR	940928/941005	LT .009
35	AIR	941005/941012	LT .015
35	AIR	941012/941019	LT .009
35	AIR	941019/941026	LT .017
35	AIR	941026/941102	LT .008
35	AIR	941102/941109	LT .012
35	AIR	941109/941116	LT .014
35	AIR	941116/941123	LT .015
35	AIR	941123/941130	LT .016
35	AIR	941130/941207	LT .008
35	AIR	941207/941214	LT .015

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

AIR IODINE

STATION LOCATION	SAMPLE TYPE	COLLECTION I-131	
		DATE	
35	AIR	941214/941221	LT .008
35	AIR	941221/941228	LT .018

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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	931229/940330	.066+/- .022	LT .001	LT .002	LT .002	LT .001
01	AIR	940330/940629	.091+/- .014	LT .001	LT .001	LT .001	LT .001
01	AIR	940629/940928	.063+/- .019	LT .001	LT .001	LT .001	LT .001
01	AIR	940928/941228	.070+/- .012	LT .001	LT .001	LT .001	LT .001
03	AIR	931229/940330	.074+/- .016	LT .001	LT .001	LT .001	LT .001
03	AIR	940330/940629	.097+/- .019	LT .001	LT .001	LT .001	LT .001
03	AIR	940629/940928	.074+/- .018	LT .001	LT .001	LT .001	LT .002
03	AIR	940928/941228	.074+/- .016	LT .001	LT .001	LT .001	LT .001
04	AIR	931229/940330	.077+/- .017	LT .001	LT .001	LT .001	LT .001
04	AIR	940330/940629	.092+/- .016	LT .001	LT .001	LT .001	LT .001
04	AIR	940629/940928	.073+/- .022	LT .001	LT .001	LT .002	LT .002
04	AIR	940928/941228	.083+/- .015	LT .001	LT .001	LT .001	LT .001
05	AIR	931229/940330	.078+/- .022	LT .001	LT .001	LT .001	LT .002
05	AIR	940330/940629	.085+/- .016	LT .001	LT .001	LT .001	LT .001
05	AIR	940629/940928	.069+/- .019	LT .001	LT .001	LT .002	LT .002
05	AIR	940928/941228	.075+/- .017	LT .001	LT .001	LT .001	LT .001
06	AIR	931229/940330	.072+/- .015	LT .001	LT .001	LT .001	LT .001
06	AIR	940330/940629	.081+/- .017	LT .001	LT .001	LT .001	LT .001
06	AIR	940629/940928	.064+/- .022	LT .001	LT .001	LT .001	LT .001
06	AIR	940928/941228	.070+/- .021	LT .001	LT .001	LT .001	LT .001
07	AIR	931229/940330	.067+/- .017	LT .001	LT .001	LT .001	LT .001
07	AIR	940330/940629	.080+/- .018	LT .001	LT .001	LT .001	LT .001
07	AIR	940629/940928	.051+/- .020	LT .001	LT .001	LT .001	LT .002
07	AIR	940928/941228	.080+/- .014	LT .001	LT .001	LT .001	LT .001
35	AIR	931229/940330	.068+/- .017	LT .001	LT .001	LT .002	LT .001
35	AIR	940330/940629	.058+/- .012	LT .001	LT .001	LT .001	LT .001
35	AIR	940629/940928	.063+/- .019	LT .001	LT .001	LT .001	LT .002
35	AIR	940928/941228	.067+/- .010	LT .001	LT .001	LT .001	LT .001

CLEVELAND ELECTRIC ILLUMINATING CO. - PRPP.
GAMMA SPEC REPORT OF TTM
SAMPLE FREQUENCY IS: MONTHLY
RESULTS IN PCI/L +/- 2 SIGMA

PRECIPITATION TRITIUM

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	H3
03	PR	931229/940126	LT 185.00
03	PR	940126/940223	LT 188.00
03	PR	940223/940330	LT 190.00
03	PR	940330/940427	LT 191.00
03	PR	940427/940525	LT 191.00
03	PR	940525/940629	LT 156.00
03	PR	940629/940727	LT 166.00
03	PR	940727/940824	LT 161.00
03	PR	940824/940928	LT 150.00
03	PR	940928/941026	LT 156.00
03	PR	941026/941130	LT 169.00
03	PR	941130/941228	LT 161.00
04	PR	931229/940126	LT 185.00
04	PR	940126/940223	LT 188.00
04	PR	940223/940330	LT 190.00
04	PR	940330/940427	LT 191.00
04	PR	940427/940525	LT 191.00
04	PR	940525/940629	LT 156.00
04	PR	940629/940727	LT 166.00
04	PR	940727/940824	LT 161.00
04	PR	940824/940928	LT 150.00
04	PR	940928/941026	LT 156.00
04	PR	941026/941130	LT 169.00
04	PR	941130/941228	LT 159.00
06	PR	931229/940126	LT 185.00
06	PR	940126/940223	LT 188.00
06	PR	940223/940330	LT 190.00
06	PR	940330/940427	LT 191.00
06	PR	940427/940525	LT 192.00
06	PR	940525/940629	LT 156.00
06	PR	940629/940727	LT 166.00
06	PR	940727/940824	LT 161.00
06	PR	940824/940928	LT 150.00
06	PR	940928/941026	LT 156.00
06	PR	941026/941130	LT 169.00
06	PR	941130/941228	LT 161.00
07	PR	931229/940126	LT 185.00
07	PR	940126/940223	LT 188.00
07	PR	940223/940330	LT 190.00
07	PR	940330/940427	LT 191.00
07	PR	940427/940525	LT 192.00
07	PR	940525/940629	LT 156.00
07	PR	940629/940727	LT 166.00

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

PRECIPITATION TRITIUM

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	H3
07	PR	940727/940824	LT 161.00
07	PR	940824/940928	LT 150.00
07	PR	940928/941026	LT 156.00
07	PR	941026/941130	LT 169.00
07	PR	941130/941228	LT 161.00
12	PR	931229/940126	LT 185.00
12	PR	940126/940223	LT 188.00
12	PR	940223/940330	LT 190.00
12	PR	940330/940427	LT 191.00
12	PR	940427/940525	LT 191.00
12	PR	940525/940629	LT 156.00
12	PR	940629/940727	LT 166.00
12	PR	940727/940824	LT 161.00
12	PR	940824/940928	LT 150.00
12	PR	940928/941026	LT 156.00
12	PR	941026/941130	LT 169.00
12	PR	941130/941228	LT 161.00
35	PR	931229/940126	LT 185.00
35	PR	940126/940223	LT 188.00
35	PR	940223/940330	LT 190.00
35	PR	940330/940427	LT 191.00
35	PR	940427/940525	LT 192.00
35	PR	940525/940629	LT 156.00
35	PR	940629/940727	LT 166.00
35	PR	940727/940824	LT 161.00
35	PR	940824/940928	LT 150.00
35	PR	940928/941026	LT 153.00
35	PR	941026/941130	LT 169.00
35	PR	941130/941228	LT 161.00

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

PRECIPITATION GROSS BETA

COLLECTION PERIOD		STATION LOCATIONS					
		03	04	06	07	12	35
JAN	931229 TO 940126	6.10+/- .70	6.50+/- .40	9.20+/- .50	1.80+/- .50	5.60+/- .60	6.90+/- .60
FEB	940126 TO 940223	8.50+/- .50	4.90+/- .40	4.90+/- .40	3.50+/- .30	5.30+/- .40	3.40+/- .30
MAR	940223 TO 940330	10.90+/- .50	1.40+/- .30	8.30+/- .50	5.80+/- .40	5.10+/- .60	4.10+/- .40
APR	940330 TO 940427	12.20+/- .60	2.00+/- .30	6.90+/- .40	2.20+/- .30	6.80+/- .40	4.60+/- .40
MAY	940427 TO 940525	5.00+/- .40	3.50+/- .30	1.90+/- .30	4.60+/- .40	6.00+/- .40	6.00+/- .40
JUN	940525 TO 940629	2.10+/- .40	2.20+/- .30	1.40+/- .20	2.20+/- .30	2.10+/- .30	1.50+/- .20
JUL	940629 TO 940727	3.50+/- .40	5.00+/- .50	3.80+/- .50	3.00+/- .40	3.60+/- .40	3.50+/- .60
AUG	940727 TO 940824	4.10+/- .30	3.60+/- .30	2.40+/- .30	2.60+/- .30	3.60+/- .30	3.10+/- .30
SEP	940824 TO 940928	5.60+/- .80	5.70+/- .90	3.20+/- .70	2.60+/- .60	6.70+/- .60	4.40+/- .80
OCT	940928 TO 941026	4.80+/- .60	3.20+/- .50	3.50+/- .50	3.80+/- .50	3.30+/- .50	5.00+/- .60
NOV	941026 TO 941130	16.30+/- .90	5.00+/- .40	8.00+/- .70	7.80+/- .70	6.60+/- .60	9.90+/- .70
DEC	941130 TO 941228	4.60+/- .60	2.80+/- .50	4.00+/- .50	1.60+/- .40	4.60+/- .50	2.70+/- .50

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

PRECIPITATION

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	931229/940126	LT 19.60 LT 8.90 LT 11.50	LT 2.00 LT 6.10	LT 4.50 LT 2.20	LT 2.70 LT 4.90	LT 4.80 LT 7.20
03	PR	940126/940223	LT 23.90 LT 5.00 LT 7.10	LT 1.80 LT 2.60	LT 2.20 LT 3.90	LT 5.00 LT 2.70	LT 3.80 LT 5.60
03	PR	940223/940330	LT 20.30 LT 5.00 LT 2.30	LT 6.40 LT 3.20	LT 1.60 LT 6.00	LT 3.30 LT 2.20	LT 3.80 LT 7.10
03	PR	940330/940427	LT 18.50 LT 9.20 LT 10.70	LT 4.60 LT 5.50	LT 8.00 LT 7.80	LT 6.80 LT 5.10	LT 6.60 LT 17.20
03	PR	940427/940525	LT 22.30 LT 4.00 LT 5.10	LT 2.30 LT 2.70	LT 2.90 LT 2.40	LT 2.50 LT 3.60	LT 4.50 LT 6.60
03	PR	940525/940629	LT 27.90 LT 3.20 LT 5.60	LT 4.50 LT 3.40	LT 4.00 LT 4.30	LT 3.10 LT 2.90	LT 4.40 LT 3.30
03	PR	940629/940727	LT 36.60 LT 12.70 LT 14.10	LT 5.20 LT 7.30	LT 5.20 LT 3.20	LT 7.10 LT 8.00	LT 5.90 LT 10.20
03	PR	940727/940824	LT 16.50 LT 2.40 LT 5.60	LT 4.00 LT 2.20	LT 1.60 LT 3.90	LT 1.80 LT 2.30	LT 3.80 LT 8.00
03	PR	940824/940928	LT 8.40 LT 6.20 LT 3.20	LT 2.40 LT 3.10	LT 2.30 LT 4.30	LT 2.70 LT 3.10	LT 3.80 LT 1.90
03	PR	940928/941026	LT 26.90 LT 2.10 LT 8.60	LT 4.10 LT 3.30	LT 3.50 LT 3.10	LT 2.20 LT 2.70	LT 3.70 LT 3.70
03	PR	941026/941130	LT 21.60 LT 3.00 LT 6.40	LT 4.50 LT 1.40	LT 3.20 LT 2.60	LT 3.50 LT 4.50	LT 2.80 LT 5.10
03	PR	941130/941228	LT 24.60 LT 5.30 LT 6.70	LT 4.50 LT 3.80	LT 5.40 LT 4.90	LT 6.80 LT 3.10	LT 2.70 LT 6.90
04	PR	931229/940126	LT 15.30 LT 11.90 LT 6.20	LT 3.60 LT 3.70	LT 2.30 LT 2.70	LT 2.90 LT 2.70	LT 2.90 LT 4.20
04	PR	940126/940223	LT 13.50 LT 3.00 LT 4.10	LT 1.40 LT 3.10	LT 2.80 LT 2.80	LT 3.00 LT 2.50	LT 3.00 LT 2.20
04	PR	940223/940330	LT 16.90 LT 15.80 LT 4.00	LT 5.80 LT 1.70	LT 3.20 LT 3.10	LT 3.70 LT 3.00	LT 4.00 LT 7.60

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

PRECIPITATION

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
04	PR	940330/940427	LT 25.60 LT 10.70 LT 8.80	LT 4.70 LT 6.10	LT 3.80 LT 2.40	LT 5.40 LT 2.80	LT 5.30 LT 10.10
04	PR	940427/940525	LT 18.30 LT 9.10 LT 4.50	LT 3.50 LT 4.30	LT 6.00 LT 4.20	LT 5.70 LT 4.40	LT 6.10 LT 4.80
04	PR	940525/940629	LT 15.30 LT 2.90 LT 3.20	LT 3.20 LT 4.50	LT 2.20 LT 3.60	LT 3.20 LT 3.40	LT 4.30 LT 3.60
04	PR	940629/940727	LT 14.70 LT 2.90 LT 2.40	LT 2.20 LT 2.20	LT 3.60 LT 1.50	LT 3.20 LT 2.70	LT 1.90 LT 2.50
04	PR	940727/940824	LT 23.60 LT 3.70 LT 4.70	LT 1.20 LT 2.80	LT 4.20 LT 2.60	LT 1.90 LT 3.20	LT 3.10 LT 5.10
04	PR	940824/940926	LT 18.90 LT 8.40 LT 18.50	LT 2.30 LT 2.80	LT 6.00 LT 4.40	LT 4.10 LT 7.40	LT 2.60 LT 8.40
04	PR	940928/941026	LT 29.10 LT 2.60 LT 14.40	LT 2.70 LT 7.00	LT 3.30 LT 5.90	LT 3.60 LT 5.70	LT 4.70 LT 13.50
04	PR	941026/941130	LT 15.60 LT 8.30 LT 8.20	LT 4.80 LT 6.20	LT 4.00 LT 4.00	LT 6.30 LT 4.70	LT 5.70 LT 5.20
04	PR	941130/941228	LT 15.20 LT 8.30 LT 11.80	LT 2.70 LT 6.80	LT 3.10 LT 1.70	LT 4.40 LT 5.50	LT 2.20 LT 7.80
06	PR	931229/940126	LT 19.80 LT 5.40 LT 3.20	LT 1.50 LT 5.00	LT 4.00 LT 4.00	LT 2.30 LT 3.30	LT 5.00 LT 2.60
06	PR	940126/940223	LT 21.30 LT 3.50 LT 6.80	LT 1.60 LT 1.40	LT 2.80 LT 2.30	LT 4.10 LT 4.00	LT 4.40 LT 5.10
06	PR	940223/940330	LT 13.90 LT 2.90 LT 6.60	LT 5.10 LT 1.90	LT 2.40 LT 2.90	LT 4.50 LT 2.90	LT 2.50 LT 4.80
06	PR	940330/940427	LT 23.90 LT 3.40 LT 3.30	LT 3.60 LT 4.10	LT 3.00 LT 2.60	LT 2.60 LT 4.10	LT 4.30 LT 4.50
06	PR	940427/940525	LT 27.10 LT 9.40 LT 4.90	LT 2.90 LT 4.70	LT 6.30 LT 2.70	LT 6.10 LT 6.50	LT 6.90 LT 4.10
06	PR	940525/940629	LT 11.80 LT 7.40 LT 3.70	LT 2.70 LT 2.20	LT 4.50 LT 4.90	LT 3.20 LT 6.80	LT 5.80 LT 9.30

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

PRECIPITATION

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	BA-140 FE-59 ER-95	CO-58 LA-140	CO-60 MN-54	CS-134 NH-95	CS-137 IN-65
06	PR	940629/940727	LT 32.30 LT 5.70 LT 3.50	LT 4.70 LT 3.80	LT 3.40 LT 3.90	LT 2.10 LT 3.40	LT 2.30 LT 8.60
06	PR	940727/940824	LT 12.90 LT 5.90 LT 4.30	LT 2.60 LT 1.50	LT 3.70 LT 2.10	LT 4.00 LT 2.90	LT 3.70 LT 4.50
06	PR	940824/940928	LT 25.70 LT 6.70 LT 18.90	LT 4.80 LT 5.20	LT 2.00 LT 3.40	LT 6.00 LT 7.40	LT 6.40 LT 11.70
06	PR	940928/941026	LT 16.80 LT 4.50 LT 3.20	LT 2.90 LT 4.00	LT 2.50 LT 2.90	LT 2.50 LT 2.70	LT 3.40 LT 4.30
06	PR	941026/941130	LT 21.40 LT 2.80 LT 8.70	LT 2.30 LT 2.80	LT 3.00 LT 2.00	LT 1.90 LT 3.40	LT 4.20 LT 3.20
06	PR	941130/941228	LT 17.00 LT 5.20 LT 9.30	LT 1.60 LT 1.60	LT 2.30 LT 3.30	LT 2.30 LT 3.40	LT 3.00 LT 2.70
07	PR	931229/940126	LT 22.90 LT 3.90 LT 12.80	LT 3.00 LT 4.60	LT 3.70 LT 3.90	LT 6.70 LT 3.00	LT 4.90 LT 6.00
07	PR	940126/940223	LT 8.60 LT 2.50 LT 5.10	LT 2.40 LT 3.80	LT 2.80 LT 2.60	LT 2.40 LT 2.30	LT 1.50 LT 4.40
07	PR	940223/940330	LT 28.50 LT 5.00 LT 9.50	LT 5.00 LT 3.20	LT 5.50 LT 3.00	LT 5.00 LT 3.80	LT 2.90 LT 5.20
07	PR	940330/940427	LT 16.20 LT 2.30 LT 6.70	LT 2.40 LT 4.30	LT 1.50 LT 1.50	LT 3.20 LT 3.50	LT 4.20 LT 4.40
07	PR	940427/940525	LT 18.10 LT 7.60 LT 5.70	LT 2.60 LT 2.80	LT 3.60 LT 2.40	LT 4.30 LT 4.70	LT 5.60 LT 9.00
07	PR	940525/940629	LT 21.30 LT 6.20 LT 5.30	LT 2.00 LT 2.10	LT 1.40 LT 2.80	LT 3.10 LT 1.60	LT 3.70 LT 3.10
07	PR	940629/940727	LT 26.70 LT 9.50 LT 3.90	LT 4.20 LT 3.00	LT 1.10 LT 1.70	LT 4.80 LT 3.80	LT 4.50 LT 2.50
07	PR	940727/940824	LT 19.70 LT 7.80 LT 3.80	LT 2.20 LT 2.20	LT 5.80 LT 4.40	LT 2.60 LT 4.40	LT 6.00 LT 5.40
07	PR	940824/940928	LT 22.00 LT 4.10 LT 6.30	LT 3.80 LT 2.50	LT 3.60 LT 1.80	LT 4.70 LT 4.60	LT 2.70 LT 6.20

ELECTRIC ILLUMINATING CO. - PNPF.
 GAMMA SPEC REPORT OF PRG
 SAMPLE FREQUENCY IS: MONTHLY
 RESULTS IN PCI/L +/- 2 SIGMA

PRECIPITATION

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
07	PR	940928/941026	LT 25.10 LT 6.70 LT 8.00	LT 3.70 LT 2.70	LT 2.00 LT 3.10	LT 2.50 LT 4.10	LT 4.40 LT 8.00
07	PR	941026/941130	LT 17.30 LT 4.40 LT 10.50	LT 4.60 LT 3.70	LT 2.40 LT 3.30	LT 5.20 LT 2.70	LT 3.00 LT 7.60
07	PR	941130/941228	LT 12.70 LT 4.00 LT 8.00	LT 3.00 LT 2.80	LT 2.00 LT 2.80	LT 4.70 LT 2.50	LT 5.30 LT 6.10
12	PR	931229/940126	LT 21.80 LT 6.70 LT 7.90	LT 5.00 LT 2.20	LT 4.10 LT 3.60	LT 4.50 LT 3.20	LT 5.40 LT 2.80
12	PR	940126/940223	LT 27.80 LT 5.40 LT 5.80	LT 1.60 LT 2.10	LT 2.00 LT 3.00	LT 4.10 LT 3.90	LT 5.90 LT 5.30
12	PR	940223/940330	LT 5.50 LT 3.10 LT 3.40	LT 2.00 LT 1.90	LT 1.70 LT 1.60	LT 1.30 LT 2.10	LT 1.80 LT 2.80
12	PR	940330/940427	LT 13.80 LT 10.40 LT 13.20	LT 2.80 LT 3.50	LT 1.90 LT 5.90	LT 6.70 LT 8.40	LT 4.20 LT 11.60
12	PR	940427/940525	LT 12.30 LT 3.10 LT 4.50	LT 2.20 LT 2.20	LT 1.90 LT 2.00	LT 1.50 LT 2.00	LT 2.90 LT 3.60
12	PR	940525/940629	LT 20.00 LT 6.90 LT 4.90	LT 2.70 LT 2.30	LT 3.80 LT 1.90	LT 2.10 LT 5.10	LT 4.10 LT 2.20
12	PR	940629/940727	LT 33.60 LT 11.50 LT 3.80	LT 5.00 LT 3.80	LT 4.20 LT 5.10	LT 4.10 LT 3.80	LT 4.40 LT 5.50
12	PR	940727/940824	LT 19.80 LT 5.00 LT 16.80	LT 5.90 LT 3.30	LT 2.00 LT 6.90	LT 7.60 LT 7.80	LT 4.70 LT 13.80
12	PR	940824/940928	LT 43.10 LT 3.80 LT 12.20	LT 4.00 LT 8.90	LT 4.60 LT 4.50	LT 6.80 LT 6.00	LT 3.70 LT 7.20
12	PR	940928/941026	LT 13.90 LT 8.20 LT 5.50	LT 1.70 LT 2.40	LT 2.40 LT 1.50	LT 4.20 LT 2.20	LT 2.80 LT 4.10
12	PR	941026/941130	LT 23.40 LT 9.10 LT 5.30	LT 5.40 LT 3.30	LT 5.40 LT 4.00	LT 3.70 LT 4.80	LT 4.10 LT 6.50
12	PR	941130/941228	LT 15.90 LT 8.60 LT 7.10	LT 4.30 LT 5.50	LT 5.10 LT 4.80	LT 2.10 LT 7.10	LT 2.90 LT 6.00

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

PRECIPITATION

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	931229/940126	LT 21.70 LT 8.70 LT 8.10	LT 2.10 LT 2.60	LT 3.30 LT 2.90	LT 4.10 LT 4.40	LT 3.00 LT 3.10
35	PR	940126/940223	LT 11.90 LT 6.00 LT 7.10	LT 2.70 LT 3.80	LT 3.30 LT 2.30	LT 4.20 LT 3.50	LT 3.20 LT 3.10
35	PR	940223/940330	LT 20.30 LT 6.40 LT 7.10	LT 3.60 LT 2.60	LT 2.80 LT 4.30	LT 5.60 LT 3.00	LT 4.80 LT 7.80
35	PR	940330/940427	LT 12.80 LT 4.30 LT 9.30	LT 3.40 LT 2.70	LT 3.60 LT 4.70	LT 5.90 LT 2.90	LT 5.30 LT 3.20
35	PR	940427/940525	LT 22.50 LT 8.90 LT 5.60	LT 4.20 LT 3.70	LT 4.60 LT 3.70	LT 3.60 LT 4.70	LT 3.70 LT 5.60
35	PR	940525/940629	LT 27.50 LT 5.30 LT 7.00	LT 2.30 LT 3.30	LT 2.70 LT 2.20	LT 2.60 LT 5.20	LT 3.10 LT 3.20
35	PR	940629/940727	LT 25.80 LT 10.50 LT 9.30	LT 5.40 LT 5.30	LT 2.10 LT 4.80	LT 2.80 LT 1.70	LT 6.40 LT 6.40
35	PR	940727/940824	LT 27.80 LT 6.20 LT 8.50	LT 2.80 LT 3.40	LT 3.40 LT 3.30	LT 2.70 LT 3.40	LT 4.90 LT 6.60
35	PR	940824/940928	LT 12.20 LT 5.40 LT 4.90	LT 3.70 LT 2.40	LT 1.40 LT 2.20	LT 2.00 LT 4.40	LT 2.00 LT 2.70
35	PR	940928/941026	LT 32.70 LT 8.30 LT 8.10	LT 4.10 LT 5.00	LT 2.00 LT 4.40	LT 4.60 LT 5.60	LT 1.80 LT 3.00
35	PR	941026/941130	LT 38.80 LT 9.10 LT 13.60	LT 6.20 LT 4.00	LT 3.80 LT 6.60	LT 5.00 LT 6.70	LT 3.80 LT 6.00
35	PR	941130/941228	LT 26.20 LT 4.80 LT 13.70	LT 3.60 LT 4.90	LT 4.40 LT 3.10	LT 3.90 LT 4.30	LT 3.40 LT 7.20

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

MILK IODINE

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	I-131
51	MILK	940107/940110	LT .50
51	MILK	940211/940214	LT .50
51	MILK	940311/940314	LT .40
51	MILK	940415/940418	LT .40
51	MILK	940506/940509	LT .20
51	MILK	940520/940523	LT .20
51	MILK	940603/940606	LT .20
51	MILK	940617/940620	LT .30
51	MILK	940708/940711	LT .30
51	MILK	940722/940725	LT .20
51	MILK	940805/940808	LT .40
51	MILK	940819/940822	LT .40
51	MILK	940902/940906	LT .40
51	MILK	940916/940919	LT .40
51	MILK	941006/941010	LT .20
51	MILK	941021/941024	LT .20
51	MILK	941104/941107	LT .20
51	MILK	941202/941205	LT .40
61	MILK	940415/940418	LT .30
61	MILK	940506/940509	LT .20
61	MILK	940520/940523	LT .20
61	MILK	940603/940606	LT .20
61	MILK	940617/940620	LT .40
61	MILK	940708/940711	LT .30
61	MILK	940722/940725	LT .20
61	MILK	940805/940808	LT .40
61	MILK	940819/940822	LT .40
61	MILK	940902/940906	LT .30
61	MILK	940916/940919	LT .30
61	MILK	941006/941010	LT .10
61	MILK	941024/941027	LT .30
61	MILK	941104/941107	LT .30
71	MILK	940107/940110	LT .40
71	MILK	940211/940214	LT .40
71	MILK	940311/940314	LT .40
71	MILK	940415/940418	LT .30
71	MILK	940506/940509	LT .20
71	MILK	940520/940523	LT .40
71	MILK	940603/940606	LT .20
71	MILK	940617/940620	LT .30
71	MILK	940708/940711	LT .30
71	MILK	940722/940725	LT .20
71	MILK	940805/940808	LT .40
71	MILK	940819/940822	LT .40

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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

MILK IODINE

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	I-131
71	MILK	940902/940906	LT .30
71	MILK	940916/940919	LT .40
71	MILK	941006/941010	LT .10
71	MILK	941021/941024	LT .20
71	MILK	941104/941107	LT .30
71	MILK	941202/941205	LT .20

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	940107/940110	LT 13.4	LT 4.9	LT 3.6	1520.0+/-200.0	LT 3.3
51	MILK	940211/940214	LT 9.2	LT 4.4	LT 3.4	1500.0+/-100.0	LT 9.9
51	MILK	940311/940314	LT 20.2	LT 6.9	LT 6.4	1480.0+/-180.0	LT 3.6
51	MILK	940415/940418	LT 9.9	LT 3.9	LT 4.1	1610.0+/-100.0	LT 1.6
51	MILK	940506/940509	LT 16.1	LT 5.1	LT 4.9	1470.0+/-120.0	LT 1.7
51	MILK	940520/940523	LT 12.1	LT 4.7	LT 3.4	1460.0+/-100.0	LT 2.1
51	MILK	940603/940606	LT 22.8	LT 6.2	LT 3.5	1440.0+/-150.0	LT 3.2
51	MILK	940617/940620	LT 15.0	LT 5.9	LT 4.9	1450.0+/-150.0	LT 6.0
51	MILK	940708/940711	LT 27.4	LT 6.3	LT 6.1	1470.0+/-170.0	LT 3.1
51	MILK	940722/940725	LT 13.8	LT 5.9	LT 4.4	1460.0+/-150.0	LT 2.5
51	MILK	940805/940808	LT 23.3	LT 2.7	LT 6.2	1350.0+/-150.0	LT 3.2
51	MILK	940819/940822	LT 7.8	LT 3.8	LT 3.8	1820.0+/-120.0	LT 1.6
51	MILK	940902/940906	LT 26.7	LT 7.5	LT 8.6	1320.0+/-180.0	LT 2.7
51	MILK	940916/940919	LT 40.6	LT 3.5	LT 7.4	1400.0+/-170.0	LT 3.5
51	MILK	941006/941010	LT 14.8	LT 3.0	LT 4.7	1410.0+/-120.0	LT 3.1
51	MILK	941021/941024	LT 27.8	LT 5.9	LT 4.6	1360.0+/-140.0	LT 8.2
51	MILK	941104/941107	LT 33.9	LT 6.1	LT 3.5	1550.0+/-200.0	LT 4.1
51	MILK	941202/941205	LT 12.4	LT 3.3	LT 4.2	1500.0+/-110.0	LT 2.6
61	MILK	940415/940418	LT 15.7	LT 2.9	LT 6.0	1780.0+/-160.0	LT 2.6
61	MILK	940506/940509	LT 19.0	LT 5.6	LT 5.8	1860.0+/-150.0	LT 1.7
61	MILK	940520/940523	LT 6.0	LT 2.3	LT 3.0	1920.0+/-90.0	LT 1.6
61	MILK	940603/940606	LT 33.4	LT 4.7	LT 7.7	1820.0+/-180.0	LT 2.6
61	MILK	940617/940620	LT 29.0	LT 5.0	LT 5.1	1850.0+/-160.0	LT 2.6
61	MILK	940708/940711	LT 15.6	LT 3.4	LT 5.3	1950.0+/-180.0	LT 3.2
61	MILK	940722/940725	LT 11.8	LT 3.4	LT 4.5	1860.0+/-130.0	LT 2.7
61	MILK	940805/940808	LT 34.8	LT 5.3	LT 6.3	1740.0+/-150.0	LT 7.0
61	MILK	940819/940822	LT 17.7	LT 3.7	LT 4.2	1450.0+/-120.0	LT 1.6
61	MILK	940902/940906	LT 18.1	LT 4.9	LT 5.1	1870.0+/-190.0	LT 6.5
61	MILK	940916/940919	LT 28.4	LT 5.6	LT 7.1	1780.0+/-190.0	LT 3.1
61	MILK	941006/941010	LT 15.3	LT 7.3	LT 6.1	1810.0+/-170.0	LT 2.6
61	MILK	941024/941027	LT 9.6	LT 3.0	LT 4.1	1850.0+/-120.0	LT 3.5
61	MILK	941104/941107	LT 25.2	LT 5.3	LT 5.5	1930.0+/-140.0	LT 1.8
71	MILK	940107/940110	LT 10.1	LT 5.6	LT 6.8	1400.0+/-160.0	LT 2.8
71	MILK	940211/940214	LT 19.0	LT 5.5	LT 5.7	1280.0+/-140.0	LT 2.7
71	MILK	940311/940314	LT 13.7	LT 2.5	LT 6.7	1350.0+/-120.0	LT 2.3
71	MILK	940415/940418	LT 18.7	LT 8.9	LT 7.7	1280.0+/-160.0	LT 3.0
71	MILK	940506/940509	LT 18.8	LT 5.4	LT 5.7	1210.0+/-160.0	LT 2.9
71	MILK	940520/940523	LT 23.4	LT 5.2	LT 6.2	1260.0+/-120.0	LT 6.6
71	MILK	940603/940606	LT 24.7	LT 4.8	LT 6.1	1300.0+/-130.0	LT 2.0
71	MILK	940617/940620	LT 14.0	LT 3.7	LT 3.7	1280.0+/-100.0	LT 3.8
71	MILK	940708/940711	LT 11.7	LT 3.7	LT 3.7	1220.0+/-110.0	LT 1.9
71	MILK	940722/940725	LT 25.4	LT 6.1	LT 6.1	1380.0+/-140.0	LT 2.7
71	MILK	940805/940808	LT 31.7	LT 8.0	LT 7.1	1410.0+/-170.0	LT 3.8
71	MILK	940819/940822	LT 16.6	LT 2.4	LT 2.8	1290.0+/-140.0	LT 1.9

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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	940902/940906	LT 29.9	LT 4.3	LT 7.7	1370.0+/-170.0	LT 4.6
71	MILK	940916/940919	LT 17.0	LT 3.9	LT 4.8	1330.0+/-120.0	LT 5.4
71	MILK	941006/941010	LT 15.7	LT 3.7	LT 3.0	1390.0+/-100.0	LT 3.1
71	MILK	941021/941024	LT 24.0	LT 4.4	LT 3.7	1200.0+/-130.0	LT 2.3
71	MILK	941104/941107	LT 36.0	LT 5.0	LT 4.6	1210.0+/-150.0	LT 3.3
71	MILK	941202/941205	LT 18.9	LT 6.6	LT 7.0	1290.0+/-150.0	LT 5.3

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
62	BROCCOLI	940809/940809	LT 73.80 LT 8.20	LT 12.50 3016.0+/-369.0	LT 5.20	LT 11.40	LT 15.10
62	CABBAGE	940809/940809	LT 51.50 LT 15.50	LT 11.80 2122.0+/-239.0	LT 9.40	LT 10.40	LT 9.30
62	BROCCOLI	940913/940913	LT 88.00 LT 15.00	LT 7.90 3644.0+/-296.0	LT 5.10	LT 13.70	LT 10.50
62	BEET GREENS	940913/940913	LT 171.00 LT 32.50	LT 15.90 7604.0+/-540.0	LT 14.40	LT 16.20	LT 13.60
62	CABBAGE	940913/940913	LT 40.00 LT 14.60	LT 3.20 1828.0+/-171.0	LT 6.10	LT 8.30	LT 6.60
62	BEET GREENS	941014/941014	LT 192.00 LT 27.50	LT 19.70 6356.0+/-557.0	LT 25.20	LT 16.00	LT 12.20
62	CABBAGE	941014/941014	LT 88.00 LT 20.40	LT 12.80 2032.0+/-263.0	LT 8.30	LT 12.60	LT 10.50
70	CABBAGE	940728/940728	LT 73.50 LT 15.70	LT 8.10 2232.0+/-227.0	LT 6.30	LT 4.40	LT 10.00
70	BEET GREENS	940728/940728	200.0+/-107.0 LT 11.30	LT 6.40 6172.0+/-423.0	LT 10.60	LT 13.10	LT 16.20
70	BROCCOLI	940809/940809	LT 158.00 LT 20.90	LT 16.10 3762.0+/-409.0	LT 12.00	LT 8.50	LT 17.90
70	CABBAGE	940809/940809	LT 127.00 LT 24.80	LT 8.10 2132.0+/-325.0	LT 14.20	LT 17.50	LT 18.60
70	BEET GREENS	940809/940809	224.0+/-118.0 LT 19.60	LT 12.30 4543.0+/-425.0	LT 5.80	LT 12.40	LT 15.30
70	CABBAGE	940913/940913	LT 127.00 LT 21.20	LT 4.80 1984.0+/-284.0	LT 8.80	LT 7.70	LT 12.20
70	RED CABBAGE	940913/940913	LT 115.00 LT 10.60	LT 6.20 2839.0+/-321.0	LT 10.40	LT 10.60	LT 5.50
70	CAULIFLOWER	940913/940913	LT 81.00 LT 13.70	LT 5.50 3054.0+/-309.0	LT 8.10	LT 10.50	LT 7.80
77	DILL	940728/940728	LT 115.00 LT 17.70	LT 7.90 6089.0+/-375.0	LT 13.60	LT 9.40	LT 13.30
77	TURNIP GREENS	940728/940728	LT 84.10 LT 13.60	LT 3.10 4174.0+/-247.0	LT 4.80	LT 8.30	LT 8.80
77	LETTUCE	940728/940728	248.0+/-102.0 LT 13.70	LT 8.70 3916.0+/-293.0	LT 11.00	LT 10.80	LT 11.10
77	BEET GREENS	940809/940809	LT 133.00 LT 16.80	LT 5.00 4819.0+/-403.0	LT 9.60	LT 12.20	LT 11.50
77	TURNIP GREENS	940809/940809	LT 127.00 LT 14.70	LT 14.60 6128.0+/-474.0	LT 11.20	LT 14.60	LT 15.60
77	DILL	940809/940809	177.0+/-65.0 LT 6.00	LT 5.10 3789.0+/-250.0	LT 9.30	LT 7.60	LT 8.80
77	TURNIP GREENS	940913/940913	LT 119.00 LT 21.10	LT 13.70 4541.0+/-393.0	LT 16.50	LT 6.50	LT 13.50

CLEVELAND ELECTRIC ILLUMINATING CO. - FNPP.
REMP TRACKING SYSTEM

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
77	BEET GREENS	940913/940913	LT 176.00	LT 19.70	LT 11.50	LT 21.90	LT 22.90
			LT 14.40	7741.0+/-579.0			
77	DILL	940913/940913	334.0+/-144.0	LT 12.70	LT 12.80	LT 13.10	LT 7.00
			LT 26.10	4237.0+/-377.0			
77	TURNIP GREENS	941014/941014	583.0+/-101.0	LT 5.30	LT 6.70	LT 5.30	LT 7.70
			LT 8.00	4750.0+/-249.0			
77	BEET GREENS	941014/941014	471.0+/-156.0	LT 10.50	LT 12.70	LT 14.90	LT 16.30
			LT 22.20	7820.0+/-420.0			
77	DILL	941014/941014	602.0+/-190.0	LT 10.30	LT 11.20	LT 10.30	LT 9.20
			LT 23.40	4564.0+/-378.0			

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	940516/940516	617.0+/-86.0 LT 6.00	LT 6.50 4267.0+/-189.0	LT 10.20	LT 7.50	LT 7.50
06	GRASS	940621/940621	1236.0+/-120.0 LT 12.20	LT 9.10 5080.0+/-264.0	LT 9.70	LT 7.10	LT 8.50
06	GRASS	940711/940711	4446.0+/-217.0 LT 18.80	LT 9.50 4511.0+/-264.0	LT 14.00	LT 12.40	LT 11.20
06	GRASS	940816/940816	9074.0+/-555.0 LT 24.40	LT 11.40 7192.0+/-674.0	LT 27.20	LT 12.60	LT 27.10
06	GRASS	940920/940920	1622.0+/-288.0 LT 31.30	LT 16.10 5972.0+/-562.0	LT 15.40	LT 17.70	LT 18.50
06	GRASS	941018/941018	4838.0+/-425.0 LT 22.30	LT 16.60 6466.0+/-580.0	LT 17.20	LT 27.20	LT 22.00
07	GRASS	940516/940516	3580.0+/-172.0 LT 11.80	LT 4.70 4268.0+/-246.0	LT 13.60	LT 6.30	LT 12.20
07	GRASS	940621/940621	2045.0+/-168.0 LT 15.10	LT 9.30 5814.0+/-312.0	LT 15.50	LT 11.30	LT 14.00
07	GRASS	940711/940711	3396.0+/-141.0 LT 13.70	LT 6.60 5153.0+/-232.0	LT 11.80	LT 10.10	LT 9.10
07	GRASS	940816/940816	4134.0+/-340.0 LT 31.20	LT 19.20 6786.0+/-534.0	LT 18.20	LT 11.60	LT 16.90
07	GRASS	940920/940920	1015.0+/-227.0 LT 34.50	LT 13.50 5387.0+/-532.0	LT 7.20	LT 17.80	LT 9.30
07	GRASS	941018/941018	4192.0+/-380.0 LT 40.20	LT 20.60 4637.0+/-521.0	LT 14.80	LT 15.80	LT 18.90
35	GRASS	940516/940516	5167.0+/-149.0 LT 13.30	LT 7.00 3674.0+/-153.0	LT 8.80	LT 6.50	LT 7.80
35	GRASS	940621/940621	1553.0+/-211.0 LT 25.10	LT 16.10 6317.0+/-418.0	LT 15.10	LT 13.50	LT 19.50
35	GRASS	940711/940711	3163.0+/-234.0 LT 23.10	LT 12.90 5839.0+/-354.0	LT 14.40	LT 7.30	LT 14.50
35	GRASS	940816/940816	2901.0+/-276.0 LT 36.80	LT 20.80 5909.0+/-478.0	LT 10.40	LT 19.10	LT 15.40
35	GRASS	940920/940920	1495.0+/-487.0 LT 40.70	LT 29.50 5043.0+/-787.0	LT 40.90	LT 36.10	LT 29.90
35	GRASS	941018/941018	6674.0+/-471.0 LT 26.80	LT 16.70 5820.0+/-593.0	LT 16.50	LT 15.60	LT 32.60

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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	940414/940414	LT 28.1 1634.0+/-391.0	LT 24.3	LT 55.5	264.0+/-32.0	11352.0+/-621.0
03	SOIL	940914/940914	LT 40.5 1187.0+/-357.0	LT 24.0	LT 50.1	263.0+/-37.0	10614.0+/-564.0
04	SOIL	940414/940414	LT 24.8 1635.0+/-399.0	LT 26.5	LT 59.9	79.0+/-25.0	13851.0+/-700.0
04	SOIL	940914/940914	LT 22.1 1358.0+/-245.0	LT 19.6	LT 43.4	66.0+/-21.0	13366.0+/-536.0
06	SOIL	940414/940414	LT 17.1 2269.0+/-470.0	LT 18.1	LT 53.0	218.0+/-32.0	15048.0+/-782.0
06	SOIL	940914/940914	LT 24.0 2140.0+/-262.0	LT 17.7	LT 31.8	215.0+/-30.0	15324.0+/-428.0
07	SOIL	940414/940414	LT 33.7 1358.0+/-428.0	LT 33.5	LT 38.4	422.0+/-47.0	12529.0+/-769.0
07	SOIL	940914/940914	LT 19.3 1459.0+/-260.0	LT 17.1	LT 26.7	413.0+/-29.0	11922.0+/-458.0
09	SOIL	940414/940414	LT 30.7 1346.0+/-370.0	LT 17.6	LT 55.5	377.0+/-40.0	11664.0+/-717.0
09	SOIL	940914/940914	LT 16.9 1311.0+/-338.0	LT 20.8	LT 24.6	407.0+/-36.0	11857.0+/-608.0
12	SOIL	940414/940414	LT 24.2 1638.0+/-486.0	LT 24.7	LT 67.4	628.0+/-124.0	13765.0+/-1510.
12	SOIL	940914/940914	LT 28.7 1394.0+/-353.0	LT 25.6	LT 29.5	461.0+/-36.0	11076.0+/-586.0
35	SOIL	940414/940414	LT 33.2 1381.0+/-361.0	LT 23.3	LT 56.5	225.0+/-30.0	11960.0+/-663.0
35	SOIL	940914/940914	LT 24.8 1157.0+/-293.0	LT 21.5	LT 50.0	199.0+/-29.0	11770.0+/-562.0

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	931230 TO 940127 940127 TO 940127	4.80+/- .70	2.30+/- .60	3.00+/- .60		
FEB	940127 TO 940224 940224 TO 940224	1.90+/- .60	2.50+/- .40	2.70+/- .70		
MAR	940224 TO 940331	2.50+/- .70	2.20+/- .60	2.60+/- .60		
APR	940331 TO 940428 940421 TO 940428	1.90+/- .60	2.30+/- .70	1.80+/- .70	2.80+/- .60	3.00+/- .60
MAY	940428 TO 940526	2.20+/- .60	2.50+/- .60	2.60+/- .60	2.60+/- .60	1.90+/- .60
JUN	940526 TO 940630	2.10+/- .70	1.60+/- .70	1.60+/- .70	2.50+/- .70	2.50+/- .60
JUL	940630 TO 940728	2.00+/- .60	1.70+/- .70	2.00+/- .70	2.50+/- .60	1.60+/- .60
AUG	940728 TO 940825	3.00+/- .50	3.20+/- .60	2.70+/- .60	3.10+/- .60	3.60+/- .60
SEP	940825 TO 940929 940929 TO 940929	3.40+/- .70	1.50+/- .50	1.90+/- .60	2.10+/- .60	3.00+/- .60
OCT	940929 TO 941027 941027 TO 941027	2.20+/- .60	1.30+/- .50	2.50+/- .60	2.30+/- .60	1.80+/- .50
NOV	941027 TO 941128 941128 TO 941128	2.90+/- .60	2.40+/- .30	2.20+/- .30	2.80+/- .30	3.80+/- .40
DEC	941128 TO 941229 941229 TO 941229	2.70+/- .60	2.30+/- .60	2.50+/- .60	3.00+/- .60	2.90+/- .40

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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

WATER

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	940127/940127	LT 24.10 LT 8.80 LT 7.20	LT 2.90 LT 4.50	LT 3.40 LT 4.60	LT 3.20 LT 3.80	LT 4.70 LT 4.10
28	WATER	940127/940224	LT 20.70 LT 3.30 LT 3.30	LT 2.90 LT 1.80	LT 3.40 LT 2.10	LT 4.60 LT 4.10	LT 4.40 LT 4.60
28	WATER	940224/940331	LT 9.40 LT 8.10 LT 6.80	LT 3.00 LT 2.50	LT 2.80 LT 1.80	LT 2.50 LT 4.10	LT 3.50 LT 3.50
28	WATER	940331/940428	LT 37.40 LT 18.10 LT 8.80	LT 8.40 LT 3.80	LT 3.10 LT 3.70	LT 7.90 LT 7.90	LT 8.40 LT 7.80
28	WATER	940428/940526	LT 34.20 LT 6.00 LT 4.00	LT 3.00 LT 6.30	LT 2.00 LT 3.80	LT 3.50 LT 4.70	LT 5.40 LT 5.50
28	WATER	940526/940630	LT 13.20 LT 8.40 LT 7.80	LT 2.50 LT 5.40	LT 1.60 LT 4.60	LT 4.90 LT 6.40	LT 5.70 LT 10.00
28	WATER	940630/940728	LT 21.50 LT 4.70 LT 4.90	LT 2.80 LT 7.00	LT 1.80 LT 2.20	LT 3.20 LT 3.90	LT 2.60 LT 4.90
28	WATER	940728/940825	LT 18.20 LT 3.00 LT 5.90	LT 1.80 LT 2.00	LT 3.80 LT 3.10	LT 2.20 LT 4.20	LT 1.90 LT 4.70
28	WATER	940929/940929	LT 29.10 LT 4.50 LT 10.00	LT 5.70 LT 2.60	LT 1.40 LT 3.40	LT 3.10 LT 5.00	LT 4.10 LT 8.70
28	WATER	941027/941027	LT 20.90 LT 4.20 LT 6.70	LT 7.90 LT 2.80	LT 4.40 LT 4.40	LT 5.40 LT 4.90	LT 3.40 LT 5.60
28	WATER	941128/941128	LT 12.80 LT 4.50 LT 2.70	LT 2.30 LT 3.10	LT 2.20 LT 1.80	LT 1.40 LT 3.10	LT 3.50 LT 2.20
28	WATER	941229/941229	LT 23.20 LT 6.00 LT 8.30	LT 3.80 LT 6.80	LT 1.60 LT 3.80	LT 2.90 LT 3.30	LT 5.60 LT 4.40
34	WATER	931230/940127	LT 17.80 LT 9.20 LT 8.10	LT 2.50 LT 4.20	LT 5.10 LT 3.30	LT 3.00 LT 3.80	LT 2.30 LT 6.60
34	WATER	940127/940224	LT 17.90 LT 7.80 LT 3.10	LT 3.00 LT 3.70	LT 1.60 LT 2.10	LT 2.20 LT 3.10	LT 4.10 LT 3.60
34	WATER	940224/940331	LT 23.50 LT 5.60 LT 4.60	LT 4.20 LT 4.10	LT 1.80 LT 5.00	LT 3.10 LT 3.30	LT 5.80 LT 5.40

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

WATER

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	940331/940428	LT 13.20 LT 4.00 LT 5.80	LT 2.20 LT 1.80	LT 2.70 LT 2.50	LT 2.30 LT 2.10	LT 2.70 LT 2.70
34	WATER	940428/940526	LT 37.50 LT 4.30 LT 4.30	LT 4.70 LT 3.70	LT 6.50 LT 5.50	LT 6.60 LT 7.60	LT 6.20 LT 11.70
34	WATER	940526/940630	LT 19.50 LT 1.60 LT 2.40	LT 1.70 LT 1.80	LT 1.10 LT 2.40	LT 3.30 LT 3.20	LT 3.50 LT 2.90
34	WATER	940630/940728	LT 22.00 LT 4.30 LT 6.40	LT 1.70 LT 4.00	LT 2.60 LT 2.30	LT 3.70 LT 3.90	LT 4.60 LT 5.00
34	WATER	940728/940825	LT 10.70 LT 4.00 LT 5.40	LT 1.80 LT 1.80	LT 3.00 LT 1.20	LT 2.50 LT 2.90	LT 2.80 LT 2.40
34	WATER	940825/940929	LT 11.90 LT 7.30 LT 3.00	LT 1.80 LT 2.20	LT 1.10 LT 1.50	LT 3.10 LT 2.80	LT 1.90 LT 5.10
34	WATER	940929/941027	LT 14.80 LT 1.60 LT 2.60	LT 3.60 LT 2.10	LT 2.50 LT 3.40	LT 1.60 LT 3.40	LT 4.80 LT 4.30
34	WATER	941027/941128	LT 19.90 LT 2.50 LT 5.20	LT 3.90 LT 2.30	LT 1.50 LT 1.90	LT 2.10 LT 6.20	LT 4.20 LT 4.10
34	WATER	941128/941229	LT 21.40 LT 7.30 LT 8.20	LT 1.60 LT 2.40	LT 4.20 LT 3.50	LT 3.90 LT 1.70	LT 4.10 LT 7.80
36	WATER	940127/940127	LT 11.90 LT 3.80 LT 6.60	LT 3.20 LT 3.00	LT 4.00 LT 2.50	LT 3.10 LT 3.90	LT 4.40 LT 4.80
36	WATER	940224/940224	LT 26.90 LT 11.10 LT 7.20	LT 4.30 LT 5.00	LT 3.60 LT 4.40	LT 5.10 LT 5.20	LT 2.70 LT 9.00
36	WATER	940224/940331	LT 14.00 LT 4.80 LT 2.00	LT 1.80 LT 2.00	LT 2.20 LT 1.50	LT 2.60 LT 2.80	LT 2.80 LT 3.10
36	WATER	940331/940428	LT 16.50 LT 6.10 LT 5.10	LT 3.30 LT 5.00	LT 2.70 LT 2.40	LT 4.10 LT 1.70	LT 4.20 LT 4.50
36	WATER	940428/940526	LT 24.60 LT 4.00 LT 5.20	LT 3.60 LT 3.10	LT 4.60 LT 3.80	LT 4.50 LT 1.90	LT 3.00 LT 4.50
36	WATER	940526/940630	LT 16.50 LT 4.20 LT 5.50	LT 3.00 LT 1.90	LT 3.00 LT 3.50	LT 4.00 LT 2.00	LT 4.60 LT 5.50

CLEVELAND ELECTRIC ILLUMINATING CO. - FNPP.
REMP TRACKING SYSTEM

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

WATER

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	940630/940728	LT 24.20 LT 2.70 LT 4.20	LT 4.40 LT 6.40	LT 3.80 LT 4.00	LT 3.80 LT 2.10	LT 2.20 LT 5.30
36	WATER	940728/940825	LT 34.60 LT 9.10 LT 7.90	LT 4.80 LT 3.40	LT 1.90 LT 4.90	LT 2.80 LT 6.00	LT 4.00 LT 8.40
36	WATER	940825/940929	LT 15.60 LT 7.50 LT 4.20	LT 3.80 LT 3.60	LT 3.60 LT 2.80	LT 2.00 LT 5.60	LT 4.50 LT 7.50
36	WATER	940929/941027	LT 23.90 LT 3.10 LT 3.10	LT 6.30 LT 5.30	LT 2.50 LT 2.70	LT 4.70 LT 1.90	LT 4.80 LT 8.40
36	WATER	941027/941128	LT 7.70 LT 6.10 LT 6.50	LT 1.80 LT 2.50	LT 3.40 LT 2.30	LT 2.60 LT 3.90	LT 2.20 LT 1.70
36	WATER	941128/941229	LT 7.80 LT 7.00 LT 6.20	LT 3.80 LT 2.70	LT 5.10 LT 4.70	LT 2.10 LT 5.50	LT 2.90 LT 5.80
59	WATER	940421/940428	LT 25.70 LT 13.30 LT 10.00	LT 6.40 LT 4.60	LT 3.90 LT 7.10	LT 7.60 LT 4.90	LT 3.90 LT 7.30
59	WATER	940428/940526	LT 9.80 LT 4.00 LT 2.70	LT 2.10 LT 1.60	LT 3.00 LT 2.00	LT 2.40 LT 3.10	LT 3.60 LT 4.60
59	WATER	940526/940630	LT 17.20 LT 7.80 LT 4.90	LT 2.90 LT 3.20	LT 4.70 LT 3.60	LT 5.10 LT 5.40	LT 2.50 LT 5.60
59	WATER	940630/940728	LT 40.50 LT 8.00 LT 8.40	LT 3.50 LT 4.90	LT 2.00 LT 4.70	LT 5.00 LT 6.10	LT 2.80 LT 5.70
59	WATER	940728/940825	LT 16.60 LT 5.70 LT 5.90	LT 2.90 LT 2.10	LT 3.50 LT 3.20	LT 2.00 LT 4.20	LT 3.80 LT 6.40
59	WATER	940825/940929	LT 34.30 LT 4.30 LT 10.40	LT 5.10 LT 3.30	LT 3.30 LT 3.30	LT 4.40 LT 2.60	LT 4.00 LT 8.50
59	WATER	940929/941027	LT 25.20 LT 7.20 LT 11.90	LT 4.10 LT 2.60	LT 3.40 LT 3.10	LT 4.80 LT 2.40	LT 3.20 LT 6.70
59	WATER	941027/941128	LT 10.30 LT 4.70 LT 9.80	LT 3.30 LT 2.60	LT 3.20 LT 3.70	LT 2.90 LT 2.60	LT 3.90 LT 5.80
59	WATER	941128/941229	LT 23.50 LT 5.10 LT 5.90	LT 2.10 LT 3.80	LT 2.60 LT 1.40	LT 3.00 LT 1.60	LT 2.80 LT 5.20

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

WATER

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
60	WATER	940421/940428	LT 23.00 LT 6.30 LT 7.00	LT 1.80 LT 4.10	LT 1.30 LT 2.70	LT 3.50 LT 3.80	LT 4.10 LT 4.20
60	WATER	940428/940526	LT 31.40 LT 3.70 LT 4.60	LT 4.10 LT 4.10	LT 2.70 LT 1.90	LT 3.40 LT 4.10	LT 4.00 LT 4.40
60	WATER	940526/940630	LT 17.90 LT 6.70 LT 6.20	LT 3.00 LT 2.80	LT 4.10 LT 3.20	LT 4.30 LT 3.20	LT 4.10 LT 6.90
60	WATER	940630/940728	LT 15.90 LT 4.10 LT 4.20	LT 3.30 LT 2.40	LT 4.10 LT 3.30	LT 3.80 LT 4.10	LT 4.90 LT 4.40
60	WATER	940728/940825	LT 9.70 LT 4.80 LT 6.00	LT 1.50 LT 2.60	LT 4.00 LT 2.50	LT 3.90 LT 2.10	LT 4.20 LT 4.90
60	WATER	940825/940929	LT 21.30 LT 6.70 LT 4.90	LT 2.60 LT 2.30	LT 1.70 LT 1.20	LT 3.80 LT 3.20	LT 1.90 LT 7.00
60	WATER	940929/941027	LT 16.10 LT 6.40 LT 8.30	LT 1.90 LT 2.50	LT 3.50 LT 3.70	LT 1.80 LT 1.80	LT 4.90 LT 2.40
60	WATER	941027/941128	LT 12.10 LT 5.50 LT 4.60	LT 3.40 LT 2.80	LT 2.90 LT 3.90	LT 3.60 LT 4.30	LT 2.10 LT 6.80
60	WATER	941128/941229	LT 22.10 LT 4.30 LT 4.80	LT 2.60 LT 2.90	LT 2.40 LT 2.10	LT 1.70 LT 4.30	LT 3.70 LT 4.30

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

WATER ITRIUM

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	H3
28	WATER	940127/940331	LT 192.00
28	WATER	940331/940630	LT 156.00
28	WATER	940630/940929	LT 149.00
28	WATER	941027/941229	173.00+/-92.00
34	WATER	931230/940331	LT 192.00
34	WATER	940331/940630	255.00+/-88.00
34	WATER	940630/940929	LT 149.00
34	WATER	940929/941229	LT 166.00
36	WATER	940127/940331	LT 192.00
36	WATER	940331/940630	282.00+/-89.00
36	WATER	940630/940929	229.00+/-83.00
36	WATER	940929/941229	LT 159.00
59	WATER	940421/940630	281.00+/-89.00
59	WATER	940630/940929	212.00+/-82.00
59	WATER	940929/941229	204.00+/-88.00
60	WATER	940421/940630	216.00+/-87.00
60	WATER	940630/940929	243.00+/-84.00
60	WATER	940929/941229	207.00+/-93.00

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

SEDIMENT

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	CO-58	CO-60	CS-134	CS-137	K-40
25	SEDIMENT	940523/940523	LT 22.1	LT 12.9	LT 45.3	43.7+/-17.9	18206.0+/-502.0
25	SEDIMENT	941006/941006	LT 25.9	LT 20.5	LT 26.4	98.7+/-19.5	14087.0+/-510.0
26	SEDIMENT	940523/940523	LT 17.3	LT 22.7	LT 47.6	261.1+/-29.7	18396.0+/-550.0
26	SEDIMENT	941006/941006	LT 19.0	LT 31.1	LT 31.6	478.0+/-45.0	22335.0+/-977.0
27	SEDIMENT	940523/940523	LT 9.3	LT 17.0	LT 45.9	370.0+/-27.0	18293.0+/-506.0
27	SEDIMENT	941006/941006	LT 20.5	LT 25.9	LT 20.5	209.0+/-25.0	16822.0+/-614.0
32	SEDIMENT	940523/940523	LT 25.6	LT 21.3	LT 45.7	329.0+/-29.0	17234.0+/-523.0
32	SEDIMENT	941006/941006	LT 39.7	LT 25.3	LT 30.5	223.0+/-32.0	12865.0+/-601.0
63	SEDIMENT	940527/940527	LT 8.0	LT 16.7	LT 32.2	LT 23.7	11972.0+/-529.0
63	SEDIMENT	941010/941010	LT 44.1	LT 14.6	LT 48.7	LT 18.9	9524.0+/-590.0
64	SEDIMENT	940527/940527	LT 18.2	LT 18.7	LT 35.0	LT 17.0	7590.0+/-395.0
64	SEDIMENT	941010/941010	LT 30.4	LT 34.5	LT 29.0	LT 18.5	9647.0+/-670.0
65	SEDIMENT	940527/940527	LT 24.9	LT 20.4	LT 44.5	LT 25.4	11015.0+/-616.0
65	SEDIMENT	941010/941010	LT 37.7	LT 18.3	LT 33.0	LT 29.3	12529.0+/-692.0

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

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	CO-58 K-40	CO-60 MN-54	CS-134 ZN-65	CS-137	FE-59
25	DRUM	940523/940524	LT 20.6 1692.0+/-367.0	LT 18.7 LT 11.1	LT 15.6 LT 31.1	LT 26.1	LT 13.2
25	WHITE SUCKER	940523/940524	LT 19.5 2228.0+/-460.0	LT 24.9 LT 16.2	LT 7.4 LT 27.9	LT 19.6	LT 55.4
25	WHITE PERCH	940523/940524	LT 14.5 2792.0+/-646.0	LT 14.3 LT 8.8	LT 22.3 LT 41.9	LT 26.8	LT 15.8
25	WALLEYE	940523/940524	LT 21.7 3077.0+/-483.0	LT 13.8 LT 12.3	LT 17.9 LT 42.7	LT 29.6	LT 46.7
25	SMALL MOUTH BASS	940523/940524	LT 16.6 2606.0+/-383.0	LT 23.2 LT 15.2	LT 15.2 LT 30.5	LT 18.1	LT 12.8
25	YELLOW PERCH	940523/940524	LT 18.8 1973.0+/-446.0	LT 26.2 LT 16.6	LT 31.8 LT 48.7	LT 21.8	LT 32.9
25	REDHORSE SUCKER	940523/940524	LT 17.5 1853.0+/-454.0	LT 25.4 LT 11.2	LT 28.1 LT 44.3	LT 26.2	LT 49.7
25	SMALL MOUTH BASS	941006/941007	LT 14.9 2426.0+/-434.0	LT 20.7 LT 14.9	LT 9.7 LT 19.6	LT 15.0	LT 51.6
25	DRUM	941006/941007	LT 14.0 1426.0+/-406.0	LT 8.9 LT 17.7	LT 28.4 LT 35.6	LT 26.3	LT 23.0
25	REDHORSE SUCKER	941006/941007	LT 28.8 2506.0+/-465.0	LT 18.6 LT 11.7	LT 20.1 LT 39.3	LT 16.6	LT 24.5
25	WHITE SUCKER	941006/941007	LT 19.4 2318.0+/-344.0	LT 11.4 LT 12.2	LT 14.1 LT 19.6	LT 14.7	LT 26.8
25	ROCK BASS	941006/941007	LT 34.5 1582.0+/-473.0	LT 30.2 LT 17.8	LT 30.9 LT 46.7	LT 32.4	LT 71.1
25	WALLEYE	941006/941007	LT 23.5 2369.0+/-384.0	LT 7.9 LT 13.7	LT 16.6 LT 30.2	LT 23.8	LT 22.1
32	WHITE PERCH	940523/940524	LT 7.7 2490.0+/-369.0	LT 9.3 LT 9.5	LT 11.0 LT 16.7	LT 13.2	LT 12.9
32	WHITE SUCKER	940523/940524	LT 11.2 2525.0+/-202.0	LT 10.6 LT 16.4	LT 26.4 LT 40.6	LT 20.7	LT 32.4
32	DRUM	940523/940524	LT 12.0 2200.0+/-369.0	LT 20.0 LT 17.1	LT 7.4 LT 36.5	LT 18.9	LT 21.7
32	WALLEYE	940523/940524	LT 14.0 2355.0+/-648.0	LT 23.3 LT 13.9	LT 22.7 LT 15.5	LT 32.3	LT 39.9
32	YELLOW PERCH	940523/940524	LT 16.8 2488.0+/-363.0	LT 13.3 LT 8.4	LT 11.7 LT 29.4	LT 15.0	LT 31.0
32	ROCK BASS	940523/940524	LT 4.0 1328.0+/-240.0	LT 5.6 LT 7.7	LT 11.8 LT 9.8	LT 16.1	LT 9.8
32	CARP	941006/941007	LT 8.1 1681.0+/-268.0	LT 9.4 LT 5.6	LT 17.0 LT 10.2	LT 14.0	LT 16.2
32	WHITE SUCKER	941006/941007	LT 6.8 2384.0+/-380.0	LT 18.2 LT 10.7	LT 10.0 LT 24.3	LT 17.0	LT 23.2
32	SMALL MOUTH BASS	941006/941007	LT 24.7 1722.0+/-421.0	LT 12.7 LT 23.1	LT 20.5 LT 42.7	LT 17.9	LT 27.5
32	WALLEYE	941006/941007	LT 8.0 3370.0+/-444.0	LT 16.4 LT 23.7	LT 21.4 LT 36.8	LT 23.6	LT 49.7

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

FISH

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	CO-58 K-40	CO-60 MN-54	CS-134 ZN-65	CS-137	FE-59
32	YELLOW PERCH	941006/941007	LT 30.6 2360.0+/-642.0	LT 30.2 LT 38.5	LT 46.4 LT 76.6	LT 43.1	LT 38.9
32	REDHORSE SUCKER	941006/941007	LT 22.0 2056.0+/-406.0	LT 8.7 LT 13.4	LT 20.9 LT 22.4	LT 21.2	LT 60.6

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
01	TLD	940106/940401	9.50+/- .10
01	TLD	940401/940707	14.10+/- .20
01	TLD	940707/941004	10.90+/- .50
01	TLD	941004/950106	11.90+/- .20
02	TLD	940106/940401	8.70+/- .10
02	TLD	940401/940707	14.00+/- .30
02	TLD	940707/941004	10.60+/- .10
02	TLD	941004/950106	11.50+/- .20
03	TLD	940106/940401	11.00+/- .10
03	TLD	940401/940707	16.60+/- .50
03	TLD	940707/941004	12.90+/- .20
03	TLD	941004/950106	14.40+/- .20
04	TLD	940106/940401	10.90+/- .10
04	TLD	940401/940707	16.10+/- .20
04	TLD	940707/941004	12.80+/- .10
04	TLD	941004/950106	14.50+/- .20
05	TLD	940106/940401	10.60+/- .20
05	TLD	940401/940707	13.50+/- .30
05	TLD	940707/941004	13.40+/- .10
05	TLD	941004/950106	12.20+/- .10
06	TLD	940106/940401	11.70+/- .30
06	TLD	940401/940707	15.80+/- .30
06	TLD	940707/941004	14.10+/- .20
06	TLD	941004/950106	13.60+/- .10
07	TLD	940106/940401	11.30+/- .30
07	TLD	940401/940707	17.60+/- .20
07	TLD	940707/941004	13.50+/- .10
07	TLD	941004/950106	14.90+/- .30
08	TLD	940106/940401	9.20+/- .10
08	TLD	940401/940707	13.40+/- .40
08	TLD	940707/941004	11.40+/- .20
08	TLD	941004/950106	11.20+/- .20
09	TLD	940106/940401	9.00+/- .10
09	TLD	940401/940707	13.40+/- .10
09	TLD	940707/941004	11.10+/- .20
09	TLD	941004/950106	11.20+/- .20
10	TLD	940106/940401	9.40+/- .10

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
10	TLD	949401/940707	17.70+/- .20
10	TLD	940707/941004	12.20+/- .10
10	TLD	941004/950106	15.70+/- .40
11	TLD	940106/940401	11.70+/- .30
11	TLD	940401/940707	14.40+/- .10
11	TLD	940707/941004	13.40+/- .20
11	TLD	941004/950106	11.60+/- .20
12	TLD	940106/940401	10.90+/- .30
12	TLD	940401/940707	15.50+/- .20
12	TLD	940707/941004	12.70+/- .10
12	TLD	941004/950106	13.60+/- .20
13	TLD	940106/940401	9.00+/- .20
13	TLD	940401/940707	14.20+/- .30
13	TLD	940707/941004	10.10+/- .20
13	TLD	941004/950106	11.70+/- .30
14	TLD	940106/940401	8.80+/- .10
14	TLD	940401/940707	14.90+/- .10
14	TLD	940707/941004	10.10+/- .10
14	TLD	941004/950106	11.80+/- .50
15	TLD	940106/940401	9.00+/- .10
15	TLD	940401/940707	14.60+/- .10
15	TLD	940707/941004	11.10+/- .20
15	TLD	941004/950106	11.20+/- .30
16	TLD	940106/940401	11.90+/- .20
16	TLD	940401/940707	19.50+/- .20
16	TLD	940707/941004	14.40+/- .10
16	TLD	941004/950106	15.80+/- .40
17	TLD	940106/940401	11.70+/- .20
17	TLD	940401/940707	20.00+/- .20
17	TLD	940707/941004	14.50+/- .20
17	TLD	941004/950106	17.60+/- .10
18	TLD	940106/940401	18.10+/- .10
18	TLD	940401/940707	24.20+/- .20
18	TLD	940707/941004	20.80+/- .10
18	TLD	941004/950106	22.20+/- .30
19	TLD	940106/940401	10.90+/- .10
19	TLD	940401/940707	18.20+/- .30

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
19	TLD	940707/941004	13.60+/- .20
19	TLD	941004/950106	15.80+/- .30
20	TLD	940106/940401	11.70+/- .40
20	TLD	940401/940707	18.10+/- .20
20	TLD	940707/941004	13.80+/- .20
20	TLD	941004/950106	15.80+/- .30
21	TLD	940106/940401	13.50+/- .10
21	TLD	940401/940707	20.30+/- .20
21	TLD	940707/941004	15.70+/- .20
21	TLD	941004/950106	15.80+/- .20
22	TLD	940106/940401	12.20+/- .30
22	TLD	940707/941004	14.00+/- .10
22	TLD	941004/950106	12.30+/- .10
23	TLD	940106/940401	13.60+/- .10
23	TLD	940401/940707	16.70+/- .30
23	TLD	940707/941004	15.60+/- .30
23	TLD	941004/950106	13.40+/- .20
24	TLD	940106/940401	11.80+/- .40
24	TLD	940401/940707	17.70+/- .20
24	TLD	940707/941004	14.10+/- .20
24	TLD	941004/950106	14.50+/- .20
29	TLD	940106/940401	12.20+/- .10
29	TLD	940401/940707	19.10+/- .10
29	TLD	940707/941004	14.80+/- .40
29	TLD	941004/950106	15.60+/- .30
30	TLD	940106/940401	9.70+/- .20
30	TLD	940401/940707	15.10+/- .10
30	TLD	940707/941004	11.60+/- .10
30	TLD	941004/950106	12.10+/- .10
31	TLD	940106/940401	11.80+/- .20
31	TLD	940401/940707	17.70+/- .20
31	TLD	940707/941004	14.70+/- .20
31	TLD	941004/950106	14.30+/- .20
33	TLD	940106/940401	13.30+/- .10
33	TLD	940401/940707	18.20+/- .20
33	TLD	940707/941004	14.10+/- .20
33	TLD	941004/950106	15.20+/- .30

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
35	TLD	940106/940401	9.50+/- .10
35	TLD	940401/940707	15.20+/- .10
35	TLD	940707/941004	11.10+/- .20
35	TLD	941004/950106	12.80+/- .10
36	TLD	940106/940401	13.20+/- .10
36	TLD	940401/940707	19.10+/- .10
36	TLD	940707/941004	14.90+/- .20
36	TLD	941004/950106	17.10+/- .20
41	TLD	940106/940401	9.20+/- .10
41	TLD	940401/940707	16.80+/- .30
41	TLD	940707/941004	13.20+/- .10
41	TLD	941004/950106	14.50+/- .20
42	TLD	940106/940401	11.00+/- .20
42	TLD	940401/940707	15.60+/- .20
42	TLD	940824/941004	14.70+/- .20
42	TLD	941004/950106	12.30+/- .10
43	TLD	940106/940401	10.10+/- .10
43	TLD	940401/940707	16.30+/- .10
43	TLD	940707/941004	11.10+/- .10
43	TLD	941004/950106	12.90+/- .20
45	TLD	940106/940401	9.60+/- .10
45	TLD	940401/940707	15.90+/- .20
45	TLD	940707/941004	10.60+/- .10
45	TLD	941004/950106	13.30+/- .30
53	TLD	940106/940401	10.10+/- .20
53	TLD	940401/940707	15.40+/- .10
53	TLD	940707/941004	11.40+/- .10
53	TLD	941004/950106	12.90+/- .10
54	TLD	940106/940401	9.70+/- .20
54	TLD	940401/940707	16.20+/- .20
54	TLD	940707/941004	10.50+/- .20
54	TLD	941004/950106	13.20+/- .10
55	TLD	940106/940401	9.50+/- .20
55	TLD	940401/940707	16.40+/- .20
55	TLD	940707/941004	10.90+/- .20
55	TLD	941004/950106	13.50+/- .20
56	TLD	940106/940401	10.40+/- .20

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
56	TLD	940401/940707	12.30+/- .30
56	TLD	940707/941004	11.10+/- .20
56	TLD	941004/950106	10.20+/- .10
58	TLD	940106/940401	11.30+/- .10
58	TLD	940401/940707	15.50+/- .20
58	TLD	940707/941004	11.50+/- .20
58	TLD	941004/950106	12.30+/- .10

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
01	TLB	940106/940401	9.90+/- .20
01	TLB	940401/940707	13.80+/- .10
01	TLB	940707/941004	13.00+/- .30
01	TLB	941004/950106	11.80+/- .10
02	TLB	940106/940401	10.40+/- .20
02	TLB	940401/940707	13.60+/- .20
02	TLB	940707/941004	12.80+/- .30
02	TLB	941004/950106	11.40+/- .30
03	TLB	940106/940401	12.20+/- .40
03	TLB	940401/940707	16.00+/- .20
03	TLB	940707/941004	14.60+/- .10
03	TLB	941004/950106	14.20+/- .20
04	TLB	940106/940401	11.80+/- .20
04	TLB	940401/940707	16.00+/- .10
04	TLB	940707/941004	14.70+/- .10
04	TLB	941004/950106	14.20+/- .20
05	TLB	940106/940401	12.20+/- .20
05	TLB	940401/940707	13.20+/- .30
05	TLB	940707/941004	14.20+/- .10
05	TLB	941004/950106	12.00+/- .10
06	TLB	940106/940401	12.60+/- .20
06	TLB	940401/940707	15.60+/- .30
06	TLB	940707/941004	15.80+/- .20
06	TLB	941004/950106	13.90+/- .20
07	TLB	940106/940401	12.30+/- .30
07	TLB	940401/940707	16.40+/- .20
07	TLB	940707/941004	15.30+/- .10
07	TLB	941004/950106	13.90+/- .20
08	TLB	940106/940401	9.80+/- .20
08	TLB	940401/940707	12.90+/- .50
08	TLB	940707/941004	12.40+/- .10
08	TLB	941004/950106	11.20+/- .30
09	TLB	940106/940401	9.80+/- .20
09	TLB	940401/940707	13.20+/- .30
09	TLB	940707/941004	12.60+/- .20
09	TLB	941004/950106	11.10+/- .30
10	TLB	940106/940401	12.50+/- .20

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
10	TLB	940401/940707	17.10+/- .30
10	TLB	940707/941004	16.60+/- .10
10	TLB	941004/950106	16.40+/- .10
11	TLB	940106/940401	12.60+/- .20
11	TLB	940401/940707	13.70+/- .30
11	TLB	940707/941004	16.00+/- .20
11	TLB	941004/950106	12.40+/- .10
12	TLB	940106/940401	12.20+/- .30
12	TLB	940401/940707	15.10+/- .30
12	TLB	940707/941004	15.30+/- .20
12	TLB	941004/950106	13.70+/- .30
13	TLB	940106/940401	12.50+/- .20
13	TLB	940401/940707	13.70+/- .40
13	TLB	940707/941004	15.30+/- .20
13	TLB	941004/950106	11.30+/- .40
14	TLB	940106/940401	12.40+/- .20
14	TLB	940401/940707	14.50+/- .10
14	TLB	940707/941004	14.90+/- .20
14	TLB	941004/950106	11.60+/- .50
15	TLB	940106/940401	11.60+/- .20
15	TLB	940401/940707	13.80+/- .40
15	TLB	940707/941004	13.10+/- .30
15	TLB	941004/950106	11.10+/- .40
16	TLB	940106/940401	15.70+/- .20
16	TLB	940401/940707	19.00+/- .10
16	TLB	940707/941004	19.20+/- .10
16	TLB	941004/950106	15.80+/- .20
17	TLB	940106/940401	14.70+/- .20
17	TLB	940401/940707	17.60+/- .30
17	TLB	940707/941004	18.20+/- .10
17	TLB	941004/950106	17.60+/- .20
18	TLB	940106/940401	19.50+/- .20
18	TLB	940401/940707	23.70+/- .20
18	TLB	940707/941004	22.50+/- .10
18	TLB	941004/950106	22.20+/- .40
19	TLB	940106/940401	11.70+/- .20
19	TLB	940401/940707	17.70+/- .20

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
19	TLB	940707/941004	15.10+/- .20
19	TLB	941004/950106	15.70+/- .30
20	TLB	940106/940401	12.40+/- .20
20	TLB	940401/940707	17.50+/- .30
20	TLB	940707/941004	15.00+/- .20
20	TLB	941004/950106	15.50+/- .30
21	TLB	940106/940401	14.20+/- .20
21	TLB	940401/940707	17.50+/- .30
21	TLB	940707/941004	16.60+/- .10
21	TLB	941004/950106	15.80+/- .10
22	TLB	940106/940401	13.00+/- .20
22	TLB	940707/941004	15.20+/- .20
22	TLB	941004/950106	12.50+/- .10
23	TLB	940106/940401	14.60+/- .20
23	TLB	940401/940707	16.30+/- .20
23	TLB	940707/941004	17.30+/- .40
23	TLB	941004/950106	15.40+/- .40
24	TLB	940106/940401	12.50+/- .20
24	TLB	940401/940707	17.00+/- .20
24	TLB	940707/941004	15.10+/- .20
24	TLB	941004/950106	15.60+/- .40
29	TLB	940106/940401	14.10+/- .20
29	TLB	940401/940707	13.20+/- .30
29	TLB	940707/941004	17.40+/- .40
29	TLB	941004/950106	16.60+/- .10
30	TLB	940106/940401	10.30+/- .20
30	TLB	940401/940707	17.50+/- .10
30	TLB	940707/941004	14.10+/- .10
30	TLB	941004/950106	12.70+/- .10
31	TLB	940106/940401	12.60+/- .30
31	TLB	940401/940707	14.00+/- .50
31	TLB	940707/941004	15.40+/- .30
31	TLB	941004/950106	14.30+/- .30
33	TLB	940106/940401	14.10+/- .20
33	TLB	940401/940707	17.50+/- .40
33	TLB	940707/941004	15.90+/- .20
33	TLB	941004/950106	15.80+/- .20

CLEVELAND ELECTRIC ILLUMINATING CO. - FNPP.
REMP TRACKING SYSTEM

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
35	TLB	940106/940401	10.70+/- .20
35	TLB	940401/940707	13.20+/- .20
35	TLB	940707/941004	13.20+/- .20
35	TLB	941004/950106	11.60+/- .20
36	TLB	940106/940401	14.80+/- .20
36	TLB	940401/940707	19.50+/- .10
36	TLB	940707/941004	17.90+/- .40
36	TLB	941004/950106	17.90+/- .10
41	TLB	940106/940401	11.30+/- .20
41	TLB	940401/940707	15.60+/- .20
41	TLB	940707/941004	14.80+/- .20
42	TLB	940106/940401	12.20+/- .20
42	TLB	940401/940707	13.70+/- .10
42	TLB	940824/941004	13.30+/- .20
42	TLB	941004/950106	12.20+/- .10
43	TLB	940106/940401	12.00+/- .20
43	TLB	940401/940707	13.80+/- .30
43	TLB	940707/941004	14.40+/- .10
43	TLB	941004/950106	12.60+/- .10
45	TLB	940106/940401	11.40+/- .20
45	TLB	940401/940707	15.40+/- .20
45	TLB	940707/941004	14.10+/- .10
45	TLB	941004/950106	12.50+/- .10
53	TLB	940106/940401	11.40+/- .20
53	TLB	940401/940707	15.00+/- .10
53	TLB	940707/941004	14.00+/- .10
53	TLB	941004/950106	14.00+/- .20
54	TLB	940106/940401	9.60+/- .20
54	TLB	940401/940707	15.20+/- .30
54	TLB	940707/941004	12.30+/- .10
54	TLB	941004/950106	13.20+/- .10
55	TLB	940106/940401	12.10+/- .40
55	TLB	940401/940707	17.20+/- .40
55	TLB	940707/941004	15.20+/- .20
55	TLB	941004/950106	14.90+/- .70
56	TLB	940106/940401	10.70+/- .30

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
56	TLB	940401/940707	13.00+/- .10
56	TLB	940707/941004	13.10+/- .20
56	TLB	941004/950106	10.90+/- .10
58	TLB	940106/940401	12.00+/- .20
58	TLB	940401/940707	13.80+/- .10
58	TLB	940707/941004	13.00+/- .20
58	TLB	941004/950106	12.20+/- .10

CLEVELAND ELECTRIC ILLUMINATING CO. - PNPP.
REMP TRACKING SYSTEM

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

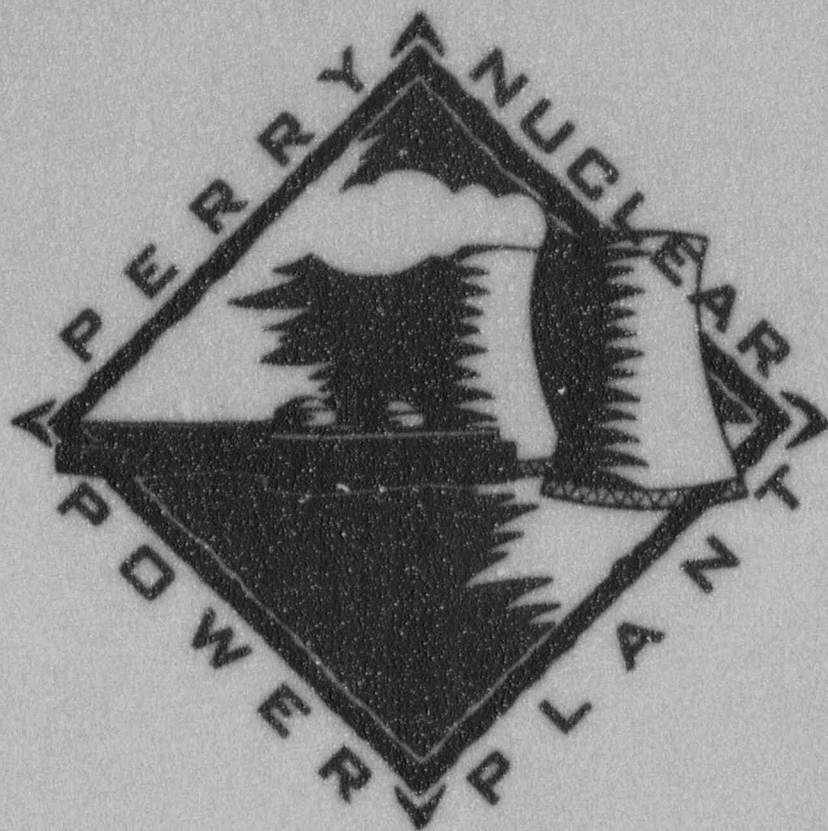
TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
01	TLA	940106/950106	53.10+/- .40
02	TLA	940106/950106	46.00+/- .70
03	TLA	940106/950106	49.50+/- .40
04	TLA	940106/950106	49.50+/- .80
05	TLA	940106/950106	39.00+/- 2.80
06	TLA	940106/950106	52.30+/- 1.60
07	TLA	940106/950106	35.90+/- 1.00
08	TLA	940106/950106	43.40+/- .30
09	TLA	940106/950106	43.90+/- .90
10	TLA	940106/950106	62.90+/- .80
11	TLA	940106/950106	46.70+/- .30
12	TLA	940106/950106	52.30+/- .30
13	TLA	940106/950106	49.20+/- .60
14	TLA	940106/950106	47.60+/- 1.10
15	TLA	940106/950106	45.10+/- .60
16	TLA	940106/950106	62.60+/- 4.80
17	TLA	940106/950106	57.70+/- .30
18	TLA	940106/950106	79.10+/- .60
19	TLA	940106/950106	54.40+/- .70
20	TLA	940106/950106	48.40+/- .50
21	TLA	940106/950106	57.30+/- .70
22	TLA	940712/950106	23.40+/- .60
23	TLA	940106/950106	52.70+/- .30
24	TLA	940106/950106	49.40+/- 1.00

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

TLD

STATION LOCATION	SAMPLE TYPE	COLLECTION DATE	DIRECT
29	TLA	940106/950106	64.20+/-1.30
30	TLA	940106/950106	47.60+/- .30
31	TLA	940106/950106	57.40+/- .30
33	TLA	940106/950106	62.30+/- .80
35	TLA	940106/950106	45.20+/- .40
36	TLA	940106/950106	64.90+/- .90
41	TLA	940106/950106	50.80+/- .30
42	TLA	940106/950106	54.90+/- .30
43	TLA	940106/950106	49.30+/- .50
45	TLA	940106/950106	48.70+/- .60
53	TLA	940106/950106	52.50+/- .40
54	TLA	940106/950106	45.80+/- .70
55	TLA	940106/950106	56.40+/- .40
56	TLA	940106/950106	44.70+/- .30
58	TLA	940106/950106	44.50+/- .60



FOR MORE INFORMATION, WRITE OR CALL:

PERRY NUCLEAR POWER PLANT
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